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This study examines the consequences of living in segregated and mixed neighbourhoods on ingroup bias and offensive action tendencies, taking into consideration the role of intergroup experiences and perceived threat. Using adult data from a cross-sectional survey in Belfast, Northern Ireland, we tested a model that examined the relationship between living in segregated (N = 396) and mixed (N = 562) neighbourhoods and positive contact, exposure to violence, perceived threat and outgroup orientations. Our results show that living in mixed neighbourhoods was associated with lower ingroup bias and reduced offensive action tendencies. These effects were partially mediated by positive contact. However, our analysis also shows that respondents living in mixed neighbourhoods report higher exposure to political violence and higher perceived threat to physical safety. These findings demonstrate the importance of examining both social experience and threat perceptions when testing the relationship between social environment and prejudice.

Although many societies are experiencing increasing diversification and desegregation at the macro-level, this does not always reflect on the micro-level. Often people live in homogenous, segregated environments, which they share only or primarily with members of their own ethnicity, religion or culture. In situations of ethno-political conflict, residential segregation between the parties in conflict is an even more pervasive problem and is believed to contribute uniquely to the intractability of intergroup conflict (e.g. Gallagher 1995; Whyte 1990). Our research examines the consequences of living in segregated versus mixed neighbourhoods on contact experiences, threat perceptions and outgroup orientations in a setting of ethno-political conflict, Northern Ireland. We specifically examine the consequences of the social environment on ingroup bias and negative action tendencies, taking into consideration two mediating factors: social experiences and perceived threat. In so doing, our research expands the theoretical debate on the consequences of living in diverse, desegregated social environments, a question that has long interested social psychologists, social scientists and policy makers alike.

1. Segregation vs. Integration: Positive or Negative Effects for Intergroup Relations?

There has been extensive debate as to whether ethnic, religious or cultural diversification and desegregation has positive or negative implications for intergroup relations. Two competing theoretical predictions have been made, one of which argues that diverse social environments induce threat and thus hold negative implications for intergroup relations, while the other rests upon the assumption that diversity offers opportunities for positive intergroup interaction and thus should reduce intergroup tensions (see also Wagner et al. 2006). The first of these theoretical stances,

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threat or conflict theory (Blalock 1967), primarily seeks to explain variations in majority group members' perceptions of and attitudes towards minority groups. It stipulates that the mere presence of minority group members in the majority's immediate social environment poses a competitive threat to the majority group's position, and that this contextual threat forms the main cause for prejudice and intergroup tensions (Blumer 1958; Bobo 1999; LeVine and Campbell 1972; Sherif 1966). Thus, threat theory proposes a direct linear relationship between the percentage of minority group members and the majority group's negative attitudes towards the minority group. Research evidence on this hypothesis remains, however, somewhat contradictory. Some studies consistently demonstrate increased levels of prejudice and discrimination towards minority groups in metropolitan areas and counties with higher proportions of minority populations (Fossett and Kiecolt 1989; Giles and Buckner 1993; Giles and Evans 1985; Giles and Hertz 1994; Glaser 1994; Quillian 1995, 1996; Taylor 1998; Wilcox and Roof 1978). Other studies however have failed to provide clear support for threat theory (Citrin, Reingold, and Green 1990; Hood and Morris 1997).

Furthermore, a number of problems and conceptual flaws surround threat theory. For one, context is treated as synonymous with threat, defined as actual minority proportion. However, Semyonov et al. (2004) found that prejudice scores towards foreigners in Germany covaried with the perceived proportion of foreigners, yet this perceived proportion did not correlate with the actual proportion of foreigners in Germany. Moreover, the theory primarily seeks to explain a dominant majority's prejudice against a comparative minority, yet includes no conjecture on less clearly defined majority-minority contexts (Oliver and Wong 2003) or on contexts where groups are engaged in ethno-political conflict.

In sharp contrast to threat theory, it has been argued that rather than posing threat, diversification and desegregation afford the opportunity for engaging in contact with other groups which, if taken up, can have positive consequences for intergroup relations. Accordingly, the relationship between the proportion of outgroup members and prejudice should be negative, and not positive as suggested by threat theory. Much of this argument is rooted in the "contact hypothesis" (Allport 1954; Hewstone and Brown 1986), which stipulates that frequent interaction with outgroup members can, under positive conditions, reduce prejudice and improve intergroup relations, including more positive and less negative action tendencies (Mackie, Devos, and Smith 2000). Thus, contact theory emphasizes the importance of social experiences in predicting prejudiced attitudes. There now exists extensive empirical support demonstrating that contact can reduce discriminatory attitudes and negative outgroup perceptions (for reviews see Brown and Hewstone 2005; Hewstone and Brown 1986), even if not all of the optimal conditions proposed by Allport (1954) are met (Pettigrew and Tropp 2006). Moreover, there is extensive research evidence showing that the opportunity for contact in people's social environment is a strong predictor of actual contact which in turn positively affects outgroup perception (Wagner, Hewstone, and Machleit 1989; Wagner and Machleit 1986).

Contact theory has also been explicitly tested in the context of residential segregation and diverse ethnic and racial environments, generally providing support for the assertion that living in more diverse and integrated environments is associated with a higher degree of intergroup contact, which, in turn, fosters more positive outgroup perceptions (Bledsoe et al. 1995; Stein, Post, and Rinden 2000; Wagner et al. 2003; Wagner et al. 2006).

