Research Article

Serious Violent Behavior and Antisocial Outcomes as Consequences of Exposure to Ethnic-Political Conflict and Violence among Israeli and Palestinian Youth1

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Abstract

We examine whether cumulative-past and concurrent exposure to ethnic-political violence among Israeli and Palestinian youth predict serious violent behavior and antisocial outcomes towards the in-group and the out-group. We collected four waves of data from 162 Israeli Jewish and 400 Palestinian youths (three age cohorts: 8, 11, and 14 years old) and their parents. The first three waves were consecutive annual assessments, and the fourth was conducted four years after the third wave, when the three age cohorts were 14, 17, and 20 years old, respectively. Based on social-cognitive-ecological models of the development of aggression (Dubow, Huesmann, & Boxer, 2009; Huesmann, 1998) and models of the development of beliefs about the "other," (Bar-Tal, 2004; Tajfel & Turner, 1986), we predicted that serious violent outcomes directed towards both the in-group and the out-group would be related to both concurrent and to persistent-past exposure to ethnic political violence. Bivariate regression models (prior to including covariates) indicated that both early cumulative exposure to ethnic-political violence during childhood and adolescence and concurrent exposure during late adolescence/early adulthood predicted all six serious violent and antisocial outcomes. When we added to the models the covariates of ethnic subgroup, age, sex, parents' education, and youths' prior physical aggression, concurrent exposure to ethnic-political violence was still significantly associated with a greater likelihood of concurrently perpetrating all 6 serious violent and nonviolent forms of antisocial behavior, and earlier cumulative exposure remained significantly related to 3 of these: severe physical aggression, participating in violent demonstrations, and our overall index of violent/antisocial behavior.

Serious Violent Behavior and Antisocial Outcomes as Consequences of Exposure to Ethnic-Political Conflict and Violence among Israeli and Palestinian Youth

UNICEF USA (www.unicefusa.org) reports that worldwide, approximately 250 million children "live in areas affected by prolonged, violent conflict." In our own research in the Middle East (the Palestinian-Israeli Exposure to Violence Study; see Boxer et al., 2013; Dubow et al., 2012; Huesmann et al., 2017), since the beginning of the Second Intifada in September 2000 through January, 2018, 10,683 people have been killed as a result of inter-ethnic violence, 2,152 (20%) of whom were minors. War exerts broad, negative impacts on youths' behavioral and mental health outcomes, most notably on post-traumatic stress, but also on aggression and other externalizing problems (e.g., Barber, 2008; Betancourt, McBain, & Brennan, 2014; Cummings et al., 2010; Dyregov, Gupta, Gjestad, & Mukanoheli, 2002; Kithakye, Morris, Terranova, & Myers, 2010; Landau et al., 2010; Macksoud & Aber, 1996; Qouta, Punamäki, & El-Sarraj, 2008). Only a few studies have examined long-term relations between exposure to ethnic-political violence and aggression, and these do not focus on serious violent behavioral outcomes (Boxer et al., 2013; Merrilees et al., 2013; Taylor, Merrilees, Goeke-Morey, Shirlow, & Cummings, 2016). In this study, we examine whether exposure to ethnic-political violence among Israeli and Palestinian youth is related to serious violent behavior and antisocial outcomes directed toward the in-group and the out-group.

Impact of Exposure to Ethnic-Political Violence on Aggressive Behavior

Research on the development of aggression has shown that serious aggression seldom occurs unless there is a convergence of multiple situational precipitating factors with multiple predisposing individual-difference factors (e.g., physiological, personality,

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environmental) (Huesmann, 2017). Within this framework, research has also shown that aggressive behavior can be learned or unlearned (Eron, 1994; Huesmann, 2017). Some children become aggressive adults because their learning environment never socializes them out of aggression. Some children become aggressive adults because their learning environment teaches them to be aggressive.

Among the most powerful learning mechanisms for the developing human is observational learning (Bandura, 1973). Numerous studies have demonstrated that children's observations of violence, whether occurring in families (e.g., Boxer, Gullan, & Mahoney, 2009; Dodge, Bates, & Pettit, 1990), neighborhoods (e.g., Guerra, Huesmann, & Spindler, 2003; Schwartz & Proctor, 2000), peer groups (e.g., Espelage, Holt, & Henkel, 2003), and the media (e.g., Anderson, Gentile, & Buckley, 2007; Huesmann, Moise-Titus, Podolski, & Eron, 2003), are related to the development of aggression. We proposed a comprehensive social-cognitive-ecological model to understand how exposure to violence across these contexts impacts youth's development of aggression-related cognitions and aggressive behavior (e.g., Huesmann, 1998, 2017), and we applied this model to understanding youths' social-cognitive and behavioral responses when exposed to ethnic-political violence (Dubow et al., 2009). Although our framework draws from empirical research and theorizing in social, cognitive, and developmental science, it emerges most directly from the observational learning tradition and connects with the contemporary public health perspective that violence can spread like a contagion through observation and modeling (Huesmann, in press; Slutkin, Ransford, & Zvetina, 2018).

While there are broad literatures on the impact on youth of violence in families, communities, peer groups, and the media, relatively less research has considered the effects of ethnic-political violence on children and adolescents; yet the extant research

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indicates that exposure to ethnic-political violence is also related to aggression by those exposed. Researchers in the Gaza Community Mental Health Program (Qouta & El Sarraj, 1992; Qouta, Punamäki, & El Sarraj, 2008) reported that 38% of children during the First Intifada in Gaza developed aggressive behavior. In two samples of 12-16 year-olds, one during a peaceful period and one during the Second Intifada, witnessing and being victimized by war violence was related to children's self- and parent-reported aggression.

In our own analysis of the first three years of longitudinal data from the current study of Israeli and Palestinian 8-14 year-olds, exposure to ethnic-political conflict/violence was significantly related to subsequent aggression toward peers, even after controlling for a range of demographic and contextual factors (Boxer et al. 2013; Huesmann et al., 2017). Structural modeling analyses showed that the most plausible explanation was that exposure to ethnic-political violence was stimulating aggression against peers by increasing beliefs accepting violence against peers, stimulating rehearsal of aggressive scripts, and stimulating emotional discontent (Huesmann, et al., 2017). Other analyses showed that greater exposure to political violence in the media was also longitudinally related to higher levels of aggression at peers independently of exposure to violence in other contexts (Dvir Gvirsman et al., 2014). In another study of the Israeli-Palestinian conflict, Victoroff et al. (2010) found that among teenagers from Gaza, those who had a family member wounded or killed by Israelis were more likely to exhibit higher levels of trait aggression, and also to endorse the statement reflecting higher levels of "religio-political aggression": "Religious ends justify any means."

In a different ethnic-political setting, Cummings and colleagues (e.g., Cummings et al., 2010; Merrilees et al., 2013; Taylor et al., 2016) found similar results -- that exposure to sectarian conflict among youth in Northern Ireland was predictive of subsequent aggression and delinquency. Across these studies, effect sizes are in the modest to moderate range, and aggression/delinquency

measures include a mix of relatively mild acts (e.g., disobeys others, lies, cheats, tantrums) and more severe acts (e.g., fights, destroys property, attacks others).

