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The Longitudinal Effects of Intergroup Contact on Youth Attitudes Towards Ethnic Minorities and Constructive Societal Engagement

Christoph Daniel Schaefer¹ | Shelley McKeown¹  | Shazza Ali² | Pier-Luc Dupont³ | David Manley² | Sumedh Rao¹ | Laura K. Taylor⁴ 

¹University of Oxford, Oxford, UK | ²University of Bristol, Bristol, UK | ³Swansea University, Swansea, UK | ⁴University College Dublin, Dublin, Ireland

Correspondence: Shelley McKeown (shelley.mckeownjones@psy.ox.ac.uk)

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ABSTRACT

Growing empirical evidence demonstrates that intergroup contact has the potential to reap effects that go beyond prejudice reduction. Much of this evidence, however, is based on findings from cross-sectional surveys. Building on the relatively smaller body of longitudinal intergroup contact research, we conduct a three-time point survey amongst youth in Northern Ireland to determine whether frequent and good-quality interactions with ethnic minority groups are associated with later reports on: (1) attitudes towards ethnic minorities, (2) prosocial behaviour towards ethnic minorities, and (3) civic engagement. Data were collected over the period of a school year amongst youth living in Belfast ($n = 420$, $M_{\text{age; T1}} = 14.9$ years) and analysed using longitudinal path analyses and structural equation models in Mplus. Results demonstrate a lagged effect of higher-quality contact on more positive attitudes towards ethnic minorities over the school year. There was also a lagged effect of more frequent contact on self-reported prosocial behaviour in support of ethnic minorities. No lagged effects were observed of intergroup contact on civic engagement. Findings highlight the potential longitudinal effects of intergroup contact on attitudes and behaviours towards ethnic minorities.

1 | Introduction

Young people across the globe are growing up in increasingly ethnically diverse contexts. Understanding how they experience ethnic interactions and the consequences of these interactions on youth attitudes and behaviours is essential for social cohesion. This is particularly true in settings marked by longstanding intergroup conflict, in which promoting positive and meaningful interactions is an integral part of peacebuilding efforts (McKeown and Taylor 2017). To date, the majority of research exploring youth intergroup relations in conflict or post-conflict societies has focused mainly on interactions between

the primary conflict groups. Whilst this research offers important and much-needed insights, many conflict societies are experiencing rapid demographic changes. These changes can introduce new forms of division that can have implications for interactions and, in turn, for social cohesion in society more broadly.

In the present research, we move beyond the traditional focus on relations between historical conflict groups and, instead, consider how these traditional groups interact with and feel towards members of another group. Specifically, we situate our research in Northern Ireland, a historically divided

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context, but one that is experiencing increasing levels of ethnic diversity. We explore whether the quantity and quality of intergroup contact experiences of Catholic and Protestant youth with ethnic minorities are associated with more positive attitudes towards ethnic minorities, prosocial behaviour towards ethnic minorities, and civic engagement over the period of a school year. We base our research within the substantial empirical literature on intergroup contact theory and offer new insights by exploring intergroup contact effects longitudinally, through a three-time-point survey, and on outcomes that include but go beyond prejudice.

1.1 | Intergroup Contact Theory

The contact hypothesis posits that positive interactions between groups can reduce prejudice, working best under the conditions of equal status, cooperation, common goals, and sanctioned by authorities or prevalent norms (Allport 1954; summarised as four conditions in, e.g., Pettigrew 1971). Meta-analyses have supported the link between contact and prejudice reduction, even when not all conditions are met (Pettigrew and Tropp 2006; Tropp and Pettigrew 2005). Indeed, the beneficial effects of contact have been observed in settings with a history of prolonged and (at times) violent intergroup conflict, even where not all of these conditions might be possible. For example, a cross-sectional study with adults in Cyprus found an association between various forms of contact and reduced prejudice (Yucel and Psaltis 2020), while studies from South Africa demonstrate associations between contact and attitudes towards intergroup reconciliation (Gibson and Claassen 2010) and between contact and reduced stereotyping (Durrheim and Dixon 2005). There is also growing evidence within the Northern Ireland context indicating that intergroup contact is associated with more positive attitudes towards ethnic minorities in samples of adults (McKee 2016; Doebler, McAreevey, and Shortall 2018) and the general population (Hayes and Dowds 2006).