Importantly, intergroup contact may not only shape outgroup perceptions directly, but can also influence additional, mediating processes involved in prejudice and intergroup hostility (for detailed reviews see Brown and Hewstone 2005; Pettigrew 1998). One key mediator that is of particular relevance in the context of our research is that of perceived threat, conceptualized as the belief that the outgroup is in some way detrimental to the ingroup. Perceived threats often concern real issues, such as competition over resources, territory or status (Blalock 1967; Brewer and Campbell 1976; Esses, Jackson, and Armstrong 1998; Sherif 1966; Stephan and Stephan 2000) or threat to physical safety (Cottrell and Neuberg 2005), but may also be more intangible and symbolic in nature, such as identity based threats (Branscombe et al. 1999; Tajfel and Turner 1979), threats to group values (Biernat, Vescio, and Theno 1996; Sears 1988) or threat to trust or morality (Cottrell

and Neuberg 2005). Threat perceptions play a central role in intergroup relations (Riek, Mania, and Gaertner 2006), and have been identified as proximal predictors of prejudice and offensive action tendencies (Cottrell and Neuberg 2005; Mackie et al. 2000; Stephan and Stephan 2000). A number of studies have shown that intergroup contact is associated with threat perceptions, and that reduced threat mediates the relationship between contact and prejudice (Stephan, Diaz-Loving, and Duran 2000; Tausch, Hewstone, et. al. 2007; Tausch, Tam, et al. 2007).

Much of past research, whether rooted in threat theory or intergroup contact theory, has been carried out in expansive geographical units, such as large metropolitan areas, counties, provinces or states. Yet it has been argued that in many instances it seems more relevant to focus on smaller micro-contexts such as neighbourhoods (Charles 2003; Oliver and Mendelberg 2000; Oliver and Wong 2003; Quillian 1995; Shinn and Toohey 2003), as it is such smaller community contexts in which individuals negotiate their everyday relations and which should thus be most predictive of both social experiences and intergroup perceptions. To date much of the research carried out to examine the effects of residential segregation has focused on individual-level consequences, demonstrating that living in segregated neighbourhoods can have adverse consequences for social and economic well-being (Jargowsky 1996; Massey and Denton 1993; Massey, Condran, and Denton 1987), educational achievement (Charles, Dinwiddie, and Massey 2004) and safety from violent crime (Massey 1995). Considerably less research has examined the consequences of residential segregation on group-level phenomena such as perceived group-level threats and intergroup attitudes. Among the few studies that have specifically focused on smaller contextual units and neighbourhoods, research evidence tends to support a positive relationship between living in more diverse, desegregated environments and more favourable outgroup attitudes. For example, Oliver and Wong (2003) examined intergroup hostility in three multi-ethnic cities in the United States and found that blacks, Latinos and whites reported less negative stereotypes as their neighbourhoods became more diverse. Using a German probability sample, Wagner et al. (2006) showed that a higher percentage of foreigners in a population district was predictive of reduced levels of prejudice, as well as more frequent and positive contact with ethnic minorities both in people's immediate neighbourhood and in their workplace, which in turn also had a positive effect on perceptions of foreigners.

Research comparing the effects of segregation versus integration remains, however, sparse, and to our knowledge no prior research has examined the effects of living in segregated versus mixed neighbourhoods on both contact and threat effects. Moreover, most previous research has focused on ethnic diversity and clearly defined majority-minority relations, largely disregarding other contexts, such as situations of intractable intergroup conflict. Yet spatial division and segregation between the involved parties are prominent features of many ethno-political conflicts, and a phenomenon which in itself can serve to further entrench existing ethno-and socio-political group boundaries and perpetuate intergroup tensions. Thus segregation may be an integral predictor of outgroup perceptions in these contexts. Our research is set in one such context, Northern Ireland.

2. Segregation, Intergroup Contact and Violence in Northern Ireland

Broadly speaking, the Northern Irish conflict is between those who wish to see Northern Ireland united with the Republic of Ireland (predominantly Catholics), and those who want Northern Ireland to remain part of the UK (predominantly Protestants; Moxon-Browne, 1991). The conflict itself dates back hundreds of years (McLernon et al. 2003), but escalated in the 1960s into the latest and most sustained period of violence that resulted in the deployment of British troops in the country and the imposition of direct rule from London (Hewstone et al. 2005). Political violence over the years has resulted in over 3,600 deaths, more than 35,000 injuries, 16,000 people charged with terrorist offences, 34,000 shootings and 14,000 bombings (e.g. Fay, Morrissey, and Smyth 1999). Despite continuing efforts at peace-building, paramilitary violence continues (Jarman 2004).

Northern Irish society also remains deeply segregated at many levels, a factor which is believed to contribute to many aspects of the conflict (Whyte 1990). The types of segregation identified include personal and marital segregation (e.g. Gallagher and Dunn 1991), educational segregation (McClenahan et al. 1996) and segregation in

sport, work or leisure (Niens, Cairns, and Hewstone 2003). There is also a substantial degree of residential segregation, with approximately 35 to 40 percent of the Northern Irish population living in completely segregated neighbourhoods (Poole and Doherty 1996) and about 50 percent living in mixed neighbourhoods (see also Boyle and Hadden 1994). Generally, there is a strong covariance between levels of segregation and social class, with relatively disadvantaged working-class areas significantly more likely to be segregated than affluent middle class areas (Shirlow 2001). This covariation between segregation and social class has also been found in other contexts, such as racial residential segregation in the United States (Massey and Denton 1993). It is worth noting that residential segregation increased as a direct result of large population movements in response to intimidation, as families moved from religiously mixed areas into safe havens dominated by their co-religionists (Boal and Murray 1977). Thus the move to more segregated social environments has been looked upon, among other things, as a way of providing safety from attack, intimidation and violence.

Moreover, Hayes and McAllister (2002) argue that exposure to violence contributes fundamentally to the intractability of the conflict and continuation of intergroup tensions. They suggest that people have been exposed to violence not only directly, e.g. through personal injury or intimidation, but also indirectly, i.e. by having a family member or close friend exposed to violence. Research has shown that such direct and indirect experiences of violence are associated with less outgroup trust and less forgiveness (Hewstone et al. 2006) and with greater support for paramilitary groups (Hayes and McAllister 2002). These findings suggest that exposure to violence may also predict outgroup perceptions and action tendencies.

