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## The Effects of Mediated Exposure to Ethnic-Political Violence on Middle East Youth’s Subsequent Post-Traumatic Stress Symptoms and Aggressive Behavior

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### Abstract

This study introduces the concept of chronic (i.e., repeated and cumulative) mediated exposure to political violence and investigates its effects on aggressive behavior and post-traumatic stress (PTS) symptoms in young viewers. Embracing the risk-matrix approach, these effects are studied alongside other childhood risk factors that influence maladjustment. A longitudinal study was conducted on a sample of youth who experience the Israeli-Palestinian conflict firsthand ( $N = 1,207$ ). As hypothesized, higher levels of chronic mediated exposure were longitudinally related to higher levels of PTS symptoms and aggression at peers independently of exposure to violence in other contexts. In the case of aggressive behavior, structural equation analysis (SEM) analyses suggest that, while it is likely there are causal effects in both directions, the bigger effect is probably for exposure to violence stimulating aggression than for aggression stimulating exposure to violence. Both the longitudinal effects on aggression and PTS symptoms were especially strong among youth who demonstrated initially higher levels of the same type of maladjustment. These results support the conceptualization of the relation between media violence and behaviors as “reciprocally determined” or “downward spirals” and highlight the contribution of the risk-matrix approach to the analysis of childhood maladjustment.

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Over the last two decades, children have reported watching news on the TV and internet at an increasing rate (Buijzen, Walma van der Molen, & Sondij, 2007). During the same period, researchers have also documented a pattern of increasingly graphic violence presented in the news (Slattery, Doremus, & Marcus, 2001). This violence seems to become more and more realistic as the technology improves and electronic devices transform every eyewitness into a potential reporter. These changes, both in the media environment and media exposure patterns, are disturbing, considering that previous research indicated that children have a stronger fear reaction to realistic violence than to fantastic, unreal violence (Cantor & Nathanson, 1996; Smith & Wilson, 2002; Walma van der Molen & Bushman, 2008) and that realistic violence is more likely to stimulate aggression by child viewers (Huesmann & Kirwil, 2007; Huesmann, Moise-Titus, Podolski, & Eron, 2003).

One type of realistic violence often presented in the news is political violence. Exposure to political violence in real-life has a significant impact on children's well-being (Braun-Lewensohn, Celestin-Westreich, Celestin, Verte, & Ponjaert-Kristoffersen, 2008; Slone & Hallis, 1999). Yet, media reports of these events reach far more children than actual events (Buijzen et al., 2007). So far, research on this type of mediated exposure has been scant, with scholarly attention directed mainly at the effects of acute mediated exposure on youth's levels of post-traumatic stress disorders (PTSDs; Ahern, Galea, Resnick, & Vlahov, 2004; Collimore, McCabe, Carleton, & Asmundson, 2008; Duggal, Berezkin, & John, 2002; Saylor, Cowart, Lipovsky, Jackson, & Finch, 2003).

To date, a few important issues on this topic have remained under-researched: First, because extant research has mostly focused on PTSD, it paid much less attention to other possible effects of such exposure, such as *aggressive behavior* (Walma van der Molen, 2004). Second, because research has typically focused on acute mediated exposure, it left understudied the possible effects of *chronic mediated exposure*. Acute exposure refers to exposure to a singular violent event in the media, such as one terror attack (e.g. Pfefferbaum et al., 2001). Chronic exposure—which stands at the center of this investigation—refers to cumulative exposure to violent political acts, which may vary in their severity. Thus, the present study aims to enrich work done so far by documenting the effects of chronic mediated exposure on both PTS symptoms as well as on aggressive behavior among youth.

The effects of chronic exposure are studied here as part of a more general “risk matrix” approach. This approach implies that increased risk from multiple unique settings should be associated in a linear fashion with psychopathology (e.g., Rutter, 1979; Sameroff, 2000). Thus, mediated exposure is one risk factor, which intertwines with other well-documented risk factors causing behavioral problems (Boxer, Huesmann, Bushman, O'Brien, & Mocerri, 2009; Huesmann & Kirwil, 2007). Adopting such an approach to the analysis of mediated chronic exposure has empirical implications. Mediated exposure should be studied in conjunction with children's experience with violence in other settings, and should also

consider children's initial level of behavioral problems (Funk, Baldacci, Pasold, & Baumgardner, 2004; Gerbner, Gross, Morgan, & Signorielli, 1980; Mrug & Windle, 2010).

The present study is based on longitudinal data from youth and their parents residing in the conflict zones of Israel and the Palestinian Authority. The study's contribution is both theoretical and empirical. It further enhances the current literature by presenting the new theoretical concept of chronic mediated exposure to political violence, and by expanding the scope of psychological maladjustment (i.e., to include aggression) thought to be a product of such exposure. Moreover, the use of longitudinal data allows us to explore the causal relation between exposure to violence and aggression, and demonstrates that it follows the pattern laid out in the reinforcing spiral model. Lastly, the study offers an evaluation of the results of chronic (i.e., repeated and cumulative) exposure to mediated political violence, while capturing exposure to violence in other settings in the child's life.

### The Possible Effects of Mediated Exposure to Political Violence

Political violence affects the lives of youth in many regions around the world where intractable conflicts take place (see, for example, the 2010 special issue of *Child Development*, Volume 81, Issue 4). Several studies have demonstrated the damaging psychosocial effects of immediate exposure to war, terrorism, and ethnic-political violence on youth. Such exposure is associated with a variety of indicators of maladjustment including PTS symptoms, anxiety, depression, and aggression (e.g., Barber, 2008; Boxer et al., 2012; Braun-Lewensohn et al., 2008; Dubow et al., 2012; Leavitt & Fox, 1996).

Much like the findings from research on exposure to ethnic-political violence in person, the majority of research on the effects of *mediated* exposure to political violence has focused on PTS symptoms and general anxiety (Ahern et al., 2004; Saylor et al., 2003; Slone, 2000). Studies on this topic found that children experience stress reactions and, in severe cases, PTS symptoms, even if they were only exposed to media coverage of political violence. This line of research is far from being exhausted. As mentioned above, it is important to address this relation within a broader approach of risk matrix (Dubow et al., 2009; Mrug, Loosier, & Windle, 2008). Moreover, we examine an additional possible consequence of mediated exposure—aggressive behavior. Surprisingly, there is hardly any work linking exposure to mediated political violence with aggression, although exposure to other types of violent media content is significantly associated with aggression (for example, see meta-analyses by Anderson & Bushman, 2001; Paik & Comstock, 1994).

The idea that exposure to mediated political violence could increase children's levels of aggression stems from a combination of two large bodies of knowledge: First, the aforementioned line of research on the influence of exposure to real-life political violence that demonstrated its contribution to aggressive behavior (Barber, 2008; Kithakye, Morris, Terranova, & Myers, 2010; Landau et al., 2010); and second, it was generally established that exposure to other types of violent content in the media (e.g., movies, video games, TV shows) promotes aggressive behavior and acceptance of such behavior (e.g., Anderson et al., 2003; Anderson et al., 2010; Eron, Huesmann, Lefkowitz, & Walder, 1972; Huesmann & Eron, 1986; Huesmann, Eron, Lefkowitz, & Walder, 1984; Huesmann & Kirwil, 2007;

Huesmann et al., 2003; Ostrov, Gentile, & Crick, 2006; Villani, 2001). Furthermore, there is evidence that portrayal of realistic violence, such as political violence, carries greater effects on children than the portrayal of fictional violence (Cantor & Nathanson, 1996; Huesmann et al., 2003; Walma van der Molen & Bushman, 2008). Preliminary evidence suggests that even among portrayals of realistic types of violence, political violence is the most stressful for youth (Becker-Blease, Finkelhor, & Turner, 2008).

As in the case of fictional violence, two processes provide an explanation as to why mediated exposure to political violence promotes aggression in the long run (Huesmann, 2007): observational learning and desensitization. Observational learning suggests that children learn socially acceptable behaviors from media content (Bandura, 1977; Huesmann & Kirwil, 2007; Huesmann et al., 2003; Villani, 2001). When children see aggressive behavior on the screen they adopt it, be it political or other. Observational learning does not just mean that children directly imitate the observed behavior; it means that they infer and adopt beliefs about the world, beliefs about normative behavior, and scripts about how to behave in general from these observations (Huesmann & Kirwil, 2007). Desensitization is the willingness to accept violence and the reduced emotional sensitivity for the suffering of others, due to recurrent exposure to violence (Carnagey, Anderson, & Bartholow, 2007; Funk et al., 2004; Huesmann et al., 2003; Krahe et al., 2011). When exposed to images of political violence, children become more tolerant of its effects, a process that was also documented on a larger scope in societies during times of political conflict (Bar-Tal, 2001; Carnagey & Anderson, 2007; Landau, 1994, 2003; Landau & Pfeiffermann, 1988; Maoz & McCauley, 2008). Thus, it is proposed here that the examination of children's responses to such exposure should be wider in scope, and includes both children's aggressive behavior as well as PTS symptoms.

## The Case of Chronic Exposure to Mediated Political Violence

As suggested above, most of the extant research has addressed the effects of acute exposure to mediated political violence. These studies were largely north-American based, and dealt with the effects of exposure to singular tragic events—mainly the terrorist attacks in Oklahoma City in 1995 (e.g., Pfefferbaum et al., 2001) and New York on September 11, 2001 (Ahern et al., 2004; Propper, Stickgold, Keeley, & Christman, 2007; Saylor et al., 2003; Suvak, Maguen, Litz, Silver, & Holman, 2008; Walma van der Molen & De Vries, 2003). Important as these studies on singular events may be, scholarly attention should not neglect the effects of chronic exposure to mediated political conflict and violence. This necessary shift in scholarly attention, though, underscores two main issues that have been addressed extensively in the more general context of media effect research: the role of simultaneous exposure to violence in other contexts, and the possible bi-directional relation between exposure to mediated violence and psychological adjustment.

