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Relations between Political Violence and Child Adjustment: A Four-Wave Test of the Role of Emotional Insecurity about Community

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Abstract

This study further explored the impact of sectarian violence and children's emotional insecurity about community on child maladjustment using a four-wave longitudinal design. The study included 999 mother-child dyads in Belfast, Northern Ireland (482 boys, 517 girls). Across the four-waves, child mean age was 12.19 ($SD = 1.82$), 13.24 ($SD = 1.83$), 13.61 ($SD = 1.99$), and 14.66 years ($SD = 1.96$), respectively. Building on previous studies of the role of emotional insecurity in child adjustment, the current study examines within-person change in emotional insecurity using latent growth curve analyses. The results showed that children's trajectories of emotional insecurity about community were related to risk for developing conduct and emotion problems. These findings controlled for earlier adjustment problems, age and gender, and took into account the time-varying nature of experience with sectarian violence. Discussion considers the implications for children's emotional insecurity about community for relations between political violence and children's adjustment, including the significance of trajectories of emotional insecurity over time.

The impact of political violence on children's well-being is an increasing concern worldwide (Feerick & Prinz, 2003). Although the negative impact of war and political violence on child development is well-established (Cairns & Dawes, 1996; Garbarino &

Kostelny, 1996; Dimitry, 2012; Burlingham & Freud, 1942; Qouta, Punamäki, & El Sarraj, 2008), there is limited information regarding the development of regulatory processes that affect adjustment in these contexts (Cummings, Goeke-Morey, Schermerhorn, Merrilees, & Cairns, 2009). Consistent with an emerging generation of empirical research examining psychosocial processes that affect youth in these contexts (Barber, 2008; Betancourt, Brennan, Rubin-Smith, Fitzmaurice, & Gilman, 2010; Dubow, Huesmann, & Boxer, 2009; Prinz & Feerick, 2003; Sagi-Schwartz, 2008), this paper further explores change in emotional insecurity about the community and the effect of these changes on adjustment. Emotional security about community, or feelings of felt security, stability and safety in children's socio-emotional environments, is a significant process in situations of intergroup conflict (Bar-Tal & Jacobson, 1998; Cummings & Davies, 2010; Waters & Cummings, 2000). With regard to the role of emotional insecurity in child adjustment, within-person analyses address new questions about how individual children change over time. For example, understanding the path or shape of these trajectories, and how these trajectories are related to adjustment, such as greater conduct problems, has implications for intervention. Thus, the present study takes a next step toward advancing understanding of children's risk and resilience in contexts of political conflict.

Northern Ireland, Sectarianism and Youth

Northern Ireland is a key area to study the psychosocial effects of political violence on children and adolescents (Cairns & Dawes, 1996). The period between 1968 and 1998, known as the Troubles, marks the most recent period of violence in the historic dispute between Unionists/Loyalists (usually Protestants), who wish to remain part of the United Kingdom, and Nationalists/Republicans (usually Catholics), who desire the unification of Ireland (Cairns & Darby, 1998; Darby, 2006). During this time, over 3,600 people were killed in a narrow range of areas mostly characterized by high levels of religious segregation and social deprivation. In such places the experience of loss was much greater than in more affluent and less segregated places (Mesev et al., 2008). In Belfast for example, around 80% of all victims were killed in places that were over 90% Protestant or Catholic (Shirlow & Murtagh, 2006). Despite the 1998 Belfast Agreement and current power-sharing among the major political parties, sectarianism and inter-group tension continue (MacGinty, Muldoon, & Ferguson, 2007).

Relations between Political Violence and Child Adjustment

Youth exposed to political violence are at increased risk for externalizing problems such as conduct problems and aggression (Cairns, 1996; Farver, Xu, Eppe, Fernandez, & Schwartz, 2005; Kerestes, 2006; Quota, Punamaki, Miller, & El Sarraj, 2008), internalizing disorders such as emotional problems of depression and anxiety (Ward, Martin, Theron, & Distiller, 2007), and post-traumatic stress (PTS) symptoms (Smith, Perrin, Yule, Hacam, & Stuvland, 2002). Recent studies have explored risk and protective factors and mediating processes through which political violence affects child well-being. Specific cognitive and emotional coping styles, family processes, and intergroup relations are indicated, in settings such as Israel (e.g., Sagi-Schwartz, 2008), Palestine (e.g., Quota et al., 2008), the former Yugoslavia (e.g., Ajdukovic & Biruski, 2008), Iraq (e.g., Dyregrov, Gjertad and Raundalen, 2002),

Africa (e.g., Kithakye, Morris, Terranova, & Myers, 2010), and Asia (e.g., Jordans et al., 2010).

Although less common, longitudinal studies advance our understanding of how psychological processes develop for youth in contexts of political violence. Following the 1991 Gulf War in Iraq, Dyregrov et al. (2002) reported that over three time points, children continued to experience fear of losing their family and other distress reactions; two years after the war, symptoms remained high but were somewhat less intense. In a longitudinal study of Palestinian adolescents during and after the first Intifada in 1993, Qouta et al. (2007) reported that exposure to military violence related to increased psychological distress and low satisfaction with quality of life. In a separate study, Punamaki et al. (2001) assessed responses of Palestinian children during and three years after the first Intifada, reporting that discrepant views of parental support were linked with elevated risk for post-traumatic stress (PTSD) disorder. These studies indicate the lasting impact of fear and the importance of family for children during and after experiences of acute political violence.