An environment where segregation is as pervasive as it is in Northern Ireland is particularly conducive to examining the intergroup consequences of living environment. Prior research in Northern Ireland has focused extensively on the role of intergroup contact in fostering positive intergroup relations, showing that direct intergroup contact, especially in the form of cross-group friendship but also so-called extended contact (the knowledge that an ingroup member has an outgroup friend) can reduce ingroup bias (Hewstone et al. 2005; Paolini et al. 2004; Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007) and increase intergroup trust (Hewstone et al. 2006; Tausch, Tam, et al. 2007). In addition, recent research has shown that intergroup contact can affect threat perceptions in Northern Ireland, reducing both individual-level and group-level threats (Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007).

Threat plays a central role in Northern Ireland's social and political arena. As evidenced by recent research (Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007), threats in Northern Ireland can involve both realistic issues (such as political power) and symbolic ones (such as values). However, realistic and symbolic threats in Northern Ireland can also go beyond those described in Integrated Threat Theory (ITT; Stephan and Stephan 2000). For example, threat or fear of direct attack, intimidation or exposure to some form of violence stemming from the outgroup may be experienced as an even more "real" form of threat, i.e. a direct threat to physical safety (Cottrell and Neuberg 2005). Also, in Northern Ireland, identity expression is of prime importance and plays a unique role in everyday life, as illustrated by the strong adherence to divisive historical traditions, e.g. parades and use of identity-related symbols, such as flags or display of religious symbols (Devine-Wright 2001). Exposure to such symbols or forms of symbolic expression of identity may become threat-inducing in itself. It is these latter two types of threat, threat to physical safety and threat surrounding symbols and symbolic expression of identity that we intend to focus on in this paper.

3. The Present Research

In this research we set out to test the prediction that living in mixed neighbourhoods has direct implications for intergroup relations. Our approach is primarily informed by contact theory, although we do aim to incorporate some of the predictions made by threat theory. However, we believe that threat theory is missing a number of conceptual and theoretical links in its hypothesized relationship between context and prejudice, some of which we hope to rectify in this present analysis. First, we believe, context cannot be equated with threat. Rather context and threat should be seen as independent predictors of prejudice and outgroup orientations. Second, context should be seen as an indirect predictor of perceived threat, mediated by the nature of intergroup experiences. It has been shown that positive

social experience, i.e. positive intergroup contact, is an important mediator in the relationship between context and prejudice (e.g. Wagner et al. 2006), and indeed that positive contact can reduce prejudice by reducing perceived threat (e.g. Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007). Consequently, both social experience *and* threat should be factored into the context-prejudice link, a set of relationships which, to our knowledge, has not been previously tested.

Thus in the present research we examine the effects of living in segregated versus mixed neighbourhoods on ingroup bias and negative action tendencies, including both social experience and threat as mediating variables. Our analysis incorporates both positive and negative social experiences as direct predictors of threat, and indirect predictors of ingroup bias and negative action tendencies. Previous research has shown that both positive and negative intergroup experiences can exert effects on threat perceptions and prejudice, respectively reducing or increasing threat and prejudice (Stephan and Renfro 2002). Informed by our immediate research context as well as work by Hayes and McAllister (2002) on the consequences of political violence, we include exposure to violence as a centrally important negative social experience. However, we make diverging predictions regarding the effects of living in mixed areas in Northern Ireland on positive contact and exposure to violence. It can be expected that living in mixed neighbourhoods, by the mere composition of one's social environment, affords more opportunities for intergroup encounters and social experiences involving outgroup members, which may not always be positive. Consequently, while we expect that respondents living in mixed neighbourhoods will report more positive contact experiences (Wagner et al. 1989), we equally anticipate that living in a mixed neighbourhood will hold somewhat greater potential for conflict exposure, which may foster threat perceptions. We include two types of threat, those concerning physical and personal safety, and those relating to symbolic expression of identity. Note that the former type of threat is more readily conceivable as an individual or personal level threat, whereas the latter is much more of a personal-level threat.

We further expect that exposure to violence will be predictive of threat perceptions, and that both exposure to violence and threat will be associated with more negative action tendencies toward the outgroup. Threat perceptions, and particularly group-level threats, should also be predictive of ingroup bias. Positive contact should serve to reduce threat perceptions, and hence also reduce ingroup bias, as well as negative action tendencies (Stephan and Renfro 2002; Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007). Overall we anticipate that living in mixed neighbourhoods in Northern Ireland will be associated with both positive and negative social experiences and that these will in turn exert respectively positive and negative effects on intergroup threat and outgroup perception. However, as exposure to violence is a social experience that is much less likely to occur than positive intergroup contact we anticipate that the effects of mixed neighbourhoods will be overall more positive than negative.

4. Method

The data for this study were collected as part of a cross-sectional study on cross-community perceptions in mixed and segregated neighbourhoods. The sample consisted of adults recruited in Belfast from two segregated communities (one predominantly Catholic and one predominantly Protestant) and two mixed communities. Note that we subsequently refer to these areas as neighbourhoods A, B, C and D, respectively, to preserve anonymity of these relatively small communities. This ensures that we do not harm already sensitive community relations by reporting levels of prejudice within them. Three of the four areas correspond to electoral wards defined by the same names and were chosen on the basis of the 2001 Northern Ireland Census (Northern Ireland Statistics and Research Branch 2002). The fourth area consisted of, and was defined by, the boundaries of a housing estate known by the same name. Areas were chosen to be equivalent, as far as possible, in terms of social class, unemployment, and an index of sectarian violence. Neighbourhood A is a predominantly Protestant estate on the outskirts of East Belfast with a population of approximately 10,000. Neighbourhood B is a predominantly Catholic estate in West Belfast with a population of approximately 6,000. One of the mixed areas, neighbourhood C, is located in North Belfast and has a population of about 4,800. According to recent census data, Protestants comprise 76 percent of residents within this area, while the remaining 24 percent are Catholics.