A limitation of many classic studies examining the effects of contact within and outside of divided societies, however, is their cross-sectional design. For instance, in the seminal meta-analysis by Pettigrew and Tropp (2006), 70% of the studies on which this analysis is based are cross-sectional (Hewstone et al. 2014). This heavy reliance on correlational data is problematic since questions regarding direction of causality or of the influence of unobserved third variables remain unanswered. For example, less prejudiced people could be more likely to enter situations in which intergroup contact can take place (Christ and Kauff 2019). Thus, experimental and longitudinal designs are required (Lemmer and Wagner 2015). Whilst longitudinal analyses also demonstrate lagged effects of intergroup contact on prejudice reduction (Christ and Kauff 2019; Binder et al. 2009; Swart et al. 2011), such designs remain relatively limited in number, and only few focus on youth samples or on outcomes that go beyond traditional measures of attitudes (i.e., stereotypes and prejudice) as the primary outcome. Work, however, is developing in this area with research exploring the between- and within-person effects of contact on youth attitudes (Friehs et al. 2024), as well as exploring the link between contact and prejudice for youth over time (Merrilees et al. 2023). We

build directly on these studies by examining the lagged effects of intergroup contact quantity and quality on youth attitudes towards ethnic minorities and on two forms of constructive action, moving beyond the focus to date on prejudice reduction: (1) youth engagement in prosocial behaviour in support of ethnic minorities and, (2) youth civic engagement.

1.2 | Intergroup Contact Effects Beyond Prejudice Reduction

Given the exponential growth in intergroup contact research, scholars have begun to study the wider outcomes of contact, known as “tertiary transfer effects” (Meleady et al. 2019). Research demonstrates, for example, that intergroup contact renders participants more open to experience (e.g., Sparkman, Eidelman, and Blanchar 2016), enhances socio-cognitive skills such as perspective-taking (e.g., Bagci et al. 2019), enhances social adjustment and leadership skills (Kawabata and Crick 2008), and fosters academic performance (Carey et al. 2022). Important in the current context is evidence that intergroup contact can promote outcomes that have the potential to impact intergroup relations and society at large by building more cohesive communities. In our analysis, we focus on prosocial behaviour and civic engagement as two forms of constructive action that we argue could be important outcomes of high quantity and good-quality intergroup contact.

Prosocial behaviour can be understood as acts that intend to benefit others, such as helping or sharing (Eisenberg 2006). In intergroup contexts, helping outgroup members plays a central role in peacebuilding efforts, as working across group lines is vital for building cohesive communities. Intergroup contact may be associated with such prosocial acts because it provides an opportunity for individuals to get to know outgroup members, which may lead individuals to see those outgroup members as similar to themselves, empathise with them, and therefore engage in prosocial actions to support them (Koschate et al. 2012). Evidence for the link between intergroup contact quality and prosocial action, above and beyond contact quantity, has been found both for outgroup helping intentions and behaviours (Johnston and Glasford 2018). There is also evidence that higher-quality intergroup contact is associated with higher self-reported prosocial behaviour towards outgroup members amongst youth in Northern Ireland (McKeown and Taylor 2018). Additionally, inducing imagined contact (compared to a control condition) prior to participants taking part in a behavioural economics game led to more prosocial decisions during the game (Meleady and Seger 2017). It stands to reason, therefore, that we might expect contact experiences with ethnic minority group members in the Northern Ireland context to be associated with more support for prosocial actions that benefit ethnic minorities.