In addition to family, community factors are related to child adjustment over time. Based on the first wave of an on-going longitudinal study, Dubow et al. (2010) provided cross-sectional evidence for cumulative effects of children's exposure to violence across family, neighborhood and peer group contexts in Israel. In a follow-up study based on three waves of data, Boxer et al. (2012) further supported this model whereby ethno-political violence affected youths' aggression by its impact on community, family and school violence. In a prospective study of former child soldiers in Sierra Leone, Betancourt, Borisova et al. (2010) found that children who experienced community acceptance evidenced less depression and improved confidence at a two-year follow-up, regardless of the level of exposure to violence. However, the magnitude of the negative effects of war-related stressors (e.g., wounding or killing others, surviving rape) was much greater than the positive effects of protective factors (e.g., such as staying in school). Based on three waves of data collection, Betancourt, Brennan et al. (2010) further demonstrated the influences of these risk and protective factors on mental health trajectories.

Emotional Insecurity about Community

Feeling secure about family and community is significant to child well-being and adjustment (Cummings & Davies, 2010). Youth who sense their family and community are safe havens can utilize parents and neighbors to provide security and protection (Quota et al., 2008). This study is rooted in emotional security theory (EST, Cummings & Davies, 1996), an organizational perspective on children's regulatory processes in the face of threats to their security. Preserving emotional security (e.g., safety, protection) is posited as a significant goal that organizes children's emotional experiences (e.g., worry, fear, safety concerns), action tendencies (e.g., intervention, withdrawal), cognitive appraisals (e.g., representations of threat to self) and associated physiological reactions (e.g., cortisol reactivity). In the face of threats to security (e.g., sectarian conflict), in an attempt to regulate their responses, children may develop maladaptive emotional reactions, such as distress or withdrawal (Cummings & Davies, 1996), and dysfunctional behaviors, such as hostility or aggression (Papp, Cummings, & Schermerhorn, 2004). Thus, EST proposes that children dynamically

respond over time to perceived threat in specific contexts with the goal of maintaining a desired level of emotional security (Cummings & Davies, 1996; Sroufe & Waters, 1977).

With regard to community, a useful analogy is to think about emotional security as a bridge between the child and the communities in which they live. When the child is secure about the community, it serves as a secure base, supporting the child's exploration and relationships with others. When a hostile environment erodes the 'bridge,' children may become hesitant to move forward and lack confidence, or may move forward in an uncertain way, unable to find appropriate footing within themselves or in interaction with others.

A growing set of empirical studies demonstrates the importance of emotional security in response to conflict and violence at different levels of the social ecology, including the family and the community (Waters & Cummings, 2000). Longitudinal studies indicate that emotional insecurity mediates the impact of family violence (Cummings & Davies, 2010) and political violence (Cummings et al., 2011) on child adjustment. Emotional insecurity about the community is an important factor in settings of prolonged intergroup conflict (Bar-Tal & Jacobson, 1998; Bleich, Gelkopf, & Solomon, 2003). In these contexts, emotional insecurity about community is related to children's sense of safety and protection about the wider social network outside the family system. Facing political violence threatens children's appraisals of felt-security, stability and safety in socio-emotional environments (Bar-Tal & Jacobson, 1998; Batniji et al., 2009; Belsky, 2008; Jordans et al., 2010; McAloney, McCrystal, Percy, & McCartan, 2009). For example, mass disasters challenge children's assumptions of the world as a secure place, threatening their sense of security about the family, neighborhood and community (Laor & Wolmer, 2003).

Rationale for the Current Study

In a four-wave test, Cummings et al. (in press) demonstrated the positive within-person association between sectarian community violence and child adjustment problems was especially elevated in high crime neighborhoods. Notably, nonsectarian community violence did not predict child maladjustment when tested in the same model as sectarian community violence; thus, the current paper focuses on sectarian community violence. However, Cummings et al. (in press) left questions remaining about the within-person variables that may be related to child adjustment in contexts of sectarian community violence.

This study aims to advance understanding of children's regulatory processes by testing how trajectories of emotional insecurity about community may be significant to child adjustment in contexts of sectarian community. Analyses address the research question: Accounting for experience with sectarian antisocial behavior and earlier adjustment, how do individual changes in, or trajectories of, emotional insecurity about community relate to children's conduct and emotion problems? Within- and between-person questions are both important for psychological research, yet also focus on different aspects of development. Within-person questions aim to describe each individual's shape of change or growth trajectory; that is, does a child's sense of security rise or fall, rapidly or slowly, over time? Between-person questions, on the other hand, assess factors related to explaining differences in individual trajectories or heterogeneity of change across people (Singer & Willet, 2003). The value

added of the present approach is exploration of how individual trajectories of emotional insecurity about community relate to adjustment, complementing tests of emotional insecurity as a mediator at a single point in time (Cummings et al., 2011).

In addition, this study takes into account variation of sectarian antisocial behavior; the benefit is a more precise assessment of relations from the perspective of the developmental process. That is, rather than measuring experience with political or sectarian violence based on a single time point in a longitudinal design, sectarian antisocial behavior is included as a time-varying covariate across the four-waves of assessment. The strength of this approach is that it allows for variation in children's experience of sectarian antisocial behavior with time, which better accounts for the influence of sectarian antisocial behavior on emotional insecurity about community. Thus, these tests hold the potential to break new ground toward articulating how change in developmental mechanisms underlies children's risk for adjustment problems in contexts of political violence.

Cummings, Schermerhorn, Davies, Goeke-Morey, and Cummings (2006) reported that emotional security was a significant mediator of child adjustment in early and middle childhood, and adolescence, with the links between exposure to environmental stress (i.e., interparental conflict) and children's emotional insecurity in the family system stronger for adolescents than for younger children. Thus, relations between environmental stress and emotional insecurity increased in strength as children moved into adolescence. However, in the context of the age period for the present study from early to middle adolescence, no evidence has yet emerged to support age differences. With regard to gender, research has not supported gender as a moderator of the role of emotional security, or in the effects of conflict on adjustment (Davies & Cummings, 2006). Therefore, age and gender are included as control factors in this study.