First, most studies done in the past did not take into account children's exposure to, and experience with, violence in their everyday lives (e.g., in the community, family, and school). Such an omission was criticized in the past in the more general context of media effects research. By and large, it was argued that failure to include indicators of exposure to real-life events could result in attributing the effects of real events to the media, thus

overestimating media influence (e.g., Behr & Iyengar, 1985; Soroka, 2002; Zucker, 1978). Likewise, in the case of exposure to mediated violence, children and youth who are exposed to such violent content may also be at a higher risk of encountering violence in their immediate surroundings (Funk et al., 2004; Huesmann & Taylor, 2006; Slater, 2004). Moreover, in the case of exposure to violent media content, omission of exposure to real-life violence could cause additional difficulties. Scholars studying the negative effects of exposure to violence argue for a “risk matrix” approach (Rutter, 1979; Sameroff, 2000) that interlaces exposure to media violence with other documented risk factors, such as exposure to violence in other settings (Boxer et al., 2009; Dubow et al., 2009; Mrug et al., 2008). Therefore, the effects of exposure to mediated political violence should be tested within a more general environmental framework of influences on children’s behavior. Consequently, this study does not consider exposure to media content as a sole factor determining maladjustment, but rather investigates it within the context of other loci of risk in the child’s life. Thus, the first hypothesis in the current study is as follows:

**Hypothesis 1a:** Greater exposure to mediated political violence will be related longitudinally to higher levels of subsequent PTS symptoms independently of the level of initial PTS symptoms and of exposure to violence in other contexts in the child’s life.

**Hypothesis 1b:** Greater exposure to mediated political violence will be related longitudinally to higher levels of subsequent aggressive behavior independently of the level of initial aggressive behavior and of exposure to violence in other context in the child’s life.

The second issue noted above is the possible bi-directional relation between chronic mediated exposure and psychological adjustment. Some researchers argue from the point of view of “selective exposure.” That is, following the foundation of the “uses and gratification” approach or social comparison theory, scholars have suggested that aggressive tendencies might drive individuals to seek out violent content (Cantor & Nathanson, 1997; Huesmann et al., 2003; Johnson, Cohen, Smailes, Kasen, & Brook, 2002; Slater, 2003, 2004; Slater, Henry, Swaim, & Anderson, 2003). This line of reasoning has found limited support from studies of media violence (Huesmann & Taylor, 2006) and is contradicted by some studies of exposure to real-life neighborhood violence (Guerra, Huesmann, & Spindler, 2003). Nevertheless, analyses have shown that both types of relations—from media exposure to aggression and vice versa—can mutually exist (see Slater et al., 2003; “downward spiral model”). Furthermore, social comparison theory provides an explanation of why aggressive youth might feel more comfortable watching other aggressive people rather than non-aggressive people (Huesmann et al., 2003). In recent years, however, because the predominant relation seems to be from violent viewing to aggression, the idea of selective exposure has also been somewhat reshaped, focusing more on the preliminary factors making some children more vulnerable to the effects of violent content (Slater, 2004; Slater, Hayes, & Ford, 2007). Among these factors is initial level of aggression (Fenigstein, 1979; Huesmann et al., 2003; Huesmann & Taylor, 2006). Some studies have found that more aggressive children seem to be more affected by media violence. Thus, instead of suggesting that preliminary aggressive behavior causes exposure to violent content, a more accurate conceptualization now suggests that existing aggressive behavior plays a role in

facilitating the effects of violent content, while also attracting viewers to the content. The attraction aggressive children demonstrate toward violent content is, therefore, an added risk factor that increases the likelihood that they will be aggressive.

Although the notion of a reciprocal relation is mostly attributed to aggression, it is also relevant for PTS symptoms. For instance, it was suggested by Pfefferbaum et al. (2002) that early symptoms of PTSD increase the tendency to watch the news. Even more relevant is Ahern et al.'s (2004) study, which demonstrated that children who already suffered from panic or traumatic symptoms prior to their mediated exposure to political violence (i.e., peri-event exposure) responded to it more severely (see also Weems, Scott, Banks, & Graham, 2012).

Based on the above reasoning, a longitudinal exploration of the effects of exposure to mediated political violence would be desirable. Such an exploration can investigate any reciprocal relation, as well as identify if children with higher initial levels of PTS symptoms and higher aggressive behavior respond more severely to political violent content. Thus, the second hypothesis in the current study is as follows:

**Hypothesis 2a:** The effect of exposure to mediated political violence on aggressive behavior will be stronger among children presenting higher initial level of aggressive behavior.

**Hypothesis 2b:** The effect of exposure to mediated political violence on PTS symptoms will be stronger among children presenting higher initial level of PTS symptoms.

## The Current Study

In order to study the effects of exposure to political violence, we conducted a longitudinal study on a sample of youth growing up in Israel and Palestine. Ethnic-political violence and conflict are prevalent and ongoing in Israel and Palestine, where since the beginning of the second Intifada in September 2000 through the end of January 2011, at least 7,487 people have been killed, including 1,442 minors. Concentrating on this population allows for the analysis of the effects of mediated exposure to ethnic-political violence on youth for whom the violence is highly relevant to their everyday lives. Such an analysis is absent in the current literature, though it is called for, both theoretically and empirically.

One can argue that given the possible strong impact of life under constant political conflict, media portrayal of such violence will lose its power, that is, the influence of actually observing such violence will be stronger than any possible effect attributed to its mediated representation. Given that, establishing media effects in a population that lives under the perils of the Israeli-Palestinian conflict will serve as a strong demonstration of media's ability to influence youth. In practice, violent scenes in the media also carry high personal relevance to the participants in this study who live in a conflict zone, which might intensify their potential effect. In keeping with previous research on acute exposure (e.g., Barber & Olsen, 2009; Dubow et al., 2009), children often are exposed to violent events that concern people in their immediate surroundings. As a result, children may have to confront the fact that similar, cumulative, and repeated violent events could potentially harm them or

someone close to them (Comer, Furr, Beidas, Babyar, & Kendall, 2008). Consequently, it is possible that the relations presented might be significantly weaker if studied in other populations, for whom the reported events have little personal relevance.

## Method

### Sampling Procedures

The data are part of a three wave longitudinal study of the effects of exposure to conflict and violence on mental health in three cohorts (ages 8, 11, and 14 at Wave 1) of youths growing up in Palestine ( $n = 600$  children) and in Israel ( $n = 901$ ; 451 Jewish and 450 Arab children). Data were collected three times, at one-year intervals, from both children and parents during the years 2007-2010.

**Palestinian sample**—The Palestinian sample is a representative sample of 600 children: 200 eight-year-olds (101 girls, 99 boys), 200 eleven-year-olds (100 girls, 100 boys), and 200 fourteen-year-olds (100 girls, 100 boys) and 1 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 6 children would be interviewed, 3 males and 3 females divided equally over the three ages under examination. Houses in each counting area were divided to allow random selection of six 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 1 child who fit the description, 1 was selected using Kish Household Tables. In the second home, the age/gender type of child selected in the previous home would be excluded and so the choices would become 5, rather than 6, 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 interviews.

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).

**Israeli sample**—The Israeli sample included 901 children and their parents. The Arab group consisted of 450 children: 150 eight-year-olds (66 girls, 84 boys), 149 eleven-year-olds (69 girls, 80 boys), and 151 fourteen-year-olds (79 girls, 72 boys) and one of their parents (68% were mothers). The Jewish group consisted of 451 children: 151 eight-year-olds (79 girls, 72 boys), 150 eleven-year-olds (73 girls, 77 boys), and 150 fourteen-year-olds (94 girls, 56 boys) and one of their parents (87% were mothers).

In comparison to the level of conflict and violence in Palestine, the level of conflict and violence is relatively low in the major population centers of Israel; so, we over sampled high-risk areas. Thus, of the Arab sample, 7% live in Jerusalem, 70% live in the north (close to the Lebanese border), and 23% live in central Israel (low conflict area). Of the Jewish sample, 15% live in Jerusalem, 25% live in the north, 23% live in the south (around the Gaza Strip), 24% live in the occupied West Bank, and 14% live in central Israel.

Families in these designed areas were randomly sampled. They were approached in one of three ways: (1) recruitment by phone—random phone calls were made to households in the designated area. The respondents were asked to participate in the project if they had children in one of the age cohorts; (2) recruitment by cluster sampling—within the designated area, we randomly selected neighborhoods and streets, and the interviewers then went door-to-door locating families with children fitting the sample criteria and asked them to take part in the project; (3) non-probability sampling—interviewees were allowed to recommend families who fit the sample criteria. Each family's census data were verified, and if their demographic characteristics indeed met the requirements, the family was included in the sample. Face-to-face interviews were scheduled for those who agreed to participate (55% in the Jewish sample and 65% in the Arab sample). Staff from the Mahshov Survey Research Institute conducted the sampling and then the interviews.

Among the Israeli Jewish sample, 91% of the parents were married, over 80% had graduated from high school, 42% reported their incomes as below the Israeli average, 28% reported it as average, and 30% reported it as above average. Parents reported that on average, there were 3.59 ( $SD = 1.83$ ) children in the home.