Neighbourhood D, the most mixed of the areas studied, is situated in South Belfast. It has an estimated population of 5,100, 52 percent Protestant and 48 percent Catholic. The two segregated areas were selected because they are located within wider communities with a majority of ingroup members and are thus both to a large extent isolated from their respective outgroup communities. Importantly, people living in these segregated communities tend to carry out many of their daily activities (e.g. shopping, church attendance) in these areas (or at least in adjacent, equally segregated ingroup areas), have the majority of their social networks (e.g. family, friends, etc.) in the areas and send their children to local schools. Hence, those living in neighbourhood A and neighbourhood B are likely to have limited daily contact and interaction with outgroup members. Conversely, the religiously mixed composition of neighbourhoods C and D informed the decision to include these areas in our research. The data were collected between March and July 2006 by a professional survey organization. Respondents were drawn at random from the four areas. The selected respondents were contacted before the interviews, first by letter and then by phone. Respondents were interviewed in their own home by trained social survey interviewers.

5. Participants

The interview was successfully completed by 984 individuals. We excluded 24 respondents from this sample because they had lived less than 10 years in Northern Ireland. Two additional respondents were excluded as they were the only respondents from their group living in an area predominantly populated by the other group. This resulted in a reduced sample size of $N = 958$. The final sample used in all of our analyses comprised 396 individuals living in segregated areas (170 Catholics from neighbourhood A; 71 males, 99 females, mean age $M = 53$ years, $SD = 18.13$, 226 Protestants from neighbourhood B, 85 males, 141 females, mean age $M = 53$ years, $SD = 16.62$) and 562 individuals living in mixed areas (252 Catholics; 81 males, 171 females, mean age $M = 49$ years, $SD = 16.22$, 310 Protestants, 132 males, 178 females, mean age $M = 54$ years, $SD = 16.48$). It should be noted that, although we tried to minimize differences between the areas in terms of social class, segregated and mixed areas differed in terms of education and income, which were higher in the mixed areas. Some small differences in terms of age and gender distribution between our samples were also evidenced. Since these variables could potentially affect some of our dependent variables, we controlled statistically for them in all our analyses.

6. Measures

Positive contact. Three items (adapted from Stephan et al. 2002) were used to measure positive intergroup contact ("When you had contact with Catholics/Protestants in the past, how often were you made to feel welcome?", "When you had contact with Catholics/Protestants in the past, how often were you supported?", and "When you had contact with Catholics/Protestants in the past, how often were you helped out?"). Responses were made on a five-point Likert-type rating scale (1 = *never*, 5 = *very often*), with higher scores denoting more positive contact. The three items loaded onto a single factor following exploratory factor analysis (EFA) with maximum likelihood (ML) estimation (eigenvalues ≥ 1), explaining 77.6 percent of the variance, and formed a reliable scale (Cronbach's $\alpha = .86$).

Exposure to violence. Following the distinction made by Hayes and McAllister (2002), we assessed both direct and indirect exposure to violence. For direct exposure we asked: "Have you ever been injured due to a sectarian incident?", "Have you ever had to move house because of intimidation?", and "Has your home ever been damaged by a bomb?" For indirect exposure we asked the same set of questions, but phrased items to refer to a family member or close friend. Respondents were asked to answer "no" or "yes" to the questions. EFA, using unweighted least squares estimation (ULS), revealed a one-factor solution (eigenvalues ≥ 1) to best describe the six items, explaining 38.5 percent of the variance. The six items were collapsed to reflect a continuous composite measure, yielding acceptable reliability estimates (Cronbach's $\alpha = .68$).

Threats to physical safety. Two items were used to measure the extent to which respondents felt that members of the outgroup posed a direct threat to physical safety ("I worry about being physically attacked by Catholics/Protestants" and "I worry about my personal property being damaged by Catholics/Protestants"). These items were adapted from Cottrell and Neuberg (2005). Responses were made

on five-point Likert scales, ranging from 1 = *strongly disagree* to 5 = *strongly agree*. EFA with ML estimation revealed a single factor solution (eigenvalues ≥ 1), explaining 87.1 percent of the variance. The two items formed a reliable scale (α = .85).

Symbolic threat. We assessed this type of threat by asking respondents to what extent they felt threatened by eight different symbols or symbolic expressions of outgroup identity that are specific to the Northern Ireland context, e.g. the British Union Jack and Irish Tricolour flags or the celebration of British and Irish cultural festivals. Respondents were only presented with symbols representative of the religious outgroup community, e.g. Catholics were asked about the Union Jack, Protestants about the Tricolour flag. Response scales ranged from 1 = *not at all* to 5 = *extremely*. Following EFA with ML estimation, the eight items loaded onto a single factor (eigenvalues ≥ 1), explaining 50 percent of the variance. Reliability for the composite scale was good (α = .85).

Ingroup bias. We measured ingroup bias using a feeling thermometer (from Haddock, Zanna, and Esses 1993). On separate scales, respondents rated how cold or warm they felt toward fellow ingroup members and towards members of the outgroup, ranging from 0 = *extremely unfavourable/cold* to 100 = extremely favourable/warm. To obtain an index of ingroup bias, a discrepancy score was computed by subtracting outgroup ratings from ingroup ratings.

Offensive action tendencies. Two items (adapted from Dijker 1987) were used to measure offensive action tendencies, i.e. "How often have you felt a desire to hurt Catholics/Protestants with words (e.g. to insult, to call names, etc.)?" and "How often have you felt a desire to hurt Catholics/Protestants physically (e.g. to attack, etc.)?" (response scale: 1 = *never* to 5 = *very often*). EFA with ML estimation yielded a single factorial solution (eigenvalues ≥ 1), explaining 83.7 percent of the variance on this factor. The two items yielded good reliability estimates (Cronbach's α = .79).