All of these studies have added to the evidence that exposure to ethnic-political violence increases the tendency of those exposed to have more general aggressive inclinations and to behave more aggressively toward everyone. Not surprisingly, other studies of youth have linked exposure to ethnic-political conflict and violence specifically to aggressive inclinations and acts directed against ethnic/political *outgroup* members. These findings undoubtedly will seem more intuitively understandable to the layman than the finding that exposure to violence stimulates a general increase in the inclination to behave aggressively against anyone. More important to the scholar, however, is that these findings are consistent with Tajfel and Turner's (1986) identity theory that highlights the importance of identification with the perpetrators and victims of the violence. One's perceptions and reactions in response to exposure to ethnic–political violence are filtered through one's ethnic identity. Ethnic-political violence heightens distinctions between one's ethnic group and the "other" (Bar Tal, 2004; Brenick et al., 2007; Niwa et al., 2016). Thus, members of societies that suffer from political conflict develop negative beliefs about the enemy/out-group (Bar-Tal, 2004; Bar-Tal, Raviv, Raviv, & Dgani-Hirsh, 2008; Barrett & Oppenheimer, 2011; Hammack, 2008; Huesmann et al., 2012), including elevated feelings of hostility toward the enemy, ethnocentrism, and support for war (e.g., Canetti-Nisim, Halperin, Sharvit, & Hobfoll, 2009; Victoroff et al., 2010).

Shechtman and Basheer (2005) found that Israeli Arab children were more likely to endorse normative beliefs about aggression toward Israeli Jewish children than toward Israeli Arab children. Merrilees et al. (2013) found that youth with higher levels of exposure to sectarian violence in Northern Ireland (e.g., name calling by people from the other group, objects thrown over walls by

the other group, deaths/injuries caused by the other group) were more likely to indicate they had aggressed against the out-group (using a 2-item measure of aggression delinquent acts in general toward the out-group). In a subsequent study, exposure to sectarian conflict predicted later engagement in aggression toward the out-group as indexed by a 10-item measure with behavior ranging from mild (e.g., wear a football jersey to taunt people from the other community) to more severe (e.g., throw objects over walls). As in the studies of the relation between exposure to political violence and general aggression, effect sizes for studies examining aggression directed toward the out-group are in the modest to moderate range, and aggression items include a mix of relatively mild to more severe acts.

The Present Study

Despite the growing body of work on the impact of exposure to ethnic-political violence on the development of aggressive behaviors in youth, very little of this research has considered whether exposure to ethnic-political violence increases the likelihood of involvement in very serious forms of aggressive, violent, and antisocial behavior. Data analyzed to address this were collected as part of the Palestinian-Israeli Exposure to Violence Study (Boxer et al., 2013; Huesmann et al., 2017). This is a 4-wave prospective study of Israeli and Palestinian youth in three starting age cohorts (ages 8, 11, and 14) who were assessed annually for three consecutive years, and again four years later when the three cohorts were 14, 17, and 20 years of age, respectively. We examine first the frequencies of severe violent behavior and antisocial outcomes among the participants. Then, we examine whether exposure to political conflict and violence during the early waves of the study, and concurrently at Wave 4, is associated with more serious violent

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behavior and antisocial outcomes at Wave 4 directed towards the in-group (severe physical aggression, arrests) and the out-group (support for and participation in violent political demonstrations) as the youth reach middle to late adolescence and early adulthood.

Method

Sample

Palestinian and Israeli Jewish children (N = 1,051 at wave 1) in three age cohorts (ages 8, 11, and 14) and their parents completed three annual waves of interviews between 2008 and 2010. A random subsample of 400 Palestinian children and their parents and 162 Israeli Jewish children and their parents completed a 4th wave of interviews in 2014-2015.

Palestinian sample. The Palestinian sample at wave 1 included 600 children: 200 8-year olds (101 girls, 99 boys), 200 11-year olds (100 girls, 100 boys) and 200 14-year olds (100 girls, 100 boys) and one of their parents (98% were mothers). Residential areas were sampled proportionally to achieve a representative sample of the general population (West Bank, 64%; Gaza Strip, 36%) (see Boxer et al., 2013, and Dubow et al., 2010, for details on the sampling procedure); 10% of families initially approached declined to participate. Staff from the Palestinian Center for Policy and Survey Research conducted the sampling and interviews.

Almost one-hundred percent (599/600) of the parents reported their religion as Muslim and 99% were married. One-third of them reported having at least a high school degree, and on average, there were 4.89 (SD = 1.86) children in the home. These statistics are representative of the general population of Palestinians (Palestinian Central Bureau of Statistics, 2008).

At Wave 2, 590 Palestinian children and their parents were re-interviewed, for a re-sampling rate of 98%, and at Wave 3, 572 were re-interviewed (re-sampling rate = 95%). T-tests of Wave 1 study variables revealed that by Wave 3, parents of non-resampled

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children rated their children as lower in aggression at Wave 1, but attrition was unrelated to Wave 1 parents' average education, exposure to political conflict/violence, child self-reported aggression, aggressive fantasy, normative beliefs supporting aggression, emotional distress, or child sex or age.

At Wave 4, due to funding constraints, we interviewed a random sample of 400 of the original participants (199 females, 201 males; 132 14 year-olds, 140 17 year-olds, 128 20 year-olds). There were no significant differences between those interviewed and not interviewed in Wave 4 on child's age or sex, child's Wave 1 exposure to ethnic-political violence, their Wave 1 aggression score, or their parents' Wave 1 average level of education.

Israeli sample. The Israeli Jewish sample included 451 children: 151 8-year olds (79 girls, 72 boys), 150 11-year olds (73 girls, 77 boys) and 150 14-year olds (94 girls, 56 boys) and one of their parents (87% were mothers).

Because the level of conflict and violence is relatively low in the major population centers of Israel, we oversampled high-conflict areas. Families were sampled by random phone calls, random door-to-door cluster sampling based on neighborhoods, and non-probability sampling using interviewee recommendations for families who fit the sample criteria (see Landau et al., 2010, for the detailed sampling procedure). Interviews were scheduled for those who agreed to participate (55% in the Jewish sample). Staff from the Machshov Survey Research Institute conducted the sampling and interviews.

Ninety-one percent of the parents were married and over 80% had graduated from high school. Parents reported that on average, there were 3.59 (*SD* = 1.83) children in the home.

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In Wave 2, the re-sampling rate was 68% (n = 305), and in Wave 3 it was 63% (n = 282). This attrition was mostly due to "refusals", mostly due to what parents viewed as insufficient monetary reimbursement (due to significant exchange rate changes, the amount of money offered was significantly less in Waves 2 and 3). *T*-tests of Wave 1 study variables revealed that attrition by Wave 3 was associated with lower levels of average parental education, lower levels of normative beliefs supporting aggression, lower levels of emotional distress, and lower levels of self-rated severe physical aggression at wave 1, but was not associated with exposure to political conflict/violence, self-or parent-reported general aggression, or child sex or age.

At Wave 4, we interviewed a random sample of 162 of the original participants (90 females, 72 males; 56 14 year-olds, 62 17 year-olds, 44 20 year-olds), and 80-85% of parents had at least a high school degree. There were no significant differences between those interviewed and not interviewed in Wave 4 on child's age or sex, or child's wave 1 aggression score; however, compared to those not re-interviewed at Wave 4, those youth who were re-interviewed had been exposed to marginally more ethnic-political violence at wave 1 ($t(898) = 1.77$, $p < .08$), and their parents at Wave 1 had a higher average educational level ($t(897) = 9.21$, $p < .001$).

Consent and Interview Procedures

The research protocol was approved by the institutional review boards of the University of Michigan, the Hebrew University of Jerusalem, and the Palestinian Center for Policy and Survey Research. One parent and one child in each family participated. Written parent consent and child assent were obtained. The family was compensated at the region's equivalent rate of $25 for the one-hour interview during Waves 1-3. In Wave 4, Israeli families were compensated at $65 per child and $40 per parent; and Palestinian

families were compensated at $30 per child and $30 per parent. Because Wave 4 occurred 4 years after Wave 3, we increased participant compensation. In addition, because of differential cost of living increases, we judged that a higher incentive was necessary in Israel to limit attrition.