The current study adds to the growing body of longitudinal research by examining within-person change in a regulatory process associated with violence exposure (i.e., emotional insecurity about community). Assessing within-person trajectories may contribute to identifying youth who are at risk for later developmental difficulties in contexts of political violence. Consistent with a developmental psychopathology perspective, and working under the assumption that regulatory processes take time to develop and affect youth outcomes, identifying trajectories is significant for understanding the effects of political violence on youth. Youth who continue on a path of dysregulation (i.e., becoming more insecure over time) may be more at risk for later developmental problems than youth who show dysregulation at one point in time. Understanding the path or shape of this trajectory is also informative for identifying points of intervention. Thus, we examine how individual trajectories of emotional insecurity in the community relate to child adjustment, extending study based on between-person analyses identifying emotional insecurity about community as a process mediating the impact of political violence on children's externalizing and internalizing problems (Cummings et al., 2010; 2011).

Method

Participants

The longitudinal study included 999 mother-child dyads in Belfast, Northern Ireland, with the children approximately evenly divided by gender (482 boys and 517 girls). Across the four-waves, child mean age was 12.19 ($SD = 1.82$; range = 10-17), 13.24 ($SD = 1.83$, range = 11-18), 13.61 ($SD = 1.99$, range = 10-19), and 14.66 years old ($SD = 1.96$; range = 11-19), respectively. Mothers were selected as the parental reporter partly because of the high prevalence of single-headed households in Belfast; 58% of families were single-parent (separated, divorced, widowed, or having never married) and 42% were married or living as married. In this sample, 61% of mothers identified as Protestant ($n = 606$), 38% as Catholic ($n = 383$) and ten mothers did not select one of the two affiliations (1%).

To be included in analyses, families had to have participated in at least one of four waves. At each wave, interviewers attempted to contact families three times. Retention between each wave was approximately 80%; comparable with other high-risk samples (e.g., Betancourt et al., 2010; Browning, Burrington, Leventhal, & Brooks-Gunn, 2008; Kronenberg et al., 2010). From Wave 1 to 2, 82% ($n = 572$) of the original sample of 695 mother-child dyads returned, 67% ($n = 466$) at Wave 3, and 61% ($n = 422$) at Wave 4. The most common reasons for attrition included no response after three attempted calls and moving with no forwarding details. There were no significant differences in any of the study variables of interest (insecurity about community, sectarian antisocial behavior, conduct problems, or emotion problems) between those children that participated in Wave 1 and Wave 2. However, children with more experience with sectarian antisocial behavior (SAB) at Wave 1 were less likely to return at Wave 3 ($t(692) = 2.03$, $p < .05$; $M = 3.67$, $SD = 6.78$ attrition; $M = 2.73$, $SD = 5.18$ retention) and Wave 4 ($t(692) = 2.71$, $p < .01$; $M = 3.78$, $SD = 7.10$ attrition; $M = 2.57$, $SD = 4.66$ retention). On the other hand, children with higher emotion problems at Wave 1 were more likely to be retained in Wave 4 ($t(692) = -2.70$, $p < .01$; $M = 2.11$, $SD = 2.01$ attrition; $M = 2.54$, $SD = 2.06$ retention).

Using the same sampling procedures as Wave 1, a supplemental set of families was recruited for a total sample of 770 mother/child dyads at Wave 3. The reasons for including a supplemental sample at this time point were to achieve similar relative distributions of families across neighborhoods at the outset of the study, anticipating attrition in the higher risk neighborhoods, and to ensure adequate sample size for subsequent years of the longitudinal study. As anticipated, given the oversampling of families from higher risk neighborhoods, supplemental families scored higher on SAB, emotional insecurity about community (SIC), and conduct and emotion problems compared to the original sample retained at Wave 3 (Table 2). The inclusion of this supplemental sample, that was slightly younger than the original sample at Wave 3, accounts for the gap of only .4 years between Waves 2 and 3. From Wave 3 to Wave 4, the only difference between families who returned ($n = 631$; 82%) and those who did not was mother report of child conduct problems ($t(768) = 5.55$, $p < .001$; $M = 3.44$, $SD = 2.74$ attrition; $M = 2.34$, $SD = 2.04$ retained).

Procedures: Neighborhood Selection and Data Collection

Most people in Belfast live segregated lives (Shirlow & Murtagh, 2006; Hughes et al., 2007); the study neighborhoods reflected this separation between Catholics and Protestants. The majority of study participants lived in homogenous wards (over 90% Catholic or Protestant; NISRA, 2011) that were interfaced, that is, shared a border with neighborhoods predominantly populated by the ‘other’ group. Neighborhoods were purposefully selected to vary in levels of sectarian and nonsectarian violence and to be relatively homogenous in terms of socio-economic status. The goal was to include a range of experiences with violence in the study sample; and at the same time, control for possible differences due to socio-economic status. All of the study areas were among the 25% most-socially deprived across Northern Ireland’s 582 electoral wards (Multiple Deprivation Rank; NISRA, 2011).

Through random, stratified sampling, approximately 35-40 families with a child between the ages of 10 and 17 years old living in the home were recruited from each neighborhood. With the goal of retaining a child in the target age range for the length of the longitudinal study, the youngest child was invited to participate in families with two or more children within the indicated age range. The same recruitment procedures were used for the supplemental sample at Wave 3. Face-to-face surveys were conducted with mothers and children in the home by professional interviewers from an established market research firm. Mothers’ surveys lasted 1 hour, and the child survey lasted from 30 minutes to 1 hour, depending on the Wave. Before participating, mothers and children provided consent and assent, respectively; families received £20 at Waves 1 and 2 and £40 at Waves 3 and 4 for their participation. Research protocol and measures were approved by the Institutional Review Boards at all participating universities.