7. Results

Preliminary analyses

To test for differences in positive contact, experience of violence, threats to physical safety, symbolic threat, ingroup bias and action tendencies between respondents living in segregated and mixed neighbourhoods we computed a series of one-way (segregated vs. mixed) between-subjects analyses of covariance (ANCOVAs), controlling for age, gender, education and income. Respondents living in mixed neighbourhoods reported significantly more positive contact with outgroup members (M = 3.60, SD = .83) than respondents in segregated neighbourhoods (M = 2.82, SD = 1.00), F (1, 950) = 68.39, p < .001, η^2 = .067. As expected, they also reported higher exposure to violence (M = .24, SD = .25) than did respondents in segregated areas (M = .15, SD = .21), F (1, 950) = 23.08, p < .001, η^2 = .024. Threats to physical safety were also higher in mixed (M = 1.60, SD = .89) than in segregated neighbourhoods (M = 1.68, SD = .80), F (1, 950) = 9.65, p < .01, η^2 = .01, although threats surrounding symbolic expression of identity were higher in segregated (M = 2. 01, SD = .97) than in mixed areas (M = 1.90, SD = .76), F (1, 950) = 4.12, p < .05, η^2 = .004 . Ingroup bias scores were lower for respondents in mixed neighbourhoods (M = – 3.43, SD = 23.05) than respondents in segregated neighbourhoods (M = 12.23, SD = 24.14), F (1, 950) = 46.8, p < .001, η^2 = .047. No statistically significant differences in action tendencies emerged between respondents in segregated neighbourhoods (M = 1.20, SD = .58) and mixed neighbourhoods (M = 1.13, SD = .34), F (1, 950) = 2.57, *ns*, η^2 = .003.

Path analysis

To examine the structural relationships between constructs we estimated a path model, entering neighbourhood (segregated versus mixed, coded 0 and 1 respectively) as an independent predictor, exposure to violence and positive contact as mediators at level 1, safety threat and symbolic threat as mediators at level 2, and offensive action tendencies and ingroup bias as outcome variables. Rather than creating latent variables, we decided to use the composite scores of the observed variables as

a number of our scales comprised only one or two items. Table 1 shows intercorrelations between the composite variables, overall means and standard deviations. We controlled for education, income, age and gender at all endogenous levels of the model. We tested the model using *Mplus* (version 4.2; Muthén and Muthén 1998–2007), using maximum likelihood estimation with robust standard errors, to control for non-normality in the data. Model fit was assessed by means of the $\chi 2$ test, one index of incremental fit, the Comparative Fit Index (CFI), and two indexes of absolute fit, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Squared Residual (SRMR). A satisfactory fit is typically indicated by a non-significant χ^2 value (or a χ^2/df ratio ≤ 3–4 if sample size is large), a CFI ≥ .95, an RMSEA ≤ .06 and an SRMR ≤ .08 (Hu and Bentler 1999). The fit of the model was good, χ^2 (1) = .077, p = .78, χ^2/df = .077, CFI = 1.00, RMSEA = .000, SRMR = .001, after allowing for covariation between safety threat and symbolic threat (β = .16, p < .001). The estimated path model is displayed in Fig. 1.

In line with our predictions, type of neighbourhood was significantly associated with both exposure to violence and levels of positive intergroup contact, such that people living in mixed neighbourhoods were more likely to have experienced violence (β = .17, p < .001), but also reported more positive contact experiences (β = .26, p < .001). Over and above the effects of violence and contact, neighbourhood also exerted a direct effect on safety threat (β = .14, p < .001), but not on symbolic threat (β = –.031, *ns*). Overall, living in a mixed environment generally had positive effects on outgroup perceptions, such that living in a mixed neighbourhood was associated with reduced ingroup bias (β = –.14, p < .001) and lower levels of offensive action tendencies (β = –.07, p < .05).

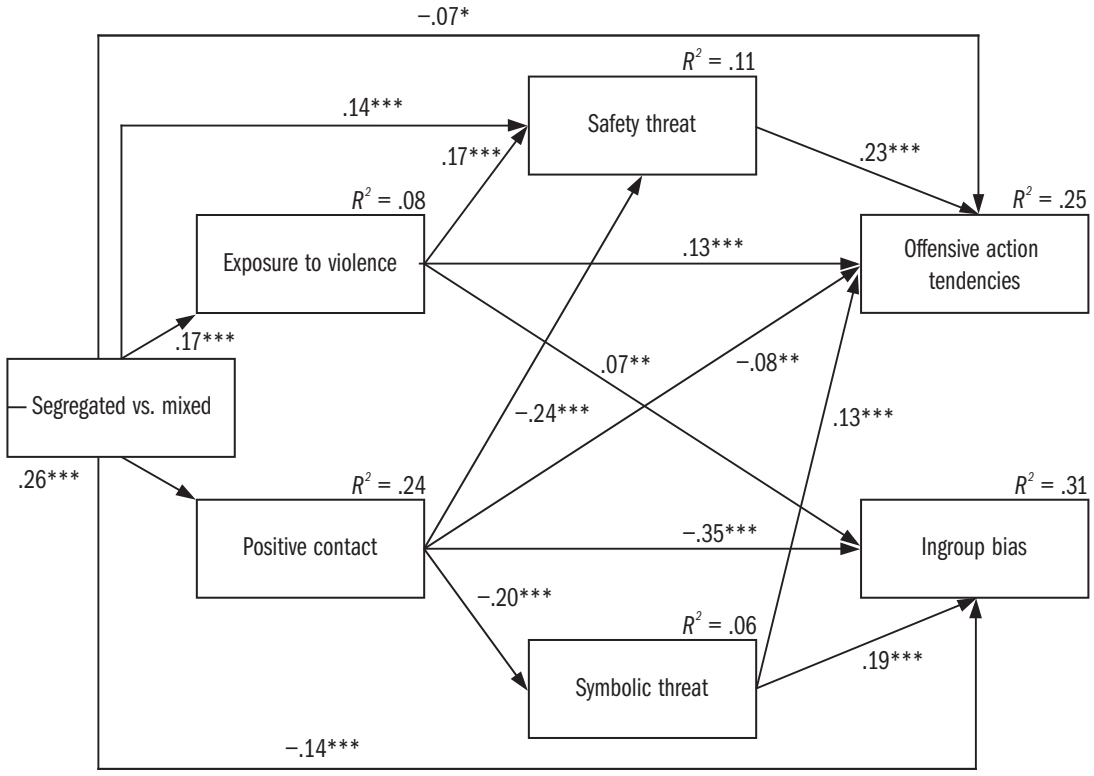
Table 1: Intercorrelations, overall means and standard deviations of study variables.