To encourage honest and accurate responding, we designed many safeguards. Consent procedures made clear that no participants' names would be on their surveys—only code numbers, in order to connect their responses to their responses in future waves of data collection; only the survey company would keep a list associating their names and code numbers for contacting them for future data collection waves and connecting their responses across waves; participants could skip any questions that might have made them feel uncomfortable; and participants could stop the interview at any time. Interviews were conducted individually in the families' homes by a well-respective survey research company in each region, and interviews were conducted by interviewers of the same ethnic group.

Measures

All measures were presented in native languages by region/ethnicity. Original English measures were translated and back-translated for accuracy by native-speaking research teams. All measures described below were presented with no variation among data collection waves.

Demographic information. Parents reported the child's age and sex. As an index of socioeconomic status, parent education was coded as follows: 1= illiterate to 10 = doctorate or law degree. We calculated the average of parents' levels of educational attainment.

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Exposure to ethnic-political conflict and violence. In each of the first three waves, parents of children in the 8-year old cohort reported on their children's exposure to political conflict and violence, whereas children in the 11- and 14-year old cohorts provided self-reports of their exposure.[1] In the 4th wave, youth in all three cohorts provided self-reports of their own exposure. The index of exposure to political conflict and violence includes 24 items adapted from Slone, Lobel, and Gilat (1999). The events represent the following domains: loss of, or injury to, a friend or family member as a result of political violence; non-violent events that are consequences of violence, e.g., **"**How often have you spent a prolonged period of time in a security shelter or under curfew?"; self or significant others participated in political demonstrations; witnessed actual political violence perpetrated by the other ethnic group; and witnessed media portrayals of violence perpetrated by the other ethnic group. Respondents indicated the extent to which they (or their child) experienced each event in the past year along a 4-point scale (0 = never to 3 = many times). The score on the index is the average of responses to the 24 events. The events can occur independently of each other; so we prefer to call the score an index of exposure rather than a scale. Still, the events inter-correlate enough that the coefficient alpha of the index ranged from .70 to .85 across ethnic groups, age cohorts, and sexes.

The index of exposure showed moderate continuity over the first three waves (*r*s ranged from .47 to .59 for Palestinians and .44 to .56 for Israeli Jews). Consequently we calculated an overall measure of average exposure to ethnic-political violence during the first three waves for each subject by averaging their scores on the exposure variable for the first three waves.

Serious violent behavior.

Physical aggression and severe physical aggression. We assessed physical aggression with self-reports on the Physical Aggression measure which has been used in numerous studies (e.g., Huesmann, Eron, & Dubow, 2002; Lefkowitz, Eron, Walder, & Huesmann, 1977). This measure has been shown to be a valid assessment of physical aggression across sex, age, and ethnic groups (Huesmann et al., 2017). The measure has 5 items that vary in severity from mild physical aggression (slapped or kicked someone, punched or beaten someone) to severe physical aggression (choked someone, threatened or actually cut someone with a knife, threatened or actually shot someone with a gun). Following other similar measures that assess mild and serious behavior (e.g., parent-to-child aggression; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998), because of the highly skewed nature of some responses, we view this measure as an index rather than a scale, as the acts of behavior often occur independently of each other. We calculate scores in two ways: a chronicity score (average number of times the participant engaged in each item in the past year along a 4-point scale ranging from 0 = never to 3 = 5 or more times) or a dichotomous score for each item, indicating whether a participant had engaged in the behavior in the past year.

For the present analyses, we used the average of the scores on the whole index for the first three waves as a covariate in predicting all wave 4 outcomes. At Wave 4, however, because our goal was to assess Wave 4 serious violent and antisocial outcomes, we use the average score on the three severe physical aggression items (choked someone, threatened or actually cut someone with a knife, threatened or actually shot someone with a gun) as our primary outcome variable. We also dichotomized each of these three items (never in the past year vs. at least once in the past year) and calculated a dichotomous score of whether a participant reported in the Wave 4 interview that he or she had engaged in any one of these three acts in the past year.

It should be noted that these severe forms of physical aggression by our participants can only be directed against other youth in their own "in-group." The children (with rare exceptions) have no contact or opportunities to aggress against youth from other ethnic groups.

Participation in violent political demonstrations at Wave 4. Items describing specific violent acts involved in political demonstrations were adapted from our measure of approval of aggressive acts that specifically target out-group political enemies (Huesmann et al., 2017). We asked participants if, in the past year, they had actually participated in 5 types of political demonstrations: 1) where rocks were thrown or property was destroyed by the demonstrators; 2) where someone got into a physical fight or physically attacked a member of an ethnic out-group; 3) where someone told others in the group to be violent toward an ethnic out-group; 4) where someone verbally threatened members of another ethnic out-group; or 5) where someone destroyed property belonging to a member of an ethnic out-group. Coefficient alphas were .84 for the Palestinians and .80 for the Israelis. We constructed a dichotomous score of whether the participant had or had not, in the past year, participated in any politically violent demonstration.

Wave 4 antisocial outcomes.

Arrests by Wave 4. Participants were asked how many times they had been arrested for a criminal or political offense in the past 5 years. We created a dichotomous score of whether the participant had or had not been arrested in the past 5 years.

Willingness to participate in a violent political demonstration at Wave 4. Participants indicated how likely they would be to participate in each of the 5 types of demonstrations (0 = Not at all likely, 1 = Somewhat likely, 2 = Very likely); coefficient alphas

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were .86 for the Palestinians and .88 for the Israelis. We constructed a dichotomous score of whether the participant indicated that he or she would be at least "somewhat likely" to participate in any one of these events.

Summary Wave 4 violence/antisocial index. We classified a participant as violent or antisocial in Wave 4 if he or she placed in the violent/antisocial classification on any of the 4 dichotomized indices of serious violent or antisocial outcomes at Wave 4 (severe physical aggression, arrested, had participated in a violent political demonstration, expressed willingness to participate in a violent political demonstration).

Covariates. We included child sex, age, parental socioeconomic status (as indexed by parental education levels), and prior levels of physical aggression as covariates in our analyses predicting Wave 4 violent and antisocial outcomes. Males are more aggressive than females, particularly when the measurement is weighted towards typically physical, direct forms of aggression (Huesmann et al., 2002; Huesmann, Dubow, & Boxer, 2009; Kokko et al., 2009). In terms of age differences, it has long been observed that aggressive behavior tends to increase from late childhood and into early adolescence, with little variation thereafter (Nansel et al., 2001; Tremblay, 2000). Family socioeconomic status has been shown to be a predictor of adolescent delinquency and adult violent outcomes (see Connolly, Lewis, & Boisvert, 2017; Dubow, Huesmann, Boxer, & Smith, 2014). Finally, we control for the child's earlier levels of physical aggression in light of abundant research that shows moderate continuity of aggression from childhood to adulthood (e.g., Huesmann et al., 2002).

Results

Frequency of Severe Violent Behavior and Antisocial Outcomes

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Table 1 shows the frequency of severe violent behavior and antisocial outcomes at Wave 4 for the overall sample, and separately by ethnic subgroup. Significant differences between the two subgroups were examined using Fischer's exact test, as Chi-square tests are overly sensitive to low cell counts. The table shows that Palestinians were more likely to have indicated that they engaged in four of the five severe forms of physical aggression compared to Israeli Jews in the past year, excluding only using a gun which was very low frequency in both ethnic groups. Table 1 also shows that 22% of Palestinians and 15% of Israeli Jews had participated in at least one violent political demonstration in the past year, 8% of Palestinians and 5% of Israeli Jews had been arrested at least once in the past 5 years, and 39% of Palestinians and 33% of Israeli Jews indicated they would be at least "somewhat likely" to participate in a violent political demonstration, but none of these three differences was statistically significant. However, Palestinians were significantly more likely than Israeli Jews (49% versus 35%) to have been coded as having engaged in at least one violent or antisocial outcome on the summary index.