Measures

Sectarian antisocial behavior (SAB)—Child awareness of sectarian antisocial behaviors in their communities was measured with a 12-item scale that was developed specifically for this context through focus groups with mothers living in Belfast (Taylor et al., 2011) and initial pilot study in Derry/Londonderry (Goeke-Morey et al., 2009) to establish the psychometric properties. Original internal consistencies from the pilot data was .94 (SAB). Children reported on items including stones or objects thrown over walls, name calling by people from the other community, and deaths or serious injury caused by the other community (see Cummings et al., 2010, for the complete scale). Youth reported on how frequently in the last three months a series of items occurred. Responses ranged on a 5-point scale from 0 (*not in the last 3 months*), 1 (*once in the last 3 months*), 2 (*every month*), 3 (*every week*), to 4 (*every day*). Internal consistency of the SAB was good across all 4 waves (Cronbach’s α were .90, .95, .96, and .98).

Emotional insecurity about community (SIC)—The SIC scale was created to be a culturally-relevant assessment of a child’s sense of safety and threat in the community. The psychometric properties and predictive power of mother report on this scale were established through a two-wave pilot study (Goeke-Morey et al., 2009), and have been further supported by factor analyses in cross-sectional and longitudinal studies (Cummings et al., 2010; 2011). Consistent with the dimensions of emotional security theory, the items

represent behavioral, affective, and cognitive aspects of a child's security in the broader community. In the current analyses, mothers reported on four items, for example, my child feels threatened by people approaching from the other community and sometimes my child feels that something very bad is going to happen in our community. Mothers responded to statements using a 5-point Likert-type scale ranging from 1 (*not at all like my child*) to 5 (*a whole lot like my child*). With a possible range from 4 to 20, higher SIC scores indicated greater insecurity about community. Cronbach's α for this scale across the four waves was .82, .81, .85, and .87.

Conduct problems—Externalizing problems were measured using child and mother report on the Conduct Problems subscale of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997). In the United Kingdom, the psychometric properties of the SDQ are well-established and it is commonly used in community samples to predict adjustment problems (Goodman & Scott, 1999). The development of this scale reflects the goal of maximizing clinical significance and criterion validity, rather than prioritizing optimal psychometric properties. Reflecting these priorities in scale development, although relatively low internal consistencies are found for subscales (Palmieri & Smith, 2007), SDQ subscales are more strongly correlated with child clinical symptoms compared to the CBCL (Goodman & Scott, 1999). Children and mothers reported on how true the following statements were for them on a 3-point scale from 0 (*not true*), 1 (*somewhat true*), to 2 (*certainly true*). The conduct problems subscale included 5 items: I get very angry and often lose my temper; I usually do as I am told (Reverse); I fight a lot; I can make other people do what I want; I am often accused of lying or cheating; I am often accused of lying or cheating; and I take things that are not mine from home, school or elsewhere. Internal consistency for both reporters on this subscale was adequate (.71 Wave 1; .67 Wave 4).

Emotion problems—Internalizing problems were measured using child and mother report on the Emotion Problems subscale of the SDQ. This set of questions had the same response scale as the Conduct Problems, and included 5 items: I get a lot of headaches, stomach-aches or sickness; I worry a lot; I am often unhappy, down-hearted or tearful; I am nervous in new situations. I easily lose confidence; and I have many fears, I am easily scared. Cronbach's α across child and mother report on this subscale was adequate (.77 Wave 1; .78 Wave 4).

Results

Data Analytic Strategy

To study intra-individual change (Singer & Willet, 2003) latent growth curve analyses were conducted using structural equation modeling (SEM) in Amos 18.0 (Arbuckle, 2009). In SEM, full maximum likelihood estimation is a preferred method for dealing with data missing at random (Enders & Bandalos, 2001). In this approach, the mean and variance of missing data are estimated using the available information from the covariance matrix from other observed variables (Arbuckle, 1996), and the estimates are less biased than methods which ignore incomplete cases (Enders, 2011). Overall model fit was assessed with the Tucker Lewis fit index (TLI), comparative fit index (CFI), and root mean square residual

(RMSEA) (Kline, 2011). Acceptable model fit indices are indicated by a TLI and CFI .90 and a RMSEA .08 (Hu & Bentler, 1999).

Descriptive Statistics

The means, standard deviations, and bivariate correlations among all study variables are presented in Table 1. Mother report of child insecurity about community was related across all waves, and is significantly correlated with child experience of sectarian antisocial behavior within wave. Child experience with sectarian antisocial behavior was significantly related across the first three waves of the study, and SAB at Wave 3 correlated with Wave 4. For each set of adjustment outcomes, mother and child reports of conduct and emotion problems were related within and between waves. Child age at Wave 1 was not correlated with any of the study variables except child report of conduct problems at Wave 4 ($r = .11, p < .05$). A series of t-tests revealed that, compared to girls, boys reported significantly more experience with sectarian antisocial behavior at Wave 3 ($t(708) = 2.07, p < .05$; boys: $M = 5.91, SD = 9.57$; girls: $M = 4.50, SD = 8.55$) and Wave 4 ($t(562) = 6.56, p < .001$; boys: $M = 3.97, SD = 8.00$; girls: $M = 1.93, SD = 5.46$), significantly more conduct problems at Wave 1 ($t(690) = 3.38, p < .01$; boys: $M = 2.83, SD = 1.96$; girls: $M = 2.32, SD = 2.00$) and Wave 4 ($t(626) = 3.01, p < .01$; boys: $M = 2.29, SD = 1.73$; girls: $M = 1.89, SD = 1.64$), and significantly fewer emotion problems at Wave 4 ($t(612) = 3.14, p < .01$; boys: $M = 1.69, SD = 1.79$; girls: $M = 2.18, SD = 2.09$).

Determining Trajectories of Insecurity about Community

In the proposed model, time is measured by wave, or the annual surveys collected one year apart. To account for the link between SAB and emotional insecurity about community, SAB was added as a concurrent predictor of insecurity about community and all waves were allowed to correlate (Singer & Willett, 2003). By adding this time-varying covariate, the final model parameters can be interpreted as the within-person effect of SAB on insecurity about community. That is, the estimates of the growth parameters of SIC are jointly influenced by the underlying growth process and the influence of the covariate SAB. We can interpret the trajectory of SIC as the adjusted measure of the within-person change net the effect of experience with sectarian antisocial behavior (Bollen & Curran, 2004).