While contact has been demonstrated to relate to reduced prejudice as well as outgroup prosocial behaviour that can either benefit outgroup members individually or as a whole, there is also a possibility that intergroup contact can lead to constructive actions that have a broader societal impact. In the present research, we focus on civic engagement. Understood as actions which address public concerns (Checkoway and Aldana 2013), civic engagement is particularly valuable in ethnically diverse

societies as a means to foster social cohesion. We argue that intergroup contact may encourage civic actions because it promotes exposure to multiple perspectives, which can challenge current views and reduce the acceptance of societal hierarchies (Hodson et al. 2018). Further, given evidence for intergroup contact effects on perspective-taking (Pettigrew and Tropp 2008; Johnston and Glasford 2018), it could be that contact increases the perception of (and sensitivity to) unequal rights in society, which could encourage individuals to engage in civic actions for the greater good. Thus, learning about other perspectives, discovering similarities and questioning inequalities might increase tendencies towards actions that benefit wider society. There are indications that intergroup contact can indeed promote civic engagement. A study conducted in the US, for example, found that intergroup interactions in universities were associated with increased engagement in community service and campus political activities (Gurin, Nagda, and Lopez 2004), while diversity experiences in college were associated with more civic engagement (Bowman 2011). Similarly, a cross-sectional study amongst youth in Northern Ireland found that intergroup contact quality between Protestants and Catholics was associated with more supportive attitudes towards peacebuilding and, in turn, more civic engagement (McKeown and Taylor 2017).

Drawing on this previous research, we expect to see that experiencing frequent and good-quality intergroup contact with ethnic minorities earlier in the school year (Time 1) will be associated not only with more positive attitudes towards ethnic minorities later in the school year (at Times 2 and 3) but also with more self-reported engagement in prosocial acts that support ethnic minorities and additionally with civic actions that demonstrate wider societal engagement.

1.3 | Present Research

Our research is situated in Northern Ireland; a setting marked by protracted ethno-religious conflict between the Protestant and Catholic communities (Cairns and Darby 1998), but also one of increasing ethnic diversity and tension. The 2021 census (Northern Ireland Statistics and Research Agency 2023) shows that 3.4% of the population identify with an ethnic minority group, and 6.5% are born outside of the UK and Ireland, which is a considerable increase compared to 1.8% of the population reporting to be an ethnic minority in the 2011 Census. Race-motivated hate crimes have also increased. The 2023 report of the Police Services in Northern Ireland (PSNI Statistics Branch 2023), for example, evidences that race-motivated hate crimes grew from the 2004/2005 period to the 2022/2023 period by 39%. Understanding how to promote better relations between ethnic groups in Northern Ireland is therefore vital.

It is within the changing demographic context of Northern Ireland that we conduct the present research. Here, we move beyond an assessment of relations between the traditional Catholic and Protestant conflict groups, exploring, instead, the relationship between intergroup contact experiences with ethnic minorities, focusing on both attitudes and behaviours towards ethnic minorities. We centre our investigation amongst youth, as not only are children and youth more receptive to contact effects than older individuals (Pettigrew and Tropp 2006; Miles

and Crisp 2014; Killen, Crystal, and Ruck 2007; Merrilees et al. 2023), but also because knowing about the potential effects of contact over time for youth might offer insights into whether contact should be implemented as a form of intervention. We also focus on exploring the effects of intergroup contact over the period of a school year to better determine the potential effects of earlier contact experiences on later outcomes. And finally, we advance current research by considering the potential effects of intergroup contact quantity and intergroup contact quality on outcomes that include prejudice but also go beyond this, by exploring prosocial behaviour and civic engagement.

Based on previous research which has examined intergroup contact effects on attitudes over time (Christ and Kauff 2019; Binder et al. 2009; Swart et al. 2011) as well as contact effects on prosocial behaviour (Koschate et al. 2012; Meleady and Seger 2017) and civic engagement (Gurin, Nagda, and Lopez 2004; McKeown and Taylor 2018), we hypothesise that over the period of the school year, as measured by three survey time points:

1. Intergroup contact quantity and quality with ethnic minorities will be longitudinally associated with more positive attitudes towards ethnic minorities.
2. Intergroup contact quantity and quality with ethnic minorities will be longitudinally associated with higher levels of prosocial behaviours towards ethnic minorities.
3. Intergroup contact quantity and quality with ethnic minorities will be longitudinally associated with higher levels of civic engagement.