Relation of Exposure to Ethnic-Political Conflict/Violence in Waves 1-3 to Wave 4 Serious Violent Behavior and Antisocial Outcomes

Discussion

Descriptive Findings

Our data were collected from two ethnic groups (Palestinian Arabs, Israeli Jews), males and females, and a wide age range of youth. As we have found in the prior waves of our study (e.g., Boxer et al., 2013), Palestinian youth and males exhibited higher levels

of aggressive outcomes than Israeli youth and females, respectively. Our prior analyses focused on less severe forms of behavior, whereas the current analyses examined more serious violent and antisocial outcomes by late adolescence and early adulthood. Although not presented in the analyses reported here, Palestinian youth were exposed to significantly higher levels of ethnic-political violence. Thus, Palestinian youth are at higher risk of exposure to ethnic-political violence and violent and antisocial outcomes. Other studies of Middle East youth have found that older youth and males are exposed to higher levels of ethnic-political violence (e.g., Barber & Olsen, 2009; Thabet & Vostanis, 2000), which "may reflect an increase in autonomy and mobility associated with the transition to adolescence that should place older youth, especially male children, into contexts where they would have greater opportunity for exposure, which may include activism and involvement in the conflict (e.g., demonstrating, distributing leaflets, protecting someone from soldiers, throwing stones; Barber & Olsen, 2009)" (Dubow et al., 2012, p. 412).

Effects of Expsoure to Ethnic-Political Violence on Subsequent and Concurrent Serious Violent and Antisocial Behavior

In this study we examined four waves of data collected over several years in samples of Palestinian Arab and Israeli Jewish youth and their families to test hypotheses derived from social learning and contagion theories of aggressive and violent behavior. Earlier work in our sample has established that exposure to ethnic-political violence is associated with a variety of mild to moderate to serious forms of aggressive behavior in youth of age 8 to 16 (e.g., Boxer et al., 2013; Dubow et al., 2010; Huesmann et al., 2017). Those findings were in line with findings from samples in other war-torn or ethnic-politically conflicted regions of the world (e.g., Betancourt et al., 2010; Merrillees et al., 2013). Yet this prior research on the impacts of ethnic-political violence has not

demonstrated that these impacts might also include increases in severe violent behavior or criminal behavior and support for and engagement in ethnic-political violence, nor that these impacts might extend from adolescence into early adulthood.

Our findings indicated that persistent exposure to ethnic-political violence during childhood and adolescence does indeed predict some of these severe outcomes at late adolescence through early adulthood. Our bivariate regression models (prior to including covariates) indicated that persistent exposure to ethnic-political violence during childhood and adolescence indeed predicted all six severe violent and antisocial outcomes at late adolescence through early adulthood. Even after controlling for ethnic subgroup, age, sex, parents' education, and the youths' prior physical aggression, early exposure still significantly predicted four years later the continuous measure of current severe physical aggression, whether the youth participated in a violent political demonstration in the past year, and whether the youth was classified as violent on any one of five specific violent or antisocial outcomes. In addition, whether or not covariates were included, our results showed that exposure to ethnic-political violence in late adolescence and early adulthood was correlated with concurrent seriously violent and antisocial behavior for all six outcomes.

The findings presented here replicate and expand prior work. We found that higher levels of persistent exposure to ethnic-political violence were consistently associated with a greater likelihood of perpetrating concurrently serious violent and nonviolent antisocial behavior and were less consistently related to perpetration four years in the future. However, previous analyses of the first three waves of data from the same samples showed that exposure was indeed related to future perpetration of violence over a shorter 1-year time span (Huesmann, et al., 2017). Those same previous analyses also showed that it is more plausible that these relations exist because exposure to ethnic political violence is stimulating aggressive behavior rather than vice-versa, and the stimulating effect

is mediated through changes in beliefs about the appropriateness of aggression, rehearsal of aggressive scripts, and emotional discontent. This is consistent with the literature on social learning of aggression broadly and the research on the effects of exposure to ethnic-political violence specifically – particularly so when considering the generalized impact of growing up in a society or region marked by ongoing ethnic-political conflict.

Our findings also expand the existing literature by reporting on violence exposure effects for two key outcomes not previously examined in this manner: willingness to engage in, and actual engagement in, politically violent behavior. We found that exposure to ethnic-political violence was significantly related to both future and concurrent participation in violent demonstrations and to concurrent expressions of "willingness" to participate in violent demonstrations. We take these measures as indicators of aggression at the "out-group" in contrast to our other measures which assess aggression at peers.

It should be noted that predicting politically violent behavior has long been a challenge to the behavioral and social sciences (Ginges, Atran, Sachdeva, & Medin, 2011). The bulk of the extant research in this area suggests that expressed support for, willingness to engage in, and actual engagement in acts of political violence are linked to behavioral commitments to in-group religio-ethnic identities. Ginges, Hansen, and Norenzayan (2009) proposed a coalitional commitment hypothesis for understanding violent political actions–the assertion that acts of political violence are driven primarily by commitment to coalitional identities and within-group cooperation enhanced by religio-ethnic custom and ritual. In this frame, exposure to ethnic-political violence directed at one's in-group by an outgroup might reify ethnic-political identity and increase hostility towards and negative stereotyping of outgroups

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(Dvir Gvirsman et al., 2016; Huesmann, Dubow, Boxer, Souweidane, & Ginges, 2012; Niwa et al., 2016), and thus increase the likelihood of participation in political violence in kind.

Limitations and Conclusions

The limitations of our study include reliance on self-reported indicators of antisocial outcomes and relatively coarse measurement of exposure to ethnic-political violence (i.e., yearly reports of prior-year experiences), but these challenges are typical for this sort of research. Official records, direct behavioral observations, and other methods such as daily diary style recording of behavior could supplement self-report measures of antisocial behavior, but these techniques come with their own barriers and costs. With regard to obtaining official arrest records, we were concerned that seeking this consent would lead individuals, especially Palestinians who might be suspicious of whether such information would be shared with Israeli authorities, to decline participation in the study. Nevertheless, previous research has shown moderate to high levels of correspondence between self-reports and official records of offending (e.g., Dubow, Huesmann, Boxer, & Smith, 2014; Piquero, Schubert, & Brame, 2014). With respect to gauging exposure, experience sampling methods would produce finer-grained results, but given the persistence of ethnic-political violence in the targeted communities, we have observed high stability of exposure over time (see, e.g., Boxer et al., 2013).

In addition, as with any survey study, perhaps certain items were not interpreted in the same way across participants. For example, an item on the exposure to ethnic-political violence measure, “Has a friend or acquaintance of yours been injured as a result of political or military violence?”, could be interpreted as the friend experiencing a major injury or a minor injury. On the other hand, extensive pilot testing of this exposure to violence measure with the designated populations showed a generally consistent

interpretation of the questions. In addition, in prior studies, this measure has been shown to have good psychometric characteristics across samples.