A series of models was tested to determine the most appropriate shape of within-person growth of insecurity about community (Singer & Willett, 2003). Including SAB as a TVC, the paths between sectarian antisocial behavior and insecurity about community were unconstrained to vary across waves. That is, the average effect of SAB on insecurity about community was allowed to vary across time (Bollen & Curran, 2004). The linear growth model was significantly better than the no growth model ($\text{diff}\chi^2(3) = 70.26, p < .001$), and the quadratic model was significantly better than the linear growth model ($\text{diff}\chi^2(4) = 51.57, p < .001$). As a comparison to the shape of SIC without the TVC, the quadratic also fit significantly better than the linear ($\text{diff}\chi^2(3) = 61.26, p < .001$) which was significantly better than the intercept-only models ($\text{diff}\chi^2(4) = 31.48, p < .001$). Thus, the unconstrained quadratic growth model for SIC with SAB as a TVC was used in all subsequent tests.

The intercept, linear slope, and quadratic slope were all estimated as random effects, that is, each participant in the study had an individual estimate of these three parameters. The variance of the random effects indicates individual differences for intercept, linear slope, and quadratic slope parameters. In this model, the intercept parameter can be interpreted as the average score of SIC for all children at Wave 1 ($B = 5.56$, $SE = .13$, $p < .001$). The linear slope parameter represents the average instantaneous growth of SIC at Wave 1 ($B = -.57$, $SE = .14$, $p < .001$), while the quadratic slope term is the average rate of curvature of the SIC trajectory over the four waves ($B = .10$, $SE = .042$, $p < .05$). On average, insecurity in the community decreased for the study participants and this decrease is slower over waves. Moreover, those with higher levels of initial insecurity had less steep linear slopes ($r = -.90$, $p < .001$) and greater curvature ($r = .76$, $p < .001$); steeper linear slopes were related to less curvature on average ($r = -.91$, $p > .001$).

Child Adjustment and Developmental Trajectories of SIC

Latent variables for each type of adjustment outcome were created using the child and mother report of conduct and emotion problems, respectively. This approach reduces measurement error and inflation of relations which could result from mono-reporter bias (i.e., only mothers or children as reporters). For the conduct problems subscale, the paths of mother's report was fixed to one (Wave 1: $\beta = .65$; Wave 4: $\beta = .63$) and the child's path was estimated (Wave 1: $\beta = .71$, $p < .001$; Wave 4: $\beta = .63$, $p < .001$). For the emotion problems subscale, the paths of mother's report was fixed to one (Wave 1: $\beta = .78$; Wave 4: $\beta = .79$) and the child's path was estimated (Wave 1: $\beta = .71$, $p < .001$; Wave 4: $\beta = .65$, $p < .001$). A non-positive definite matrix was corrected by constraining Wave 1 and 4 error variances for SIC. Error variances of the manifest indicators for child report of adjustment were correlated between Wave 1 and Wave 4; in addition, error variances for child report of adjustment and SAB were correlated within Wave 1 and within Wave 4.

The study was designed to assess within-person changes over the four waves of data collection, with ages varying within each wave of data collection. To test the primary hypothesis that within-person change of insecurity about community (SIC) will relate to child adjustment problems, specifically conduct and emotion problems, a number of theoretically-relevant control variables were added to the quadratic growth model. To control for rank-order change in adjustment, an auto-regressive path from Wave 1 to Wave 4 conduct and emotion problems was added to each model. Child gender was added as a time-invariant covariate for earlier adjustment, trajectories of insecurity about community, experience with sectarian antisocial behavior across all four waves, and adjustment at Wave 4. Age was added as a between-person control for later adjustment, and correlated with experience with sectarian antisocial behavior across all four waves. These between-person, time-invariant covariates must be interpreted in light of the effect of the TVC, SAB in this case, on the latent growth factors (Bollen & Curran, 2004). Figures 1 and 2 depict the final models tested to explore the relations between changes of insecurity about community and child adjustment. The findings were consistent across models: within-person change in insecurity about community predicted conduct and emotion problems at Wave 4.

Conduct problems—The quadratic change model for insecurity about community predicted conduct problems at Wave 4 ($\chi^2(51) = 173.42, p < .05, N = 999$; TLI = .86; CFI = .93; RMSEA = .049 (CI: .041, .057); Table 3). As expected, more conduct problems at Wave 1 ($\beta = .43, p < .001$) and more concurrent experience with sectarian antisocial behavior ($\beta = .47, p < .001$) predicted more conduct problems at Wave 4. Although boys reported more conduct problems at Wave 1, in the complete model test which controlled for the other variables, there were no significant differences between boys and girls in reported conduct problems at Wave 4. Conduct problems were not predicted by age in this model. With regard to the growth parameters of SIC, controlling for the impact of SAB, the initial levels of insecurity ($\beta = .54, p < .05$), the linear change in insecurity ($\beta = .84, p < .01$), and the quadratic change ($\beta = .32, p < .05$) significantly predicted conduct problems at Wave 4, even though the average insecurity decreased linearly over time ($B = -.57, SE = .14, p < .001$).