Among the Israeli Arab sample, 92% of the parents were married; 55% to 60% did not graduate from high school, and 43% reported their incomes as below the Israeli average, 37% reported their income as average, and 21% reported it as above average. Parents reported that on average, there were 3.17 ( $SD = 1.39$ ) children in the home.

### Consent and Interview Procedures

The research protocol was approved by the institutional review boards of the University of Michigan (Behavioral Sciences) and the Hebrew University of Jerusalem. In both Palestine and Israel, 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 Wave 1 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.



The interviews were conducted in three yearly waves at one-year intervals. Although the timing of waves in Palestine and Israel were similar, they did not overlap precisely. Wave 1 was conducted from May 2007 through September 2007 in Palestine, and from May 2007 through October 2007 in Israel. Wave 2 was conducted from May 2008 through September 2008 in Palestine, and from May 2008 through December 2008 in Israel. Wave 3 was conducted from May 2009 through August 2009 in Palestine, and from May 2009 through April 2010 in Israel. It should be noted that data collection did not occur in Palestine during the major 2008 incursion of Israeli troops into Gaza (Operation Cast Lead), which began operationally on December 27, 2008.

## Measures

All measures described below were presented with no variation between waves of data collection. Measures were presented in appropriate native languages by region and ethnicity (i.e., Hebrew for Israeli Jews and Arabic for Palestinians and Israeli Arabs; Israeli Arabs were able to select Hebrew or Arabic). Original English measures were translated and back-translated for accuracy by native-speaking research teams at the two data collection sites.

**Demographics**—To assess socioeconomic status, parent’s education was coded on a scale ranging from 1 (*illiterate*) to 10 (*doctorate or law degree*). For income, parents were asked, “The average Palestinian/Israeli income is XXX per month. Is your income 1 = below average to 5 = way above average.” As for children demographics, both parent and child reported on child’s age and gender.

**Exposure to ethnic-political violence in the mass media**—Parents of 8-year-olds reported on their children’s exposure to political conflict and violence in the media, whereas 11- and 14-year-old children provided self-reports of their exposure to political conflict and violence in the media. Based on the exposure to political conflict and violence scale by Slone, Lobel, and Gilat (1999), we created a six-item scale assessing witnessed media portrayals of the ethnic-political violent acts (six items,  $\alpha = .83$  for parent report,  $\alpha = .72$  for self-report; for example, “How often have you seen video clips or photographs of injured or martyred Palestinians on stretchers or the ground because of an Israeli attack?”). Respondents indicated the extent to which they or their child experienced the event in the past year along a 4-point scale (0 = *never* to 3 = *many times*). For the purpose of the regression analysis presented below, we calculated a composite exposure score across Waves 1 and 2 by summing the participant’s scores ( $M = 3.2$ ,  $SD = 1.9$ ,  $r = .70$ ,  $p < .01$ ).

### **Exposure to conflict/violence in the context of the community, school, and family—**

1. The exposure to *intra-ethnic community violence* scale includes four items taken from Attar, Guerra, and Tolan (1994) and Barber (1999) ( $\alpha = .58$ ). 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?”). 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 [individual from the same ethnic group as yours]?” “How often have you seen or heard a violent argument between your neighbors?” Each year, we calculated a score based on the mean of the items.

2. The exposure to *school conflict and violence* scale includes three items taken from Attar et al. (1994) ( $\alpha = .78$ ). 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?” Each year, we calculated a score based on the mean of the items.
3. For exposure to family conflict and violence, we used two indices: (a) A single item adapted from Attar et al. (1994) to which children responded along a 4-point scale (0 = *never* to 3 = *many times in the past year*): “How often have you seen or heard a violent argument between your adult relatives?” and (b) The mean of six items that parents answered from the physical assault scale of the Revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996;  $\alpha = .87$ ), indicating whether either partner engaged in the behavior (e.g., thrown something at the other, hit the other) in the past year on a 10-point scale (0 = *never* to 9 = *9 or more times*). These two scales were not combined into one, given their unequal number of items and the fact that the children’s reports were based on single item (Kline, 2010).

For each of the four exposures to violence scales, we calculated a chronic, cumulative exposure score across Waves 1 and 2 by summing the participant’s scores. The cumulative exposure scores for community, school, and family violence measures ranged from 0 to 6, except for the family violence parent report on the CTS, which ranged from 0 to 18. The means of the chronic exposure scores (sum of Wave 1 and Wave 2) and the Wave 1 to Wave 2 correlations for exposure were respectively correlated:—for community violence:  $M = 1.2$ ,  $SD = 0.9$ ,  $r = .42$ ,  $p < .01$ ; for school violence:  $M = 4.0$ ,  $SD = 1.6$ ,  $r = .36$ ,  $p < .01$ ; children’s report of family violence:  $M = 1.8$ ,  $SD = 1.8$ ,  $r = .34$ ,  $p < .01$ ; for parent’s report of spousal violence on the CTS:  $M = 0.6$ ,  $SD = 1.8$ ,  $r = .54$ ,  $p < .01$ .

**Symptoms of PTS**—Children completed nine items ( $\alpha = .70$ ) from the *Child Post-Traumatic Stress Symptoms Index* (Pynoos et al., 1987). The items follow the criteria listed in the Diagnostic and Statistical Manual of Mental Disorders (4th ed., text rev.; *DSMIV-TR*; American Psychiatric Association, 2000) for PTS 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, headaches, or stomach aches.”). The measure has been used with children ages 6 to 16, and has been administered to youth in the Middle East (e.g. Thabet, Abed, & Vostanis, 2004; Wolmer, Laor, Gershon, Mayes, & Cohen, 2000).

### **Aggressive behavior**

**Child self-report of severe physical aggression:** Children were administered the four-item ( $\alpha = .62$ ) *Severe Physical Aggression Scale* (Lefkowitz, Eron, Walder, & Huesmann, 1977).

**Child self-report of general aggressive behavior:** Children responded to a modified 10-item ( $\alpha = .80$ ) version of the *Peer Nomination of Aggression Inventory* based on the original peer-rated index (Eron, Walder, & Lefkowitz, 1971). 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?”).

**Parent report of general aggressive behavior by child:** Parents reported on their children’s aggressive behavior via the 20-item aggression subscale of the *Child Behavior Checklist* (Achenbach & Edelbrock, 1983;  $\alpha = .89$ ). Parents rated the extent to which children displayed each behavior during the 6 months prior to assessment (e.g., “argues a lot,” “threatens people,” “gets in many fights”) on a 3-point scale (0 = *not true [as far as you know]*, 1 = *somewhat or sometimes true*, 2 = *very true or often true*).

A *Composite Aggression Score* was computed based on a measurement model for a single latent trait of aggression in each of the three waves affected only by aggression in the previous wave. All Waves 1, 2, and 3 indicators of the three scales above were included, and the hypothesized data structure was tested as a multiple-group model across the three age cohorts (constrained to be equal across time) using the AMOS Program, Version 7.0, with missing data points estimated via the Full Information Maximum Likelihood (FIML) algorithm ( $\chi^2/df = 4.157$ ; Root Mean Square Error of Approximation [RMSEA] = .04, Comparative Fit Index [CFI] = .99). The factor weights for aggression on each scale from this model were used to create a factor weighted Composite Aggression Score (weight for self-reported severe aggression = .470; for self-reported general aggression = .182; and for parent report of general aggression = .177). The structural equation measurement model suggested measurement invariance across both age cohorts and ethnic groups.

### **Panel Attrition**

For the Palestinian sample, the attrition rate was 5% (2% at Wave 2 and additional 3% at Wave 3). By Wave 3, non-resampled children reported higher levels of exposure to

mediated political violence at Wave 2,  $t(587) = 2.5, p < .01$ . For the Israeli Arabs, the attrition rate was 14% (14% at wave 2, none at wave 3). Non-resampled children had higher symptoms of PTS,  $t(447) = 3.05, p < .01$ , and higher aggression,  $t(448) = 3.5, p < .01$ . For Israeli Jews, the attrition rate was 37% (32% at Wave 2, and additional 5% at Wave 3).<sup>1</sup> Attrition was associated with lower levels of average parental education at Wave 1,  $t(449) = 3.31, p < .01$ ; lower aggression at Wave 1,  $t(449) = 2.7, p < .01$ ; and lower exposure to violence at the community at Wave 1,  $t(449) = 2.2, p < .05$ . Despite these differences, none of the key study variables showed a substantial restriction in the range due to attrition.

### Statistical Procedures

First, we present sample descriptive statistics of the major study variables by ethnic subgroup. We also address the differences found by gender and age. Next, a key cross-lag structural equation model is presented to analyze the longitudinal relation between exposure to mediated political violence and later maladjustment (PTS symptoms and aggression at peers—Hypotheses H1a and H1b).<sup>2</sup> The purpose of this analysis is to compare the unique contribution of mediated exposure to ethnic-political violence to later maladjustment over time with the unique contribution of maladjustment to later mediated exposure to ethnic-political violence over time. This model contains three autoregressive paths (for aggressive behavior, PTS, and exposure), correlations among the three variables at each time point, and reciprocal predictive relations between them at adjacent times (W1 → W2, W2 → W3, W1 → W3), controlling for demographics and exposure to violence in other settings.