As another limitation, although longitudinal interview studies can address issues of the plausibility of temporal orderings of variables across time, only experimental studies can yield conclusive causal evidence. For example, it is plausible that our findings that exposure to ethnic-political violence predicted future participation in violent political demonstrations also works in the opposite direction, i.e., that participation in such demonstrations leads to more exposure to ethnic-political violence. However, the cross-lagged structural modeling analyses of the first three waves of data (Huesmann et al., 2017) demonstrated that it was more plausible to conclude that exposure was associated with later aggression rather than vice versa. Nevertheless, those analyses did not include participation in violent political demonstrations, which was far less likely when the youth were younger. So, future research should assess both exposure to ethnic-political violence that is not a result of political demonstrations and actual participation in violent political demonstrations over multiple time points during late adolescence into early adulthood to assess bidirectional effects. Additionally, while longitudinal field studies can test whether measured "third" variables could account for a correlation, they cannot rule out the potential confounding effects of unmeasured variables. We included a range of covariates that have been shown to relate to violence, including sex, age, prior aggression, and parental educational levels, but other unmeasured variables might also contribute to influencing later violence (e.g., parenting variables, peer group dynamics). Perhaps more importantly, future work on the role of exposure to ethnic-political violence in accounting for youths' willingness to engage in, or actually engage in, violent behavior against

their peers or to engage in politically violent behavior directed at an out-group could benefit from exploring social-identity factors that might moderate the effects.

Footnotes

[1] Parents of children in the 8 year-old cohort provided the 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 in each wave. We followed this strategy for two reasons. First, our Institutional Review Board had concerns about the 8 year-olds' emotional reactions to reporting on their exposure to this type of conflict and violence. Second, given the time constraints of the interviews with young children, having parents report on these 24 items decreased the length of the interview for 8 year-olds. To examine the comparability of children's and parents' reports of children's exposure to political conflict/violence, at wave 3 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).

References

Allison, P. *Logistic Regression for Rare Events.* https://statisticalhorizons.com/logistic-regression-for-rare-events (February 13, 2012.)

Anderson, C. A., Gentile, D. A., & Buckley, K. E. (2007). *Violent video game effects on children and adolescents: Theory, research, and public policy*. NY: Oxford University Press.

Bandura, A. (1973). *Aggression: A social learning analysis*. Englewood Cliffs, NJ: Prentice-Hall.

Author Manuscript

Barber, B. K. (2008). Contrasting portraits of war: Youths' varied experiences with political violence in Bosnia and Palestine. *International Journal of Behavioral Development, 32,* 298-309. http://dx.doi.org/10.1177/0165025408090972

Barber, B. K., & Olsen, J. A. (2009). Positive and negative psychosocial functioning after political conflict. In B. K. Barber (Ed.), *Adolescents and war: How youth deal with political violence* (pp. 207–237). NY: Oxford University Press.

Barrett, M., & Oppenheimer, L. (2011). Findings, theories and methods in the study of children's national identifications and national attitudes. *European Journal of Developmental Psychology, 8,* 5–24. doi:10.1080/17405629.2010.533955

Bar-Tal, D. (2004). The necessity of observing real life situations: Palestinian-Israeli violence as a laboratory for learning about social behavior. *European Journal of Social Psychology, 34,* 677–701. doi:10.1002/ejsp.224

Bar-Tal, D., Raviv, A., Raviv, A., & Dgani-Hirsh, A. (2008). The influence of the ethos of conflict on Israeli Jews' interpretation of Jewish-Palestinian encounters. *Journal of Conflict Resolution, 53,* 94–118. doi:10.1177/0022002708325942

Betancourt, T.S., McBain, R.K., & Brennan, R.T. (2014). Trajectories of externalizing problems among war-affected youth in Sierra Leone: Results from a longitudinal study. *Aggression and Violent Behavior, 19,* 708-714. http://dx.doi.org/10.1016/j.avb.2014.09.003

Boxer, P., Gullan, R. L., & Mahoney, A. (2009). Adolescents' physical aggression towards parents in a clinic referred sample. *Journal of Clinical Child and Adolescent Psychology, 38,* 106–116. http://dx.doi.org/10.1080/15374410802575396

Boxer, P., Huesmann, L. R., Dubow, E. F., Landau, S., Gvirsman, S., Shikaki, K., & Ginges, J. (2013). Exposure to violence across the social ecosystem and the development of aggression: A test of ecological theory in the Israeli-Palestinian conflict. *Child Development, 84,* 163-177. http://dx.doi.org/10.1111/j.1467-8624.2012.01848.x

Brenick, A., Lee-Kim, J., Killen, M., Fox, N., Raviv, A., & Leavitt, L. (2007). Social judgments in Israeli and Arab children: Findings from media-based intervention projects. In D. Lemish & M. Götz (Eds.), *Children and media at times of conflict and war* (pp. 287–308). Cresskill, NJ: Hampton Press.

B'Tselem: Israeli Information Center for Human Rights in the Occupied Territories. (2018). Accessed in March, 2018, at https://www.btselem.org/statistics

Canetti-Nisim, D., Halperin, E., Sharvit, K., & Hobfoll, S. E. (2009). A new stress-based model of political extremism: Personal exposure to terrorism, psychological distress, and exclusionist political attitudes. *Journal of Conflict Resolution, 53,* 363–389. doi:10.1177/0022002709333296

Connolly, E. J., Lewis, R. H., & Boisvert, D. L. (2017). The effect of socioeconomic status on delinquency across urban and rural contexts: Using a genetically informed design to identify environmental risk. *Criminal Justice Review, 42*, 237-253. http://dx.doi.org/10.1177/0734016817724200

Cummings, E. M., Schermerhorn, A. C., Merrilees, C. E., Goeke-Morey, M. C., Shirlow, P., & Cairns, E. (2010). Political violence and child adjustment in Northern Ireland: Testing pathways in a social-ecological model including single- and two-parent families. *Developmental Psychology, 46,* 827-841. http://dx.doi.org/10.1037/a0019668

Dodge, K. A., Bates, J. E., & Pettit, B. S. (1990). Mechanisms in the cycle of violence. *Science, 250,* 1678–1683. http://dx.doi.org/10.1126/science.2270481

Dubow, E. F., Boxer, L. R., Huesmann, L. R., Shikaki, K., Landau, S., Gvirsman, S., & Ginges, J. (2010). Exposure to conflict and violence across contexts: Relations to adjustment among Palestinian children. *Journal of Clinical Child and Adolescent Psychology, 39,* 103-116. http://dx.doi.org/10.1080/15374410903401153

Dubow, E. F., Huesmann, L. R., & Boxer, P. (2009). A social-cognitive-ecological framework for understanding the impact of exposure to persistent ethnic-political violence on children's psychosocial adjustment. *Clinical Child and Family Psychology Review, 12,* 113-126. http://dx.doi.org/10.1007/s10567-009-0050-7

Dubow, E. F., Huesmann, L. R., Boxer, Landau, S., Dvir, S., Shikaki, K., & Ginges, J. (2012). Exposure to political conflict and violence and post-traumatic stress in Middle East youth: Protective factors. *Journal of Clinical Child and Adolescent Psychology, 41,* 402-416. http://dx.doi.org/10.1080/15374416.2012.684274

Dubow, E. F., Huesmann, L. R., Boxer, P., & Smith, C. (2014). Childhood predictors and age 48 outcomes of self-reports and official records of offending. *Criminal Behaviour and Mental Health, 24,* 291-304. http://dx.doi.org/10.1002/cbm.1929

Dvir Gvirsman, S., Huesmann, L. R., Dubow, E. F., Landau, S. F., Boxer, P., & Shikaki, K. (2016). The longitudinal effects of chronic mediated exposure to political violence on ideological beliefs about political conflicts among youth. *Political Communication, 33,* 98-117. http://dx.doi.org/10.1080/10584609.2015.1010670

Dvir Gvirsman, S., Huesmann, L. R., Dubow, E. F., Landau, S. F., Shikaki, K., & Boxer, P. (2014). The effects of mediated exposure to ethnic-political violence on Middle East youth's subsequent post-traumatic stress symptoms and aggressive behavior. *Communication Research, 41,* 961-990. http://dx.doi.org/10.1177/0093650213510941

Dyregov, A., Gjestad, R., & Raundalen, M. (2002). Children exposed to warfare: A longitudinal study. *Journal of Traumatic Stress, 15,* 59–68. doi:10.1023/A:1014335312219.