Whilst we do not have specific hypotheses about the potential interaction effects between contact quality and quantity on our outcomes or hypothesise any differences between Catholics and Protestants, we explore both of these in supplementary analyses.

2 | Method

2.1 | Recruitment

Youth participants were recruited from three ethno-religiously mixed secondary schools in Belfast as part of a larger funded research project exploring youth intergroup contact experiences in Northern Ireland and England. Our goal was to recruit approximately 500 participants from across Belfast to enable us to test our models.

All secondary-level schools in Belfast in which the proportion of either the Catholic or Protestant community of the pupil population was not higher than 60% were contacted in July 2021 ($n = 7$) and asked if they would be interested in taking part in the project. Two schools—one grammar school (1438 enrolled, 44% Protestant, 28% Catholic, 28% other) and one integrated school (628 enrolled, 44% Protestant, 29% Catholic, 27% other)—agreed to participate. A second round of recruitment was carried out in September 2021, with a further 11 schools with no more than 85% of youth from either the Catholic or Protestant community being contacted to take part. This resulted in one additional boys' school joining the study (controlled school, 1093 enrolled, 85% Protestant, 1% Catholic, 13% other).

2.2 | Sample

A total of 488 participants took part in the project survey at Time 1, 419 participants at Time 2, and 460 at Time 3 during the 2021–2022 school year. Youth who could not be assigned to either the Catholic or Protestant community, and/or were not born in Northern Ireland, Ireland, or the wider UK context (except for one person born in the US with British nationality), and/or who were not white, and/or who stated nationalities other than Irish or British were removed from the dataset for the purposes of the present paper. Participants were matched across time points; first, Time 1 participants were matched to Time 2 and to Time 3, and then, in an additional step, we matched Time 2 with Time 3 participants.

The final sample comprised 420 youth (M_{age} for Time 1 = 14.9 years, SD_{age} for Time 1 = 0.79; 30% female, 64% male, 5% other gender or not stated; 28% Catholic, 72% Protestants; 33% reported receiving free school meals), including observations with missing variables and time points. At Time 1, 3% described the financial situation of their family as not very well off or as not at all very well off, 48% as average, and 32% as well off or very well off (16% missing values). Forty-one percent were from a grammar school ($n = 171$), of which 32% reported having a Catholic background and 68% reported having a Protestant background. In the integrated school ($n = 118$), which accounted for 28% of the final sample, 46% of participants reported having a Catholic background and 54% reported having a Protestant background. In the controlled school ($n = 96$, 23% of the final sample), 100% of participants reported having a Protestant background.

2.3 | Measures

In addition to a series of demographic questions used in the present analyses (i.e., age, gender, community background, and receiving free school meals as a proxy for socio-economic status), youth participants completed the following survey measures as part of the larger project survey:

2.3.1 | Contact quantity and quality

Adapted from Tam et al. (2009), the quantity and quality of intergroup contact with ethnic minority groups were each measured by a single item. Contact quantity was assessed with the item “How much contact do you have with people from minority ethnic communities” using a 4-point response scale, ranging from “none at all” to “a lot”. Contact quality was measured in a paper-and-pen version with the question “In general, when you meet people from the minority ethnic community, do you find the contact pleasant or unpleasant”. In an online version, the wording was slightly adapted: “When you interact with people [...]”. In both cases, a 6-point response scale was used, ranging from “very unpleasant” to “very pleasant”. Higher scores indicated greater quantity and quality of contact, respectively.