Emotion problems—Emotion problems at Wave 4 were also predicted by the quadratic change model for insecurity about community ($\chi^2(51) = 286.37, p < .05, N = 999$; TFI = .75; CFI = .88; RMSEA = .068 (90% CI: .060, .076); Table 4). Consistent with previous research, earlier emotion problems predicted later adjustment ($\beta = .34, p < .001$), girls (dummy coded 1) reported more emotion problems than boys (dummy coded 0; $\beta = .10, p < .05$), and experience with sectarian antisocial behavior predicted Wave 4 emotion problems ($\beta = .36, p < .001$). Age did not predict later adjustment problems in this model. The intercept, linear slope, and quadratic slope of insecurity about community all predicted more emotional problems for children, after controlling for the effect of sectarian antisocial behavior on the growth parameters and the impact of earlier adjustment, gender, and age on emotion problems. Participants with higher initial insecurity about community at Wave 1 had more emotion problems at Wave 4 ($\beta = .69, p < .01$). Although on average insecurity about community decreased with time ($B = -.57, SE = .14, p < .001$), a higher initial rate of change was positively related to later emotion problems ($\beta = .87, p < .001$). The quadratic curvature parameter also predicted later adjustment; children who decelerated less rapidly over time reported more emotion problems at Wave 4 ($\beta = .34, p < .05$).

In summary, accounting for variation in SAB over time, and controlling for age and gender and T1 child adjustment, the findings suggest child developmental trajectories in insecurity about community have implications for child adjustment (see Figures 1 and 2). Specifically, youth in Belfast who had higher initial levels of and less improvement in insecurity over time, had greater conduct and emotion problems at Wave 4.

Discussion

Building on evidence that emotional insecurity about community contributes to inter-individual differences in relations between sectarian community violence and child adjustment in Northern Ireland, intra-individual trajectories of emotional insecurity were identified as related to children's risk for both conduct and emotion problems, taking into account earlier adjustment problems, age, and gender, and the time-varying nature of sectarian violence over the four waves. Extending tests of emotional insecurity as a static mediator explaining between-person differences, within-person change in emotional

insecurity about community was demonstrated as related to risk for child maladjustment. Conduct and emotion problems were predicted by greater insecurity at the start of the study and less recovery of security over four years. This report thus further affirms support for emotional insecurity about community as a significant process for understanding relations between political violence and children's adjustment.

This study advances understanding of factors that relate to children's maladjustment in a context of political violence. Controlling for nonsectarian violence, Cummings et al. (in press) showed that sectarian violence predicted youth's adjustment problems over time, and that this link was stronger in high crime neighborhoods. The present study extends those findings; controlling for variation in sectarian community violence, individual trajectories of insecurity about community predicted child conduct and emotion problems. These results show the developmental significance of trajectories of emotional insecurity, demonstrating that youth who continue on a path of insecurity over time are at heightened risk for later developmental problems. These findings call attention to the need for assessment over time to fully understand the dynamic development of risk processes, beyond a focus on insecurity at a single point in time. The relevance of this construct to war-affected children has been implicated in multiple contexts of political violence (Bar-Tal & Jacobson, 1998; Batniji et al., 2009; Belsky, 2008; Jordans et al., 2010; McAloney, McCrystal, Percy, & McCartan, 2009; Quota et al., 2008). This work builds on findings from other longitudinal studies on children and political violence examining patterns of distress over time (e.g. Dyregrov et al., 2002; Punamaki et al. (2001).

Complementing studies showing insecurity about community is a mediator (Cummings et al., 2011), within-child changes in security were related to children's adjustment over time. Children's emotional insecurity about community may be especially threatened by sectarian community violence because it is closely associated with personal and ethnic identities. In this regard, sectarian community violence and family conflict may bear some similarities to each other. The threat associated with conflict and violence in both of these contexts has meaning for the individual's own relationships with others and poses dangers to others who are socially and emotionally important to the child. Because sectarian hostility associated with political violence is directed at people like oneself in the community, it may elevate children's worry, fear and safety concerns in relation to living in these neighborhoods and with regard to the well-being of others who are socially and emotionally significant for children. Feeling insecure may be an adaptive response to a social ecology made threatening by political violence, in the short-term (Belsky, 2008). Being in a state of heightened awareness in a dangerous environment may serve a protective role. However, in the long-term, heightened insecurity likely contributes to maladaptive regulatory responses. Such reactions may include heightened negativity and hostility, or elevated expenditures of physical and psychological resources over prolonged periods of time, undermining youth's capacities for adaptive psychological functioning. These findings and their implications for risk processes suggest that trajectories of insecurity indicate an impetus for intervention.

Although longitudinal relations between sectarian community violence and later adjustment problems have been demonstrated (Cummings et al., 2011), this is the first study to incorporate within-person changes in insecurity about community. Whereas sectarian

community violence has previously been shown to have implications for later maladjustment, sectarian community violence is not a constant. In fact, levels of sectarian community violence fluctuated over the four years of this study, but that change was not linear. In this context of change, sectarian community violence was included as a time-varying covariate to control for its effect on insecurity about community. In these models, that effect was taken into account in the estimation of how trajectories of insecurity related to later child adjustment (Curran & Bauer, 2011). That is, we estimated the within-person changes in emotional insecurity about community by taking into consideration the concurrent levels of sectarian community violence each individual experienced within each wave. The final trajectory of SIC can be interpreted as the adjusted measure of the within-person change, after accounting for changing experience with sectarian antisocial behavior (Bollen & Curran, 2004).

It is important to place the study of emotional security in the broader search for understanding of relations between political violence and child adjustment. Multiple additional constructs are finding support (e.g., see reviews in Cummings et al., 2009; Dubow et al., 2009; Sagi-Schwartz, 2008). For example, based on a three-wave longitudinal study investigating family- and individual-level protective factors in a context of ethno-political violence among Palestinian and Israeli youth, Dubow et al. (2012) reported that higher youth self-esteem and positive parenting were protective factors with regard to the development of PTSD symptoms. In a two-wave prospective study in Kabul, Afghanistan, Panter-Brick, Goodman, Tol and Eggerman (2011) found that family violence had a negative impact on child and adolescent adjustment, even taking into account direct effects of trauma associated with political violence, underscoring the significance of the community and family ecological context in the effects of political violence on youth outcomes. Betancourt (2012) has emphasized the need for more ecologically-constructed, longitudinal research on the broad impact of political violence on children to advance understanding of potential mediators and moderators, and risk and protective factors, in relation to children's functioning and adjustment in contexts of political violence.