Eron, L. D. (1994). Theories of aggression: From drives to cognitions. In L. R. Huesmann (Ed.), *Aggressive behavior: Current perspectives* (pp. 3-11). New York: Plenum Press.

Espelage, D. L., Holt, M. K., & Henkel, R. R. (2003). Examination of peer-group contextual effects on aggression during early adolescence. *Child Development, 74,* 205–220. http://dx.doi.org/10.1111/1467-8624.00531

Ginges, J., Atran, S., Sachdeva, S., & Medin, D. (2011). Psychology out of the laboratory: The challenge of violent extremism. *American Psychologist, 66,* 5017-519. http://dx.doi.org/10.1037/a0024715

Ginges, J., Hansen, I. G. & Norenzayan, A. (2009). Religion and popular support for suicide attacks. *Psychological Science, 20,* 224-230. http://dx.doi.org/10.1111/j.1467-9280.2009.02270.x

Guerra, N. G., Huesmann, L. R., & Spindler, A. (2003). Community violence exposure, social cognition, and aggression among urban elementary school children. *Child Development, 74,* 1507-1522. http://dx.doi.org/10.1111/1467-8624.00623

Hammack, P. L. (2008). Narrative and the cultural psychology of identity. *Personality and Social Psychology Review, 12,* 222–247. doi:10.1177/1088868308316892

Author Manuscript

Huesmann, L. R. (1998). The role of social information processing and cognitive schemas in the acquisition and maintenance of habitual aggressive behavior. In R. G. Geen & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for policy* (pp. 73-109). New York: Academic Press.

Huesmann, L. R. (2017). An integrative theoretical understanding of aggression. In B. Bushman (Ed.), *Aggression and violence: a social psychological perspective* (pp. 3-21). NY: Routledge.

Huesmann, L. R. (in press). The contagion of violence. In A. T. Vazsonyi, D. Flannery, and M. DeLisi (Eds.), *The Cambridge Handbook of Violent Behavior and Aggression (2nd edition).*

Huesmann, L. R., Dubow, E. F., Boxer, L. R., Landau, S., Gvirsman, S., & Shikaki, K. (2017). Children's exposure to violent political conflict stimulates their subsequent aggression at peers by increasing their emotional distress and normative beliefs favoring aggression. *Development and Psychopathology, 29,* 39-50. http://dx.doi.org/10.1017/S0954579416001115

Huesmann, L. R., Dubow, E. F., Boxer, P., Souweidane, V., & Ginges, J. (2012). Foreign wars and domestic prejudice: How perceptions of war scenes in the mass media affect and are affected by American youths' ethnic prejudices. *Journal of Research on Adolescence, 22, 556-570* .http://dx.doi.org/10.1111/j.1532-7795.2012.00785.x

Huesmann, L. R., Eron, L. D., & Dubow, E. F. (2002). Childhood predictors of adult criminality: Are all risk factors reflected in childhood aggressiveness? *Criminal Behavior and Mental Health, 12.* http://dx.doi.org/10.1002/cbm.496

Author Manuscript

Huesmann, L. R., Moise-Titus, J., Podolski, C. P., & Eron, L. D. (2003). Longitudinal relations between childhood exposure to media violence and adult aggression and violence: 1977-1992. *Developmental Psychology, 39,* 201-221. http://dx.doi.org/10.1037/0012-1649.39.2.201

Kithakye, M., Morris, A. S., Terranova, A. M., & Myers, S. S. (2010). The Kenyan political conflict and children's adjustment. *Child Development, 81,* 1114–1128. http://dx.doi.org/10.1111/j.1467-8624.2010.01457.x

Kokko, K., Pulkkinen, L., Huesmann, L. R., Dubow, E. F., & Boxer, P. (2009). Intensity of aggression in childhood as a predictor of different forms of adult aggression: A two-country (Finland and the United States) analysis. *Journal of Research on Adolescence, 19,* 9–34. http://dx.doi.org/10.1111/j.1532-7795.2009.00579.x

Landau, S. F., Gvirsman, S. D., Huesmann, L. R., Dubow, E. F., Boxer, P., Ginges, J., & Shikaki, K. (2010). The effects of exposure to violence on aggressive behavior: The case of Arab and Jewish children in Israel. In K. Österman (Ed.), *Indirect and Direct Aggression* (pp. 321-343). Berlin, Germany: Peter Lang.

Lefkowitz, M. M., Eron, L. D., Walder, L. O., & Huesmann, L. R. (1977). *Growing up to be violent: A longitudinal study of the development of aggression.* New York: Pergamon.

Macksoud, M. S., & Aber, J. L. (1996). The war experiences and psychosocial development of children in London. *Child Development, 67,* 70–88. doi:10.2307/1131687.

Author Manuscript

Merrilees, C. E., Cairns, E., Taylor, L. K., Goeke-Morey, M. C., Shirlow, P. & Cummings, E. M. (2013). Social identity and youth aggressive and delinquent behaviors in a context of political violence. *Political Psychology, 34*, 695–711. http://dx.doi.org/10.1111/pops.12030

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among U.S. youth: Prevalence and association with psychological adjustment. *Journal of the American Medical Association, 285*, 2094–2100. http://dx.doi.org/10.1001/jama.285.16.2094

Niwa, E. Y., Boxer, P., Dubow, E. F., Huesmann, L. R., Landau, S., Shikaki, K., & Dvir Gvirsman, S. (2016). Negative stereotypes of ethnic out-groups: A longitudinal examination among Palestinian, Israeli Jewish, and Israeli Arab youth. *Journal of Research on Adolescence, 26*, 166-179. http://dx.doi.org/10.1111/jora.12180

Palestinian Central Bureau of Statistics. (2008, August). Census final results in the West Bank: Summary (Population and Housing). Ramallah, Author. Retrieved November 11, 2008, from http://www.pcbs.gov.ps/Portals/_PCBS/Downloads/book1487.pdf

Piquero, A. R., Schubert, C. A., & Brame, R. (2014). Comparing official and self-report records of offending across gender and race/ethnicity in a longitudinal study of serious youthful offenders. *Journal of Research in Crime and Delinquency, 51*, 526-556. http://dx.doi.org/10.1177/0022427813520445

Qouta, S., & El Sarraj, E. (1992). Curfew and children's mental health. *Journal of Psychological Studies, 4*, 13–18.

Author Manuscript

Qouta, S., Punamäki, R. L., & El Sarraj, E. (2008). Child development and family mental health in war and military violence: The Palestinian experience. *International Journal of Behavioral Development, 32,* 310-321. http://dx.doi.org/10.1177/0165025408090973

Schwartz, D., & Proctor, L. J. (2000). Community violence exposure and children's social adjustment in the school peer group: The mediating roles of emotion regulation and social cognition. *Journal of Consulting and Clinical Psychology, 68,* 670-683. http://dx.doi.org/10.1037/0022-006X.68.4.670

Shechtman, Z., & Basheer, O. (2005). Normative beliefs supporting aggression of Arab children in an inter-group conflict. *Aggressive Behavior, 31,* 1–12. doi:10.1002/ab.20069.