The contact questions were preceded by a definition of a minority ethnic group, adapted from the Northern Ireland Young

Life and Times Survey 2008 (ARK 2009, 4) as follows: “Minority ethnic group means: I. People living here who are not white, regardless of their nationality and whether they were born in the UK or in Ireland (for example, people who identify as Black Africans or Chinese); II. Regardless of their skin colour, people who were not born in the British Isles and whose nationality is not Irish or British, but who moved to Northern Ireland to live or find work (for example, people from Poland or Lithuania); III. Irish Travellers.”

2.3.2 | Attitudes towards ethnic minorities

To assess attitudes towards ethnic minorities, participants completed a feeling thermometer (Cairns et al. 2006). They were asked to “[think] about a thermometer running from 0 to 100 degrees. Please select the number that indicates your overall feeling towards the minority ethnic community in Northern Ireland” (0 = *unfavourable*, 100 = *favourable*).

2.3.3 | Prosocial behaviour towards ethnic minorities

To examine prosocial behaviour targeted towards ethnic minorities, youth participants were first asked to indicate how often they engaged in concrete acts of prosocial behaviour (such as helping, cooperation, and concern) in general (adapted from Taylor et al. 2014). They were then asked to report how often they implemented these acts towards ethnic minorities, on a scale ranging from 0 (*never*) to 3 (*often*), which was used as a single-item measure of prosocial behaviour targeted towards ethnic minorities.

2.3.4 | Civic engagement

The measure for civic engagement was adapted from Taylor et al.'s (2019) research amongst youth in Northern Ireland, based on Zaff et al. (2010). Youth were asked to respond to six items on a scale ranging from 0 (*never*) to 3 (*often*), to indicate how often they engaged in activities that were helpful for the area or region in which they were living. The items used were: “Help make your city or town a better place for people to live”, “Help out at your church, chapel or other place of worship”, “Mentor, advise or tutor others”, “Help a neighbour”, “Volunteer your time (e.g., at a youth club, community centre)”, and “Help out at your school (e.g., open days, school fairs)” (Time 1: $\alpha = .77$; Time 2: $\alpha = .80$; Time 3: $\alpha = .79$). Higher scores represent more civic engagement.

Principal component analysis was conducted for the six civic engagement items to determine the factor structure. A one-component solution was suggested by both the scree plot and the Kaiser criterion for each time point (explained variance $\geq 47.2\%$; Eigenvalues ≥ 2.83). A confirmatory factor analysis was then conducted to test for measurement invariance. All items across the three time points were included simultaneously, and the six items of each time point served as indicators for one factor each, resulting in three factors (one per time point). The residual variances of each of the six indicators were allowed to intercorrelate across time. The configural model yielded a good fit (CFI = 0.98, TLI = 0.98, RMSEA = 0.03, SRMR = 0.05). Setting the factor

loadings for each indicator to be equal across time did not result in a significant change in the model fit ($\Delta\chi=12.33$, $df=10$, $p=0.264$). Metric invariance for the six-item measure was therefore assumed.

2.4 | Procedure

Prior to data collection in the three participating schools, ethical approval was obtained from the University of Bristol, and information sheets were sent out to all potential participants' parents, providing them with the opportunity to opt-out their child as well as to participate in the research themselves. Survey data were collected in each of the three secondary schools during November 2021–January 2022 (Time 1), March 2022 (Time 2) and May 2022 (Time 3). Prior to data collection, each classroom teacher was provided with a survey information pack. Youth were verbally informed of the purpose of the research and their rights, including the voluntary and anonymous nature of the survey, that they could omit questions and that they could later withdraw if they chose to do so. Surveys were then distributed in the presence of both the researchers and school teachers. Youth were asked to read an information sheet, given the opportunity to ask any questions, and, if they were happy to proceed, to provide informed consent prior to completing the survey.

Data were collected using computers and mobile devices via Qualtrics in two schools, whilst in the third school, participants completed the survey in paper-and-pen versions. Both youth participants and schools were compensated for their time, with participants receiving a £10 Amazon voucher for each survey completion and the schools each receiving a £500 payment at the end of the project.