To examine the hypothesis that initial level of maladjustment moderates the relation between exposure to chronic mediated violence and subsequent adjustment, we then computed regression analyses predicting Wave 3 PTS and aggression from chronic exposure to mediated political violence and other predictors. To obtain the best assessment of chronic, repeated mediated exposure to political violence, we summed children's exposure to mediated violence in Waves 1 and 2. The other predictors in each regression included chronic exposure to other kinds of real-life violence (family, school, and community), Wave 1 PTS or aggression score, and the interactions representing the hypothesized moderation of chronic exposure to mediated political violence by the initial level of maladjustment and by exposure to the other forms of violence. Following Aiken and West (1991), we centered all variables entering into interaction terms. Any significant interaction effects were probed by examining simple slope regression lines of the relation between chronic exposure to mediated political violence and Wave 3 PTS and aggression (one for a high level of the moderator variable  $-1 SD$  above the centered mean, and one for a low level of the moderator  $-1 SD$  below the centered mean). We included exposure to other forms of real-life violence in these analyses (family, school, and community) and their interactions with mediated

<sup>1</sup> The decrement in the number of participants interviewed among Israeli Jews was mostly due to "refusals." The refusing participants reported that they did not feel the monetary reimbursement was sufficient to justify their time. In fact, due to significant exchange rate changes over the course of the study, the amount of money offered to each participant was significantly less in Waves 2 and 3. Because Arab Israelis had much lower average incomes, the amount was perceived as sufficient by most of them.

<sup>2</sup> There are a number of analytical methods to study change in longitudinal data, an important one being the latent growth model (Muthén & Curran, 1997). However, to achieve significant statistical power for a bi-directional model using this type of analysis, one would have to rely on more than three observations (Cheong, 2011; Muthén & Curran, 1997). For this reason, cross-lag analysis was chosen in the present study.

exposure to political violence because, as noted above, researchers have found that exposure to violence in the media and in real-life can be associated. This is relevant to the risk matrix model and also to Gerbner et al.'s (1980) concept of resonance. Gerbner et al. (1980) describe resonance as a situation in which exposure to violence in real-life magnifies the effects of exposure to mediated violence. Such theoretical relations are captured by interaction terms (Shrum & Bischak, 2001). In both models, emphasis is given to the interweaving of media exposure with other types of exposure.

## Results

### Descriptive Statistics and Correlations Among the Key Study Variables

Table 1 presents the descriptive statistics of the key variables in the current analysis, in addition to further analyses of differences between the major demographic groups: gender, ethnic group, and age. A three-way ANOVA revealed that Palestinian children were more likely to be exposed to mediated political violence and showed the highest levels of aggressive behavior as well as PTS symptoms. Males were more likely to be exposed to mediated political violence and showed higher levels of aggression than females. Females, on the other hand, showed higher levels of PTS symptoms. Age differences were not entirely consistent across waves, yet generally, older cohorts reported higher exposure to mediated violence. All the differences accounted for here are in accordance with the findings reported in previous studies (Barber & Olsen, 2009).

Table 2 presents the correlations between the main variables in the study. It is worth noting that, as shown in Table 2, exposure to mediated political violence was correlated with exposure to violence in other settings of the child's life. These associations highlight the importance of the risk-matrix approach.

### Cross-Lag Analysis: Reciprocal Relations Between Exposure to Mediated Political Violence and Maladjustment

Figure 1 presents the cross-lagged structural equation model analyzing the longitudinal relation between mediated exposure to political violence and later maladjustment (controlling for age, gender, parent's income and education, and exposure to violence in other settings: in the community, school, and family). The model fits the data extremely well ( $\chi^2 = 24.0$ ,  $df = 26$ ,  $p = .58$ ; RMSEA = .00, CFI = .998). Although not shown in Figure 1, within each wave, error terms for exposure, aggression, and PTS were allowed to be positively correlated (Wave 1: exposure–aggression = .27\*\*; exposure–PTS = .36\*\*; PTS–aggression = .27\*\*; Wave 2: exposure–aggression = .22\*\*; exposure–PTS = .18\*\*; PTS–aggression = .20\*\*; Wave 3: exposure–aggression = .23\*\*; exposure–PTS = .21\*\*; PTS–aggression = .16\*\*). As can be seen from Figure 1, almost all paths from exposure to mediated political violence to subsequent maladjustment (5 out of 6 paths) were found to be significant. The only path that failed to support the mediated exposure to maladjustment hypothesis is that from exposure in Wave 2 to PTS in Wave 3. This might be partly attributed to the lack of change in PTS symptoms between Wave 2 and Wave 3,  $t(1, 1228) = .54$ ,  $p = .57$ . For the paths in the opposite direction—from PTS and aggression to

subsequent exposure demonstrate a similar pattern—four out of the six paths were significant.

The model presented in Figure 1 was tested against alternative models in which a pair of paths—a path from exposure to subsequent maladjustment and the parallel path from maladjustment to subsequent exposure—were constrained to be equal. Testing constraints in this manner allowed us to determine whether the effect of exposure to mediated violence on maladjustment was significantly different from the effect of maladjustment to exposure. In two out of three possible comparisons, constraining paths to be equal significantly harmed the model (Wave 1 → Wave 3,  $\chi^2=4.3$ ,  $df=1$ ,  $p<.05$ ; Wave 2 → Wave 3  $\chi^2=6.9$ ,  $df=1$ ,  $p<.01$ , but not Wave 1 → Wave 2). In the case of PTS, the paths were not significantly different from each other.<sup>3</sup> Furthermore, in every case in which we showed that the paths were significantly different, the stronger path was the path from exposure to violence to subsequent maladjustment. Taken together, these results confirm hypotheses H1a and H1b—that greater exposure to mediated political violence is related longitudinally to higher levels of maladjustment independently of the level of initial maladjustment and of exposure to violence in other contexts. It is also the case that the relation between exposure and adjustment is bi-directional.

### **Moderating Effect of Initial Level of Maladjustment on the Relation Between Exposure to Mediated Political Violence and Subsequent Maladjustment**

To test the hypotheses that the effect on maladjustment of mediated exposure to political violence is moderated by the initial level of maladjustment (Hypotheses H2a and H2b), we computed a hierarchical multiple regression model (see Table 3). In Step 1, we predicted Wave 3 PTS symptoms (H1a) and aggression (H1b) from exposure to mediated violence aggregated over the first two waves, while controlling for exposure to violence in other settings. We also included the youth's initial level of aggression/PTS symptoms in Wave 1 as a predictor; so we would be predicting *change* in these outcomes over time. We also included covariates in Step 1 (child's sex, child's age, and average level of parents' education). In Step 2, we added the interaction of chronic exposure to mediated political violence with initial levels of aggression/PTS symptoms to test our moderation hypotheses (H2a and H2b). We also included four other interactions in this step (Exposure to mediated political violence × Exposure to violence in school, the community, and the family [child report and parent report separately]).

Table 3 shows that in the first step of the analysis (Model 1), the model accounted for 24% of the variance in Wave 3 PTS symptoms and 41% of the variance in Wave 3 aggressive behavior. There were significant main effects for Wave 1 PTS symptoms ( $\beta = .26$ ), reflecting the stability in symptoms over time. Likewise, there were significant main effects for Wave 1 aggressive behavior ( $\beta = .37$ ), again reflecting stability. As in the SEM cross-lagged analysis in Figure 1, higher levels of mediated exposure predicted significantly higher levels of Wave 3 PTS symptoms and higher levels of Wave 3 aggressive behavior.

<sup>3</sup>A full table of these models, which tested all constraints in cross-lag paths, is available upon request.

In the second step of the analysis, interaction terms were added to the models. Both key interactions were significant, resulting in a 1% increase of the explained variance in Wave 3 PTS symptoms and a 2% increase of the explained variance in Wave 3 aggressive behavior. As hypothesized (H2), children showing higher initial levels of PTS/aggression were more affected by media coverage of political violence.

Figure 2 shows the risk-exacerbating effect of initial maladjustment on the relation between mediated exposure to political violence and later maladjustment. For youth with initially higher levels of aggression (Figure 2a) or PTS (Figure 2b), there was a significant positive relation between exposure to mediated political violence and Wave 3 maladjustment (PTS symptoms:  $b = .34$ ,  $SE = .05$ ; aggression:  $b = .50$ ,  $SE = .04$ ); this relation was still significant for youth whose initial levels of maladjustment were low ( $-1 SD$ ), yet of a lower magnitude (PTS symptoms:  $b = .21$ ,  $SE = .04$ ; aggression:  $b = .19$ ,  $SE = .03$ ).

## Discussion

This study sought to contribute, both theoretically and methodologically, to the emerging scientific interest in the effects of exposure to mediated political violence among children and youth (Pfefferbaum et al., 2001; Smith & Moyer-Gusé, 2006; Walma van der Molen, 2004; Weems et al., 2012). Building on the idea of a risk-matrix model, it offered a wider, holistic approach that places mediated exposure effects as part of the broader ecological environment influencing youth (Boxer et al., 2009). Following this approach, different sources influencing child maladjustment were documented and served as a background to the study of mediated exposure, allowing us to pinpoint its distinct contribution. Specifically, the study tested the contribution of chronic mediated exposure, as opposed to an acute exposure, on two major behavioral outcomes—aggression and PTS symptoms. Utilizing longitudinal data allowed for sound methodological exploration of the suggested causal relations.

It was hypothesized that exposure to mediated political violence increases the risk of both PTS symptoms and aggressive behavior, especially among youth demonstrating initially higher levels of PTS and aggression. Observing these relations among Middle Eastern youth allowed us to establish that mediated exposure can harm even those who are immediately affected by an ongoing political conflict in their everyday lives. The hypotheses were mostly confirmed: mediated exposure was linked to subsequent aggressive behavior, and even more so among youth with initially higher levels of aggression. A similar pattern was found for PTS symptoms: mediated exposure was linked to subsequent PTS, and more so among those with an initially higher level of PTS. Yet in the case of PTS, there were no significant relations between Wave 2 and Wave 3, only between Wave 1 and Wave 3 and between Wave 1 and Wave 2. That PTS symptoms did not change between Waves 2 and 3 raises the possibility that these relations may not be linear, in the sense that exposure might affect PTS symptoms only to a certain level. Beyond this point, any additional cumulative exposure has no effect.