Slone, M., Lobel, T. & Gilat, I. (1999). Dimensions of the political environment affecting children's mental health. *Journal of Conflict Resolution, 43,* 78-91. http://dx.doi.org/10.1177/0022002799043001005

Slutkin, G., Ransford, C., & Zvetina, D. (2018). How the health sector can reduce violence by treating it as a contagion. *AMA Journal of Ethics, 20,* 47-55.

Straus, M. A., Hamby, S. L., Finkelhor, D., Moore, D. W., & Runyan, D. (1998). Identification of child maltreatment with the Parent-Child Conflict Tactics Scales: Development and psychometric data for a national sample of American parents. *Child Abuse & Neglect, 22,* 249-270. http://dx.doi.org/10.1016/S0145-2134(97)00174-9

Tajfel, H., & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel & L. W. Austin (Eds.), *Psychology of intergroup relations* (pp. 7-24). Chicago: Nelson-Hall.

Author Manuscript

Taylor, L. K., Merrilees, C. E., Goeke-Morey, M. C., Shirlow, P., & Cummings, E. M. (2016). Trajectories of adolescent aggression and family cohesion: The potential to perpetuate or ameliorate political conflict. *Journal of Clinical Child and Adolescent Psychology, 4*, 114-128, DOI: 10.1080/15374416.2014.945213

Thabet, A. A., & Vostanis, P. (2000). Post-traumatic stress disorder reactions in children of war: A longitudinal study. *Child Abuse & Neglect, 24*, 291–298. http://dx.doi.org/10.1016/S0145-2134(99)00127-1

Tremblay, R. E. (2000). The development of aggressive behaviour during childhood: What have we learned in the past century? *International Journal of Behavioral Development*, 24, 129–141. http://dx.doi.org/10.1080/016502500383232

UNICEF USA. https://www.unicefusa.org/mission/emergencies/conflict. Accessed March 13, 2018.

Victoroff, J., Qouta, S., Adelman, J. R., Celinska, B., Stern, N., Wilcox, R., & Sapolsky, R. M. (2010). Support for religio-political aggression among teenaged boys in Gaza: Part I: Psychological findings. *Aggressive Behavior, 36*, 219-231. http://dx.doi.org/10.1002/ab.20348

Williams, R. *Analyzing Rare Events with Logistic Regression*. University of Notre Dame, http://www3.nd.edu/~rwilliam/ (Last revised April 7, 2017.)

Table 1
Percent of Palestinians and Israelis Exhibiting Wave 4 Serious Violent Behavior and Antisocial Outcomes

	Overall (*n*=562)	Palestinians (*n* =400)	Israelis (*n* =162)	Difference between ethnic subgroups
Wave 4 serious violent behavior		% (*n*)	% (*n*)	Fischer's exact *p*
Severe physical aggression (at least once in past year):				
Choked someone	13.4 (75)	16.0 (64)	6.8 (11)	.004
Cut or threatened to cut someone with knife	3.4 (19)	4.5 (18)	0.6 (1)	.02
Shot or threatened to shoot someone with gun	1.2 (7)	1.0 (4)	1.9 (3)	.42
At least one severe act (choked, cut, shot, or threatened to cut or shoot)	15.2 (85)	18.0 (72)	8.1 (13)	.003
Participated in at least one violent political demonstration in past year	19.6 (110)	21.6 (86)	14.9 (24)	.08
Wave 4 antisocial outcome				
Arrested at least once in past 5 years	7.3 (39)	8.0 (32)	5.2 (7)	.34
Willing to participate in a violent political demonstration	37.0 (208)	38.8 (155)	32.7 (53)	.21
Summary Wave 4 violent/antisocial index[a]	44.8 (252)	48.8 (195)	35.2 (57)	.004

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[a]The participant was violent or antisocial in at least one of the following dichotomous indices: Severe physical aggression (at least one severe act); participated in at least one violent political demonstration; arrested at least once in the past 5 years; willing to participate in a violent political demonstration

Table 2

Bivariate Regression Models Relating Wave 4 Violent and Antisocial Outcomes to Past and Concurrent Exposure to Ethnic-Political Violence

	Wave 4 serious violent outcomes						Wave 4 antisocial outcomes				Summary Wave 4 violent/antisocial index[a]	
Predictor:	Severe physical aggression (continuous)		Severe physical aggression (at least one)		Participated in violent demonstrations		Arrested		Willingness to participate in violent demonstrations			
	β	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
W1-3 ethnic-political viol. exp.	0.18***	(.10, .26)	3.82***	(1.94, 7.52)	2.68**	(1.46, 4.91)	5.48***	(2.10, 14.25)	1.83*	(1.11, 3.01)	3.14***	(1.90, 5.20)
W4 ethnic-political viol. exp.	0.23***	(.14, .31)	4.67***	(2.48, 8.80)	15.88***	(8.04, 31.36)	7.93***	(3.41, 18.41)	7.20***	(4.13, 12.56)	8.67***	(4.90, 15.36)

Note. We computed an ordinary least squares regression for the model predicting the continuous severe physical aggression outcome, and logistic regressions for the models predicting the dichotomous serious violent behavior and antisocial outcomes. Following Allison (2012) and Williams (2017), we used the Firth correction method that reduces bias in maximum likelihood logistic models when there are relatively fewer cases in the rarer of two outcomes. OR=odds ratio. CI=confidence interval.

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[a]The participant was violent or antisocial in at least one of the following dichotomous indices: Severe physical aggression (at least one severe act); participated in at least one violent political demonstration; arrested at least once in the past 5 years; willing to participate in a violent political demonstration.

*p<.05. **p<.01. ***p<.001.

Table 3

Multiple Regression Models Predicting Wave 4 Antisocial and Violent Outcomes from Ethnic-Political Violence Exposure in Waves 1-3, Aggressive Behavior in Waves 1-3, and Demographic Covariates

	Wave 4 serious violent outcomes						Wave 4 antisocial outcomes				Summary Wave 4 violent/antisocial index[a]	
Predictors	Severe physical aggression (continuous)		Severe physical aggression (at least one)		Participated in violent demonstrations		Arrested		Willingness to participate in violent demonstrations			
	β	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
W1-3 ethnic-political viol. exp.	.13*	(.01, .26)	1.33	(.94, 1.87)	1.52**	(1.11, 2.08)	1.36	(.87, 2.15)	1.20	(.92, 1.56)	1.37*	(1.04, 1.80)
Israeli	-.04	(-.17, .09)	.77	(.29, 1.99)	.76	(.33, 1.73)	1.52	(.44, 5.26)	.70	(.37, 1.31)	.69	(.37, 1.30)
W1-3 eth-pol viol. exp X Israeli	-.11	(-.32, .10)	.98	(.46, 2.11)	.65	(.35, 1.20)	.92	(.32, 2.62)	1.02	(.64, 1.63)	.91	(.57, 1.46)
W1-3 severe physical aggression	.21***	(.12, .29)	3.20***	(1.74, 5.88)	.93	(.54, 1.61)	1.98	(.90, 4.34)	.73	(.46, 1.15)	1.26	(.80, 1.99)
Male	.15***	(.07, .24)	3.35***	(1.87, 6.00)	2.74***	(1.69, 4.43)	6.93***	(2.46, 19.53)	1.77**	(1.22, 2.57)	2.18***	(1.51, 3.15)
Age	-.12**	(-.20, -.03)	.86**	(.76, .96)	.88*	(.79, .97)	1.05	(.90, 1.22)	.96	(.89, 1.04)	.94	(.87, 1.02)
Parents' average	.00	(-.10,	1.00	(.84,	1.01	(.87,	.92	(.71,	1.11	(.98,	1.08	(.94,

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education		.11)		1.20)		1.18)		1.17)		1.26)		1.22)
Overall *F* / Wald $\chi 2$ Test	*F*(7,553)=11.19***		$\chi 2(7) = 53.19$***		$\chi 2(7) = 36.34$***		$\chi 2(7) = 27.13$***		$\chi 2(7) = 20.33$**		$\chi 2(7) = 44.77$***	

Note. We computed an ordinary least squares regression for the model predicting the continuous severe physical aggression outcome, and logistic regressions for the models predicting the dichotomous serious violent behavior and antisocial outcomes. Following Allison (2012) and Williams (2017), we used the Firth correction method that reduces bias in maximum likelihood logistic models when there are relatively fewer cases in the rarer of two outcomes. OR=odds ratio. CI=confidence interval.