These findings suggest that youth who follow a path of insecurity over time are at elevated risk for later developmental problems, advancing the notion that the path or shape of trajectory of emotional insecurity may also be pertinent for identifying bases for intervention. Frequent or prolonged activation of the emotional security regulatory system may increase the risk of the development of psychopathology (e.g., depression, conduct problems, PTSD) through a variety of processes, including pessimistic expectations or representations about community relations or the expenditure of psychological and physical resources, thereby reducing capacities to regulate functioning or pursue other important developmental goals.

Developmental change also merits comment. Insecurity about community decreased on average over time, and those changes had important implications for later adjustment. More specifically, children who had higher initial levels of insecurity and less improvement in insecurity had more emotion and conduct problems. However, it remains for future research to identify the substantive bases for declines in developmental trajectories of emotional

insecurity about community. For example, youth may develop more resources for coping with emotional insecurity about community over time.

Certain limitations should be acknowledged. Most children ranged between 10 and 17 years of age, reflecting our interest in studying age groups at risk for becoming participants as well as observers of sectarian conflict. The decision to interview the youngest child for families that had more child in the target age range, may potentially bias the sample toward younger children. However, the benefit of retaining children as much as possible in target age range throughout the longitudinal study was seen as a priority. Although evidence is limited on the relative vulnerability of children to political violence, future research should further examine age as a possible vulnerability or protective factor in contexts associated with historical political violence (Muldoon, 2003; Slone & Shechner, 2009). For example, cohort-sequential designs may potentially discriminate change over times, and age changes, in risk factors for the development of psychopathology (e.g., Boxer et al., 2012; Dubow et al., 2012).

Finally, the overall model fit indices warrant discussion. Although the RMSEA met the standards for adequate model fit and the CFI was at or near acceptable standards, the TLI was low in both final models. The low TLI could be attributed to the close to zero-order correlations of age with many of the variables in the model (Kenny, 2012). There are challenges to applying traditional guidelines for applying model fit from SEM to growth-curve models, particularly with missing data (Wu, West, & Taylor, 2009). Therefore, one suggested direction is to use them to choose the best of a set of competing models (Wu et al., 2009).

The results suggest that ameliorating children's insecurity about sectarian conflict and violence could be an important goal toward improving individual well-being. The findings support efforts by governments and communities to find ways to attempt to reduce children's exposure to sectarian hostilities, suggesting an additional focus on ways to foster children's trust and feelings of safety even when confronted with these events. These findings also offer promising directions for future research on within-person change in emotional insecurity about community for child adjustment in Belfast, with implications for studying similar processes in other parts of the world in which children are exposed to political violence (Darby, 2006).

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Figure 1.

Test of the quadratic latent growth curve model of child insecurity about community predicting conduct problems, controlling for early adjustment, age and gender. SAB = sectarian antisocial behavior; SIC = insecurity about community; SDQ = strengths and difficulties questionnaire. Standardized parameter estimates are presented, with dotted lines representing non-significant paths, for structural relations of theoretical interest. Coefficients for correlations among exogenous variables and error variances were omitted from the model for readability. * $p < .05$, ** $p < .01$, *** $p < .001$.

Model fit for LGC: $\chi^2(51) = 173.42$, $p < .05$, $N = 999$; TLI = .86; CFI = .93; RMSEA = .049 (CI: .041, .057)

Figure 2.

Test of the quadratic latent growth curve model of child insecurity in the community predicting emotion problems, controlling for early adjustment, age and gender. SAB = sectarian antisocial behavior; SIC = insecurity about community; SDQ = strengths and difficulties questionnaire. Standardized parameter estimates are presented, with dotted lines representing non-significant paths, for structural relations of theoretical interest. Coefficients for correlations among exogenous variables and error variances were omitted from the model for readability. * $p < .05$, ** $p < .01$, *** $p < .001$.

Model fit for LGC: $\chi^2(51) = 286.37$, $p < .05$, $N = 999$; TFI = .75; CFI = .88; RMSEA = .068 (90% CI: .060, .076)

Table 1
Means, Standard Deviations, and Bivariate Correlations among all Study Variables (N=999)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Child age W1	-																	
2. Child gender ^a	-0.07	-																
3. Sectarian antisocial behavior W1	0.07	-0.05	-															
4. Sectarian antisocial behavior W2	0.02	-0.04	.23***	-														
5. Sectarian antisocial behavior W3	-0.06	-.08*	.22***	.18***														
6. Sectarian antisocial behavior W4	0.01	-.15***	0.08	-0.02	.66***	-												
7. Security about community W1	0	0.02	.25***	0.04	.33***	.22***	-											
8. Security about community W2	-0.01	0.06	.12**	.27***	.37***	.25***	.49***	-										
9. Security about community W3	-0.02	-0.02	.19***	.09	.55***	.35***	.39***	.39***	-									
10. Security about community W4	-0.02	-0.05	0.09	-0.01	.48***	.48***	.41***	.33***	.66***	-								
11. Conduct problems W1 ^b	0.04	-.13**	0.03	-0.07	0.08	0.11*	.17***	.18***	0.09	.12*	-							
12. Conduct problems W4 ^b	.11*	-.12**	0	-.14**	.27***	.33***	.11*	.11*	.25***	.25***	.28***	-						
13. Emotion problems W1 ^b	0	0.07	-.11**	-.14**	0.15**	.18**	.28***	.21***	.23***	.23***	.44***	.26***	-					
14. Emotion problems W4 ^b	0.02	.13**	-0.02	0.03	.20***	.17***	.23***	.22***	.25***	.23***	.21***	.40***	.38***	-				
15. Conduct problems W1 ^c	0.04	-.13**	-0.01	-0.01	-0.14	-0.09	0.02	0.03	-0.04	-0.03	.45***	.23**	.20**	-0.03	-			
16. Conduct problems W4 ^c	-0.01	-.16***	0.07	-0.1	.27***	.27***	.12*	0.06	.22***	.27***	.23***	.43***	.13**	.25***	.19*	-		
17. Emotion problems W1 ^c	0.02	-0.04	0.05	-.14*	.18*	0.04	.39***	.27***	.31***	.32***	.35***	0.14	.51***	.21**	.34***	0.07	-	