Generally the results found here, along with the differences found according to the key demographic factors (gender, age, and ethnicity), are in agreement with previous work (for

elaboration on the effects of demographic variables, see Dubow et al., 2012). Others have found that when exposure to fictional violent content (such as that in movies, videogames, and TV shows) is considered, similar relations as those documented here emerge (Huesmann & Taylor, 2006; Slater, 2004; Slater et al., 2003). Fictional content was found to influence youth's aggressive behavior, attitudes, emotions, and beliefs, and those effects appear to be strongest among youth with a prior tendency toward aggression. Taken together, the findings of our study, as well as other studies, suggest that media violence—be it real or fictional—might affect youth in a similar manner (Walma van der Molen, 2004), supporting the notion that the effects of violent content could be generalized across genres.

Similar generalizations can be made regarding our results for PTS symptoms. The effects of chronic exposure found here bear resemblance to those found in the case of acute exposure (Pfefferbaum et al., 2002; Weems et al., 2012). These effects also bear resemblance to the effects found on aggression in the current study. Mediated exposure to political violence, therefore, impacts both outcomes in a similar way—it exacerbates *existing* maladjustment, be it PTS or aggression. This similarity implies that the generalization of mediated exposure effects is appropriate not only across genres but also across behavioral outcomes.

This generalized pattern is not only in accordance with previous empirical findings; it also accords with two known theoretical models. Both Bandura's (1977) concept of "reciprocal determinism" and Slater et al.'s (2003) model of "downward spirals" outline media influence in a similar manner. These models conceptualize media effects as mutually reinforcing spirals: in a recursive process, prior behaviors and beliefs shape media preferences, while exposure to like-minded content, in turn, confirms and strengthens prior behaviors and beliefs, rendering them more extreme. An additional conjecture that derives from such conceptualization is that different individuals will respond differently when exposed to the same media content.

Applying such a conceptualization implies that children with prior psychological and behavioral difficulties will show greater interest in violent media content (Fenigstein, 1979; Huesmann et al., 2003; Huesmann & Taylor, 2006; Pfefferbaum et al., 2002; Slater, 2003, 2004). They will also be more susceptible and ready to intake it, thereby demonstrating stronger emotional and cognitive reactions, which will in turn result in greater psychological and behavioral difficulties. Alongside this reciprocal process among targeted youth, a different process occurs among those less vulnerable—those youth demonstrated fewer psychological difficulties. These youth are less likely to be exposed to the violent content in the first place, and even when exposed, they will be less ready to intake it, thus being at a lower risk of developing maladjustment.

This theoretical framework emphasizes the value of the risk-matrix approach (Rutter, 1979; Sameroff, 2000). If prior maladjustment conditions media effects, then only when analyzing exposure to violent content in a broader context could its effects be revealed. This claim is supported by the associations found between exposure to mediated political violence and exposure to violence in other settings in the child's life. Children who are exposed to one type of violence are at a higher risk of encountering other types of violence (Funk et al., 2004; Mrug et al., 2008; Mrug & Windle, 2010). Thus, it might be that children with initial



behavioral problems are not only more attracted to violent media content, but are also more likely to encounter violence in other settings. Thus, mediated exposure must be singled out from other types of exposure, if scholars wish to argue that it contributes to maladjustment.

Research on media effects in general, and on children in particular, is one of the longest and most debated traditions in communication studies (Slater et al., 2003). The fact that this debate is yet unresolved is partly due to the shortage of longitudinal studies, which are one of the most suitable ways to answer such questions (Huesmann, 2007; Huesmann et al., 2003). The research strand focusing on exposure to mediated political violence suffers from the same problems. The current study, therefore, serves as an important contribution to the existing literature. By analyzing the change in maladjustment, the study demonstrated that media exposure indeed affects maladjustment, above and beyond the reverse causality.

### Research Limitations

This study analyzed unique populations—youth who live in the conflict zones of Israel and the Palestinian Authority. This type of sample enriches our scholarly knowledge of understudied populations, yet also limits the external validity of the results to some degree. One such limitation arises from the nature of the scale that was used to measure mediated exposure to political violence. Participants were asked about their exposure to situations in which political violence was perpetrated against individuals from their ethnic group. It might be that part of the effects found here is a result of the youths' identification with the victims and of the high personal relevance of the events. If so, exposure to acts of political violence might not carry the same weight if those exposed are children who do not belong to the ethnic groups involved in the specific conflict (e.g., an American child watching a clip about the Israeli-Palestinian conflict). This type of limitation is important, given the changes in the media environment. For example, today, political violent acts from around the world are broadcast on YouTube, making such content available regardless of nationality. Thus, although speculative, it could be that children will be increasingly exposed to political violence; yet, because they do not feel a sense of identification with the victims of conflicts which take place in countries far away, and because the violence presented may have no immediate relevance to their lives, they will be less affected (Huesmann, Eron, Klein, Brice, & Fischer, 1983). Further investigation of this question is needed, comparing the effects of violent media content with high versus low personal relevance. Such studies could also investigate physiological arousal (Fischer, Kastenmüller, & Greitemeyer, 2010) or emotional reactions such as fear, anger, and anxiety, which could be provoked by exposure to such content. Emotional mechanisms may also include identification, which is known to enhance the relation between exposure and aggressive behavior (Huesmann, Lagerspetz, & Eron, 1984); or empathy, which improves children's ability to remember stories or events (Bourg, Ridsen, Thompson, & Davis, 1996).

Second, because exposure to political violence is common throughout Palestine, we could afford to obtain a representative sample of that entire population. However, for the Israelis (Jews and Arabs), although most live in the large cities of Jerusalem and Tel Aviv, those areas are generally in low conflict areas, so a representative sample would not have allowed us to obtain sufficient numbers who were exposed to persistent violence. Consequently, we

designed a sampling procedure to oversample high exposure areas to insure adequate representation of exposure to ethnic-political conflict and violence. Thus, the Israeli sample is not representative of the total Israeli population, so the results are not as generalizable to the Israeli population as are those regarding the Palestine population.

Third, our data on exposure to violence were based on child and/or parent reports. Blending parent reports of exposure for younger children and self-reports for older children is not optimal, although reporter (child or parent) appeared not to matter in our data.<sup>4</sup> Future studies should utilize multiple converging sources of information on children's experiences, especially given findings suggesting that parents and children can differ in systematic ways in their reports of children's exposure (Kuo, Mohler, Raudenbush, & Earls, 2000). Another measurement-related limitation arises from the uneven number of items used in the scales measuring exposure to violence, and the fact that in two cases—children's self-report of severe physical aggression and exposure to inter-ethnic community violence—internal consistency reliability was somewhat low. Yet, these scales have been used in other studies and their validity has been supported.

In sum, this study expanded the borders of mediated exposure effects and identified the youth who are most vulnerable to it. It also pointed to the importance of the risk-matrix approach to the study of media effects. A better understanding of children's risk matrix can be instrumental in developing clinical tools for children and families for coping with and reducing the odds of maladjustment in the face of exposure to ethnic-political violence.

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<sup>4</sup>Parents of children in the 8-year-old cohort provided reports of their children's exposure to ethnic-political conflict in each wave, but children in the older cohorts (11- and 14-year-olds in Wave 1) provided self-reports. We followed this strategy because our Institutional Review Board had concerns about the 8-year-olds' emotional reactions to reporting on their own exposure. Also, given time constraints on interviews with young children, having parents report on these items decreased the length of the interview for 8-year-olds. To examine the comparability of children's and parents' reports of children's exposure to political conflict/violence, we administered the measures to both children and parents of the youngest cohort in Wave 3 and found them to be highly correlated ( $r = .68$ ).

aggressive behavior and in particular on understanding how the observations of others behaving violently influences the development of a youth's aggressive and violent behavior.

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## References

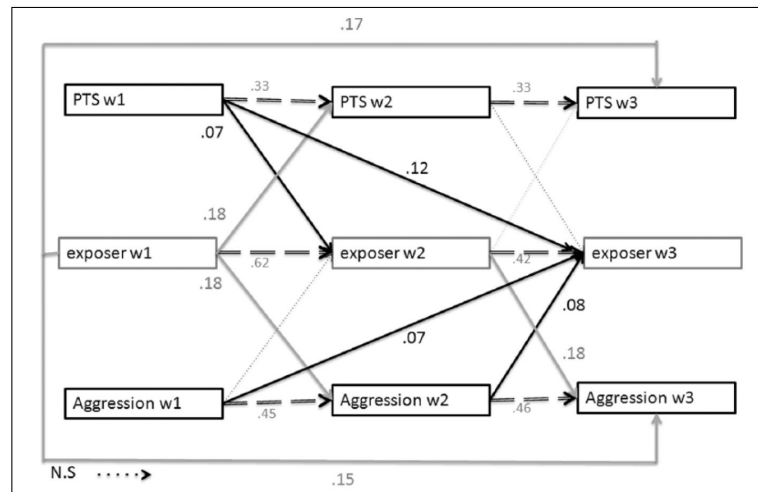
- Achenbach, T.; Edelbrock, C. *Manual for the Child Behavior Checklist*. University of Vermont; Burlington: 1983.
- Ahern J, Galea S, Resnick H, Vlahov D. Television images and probable post-traumatic stress disorder after September 11. *The Journal of Nervous and Mental Disease*. 2004; 192:217–226. [PubMed: 15091303]
- Aiken, LA.; West, SG. *Testing and interpreting interactions in multiple regressions*. SAGE; Newbury Park, CA: 1991.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 4th ed. Author; Washington, DC: 2000.
- Anderson CA, Berkowitz L, Donnerstein E, Huesmann LR, Johnson JD, Linz D, Wartella E. The influence of media violence on youth. *Psychological Science in the Public Interest*. 2003; 4:81–110. [PubMed: 26151870]
- Anderson CA, Bushman BJ. Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*. 2001; 12:353–359. [PubMed: 11554666]
- Anderson CA, Shibuya A, Ihori N, Swing EL, Bushman BJ, Sakamoto A, Saleem M. Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*. 2010; 136:151–173. [PubMed: 20192553]
- Attar BK, Guerra NG, Tolan PH. Neighborhood disadvantage, stressful life events and adjustments in urban elementary-school children. *Journal of Clinical Child Psychology*. 1994; 23:391–400.
- Bandura, A. *Social learning theory*. Prentice Hall; Englewood Cliffs, NJ: 1977.