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Positive contact	3.28	.98	1	.05	–.22***	–.18***	–.45***	–.10***	.03	.12***	.27***	.25***
2. Violence	.20	.24		1	.19***	.07*	.04	.22***	–.15***	–.16***	.14***	.15***
3. Safety threat	1.65	.84			1	.21***	.19***	.33***	–.07*	–.11**	–.06	–.08*
4. Symbolic threat	1.95	.86				1	.28***	.24***	–.13***	–.03	.02	.02
5. Ingroup bias	3.05	24.07					1	.27***	.01	–.10**	–.26***	–.18***
6. Action tendencies	1.16	.46						1	–.20***	–.27***	.02	–.03
7. Age	52.09	17.34							1	–.03	–.29**	–.15***
8. Gender [a]	–	–								1	.02	–.19***
9. Education [b]	1.88	1.06									1	.46***
10. Income [c]	5.47	2.34										1

Notes. *p < .05; ** p < .01; *** p < .001; [a] gender was coded 0 = male, 1 = female; [b] education was coded as follows: 1 = *to age 16 or less, 2 = to age 18 only, 3 = higher education (including first degree at university), 4 = post-graduate;* [c] income was coded as follows: 1 = *less than £3,000 per annum (p.a.),* 2 = *£3,000–3,999 p.a.,* 3 = *£4,000–6,999 p.a.,* 4 = *£7,000–9,999 p.a.,* 5 = *£10,000–14,999 p.a.,* 6 = *£15,000–19,999,* 7 = *£20,000–25,999 p.a.,* 8 = *£26,000–29,999 p.a.,* 9 = *£30,000–39,999 p.a.,* 10 = *£40,000–49,999 p.a.,* and 11 = *more than £50,000 per annum*

Figure 1: Path model results (N = 958)

Only significant paths are shown. Path coefficients are standardized, * $p < .05$, ** $p < .01$, *** $p < .001$. Overall model fit: X^2 (1) = .077, p = .78, X^2/df = .077, CFI = 1.00, RMSEA = .000, SRMR = .001.



As expected, positive contact was significantly associated with reduced levels of safety threat ($\beta = -.24$, $p < .001$) and symbolic threat ($\beta = -.20$, $p < .001$), as well as less ingroup bias ($\beta = -.35$, $p < .001$) and weaker offensive action tendencies ($\beta = -.08$, $p < .05$). Exposure to violence, on the other hand, generally exerted negative effects on threat perceptions and outgroup attitudes, although primarily on the individual-level variables. Specifically, exposure to violence predicted higher threats to physical safety ($\beta = .17$, $p < .001$), but not symbolic threat ($\beta = .06$, *ns*). Higher values for experience of violence were also associated with more negative action tendencies ($\beta = .13$, $p < .001$) and marginally increased levels of ingroup bias ($\beta = .07$, $p < .05$). While symbolic threat was the primary predictor of bias ($\beta = .19$, $p < .001$) (safety threat: $\beta = .059$, *ns*), higher safety threat exerted a stronger effect on action tendencies ($\beta = .23$, $p < .001$) (symbolic threat: $\beta = .13$, $p < .001$).[1]

Over and above the control variables, the model explained 25.2 percent of the variance in offensive action tendencies

1 The control variables in our model also exerted significant effects. Higher income was predictive of weaker offensive action tendencies ($\beta = -.09$, $p < .05$), lower realistic threat perceptions ($\beta = -.10$, $p < .05$) and more positive contact ($\beta = .10$, $p < .01$). Values for positive social experiences were also higher for people with higher levels of education ($\beta = .25$, $p < .000$). Females were less likely to report exposure to violence ($\beta = -.16$, $p < .001$) and reported less personal-level threat ($\beta = -.07$, $p < .05$). With increasing age, respondents reported weaker negative action tendencies ($\beta = -.144$, $p < .001$), less exposure to violence ($\beta = -.13$, $p < .001$), lower threat surrounding symbolic expression of identity ($\beta = -.10$, $p < .01$) and more positive experiences with outgroup members ($\beta = .13$, $p < .001$). None of the other effects of the control variables reached statistical significance.

and 30.8 percent of the variance in ingroup bias, as well as 10.7 percent and 5.7 percent of the variation in safety and symbolic threat, respectively. Neighbourhood accounted for 8.5 percent of the variance in exposure to violence and 23.9 percent of the variation in positive social experiences.

Breakdown of effects

In order to assess whether social experience and threats acted as mediators in the model, we broke the effects down into indirect effects and total indirect effects. We detected a number of indirect effects, although some of these effects were negligible, for which reason we only report effects that were significant at the $p < .001$ level. Our results show that positive contact acted as a significant mediator in the relationship between neighbourhood and ingroup bias (IE = –.09, $p < .001$), and also exerted an indirect effect on bias by reducing threat perceptions surrounding symbolic identity expression (IE = –.04, $p < .001$), as well as an indirect effect on action tendencies by reducing threats to safety (IE = –.06, $p < .001$). Positive contact also acted as a significant mediator in the relationship between neighbourhood and threats to physical safety (IE = –.06, $p < .001$) and between neighbourhood and symbolic threat (IE = –.05, $p < .001$). Exposure to violence only acted as a significant mediator in the relationship between neighbourhood and threats to physical safety (IE = .03, $p < .001$). And threats to physical safety significantly mediated the relationship between neighbourhood and offensive action tendencies (IE = .03, $p < .001$). Together, positive contact and threats to physical safety exerted a mediational effect in the relationship between neighbourhood and action tendencies (IE = –.01, $p < .001$), as well as in the relationship between neighbourhood and ingroup bias (IE = .01, $p < .001$).