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
18. Emotion problems	0.02	0.04	-.10*	0.01	.35***	.30***	.26***	.21***	.30***	.33***	.10*	.32***	.30***	.53***	-.008	.44***	.16*	-
W_4^c																		
<i>M</i>	12.18	-	3.04	2.83	5.18	2.91	5.89	5.89	5.33	5.35	2.57	2.08	2.37	1.95	2.2	2.08	2.45	1.78
<i>SD</i>	1.82	0.5	5.77	6.83	9.08	6.87	3.27	3.13	2.57	2.8	2	1.69	2.05	1.96	1.92	1.74	2.25	2.19

^a Child gender: 0 = *male*, 1 = *female*.

^b Child report.

^c Mother report.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 2
Comparisons of Original Retained and Supplemental Families at Wave 3

	Original		Supplemental		Independent T-test	
	M	SD	M	SD	Diff	CI
Sectarian antisocial behavior W3	4.36	8.60	6.45	9.65	2.08**	.72,3.44
Security about community W3	5.15	2.31	5.61	2.90	0.46*	.08,.83
Conduct problems W3 ^a	1.86	1.54	2.16	1.80	0.30*	.06,.54
Conduct problems W3 ^b	2.26	2.01	3.02	2.48	0.76***	.44,1.08
Emotion problems W3 ^a	1.68	1.66	2.20	2.12	0.52***	.25,.80
Emotion problems W3 ^b	1.84	2.10	2.57	2.23	0.73***	.42,1.04

^a Child report.

^b Mother report.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3

Unstandardized, Standardized, and Significance Levels for Conduct Problems Model in Figure 1 (Standard Errors in Parentheses; N = 999)

Parameter Estimate	Unstandardized	Standardized	<i>p</i>
Measurement model estimates			
SAB_c1 → SIC_m1	0.12 (.02)	0.21	<.001
SAB_c2 → SIC_m2	0.15 (.02)	0.32	<.001
SAB_c3 → SIC_m3	0.12 (.01)	0.43	<.001
SAB_c4 → SIC_m4	0.17 (.01)	0.44	<.001
Conduct Problems W1 → SDQ_m1	1.00	0.65	-
Conduct Problems W1 → SDQ_c1	1.13 (.30)	0.71	<.001
Conduct Problems W4 → SDQ_m4	1.00	0.63	-
Conduct Problems W4 → SDQ_c4	1.05 (.15)	0.68	<.001
Structural model estimate			
SIC Intercept → Conduct Problems W4	0.19 (.10)	0.54	0.043
SIC Linear → Conduct Problems W4	0.37 (.13)	0.84	0.005
SIC Quadratic → Conduct Problems W4	0.55 (.24)	0.32	0.02
Conduct Problems W1 → Conduct Problems W4	0.37 (.09)	0.43	<.001
SAB_c4 → Conduct Problems W4	0.07 (.01)	0.47	<.001
Age → Conduct Problems W4	0.02 (.03)	0.04	0.36
Gender → Conduct Problems W4	-.17 (.13)	-0.08	0.20
Residual for Conduct Problems W4	0.61 (.16)	-	<.001

Note: $\chi^2(51) = 173.42$, $p < .05$, $N = 999$; TLI = .86; CFI = .93; RMSEA = .049 (CI: .041, .057) Child gender: 0 = *male*, 1 = *female*; SAB = sectarian antisocial behavior; SIC = insecurity about community; SDQ = strengths and difficulties questionnaire. Error variance and covariance parameters were omitted for space and can be obtained from the first author.

Table 4

Unstandardized, Standardized, and Significance Levels for Emotion Problems Model in Figure 2 (Standard Errors in Parentheses; N = 999)

Parameter Estimate	Unstandardized	Standardized	p
Measurement model estimates			
SAB_c1 → SIC_m1	0.12 (.02)	0.21	<.001
SAB_c2 → SIC_m2	0.15 (.02)	0.32	<.001
SAB_c3 → SIC_m3	0.12 (.01)	0.43	<.001
SAB_c4 → SIC_m4	0.17 (.01)	0.44	<.001
Emotion Problems W1 → SDQ_m1	1.00	0.78	-
Emotion Problems W1 → SDQ_c1	0.81 (.24)	0.71	<.001
Emotion Problems W4 → SDQ_m4	1.00	0.79	-
Emotion Problems W4 → SDQ_c4	0.74 (.11)	0.65	<.001
Structural model estimate			
SIC Intercept → Emotion Problems W4	0.36 (.14)	0.69	0.007
SIC Linear → Emotion Problems W4	0.60 (.20)	0.87	0.002
SIC Quadratic → Emotion Problems W4	0.90 (.36)	0.34	0.01
Emotion Problems W1 → Emotion Problems W4	0.32 (.08)	0.34	<.001
SAB_c4 → Emotion Problems W4	0.09 (.01)	0.36	<.001
Age → Emotion Problems W4	-.02 (.04)	-.02	0.64
Gender → Emotion Problems W4	0.39 (.18)	0.10	0.03
Residual for Emotion Problems W4	1.89 (.39)	-	<.001

Note: $\chi^2(51) = 286.37, p < .05$, N = 999; TFI = .75; CFI = .88; RMSEA = .068 (90% CI: .060, .076) Child gender: 0 = *male*, 1 = *female*; SAB = sectarian antisocial behavior; SIC = insecurity about community; SDQ = strengths and difficulties questionnaire. Error variance and covariance parameters were omitted for space and can be obtained from the first author.