- Barber BK. Political violence, family relations, and Palestinian youth functioning. *Journal of Adolescent Research*. 1999; 14:206–230.
- Barber BK. Contrasting portraits of war: Youths' varied experiences with political violence in Bosnia and Palestine. *International Journal of Behavioral Development*. 2008; 32:298–309.
- Barber, BK.; Olsen, JA. Positive and negative psychological functioning after political conflict: Examining adolescents of the first Palestinian intifada. In: Barber, BK., editor. *Adolescents and war: How youth deal with political violence*. Oxford University Press; Oxford, UK: 2009. p. 207-236.
- Bar-Tal D. Why does fear override hope in societies engulfed by intractable conflict, as it does in the Israeli society? *Political Psychology*. 2001; 22:601–627.
- Becker-Blease KA, Finkelhor D, Turner H. Media exposure predicts children's reactions to crime and terrorism. *Journal of Trauma & Dissociation*. 2008; 9:225–248. [PubMed: 19042776]
- Behr RL, Iyengar S. Television news, real-world cues, and changes in the public agenda. *Public Opinion Quarterly*. 1985; 49:38–57.
- Bourg, T.; Risden, K.; Thompson, S.; Davis, RC. The role of emotion, empathy, and text structure in children's and adults' narrative text comprehension. In: Kru, RJ.; MacNealy, MS., editors. *Empirical approaches to literature and aesthetics*. Ablex; Westport, CT: 1996. p. 241-260.
- Boxer P, Huesmann LR, Bushman BJ, O'Brien M, Mocerri D. The role of violent media preference in cumulative developmental risk for violence and general aggression. *Journal of Youth and Adolescence*. 2009; 38:417–428. [PubMed: 19636754]
- Boxer P, Huesmann LR, Dubow EF, Landau SF, Dvir Gvirsman S, Shikaki K, Ginges J. Exposure to violence across the social ecosystem and the development of aggression: A test of ecological theory in the Israeli-Palestinian conflict. *Child Development*. 2012; 84:163–177. [PubMed: 22906188]
- Braun-Lewensohn O, Celestin-Westreich S, Celestin L-P, Verte D, Ponjaert-Kristoffersen I. Adolescents' mental health outcomes according to different types of exposure to ongoing terror attacks. *Journal of Youth and Adolescence*. 2008; 38:850–862. [PubMed: 19636786]
- Buijzen M, Walma van der Molen JH, Sondij P. Parental mediation of children's emotional responses to a violent news event. *Communication Research*. 2007; 34:212–230.
- Cantor J, Nathanson AI. Children's fright reactions to television news. *Journal of Communication*. 1996; 46:139–152.
- Cantor J, Nathanson AI. Predictors of children's interest in violent television programs. *Journal of Broadcasting & Electronic Media*. 1997; 41:155–167.
- Carnagey NL, Anderson CA. Changes in attitudes towards war and violence after September 11, 2001. *Aggressive Behavior*. 2007; 33:118–129. [PubMed: 17441012]
- Carnagey NL, Anderson CA, Bartholow B. Media violence and social neuroscience: New questions and new opportunities. *Current Directions in Psychological Science*. 2007; 16:178–182.
- Cheong J. Accuracy of estimates and statistical power for testing mediation in latent growth curve modeling. *Structural Equation Modeling: A Multidisciplinary Journal*. 2011; 18:195–211.
- Collimore KC, McCabe RE, Carleton RN, Asmundson GJG. Media exposure and dimensions of anxiety sensitivity: Differential associations with PTSD symptom clusters. *Journal of Anxiety Disorders*. 2008; 22:1021–1028. [PubMed: 18093798]
- Comer JS, Furr JM, Beidas RS, Babyar HM, Kendall PC. Media use and children's perceptions of societal threat and personal vulnerability. *Journal of Clinical Child & Adolescent Psychology*. 2008; 37:622–630. [PubMed: 18645752]
- Dubow EF, Boxer P, Huesmann LR, Shikaki K, Landau SF, Dvir Gvirsman S, Ginges J. Exposure to conflict and violence across contexts: Relations to adjustment among Palestinian children. *Journal of Clinical Child & Adolescent Psychology*. 2009; 39:103–116. [PubMed: 20390802]
- Dubow EF, Huesmann LR, Boxer P, Landau SF, Dvir Gvirsman S, Shikaki K, Ginges J. Exposure to political conflict and violence and posttraumatic stress in Middle East youth: Protective factors. *Journal of Clinical Child & Adolescent Psychology*. 2012; 41:402–416. [PubMed: 22594697]
- Duggal HS, Berezkin G, John V. PTSD and TV viewing of World Trade Center. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2002; 41:494–495. [PubMed: 12014777]

- Eron L, Huesmann LR, Lefkowitz M, Walder LO. Does T.V. violence cause aggression? *American Psychologist*. 1972; 27:253–263. [PubMed: 5015586]
- Eron, L.; Walder, LO.; Lefkowitz, M. *Learning of aggression in children*. Little, Brown; Boston, MA: 1971.
- Fenigstein A. Does aggression cause a preference for viewing media violence? *Journal of Personality and Social Psychology*. 1979; 37:2307–2317. [PubMed: 529015]
- Fischer P, Kastenmüller A, Greitemeyer T. Media violence and the self: The impact of personalized gaming characters in aggressive video games on aggressive behavior. *Journal of Experimental Social Psychology*. 2010; 46:192–195.
- Funk J, Baldacci H, Pasold T, Baumgardner J. Violence exposure in real-life, video games, television, movies, and the internet: Is there desensitization? *Journal of Adolescence*. 2004; 27:23–39. [PubMed: 15013258]
- Gerbner G, Gross L, Morgan M, Signorielli N. The “mainstreaming” of America: Violence profile no. 11. *Journal of Communication*. 1980; 30:10–29.
- Guerra NG, Huesmann LR, Spindler A. Community violence exposure, social cognition, and aggression among urban elementary school children. *Child Development*. 2003; 74:1561–1576. [PubMed: 14552414]
- Huesmann LR. The impact of electronic media violence: Scientific theory and research. *Journal of Adolescent Health*. 2007; 41:S6–S13. [PubMed: 18047947]
- Huesmann, LR.; Eron, LD., editors. *Television and the aggressive child: A cross national comparison*. Lawrence Erlbaum; Hillsdale, NJ: 1986.
- Huesmann LR, Eron LD, Klein R, Brice P, Fischer P. Mitigating the imitation of aggressive behaviors by changing children’s attitudes about media violence. *Journal of Personality and Social Psychology*. 1983; 44:899–910. [PubMed: 6864445]
- Huesmann LR, Eron LD, Lefkowitz M, Walder L. Stability of aggression over time and generations. *Developmental Psychology*. 1984; 20:1120–1134.
- Huesmann, LR.; Kirwil, L. Why observing violence increases the risk of violent behavior in the observer. In: Flannery, DJ.; Vazsonyi, AT.; Waldman, ID., editors. *The Cambridge handbook of violent behavior and aggression*. Cambridge University Press; Cambridge, UK: 2007. p. 545-570.
- Huesmann LR, Lagerspetz K, Eron L. Intervening variables in the television violence aggression relation: Evidence from two countries. *Developmental Psychology*. 1984; 20:746–775.
- Huesmann LR, Moise-Titus J, Podolski C-L, Eron LD. Longitudinal relations between children’s exposure to TV violence and their aggressive and violent behavior in young adulthood: 1977-1992. *Developmental Psychology*. 2003; 39:201–221. [PubMed: 12661882]
- Huesmann LR, Taylor LD. The role of media violence in violent behavior. *Annual Review of Public Health*. 2006; 27:393–415.
- Johnson JG, Cohen P, Smailes EM, Kasen S, Brook JS. Television viewing and aggressive behavior during adolescence and adulthood. *Science*. 2002; 295:2468–2471. [PubMed: 11923542]
- Kithakye M, Morris AS, Terranova AM, Myers SS. The Kenyan political conflict and children’s adjustment. *Child Development*. 2010; 81:1114–1128. [PubMed: 20636685]
- Kline, RB. *Principles and practice of structural equation modeling*. Guilford Press; New York, NY: 2010.
- Krahé B, Möller I, Huesmann LR, Kirwil L, Felber J, Berger A. Desensitization to media violence: Links with habitual media violence exposure, aggressive cognitions, and aggressive behavior. *Journal of Personality and Social Psychology*. 2011; 100:630–646. [PubMed: 21186935]
- Kuo M, Mohler B, Raudenbush SL, Earls FJ. Assessing exposure to violence using multiple informants: Application of hierarchical linear model. *Journal of Child Psychology and Psychiatry*. 2000; 41:1049–1056. [PubMed: 11099121]
- Landau, SF. Violent crime in a society at war: Israel and the intifada. In: Ramirez, JM., editor. *Violence: Some alternatives*. Centreu; Madrid, Spain: 1994. p. 63-84.
- Landau SF. Societal costs of political violence. *Palestine-Israel Journal of Politics, Economics and Culture*. 2003; 10:28–35.