Tests of alternative path models

We tested a number of alternative theoretical predictions to rule out the possibility that the relationships between some of our constructs could also operate in opposite directions than those specified in the present model. For example it could be argued that threat perceptions predict willingness to engage in contact or that threat perceptions overshadow social experiences. To test this prediction we estimated a model in which we reversed the two threat constructs and positive contact, but not exposure to violence as it is extremely unlikely that threat perceptions could influence this relatively objective measure. This model fitted the data significantly worse than our proposed model, χ^2 (3) = 23.2, $p < .001$, $\chi^2/df = 7.76$, CFI = .981, RMSEA = .084, SRMR = .020; $\Delta \chi^2 = 24.9$, df = 2, $p < .001$, and inspection of the path coefficients revealed that positive contact was a stronger predictor of both types of threat than were threat perceptions of positive contact in the reverse model. We tested the difference using a calculation procedure for non-normal outcomes, described by Satorra and Bentler (2001).

Similarly, it might be argued that levels of prejudice affect the choice to engage in contact, and hence also how contact is perceived. A model where we reversed the order of ingroup bias and contact also yielded a worse model fit, χ^2 (5) = 71.5, $p < .001$, $\chi^2/df = 14.20$, CFI = .938, RMSEA = .118, SRMR = .033, $\Delta \chi^2 = 74$, df = 4, $p < .001$. A model in which we reversed the order of ingroup bias, contact and threat– so that bias preceded threat and contact, and threat also predicted contact– also yielded poorer model fit, χ^2 (3) = 25.1, $p < .001$, $\chi^2/df = 8.36$, CFI = .979, RMSEA = .088, SRMR = .017; $\Delta \chi^2 = 25.6$, df = 2, $p < .001$. Although it may also be argued that previous experience of positive contact might determine the choice of mixed neighbourhood, and equally that exposure to violence might determine choice of segregated environment in Northern Ireland, we believe this to be extremely unlikely because most of the large residential movements to segregated environments in Northern Ireland occurred in the late 1960s and early 1970s, with the beginning of civil unrest in Northern Ireland (Boal and Hadden 1977). Moreover, we asked respondents to report the average time they had lived in the neighbourhood. Approximately 25 percent of individuals reported having lived in the neighbourhoods all their life, while for the remaining respondents the mean number of years they had lived in the neighbourhood was 22 ($M = 21.74$, $SD = 14.74$).

8. Discussion

In this paper we have tested some of the predictions made by threat and contact theory for the relationship between context and prejudice. We specifically examined the effect of living in segregated versus mixed neighbourhoods in Northern Ireland on outgroup orientations, taking into

consideration two intervening factors: social experience and threat. In general, our predictions were confirmed. Our research demonstrates that living in a mixed neighbourhood in Northern Ireland can have positive effects on outgroup perception, such that respondents living in mixed neighbourhoods were less likely to favour the ingroup over the outgroup, and were also marginally less likely to report negative or offensive action tendencies towards the outgroup. Moreover, respondents in mixed areas were more likely to have experienced positive contact with members of the other religious group. Positive contact also partially mediated the effects of context on ingroup bias, such that neighbourhood also exerted an indirect effect on intergroup perception.

These findings are in general alignment with the predictions of contact theory, and counter the general claims of threat theory that desegregation has negative, rather than positive, consequences for intergroup relations. Thus we add not only to the existing body of research on the positive effects of contact (Brown and Hewstone 2005; Pettigrew and Tropp 2006), but also demonstrate that contact exerts an important effect on the social context/prejudice link (see also Wagner et al. 2006). However, our analysis also shows that living in a mixed environment in Northern Ireland can have some negative consequences. Our research showed that respondents living in the mixed areas reported more exposure to violence and higher levels of threats to physical safety than respondents in the segregated neighbourhoods. This substantiates the view that segregation can offer safety from intimidation and attack (Boal and Murray 1977). Two points do however need to be kept in mind when interpreting these results. First, our measure of violence exposure is sub-optimal as it does not allow for identification of the period during which exposure to violence occurred, nor the exact location where violence was experienced. Furthermore, it captured a selective range of items. Secondly, the neighbourhoods we focused on in the present context are less affluent than other mixed neighbourhoods in Northern Ireland. Typically, mixed neighbourhoods in Northern Ireland are much more affluent than segregated environments, yet in the present context we focused explicitly on mixed neighbourhoods of lower socio-economic status in an attempt to minimize differences between the mixed and the segregated neighbourhoods. Hence it cannot be concluded that living in a mixed neighbourhood is unavoidably associated with more negative experiences. Instead, it may be the case that only those mixed areas that are of lower socio-economic status than other mixed areas show a greater likelihood for conflict exposure. Importantly however, it needs to be kept in mind that exposure to violence is a less likely occurrence than intergroup contact, as also evidenced in the low reported mean scores, for which reason these negative experiences do not overshadow the positive effects of contact. This perhaps is one of the most interesting findings in the present context, that despite the exposure to somewhat more negative experiences and higher threat perceptions, living in these mixed areas still affords opportunities for positive contact and is associated with less negative action tendencies and more positive outgroup attitudes.

Although our research was primarily informed by contact theory, we do not deny that threat can exert negative effects on intergroup relations. Rather we sought to integrate, extend and simultaneously test some of the predictions made by both threat theory and contact theory. As a result of this our research makes a number of important contributions to understanding the relationship between the social environment and prejudice. Our research highlights in particular the importance of social experience in the immediate social environment and the extent to which this can not only affect outgroup attitudes, but also threat perceptions concerning the outgroup. We argue that threat, rather than being equated with context, should be regarded as an intervening link in the relationship between context, contact and prejudice, with both context and contact as antecedents of threat. Our findings confirm this general set of relationships, demonstrating that both positive and negative social experiences (i.e. contact and exposure to violence) exerted effects on threat perceptions and outgroup orientations.