[a]The participant was violent or antisocial in at least one of the following dichotomous indices: Severe physical aggression (at least one severe act); participated in at least one violent political demonstration; arrested at least once in the past 5 years; willing to participate in a violent political demonstration.

*p<.05. **p<.01. ***p<.001.

Table 4 *Multiple Regression Models Predicting Wave 4 Antisocial and Violent Outcomes from Concurrent Exposure to Ethnic-Political Violence in Wave 4, Prior Aggressive Behavior in Waves 1-3, and Demographic Covariates*

	Wave 4 serious violent outcomes			Wave 4 antisocial outcomes		Summary Wave 4 violent/antisocial index[a]
Predictors	Severe physical aggression (continuous)	Severe physical aggression (at least one)	Participated in violent demonstrations	Arrested	Willingness to participate in violent demonstrations	

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	β	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
W4 ethnic-political viol. exp.	.20***	(.11, .29)	1.48**	(1.13, 1.94)	2.68***	(2.00, 3.59)	1.83**	(1.29, 2.60)	1.81***	(1.45, 2.27)	1.85***	(1.46, 2.34)
Israeli	-.02	(-.36, -.16)	.67	(.28, 1.60)	1.23	(.59, 2.55)	2.02	(.63, 6.40)	.75	(.43, 1.32)	.71	(.41, 1.25)
W4 eth-pol viol. exp X Israeli	-.17	(-.13, .08)	1.94	(.91, 4.14)	.90	(.49, 1.64)	1.46	(.49, 4.34)	1.28	(.78, 2.09)	1.46	(.87, 2.44)
W1-3 severe physical aggression	.24***	(.14, .31)	3.80***	(1.43, 6.61)	1.18	(.65, 2.12)	2.28*	(1.00, 5.19)	.84	(.52, 1.36)	1.56	(.97, 2.52)
Male	.14**	(.06, .22)	3.17***	(1.77, 5.70)	2.37**	(1.43, 3.93)	6.62***	(2.35, 18.62)	1.53*	(1.04, 2.26)	2.03***	(1.39, 2.96)
Age	-.11**	(-.18, -.03)	.86**	(.77, 0.96)	.86**	(.78, .95)	1.06	(.92, 1.24)	.95	(.87, 1.02)	.94	(.87, 1.02)
Parents' average education	-.02	(-.12, .08)	.96	(.80, 1.16)	.93	(.78, 1.10)	.83	(.64, 1.07)	1.08	(.95, 1.23)	1.05	(.92, 1.20)
Overall *F* / Wald χ2 Test	*F*(7,553)=14.15***		χ2(7) = 60.85***		χ2(7) = 74.16***		χ2(7) = 37.25***		χ2(7) = 55.34***		χ2(7) = 84.88***	

Note. We computed an ordinary least squares regression for the model predicting the continuous severe physical aggression outcome, and logistic regressions for the models predicting the dichotomous serious violent behavior and antisocial outcomes. Following Allison (2012) and Williams (2017), we used the Firth correction method that reduces bias in maximum likelihood logistic models when there are relatively fewer cases in the rarer of two outcomes. OR=odds ratio. CI=confidence interval.

[a]The participant was violent or antisocial in at least one of the following dichotomous indices: Severe physical aggression (at least one severe act); participated in at least one violent political demonstration; arrested at least once in the past 5 years; willing to participate in a violent political demonstration.

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*p<.05. **p<.01. ***p<.001.

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Table 2 shows the results of bivariate regressions (prior to including covariates) examining the relation between Wave 4 violent and antisocial outcomes and concurrent and prior exposure to ethnic-political conflict/violence. We computed an ordinary least squares regression for the model predicting the continuous severe physical aggression outcome, and logistic regressions for the models predicting the dichotomous outcomes. Following Allison (2012) and Williams (2017), we used the Firth correction method that reduces bias in maximum likelihood logistic models when there are relatively fewer cases in the rarer of two outcomes. The first row of the table shows that the composite score of exposure to political conflict/violence across the Waves 1 to 3 of the study significantly predicted higher levels of each Wave 4 serious violent behavior and antisocial outcome. Similarly, the second row of the table shows that concurrent Wave 4 exposure to political conflict/violence significantly predicted higher levels of each Wave 4 serious violent behavior and antisocial outcome.

Table 3 shows multivariate regressions (including covariates) predicting Wave 4 serious violent behavior and antisocial outcomes from the Wave 1-3 composite score of exposure to political conflict/violence. The covariates include ethnic subgroup (Israeli; Palestinian is the reference group), average severe physical aggression across the first three waves, sex, age, and parents'

average educational attainment. We also included the interaction term of the composite Wave 1-3 exposure to ethnic-political violence score by ethnic subgroup to examine whether the effect of exposure to political conflict violence on the Wave 4 outcomes differed by ethnic subgroup. The results show a significant effect of exposure to violence on the Wave 4 continuous measure of severe physical aggression toward peers ($\beta = .13$, $p < .05$). In addition, we found a significant effect of exposure to political violence in Waves 1-3 on participating in violent political demonstrations in Wave 4 ($OR = 1.52$. $p < .01$). Also, exposure to violence in Waves 1-3 significantly predicted our summary index of Wave 4 violent and antisocial behavior ($OR = 1.37$, $p < .05$). These results are significant even after accounting for ethnic subgroup, child sex, child age, child's prior levels of severe physical aggression, and parents' educational attainment. Three of these covariates had significant effects on Wave 4 outcomes in their own right. For example, being male significantly increased the risk of every antisocial or violent outcome in Wave 4.

Table 4 shows multivariate regressions (including the same covariates as in the previous analysis) predicting Wave 4 serious violent behavior and antisocial outcomes from concurrent Wave 4 exposure to political conflict/violence. In these models, we also included the interaction term of the Wave 4 exposure to political conflict/violence score by ethnic subgroup to examine whether the relation between Wave 4 outcomes and concurrent Wave 4 exposure to political conflict violence differed by ethnic subgroup. The results show significant main effects of exposure to ethnic-political violence in Wave 4 on all six Wave 4 measures of concurrent serious violent behavior and antisocial outcomes. In all cases, higher levels of exposure are related to higher levels of concurrent violence and antisocial outcomes. As with the regressions predicting Wave 4 outcomes from prior exposure to violence, these results for predicting Wave 4 outcomes from concurrent exposure are significant even after accounting for ethnic subgroup, child sex, child age, child's

prior levels of severe physical aggression, and parents' educational attainment. Several of these covariates have significant effects on Wave 4 outcomes, but they do not explain the relation between the Wave 4 outcomes and concurrent exposure to ethnic-political violence.

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