- Landau, SF.; Dvir Gvirsman, S.; Huesmann, LR.; Dubow, EF.; Boxer, P.; Ginges, J.; Shikaki, K. The effects of exposure to violence on aggressive behavior: The case of Arab and Jewish children in Israel. In: Österman, K., editor. *Indirect and direct aggression*. Peter Lang; New York, NY: 2010. p. 321-343.
- Landau SF, Pfeffermann D. A time series analysis of violent crime and its relation to prolonged states of warfare: The Israeli case. *Criminology*. 1988; 26:489–504.
- Leavitt, LA.; Fox, NA. *The psychological effects of war and violence on children*. Lawrence Erlbaum; Hillsdale, NJ: 1996.
- Lefkowitz, MM.; Eron, LD.; Walder, LO.; Huesmann, LR. *Growing up to be violent: A longitudinal study of the development of aggression*. Pergamon; Oxford, UK: 1977.
- Maoz I, McCauley C. Threat, dehumanization, and support for retaliatory aggressive policies in asymmetric conflict. *Journal of Conflict Resolution*. 2008; 52:93–116.
- Mrug S, Loosier PS, Windle M. Violence exposure across multiple contexts: Individual and joint effects on adjustment. *American Journal of Orthopsychiatry*. 2008; 78:70–84. [PubMed: 18444729]
- Mrug S, Windle M. Prospective effects of violence exposure across multiple contexts on early adolescents' internalizing and externalizing problems. *Journal of Child Psychology and Psychiatry*. 2010; 51:953–961. [PubMed: 20331489]
- Muthén BO, Curran PJ. General longitudinal modeling of individual differences in experimental designs: A latent variable framework for analysis and power estimation. *Psychological Methods*. 1997; 4:2371–2402.
- Ostrov JM, Gentile DA, Crick NR. Media exposure, aggression and prosocial behavior during early childhood: A longitudinal study. *Social Development*. 2006; 15:612–627.
- Paik H, Comstock G. The effects of television violence on antisocial behavior: A meta-analysis. *Communication Research*. 1994; 21:516–546.
- The Palestinian Central Bureau of Statistics. *The Population, Housing and Establishment Census - 2007*. 2008. Retrieved from [http://www.pcbs.gov.ps/Portals/\\_pcbs/PressRelease/census2007\\_e.pdf](http://www.pcbs.gov.ps/Portals/_pcbs/PressRelease/census2007_e.pdf)
- Pfefferbaum B, Doughty DE, Reddy C, Patel N, Gurwitsch RH, Nixon SJ, Tivis RD. Exposure and peritraumatic response as predictors of posttraumatic stress in children following the 1995 Oklahoma City bombing. *Journal of Urban Health*. 2002; 79:354–363. [PubMed: 12200504]
- Pfefferbaum B, Nixon SJ, Tivis RD, Doughty DE, Pynoos RS, Gurwitsch RH, Foy DW. Television exposure in children after a terrorist incident. *Psychiatry: Interpersonal and Biological Processes*. 2001; 64:202–211.
- Propper RE, Stickgold R, Keeley R, Christman SD. Is television traumatic?: Dreams, stress, and media exposure in the aftermath of September 11, 2001. *Psychological Science*. 2007; 18:334–340. [PubMed: 17470259]
- Pynoos RS, Frederick C, Nader K, Arroyo W, Steinberg A, Eth S, Fairbanks L. Life threat and posttraumatic stress in school-age children. *Archives of General Psychiatry*. 1987; 44:1057–1063. [PubMed: 3689093]
- Rutter, M. Protective factors in children's responses to stress and disadvantage. In: Kent, MW.; Rolf, EJ., editors. *Primary prevention of psychopathology Vol. 3: Social competence in children*. University of New England Press; Hanover, NH: 1979. p. 49-74.
- Sameroff, A. Dialectical processes in developmental psychopathology. In: Sameroff, A.; Lewis, M.; Miller, S., editors. *Handbook of developmental psychopathology*. 2nd ed. Kluwer Academic; New York, NY: 2000. p. 23-40.
- Saylor C, Cowart B, Lipovsky J, Jackson C, Finch A. Media exposure to September 11: Elementary school students' experiences and posttraumatic symptoms. *American Behavioral Scientist*. 2003; 46:1622–1642.
- Shrum J, Bischak D. Mainstreaming, resonance, and impersonal impact. *Human Communication Research*. 2001; 27:187–215.
- Slater MD. Alienation, aggression, and sensation seeking as predictors of adolescent use of violent film, computer, and website content. *Journal of Communication*. 2003; 53:105–121.

- Slater MD. Vulnerable teens, vulnerable times: How sensation seeking, alienation, and victimization moderate the violent media content-aggressiveness relation. *Communication Research*. 2004; 31:642–668.
- Slater MD, Hayes AF, Ford VL. Examining the moderating and mediating roles of news exposure and attention on adolescent judgments of alcohol-related risks. *Communication Research*. 2007; 34:355–381.
- Slater MD, Henry KL, Swaim RC, Anderson LL. Violent media content and aggressiveness in adolescents: A downward spiral model. *Communication Research*. 2003; 30:713–736.
- Slattery K, Doremus M, Marcus L. Shifts in public affairs reporting on the network evening news: A move toward the sensational. *Journal of Broadcasting & Electronic Media*. 2001; 45:290–302.
- Slone M. Responses to media coverage of terrorism. *Journal of Conflict Resolution*. 2000; 44:508–522.
- Slone M, Hallis D. The impact of political life events on children's psychological adjustment. *Anxiety, Stress & Coping*. 1999; 12:1–21.
- Slone M, Lobel T, Gilat I. Dimensions of the political environment affecting children's mental health. *Journal of Conflict Resolution*. 1999; 43:78–91.
- Smith S, Moyer-Gusé E. Children and the war on Iraq: Developmental differences in fear responses to television news coverage. *Media Psychology*. 2006; 8:213–237.
- Smith S, Wilson B. Children's comprehension of and fear reactions to television news. *Media Psychology*. 2002; 4:1–26.
- Soroka SN. Issue attributes and agenda setting by media, the public, and policymakers in Canada. *International Journal of Public Opinion Research*. 2002; 14:264–285.
- Straus MA, Hamby SL, Boney-McCoy S, Sugarman DB. The revised conflict tactics scales (CTS2) development and preliminary psychometric data. *Journal of Family Issues*. 1996; 17:283–316.
- Suvak M, Maguen S, Litz BT, Silver RC, Holman EA. Indirect exposure to the September 11 terrorist attacks: Does symptom structure resemble PTSD? *Journal of Traumatic Stress*. 2008; 21:30–39. [PubMed: 18302169]
- Thabet AAM, Abed Y, Vostanis P. Comorbidity of PTSD and depression among refugee children during war conflict. *Journal of Child Psychology and Psychiatry*. 2004; 45:533–542. [PubMed: 15055372]
- Villani S. Impact of media on children and adolescents: A 10-year review of the research. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2001; 40:392–401. [PubMed: 11314564]
- Walma van der Molen JH. Violence and suffering in television news: Toward a broader conception of harmful television content for children. *Pediatrics*. 2004; 113:1771–1775. [PubMed: 15173505]
- Walma van der Molen JH, Bushman BJ. Children's direct fright and worry reactions to violence in fiction and news television programs. *The Journal of Pediatrics*. 2008; 153:420–424. [PubMed: 18534207]
- Walma van der Molen JH, De Vries M. Violence and consolation: September 11th 2001 covered by the Dutch children's news. *Journal of Educational Media*. 2003; 28:5–19.
- Weems CF, Scott BG, Banks DM, Graham RA. Is TV traumatic for all youths? The role of preexisting posttraumatic-stress symptoms in the link between disaster coverage and stress. *Psychological Science*. 2012; 23:1293–1297. [PubMed: 23070308]
- Wolmer L, Laor N, Gershon A, Mayes LC, Cohen DJ. The mother-child dyad facing trauma: A developmental outlook. *The Journal of Nervous and Mental Disease*. 2000; 188:409–415. [PubMed: 10919698]
- Zucker, HG. The variable nature of news media influence. In: Ruben, BD., editor. *Communication yearbook*. Vol. Vol. 2. Transaction Books; New Brunswick, NJ: 1978. p. 225-240.