Our findings also confirm the typically reported negative relationship between threat and action tendencies (Cottrell and Neuberg 2005; Mackie et al. 2000) and threat and ingroup bias (e.g. Tausch, Hewstone, et al. 2007). These findings highlight the importance of studying both positive and negative social experiences and their consequences for threat perceptions and prejudice (Stephan

and Renfro 2002). In addition our results demonstrate that positive contact with members of the outgroup is associated with reduced threat perceptions, both at the personal and the group level, which supports previous research that has shown both individual-level and group-level threats to be affected by positive contact (e.g. Tausch, Hewstone, et al. 2007; Tausch, Tam, et al. 2007). Conversely, exposure to violence is associated with higher threats to physical safety, more negative action tendencies and a higher degree of ingroup bias. This implies that in situations of ethnopolitical conflict actual or indirect exposure to violence can explain at least some of the variation in outgroup attitudes, a fact that is often implicitly assumed but rarely explicitly measured in social psychological and sociological research on intergroup relations in conflict, which tends to focus on milder forms of intergroup bias, such as ingroup favouritism, rather than outgroup derogation (Hewstone, Rubin, and Willis 2002).

It has been argued that studying intergroup phenomena at the macro-level (e.g. at country or state level or in extended metropolitan areas), is often suboptimal and may mask true variation in intergroup perceptions (Oliver and Mendelberg 2000; Quillian 1995; Wagner et al. 2006). Our research is of particular value as it not only demonstrates the importance of studying micro-contexts, but also highlights the importance of studying micro-neighbourhoods in ethnopolitical conflict settings. In situations of political conflict, intergroup phenomena are often studied at the macro-level, with little attention paid to contextual variations or–more importantly–the consequences of such variation. Our research, however, shows that space and place can uniquely predict intergroup perception, over and above the effects of education, income, gender or age. Moreover, neighbourhoods are often the principal unit of analysis for personal interaction, and hence also for intergroup interaction, and thus it is these micro-level sites where the effects of intergroup contact should be most pronounced (see also Wagner et al. 2006). Our research thus demonstrates that even in situations of intractable conflict, as witnessed in Northern Ireland, the immediate social context and environment can play a key role in determining intergroup relations.

A number of methodological, conceptual and theoretical limitations need to be addressed. It should be noted that this study was cross-sectional, thus not allowing us to draw confident causal inferences, a concern that is also typically raised in the context of intergroup contact research (Pettigrew 1998). We attempted to address the issue of causality by testing a series of alternative models which specified alternative causal orders of the model variables. Each of these alternative models fits the data significantly worse than the proposed model. This allows us to draw the tentative conclusion that in Northern Ireland contact is more likely to precede ingroup bias than vice versa. Similar conclusions have been drawn in other contexts (e.g. Wagner et al. 2003). However, the issue of direction remains an ever-present concern with cross-sectional designs and needs to be kept in mind when interpreting results obtained by means of cross-sectional methodology. We therefore strongly recommend that future research uses longitudinal designs when examining the relationship between context and prejudice, which will then allow us to draw conclusions about causality with greater confidence. It might also be useful to consider additional mediational variables that are conceptually similar to those tested in our model. For example, future research should test whether similar effects are obtained when different types of individual-level threats (e.g. intergroup anxiety) and group-level threats (e.g. threat to status or power) are included.

One conceptual problem lies in our use and definition of the term "neighbourhood", a problem that is typically observed in research on neighbourhood effects, given that "neighbourhood" is a relatively fluid and ambiguous term. Although our four chosen neighbourhoods correspond to electoral wards and are thus clearly defined spaces, with unambiguous boundaries and names, we did not tap into the subjective meaning of what respondents perceived their neighbourhoods to be. It is known that individuals can hold varying interpretations of what they perceive a neighbourhood to be, and that perceived neighbourhood boundaries may even differ between people living in close vicinity to each other (Coulton et al. 2001; Lee, Campbell, and Miller 1991). What defines a neighbourhood may also be context-dependent, such that neighbourhood boundaries may differ depending on the frame of reference used. For example, when a person is asked whether they work in the neighbourhood the boundaries may be perceived as stretching further than when they are asked whether

they socialize in the neighbourhood. It is these subjective and contextual variations that should be considered in future research. Such research may aim to capture such individual nuances rather than purely focus on place of residence as a predictor of neighbourhood effects. This will allow us to draw even stronger conclusions about the effects of neighbourhood– and especially segregated versus integrated neighbourhoods – on threat perceptions and outgroup attitudes. Alternatively, if relying on objectively defined areas, such as electoral wards, it might also be useful to assess individuals' level of identification with these areas, which may act as a moderator of relationships.

Moreover, future research should focus more extensively on testing both positive and negative intergroup contact (Pettigrew and Tropp 2006). The two types of social experiences included in our analysis, positive contact and exposure to violence, cannot be conceptually placed at opposing ends of a unidimensional construct. Not only is exposure to violence a construct that is primarily of relevance in situations characterized by violent intergroup tensions, but it is a much more context-specific and objective and less controllable social experience than intergroup contact. Thus we should explore the extent to which context exerts effects on both positive and negative social experiences that are conceptually equivalent, such as positive and negative experiences of intergroup contact. Such an analysis would help clarify whether living in mixed neighbourhoods truly holds more positive than negative implications for intergroup relations in conflict. If living in mixed neighbourhoods generally exerts a stronger effect on positive than negative contact over and above the effects on exposure to violence, this would demonstrate even more clearly the benefits of living in a desegregated environment. Finally, it should be noted that some of our constructs were assessed using a limited number of items. Future research should therefore consider including a greater range of items to measure social experiences.

Nonetheless, our research has made a number of significant contributions to understanding the key role of exposure to violence on outgroup perceptions and how it can be counteracted. Our research highlights that living in mixed neighbourhoods in situations of ethno-political conflict can go hand in hand with closer physical proximity to intergroup tensions and actual conflict. However, we also demonstrated that living in mixed neighbourhoods can hold positive implications for intergroup relations. Living in a desegregated and diverse environment provides opportunities for engaging in intergroup contact and therefore allows for more positive contact experiences. In sum, our findings demonstrate the importance of measuring both negative and positive social experiences, as well as explicitly factoring in threat perceptions when examining the link between context and prejudice. In this way, without overlooking the pernicious effects of exposure to violence, we have also highlighted the positive consequences of intergroup contact for the reduction of intergroup conflict.

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