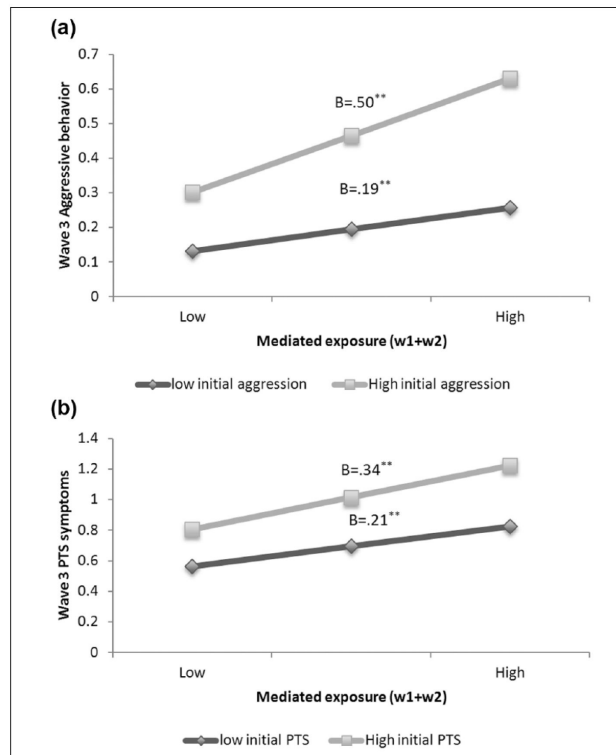


**Figure 1.**

Cross-lag structural equation model of the relation between chronic mediated exposure to ethnic political violence, aggression, and PTS symptoms during Waves 1, 2, and 3.

*Note.* Demographic variables included in the model were gender, age, parents' income, and education. Also included in the model were exposure to violence in the family, community, and school. Fit:  $\chi^2/df = .92, p = .34$ ; RMSEA = .00, CFI = .998. Not seen in the figure are the within-wave correlations. Solid lines for paths between different constructs across waves; dashed lines for paths within the same construct across waves; dotted lines for non-significant paths. PTS = post-traumatic stress.





**Figure 2.**

Initial maladjustment as a moderator of the relation between mediated exposure to political violence and PTS symptoms/aggression.

*Note.* High and low maladjustments are defined as one *SD* below and above the mean scores on mediated exposure, PTS symptoms, and aggression. PTS = post-traumatic stress.

Table 1

Descriptive Statistics for the Key Study Variables.

	Palestinian Arab		Israeli Jew		Israeli Arab		Total		Ethnicity		Gender		Age	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Diff	$\eta^2$	Diff	$\eta^2$	Diff	$\eta^2$
Mediated political violence														
W1	2.5	0.59	1.2	0.75	0.9	0.76	1.6	1.01	P > IJ > IA	0.57	M > F	0.00	14 > 11 = 8	0.03
W2	2.4	0.65	1.1	0.81	0.6	0.77	1.6	1.09	P > IJ > IA	0.56	M > F	0.00	14 > 11 > 8	0.06
W3	2.3	0.58	1	0.71	0.6	0.72	1.5	1.01	P > IJ > IA	0.6	—	0.00	14 = 11 > 8	0.05
Aggression														
W1	0.6	0.33	0.3	0.28	0.3	0.29	0.4	0.32	P > IJ = IA	0.14	M > F	0.08	14 = 11 > 8	0.02
W2	0.5	0.32	0.3	0.27	0.2	0.23	0.4	0.31	P > IJ > IA	0.2	M > F	0.05	—	0.01
W3	0.5	0.32	0.3	0.25	0.1	0.17	0.3	0.33	P > IJ > IA	0.34	M > F	0.05	—	0.00
PTS symptoms														
W1	1.4	0.6	1	0.57	0.8	0.54	1.1	0.62	P > IJ > IA	0.16	F > M	0.01	—	0.00
W2	1.1	0.65	0.9	0.54	0.5	0.51	0.9	0.64	P > IJ > IA	0.17	F > M	0.02	—	0.01
W3	1.2	0.7	0.8	0.52	0.5	0.58	0.9	0.68	P > IJ > IA	0.17	F > M	0.02	—	0.00

Note. A three-way (age  $\times$  sex  $\times$  ethnic group) ANOVA was computed for each variable. *Ns* range from—Palestinian Arab: W1 = 600, W3 = 572; Israeli Jew: W1 = 450, W3 = 282; Israeli Arab: W1 = 450, W3 = 385; Total: W1 = 1,500, W3 = 1,238. Post hoc multiple comparison (least significant differences) tests were computed between means of subgroups defined by age cohort, sex, and ethnic group. *SD* = standard deviation;  $\eta^2$  = partial eta-squared value for effect, Diff = direction of observed significant differences ( $p < .05$ ); W = wave; P = Palestinian; IJ = Israeli Jew; IA = Israeli Arab; M = Male; F = Female. PTS = post-traumatic stress.

Table 2

Correlations Among the Key Study Variables, Within and Across Waves.

	Mediated			Family: Child's report			Family: Parent's report			Community			School			PTS			Aggression			
	W1	W2	W3	W1 + W2	W3	W3	W1 + W2	W3	W3	W1 + W2	W3	W1 + W2	W3	W1 + W2	W3	W1	W2	W3	W1	W2	W3	
Mediated																						
W1																						
W2	.71**																					
W3	.67**	.71**																				
Family: Child's report																						
W1 + W2	.38**	.38**	.33**																			
W3	.15**	.16**	.24**	.19**																		
Family: Parent's report																						
W1 + W2	.14**	.13**	.12**	.23**	.19**																	
W3	.08**	.08**	.09**	.21**	.18**	.56**																
Community																						
W1 + W2	.34**	.30**	.26**	.55**	.25**	.19**	.12**															
W3	.09**	.08**	.21**	.45**	.45**	.14**	.15**	.30**														
School																						
W1 + W2	.46**	.47**	.40**	.39**	.18**	.11**	0.05	.18**	.45**													
W3	.40**	.39**	.49**	.37**	.37**	.11**	.08**	.37**	.25**	.48**												
PTS																						
W1	.38**	.35**	.35**	.11**	.11**	.14**	.11**	.24**	.09**	.36**	.27**											
W2	.32**	.36**	.31**	.15**	.15**	.17**	.10**	.20**	.09**	.33**	.30**	.44**										
W3	.35**	.32**	.43**	.25**	.25**	.13**	.06*	.16**	.23**	.29**	.41**	.40**	.48**									
Aggression																						
W1	.33**	.29**	.30**	.16**	.16**	.13**	.08**	.30**	.14**	.33**	.25**	.28**	.18**	.18**								
W2	.35**	.40**	.39**	.13**	.13**	.121**	.09**	.23**	.12**	.31**	.31**	.19**	.28**	.18**	.54**							
W3	.46**	.48**	.54**	.19**	.19**	.11**	.07*	.17**	.19**	.33**	.46**	.24**	.27**	.31**	.51**	.67**						

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Note. Mediated = exposure to mediated ethnic-political violence; Family: Child's report = child's report of family violence; Family: Parent's report = parent's report of family violence; Community = exposure to community violence; School = exposure to violence at school. W = wave; PTS = post-traumatic stress.

\*  $p < .05$ .

\*\*  $p < .01$ .

**Table 3**  
Regression Analyses Predicting Wave 3 Post-Traumatic Stress Symptoms and Aggression.

	PTSD						Aggression					
	Model 1			Model 2			Model 1			Model 2		
	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$	B	SE	$\beta$
Constant	0.83	0.1		0.78	0.12		0.51	0.04		0.52	0.04	
Gender <sup>a</sup>	-0.16**	0.04	-0.12	-0.17**	0.04	0.12	0.05**	0.02	0.08	0.05**	0.02	0.07
Age	-0.02**	0.01	-0.07	-0.02**	0.01	-0.08	-0.01**	0.00	-0.09	-0.02**	0.00	-0.11
Parents' education levels	-0.01	0.01	-0.03	-0.01	0.01	-0.03	-0.02**	0.01	-0.07	-0.02**	0.01	-0.07
Household income	-0.04	0.02	-0.05	-0.04	-0.02	-0.05	0.01	0.01	0.02	0.01	0.01	0.02
Exposure to violence (W1 + W2)												
Child's report of family violence	-0.04	0.02	-0.06	-0.06*	0.03	-0.08	-0.01	0.01	0.00	-0.02	0.01	-0.01
Parent's report of family violence	0.03	0.02	0.04	0.03	0.02	0.04	0.01	0.01	0.01	0.01	0.01	0.04
Community	0.00	0.05	0.00	-0.01	0.05	0.01	-0.06**	0.02	-0.09	-0.07**	0.02	-0.10
School	0.10**	0.03	0.12	0.13**	0.03	0.16	0.01	0.01	0.03	0.03**	0.01	0.07
Mediated ethnic-political	0.16**	0.02	0.23	0.16**	0.02	0.23	0.13**	0.01	0.39	0.14**	0.01	0.41
PTS score W1	0.28**	0.03	0.26	0.27**	0.03	0.25						
Aggression W1							0.37**	0.03	0.37	0.35**	0.03	0.35
Exposure to mediated viol (W1 + W2) × PTS score W1				0.07*	0.03	0.06						
Exposure to mediated viol (W1 + W2) × Aggression score W1										0.16**	0.03	0.15
Adjusted R <sup>2</sup>				.24**		.24**		.41**				.44**

Note. Model 1 presents the results of a regression model that includes demographic variables as well as exposure to violence in various contexts. Model 2 adds an interaction term (Exposure to media violence × Initial level of aggression/PTS). The model presented in the table also included in Model 2 the effects of four additional interaction terms (not shown in the table): between mediated exposure and family violence (child report and parent report), community violence, and school violence. Of these eight interactions across the two regressions (predicting PTS and aggression), only one was significant—child report of family violence predicting aggression:  $b = .03, SE = .01, p < .01$ . PTSD = post-traumatic stress disorders; W = wave; PTS = post-traumatic stress.

<sup>a</sup> 0 = female, 1 = male.

\*  $p < .05$ .

\*\*  $p < .01$ .