3 | Results

3.1 | Data Analysis

Means, standard deviations, and intercorrelations for the continuous variables in the analyses are presented in Table 1. Panel modelling with cross-lagged and autoregressive effects in Mplus (Muthén and Muthén 1998–2017) was used to examine the effects of contact on attitudes and behaviours. Specifically, we explored the lagged effects of contact quantity and quality with members of the ethnic minority community on each of the following outcome variables: (1) attitudes towards ethnic minorities, (2) prosocial behaviour towards ethnic minorities and (3) civic engagement. Separate models were run for each outcome variable, to prevent estimation problems resulting from a high number of parameters, since more complex models tend to require a larger sample size (Kline 2016). The two models with attitudes and prosocial behaviour towards ethnic minorities as outcomes were tested through path analyses since these constructs were measured with single items each. The model with civic engagement as the outcome was tested using structural equation modelling, as this construct had been measured by six items.

All criteria in the models, measured at Time 2 and 3, were predicted by contact quantity, contact quality, and the respective

outcome variable (e.g., attitudes) measured at the preceding time points. Variables measured at Time 1 also served as predictors for the criteria measured at Time 3, reflecting lag-2 effects. This implements a CL2PM, which accounts for possible delayed effects and variable stability, thus also controlling for confounding variables more comprehensively (VanderWeele, Mathur, and Chen 2020; Lüdtke and Robitzsch 2023).

The residual variances of the variables measured at Time 2 and 3 were allowed to intercorrelate within each time point. The demographic variables of gender, age, community background (Catholic or Protestant), and SES (measured as eligibility for free school meals) were included as controls for all criteria. Contact quantity, contact quality, attitudes, and prosocial behaviour were divided by their standard deviations prior to being entered into the analyses, to render the size of the regression coefficients comparable. Full Information Maximum Likelihood (FIML) as the standard setting in Mplus was used to handle missing data. A simplified version of our model is presented in Figure 1. In the figure, we include the outcome variable of attitudes as an example.

Table 1 contains means, standard deviations, and intercorrelations of the continuous variables explored in the analyses that follow.

3.2 | Intergroup Contact and Attitudes Towards Ethnic Minorities

To test our first hypothesis, intergroup contact quantity and quality measured at Time 1 were employed as predictors for attitudes towards minorities measured at Time 2, while contact quantity and contact quality at Time 2 served as predictors for attitudes towards ethnic minorities at Time 3. Several varieties of this model were specified. We used unstandardised parameters, in order to be able to test the assumption of stationarity in our models. In one model, the coefficients of autoregressive paths were set to be equal across intervals. Specifically, the path from contact quality at Time 1 to Time 2 was set to be equal to the path from contact quality at Time 2 to Time 3, while the autoregressive paths of contact quantity and attitudes towards ethnic minorities were set to be equal analogously. This model was compared to an unconstrained model.

The model fit of the constrained model was significantly lower than the fit of the unconstrained model ($\Delta\chi=15.17$, $df=3$, $p=0.002$). Further inspections indicated that this was mainly due to the autoregressive path from attitudes towards ethnic minorities at Time 1 to Time 2 being significantly different from that of Time 2 to Time 3 ($\Delta\chi=11.97$, $df=1$, $p<0.001$). Specifically, the autoregressive effect of attitudes measured at Time 1 to attitudes measured at Time 2 was significant ($b=0.44$, $SE=0.07$, $p<0.001$), as was the effect from Time 1 to Time 3 ($b=0.20$, $SE=0.08$, $p=0.010$). No remaining effect was observed from Time 2 to Time 3 ($b=0.07$, $SE=0.09$, $p=0.456$), possibly due to a longer-term stability reflected in the significant path from Time 1 to Time 3. As a result, the paths for the autoregressive effects of Time 1 on Time 2 could not be set equal to the paths from Time 2 to Time 3.

TABLE 1 | Means, standard deviations, and intercorrelations for the continuous variables in the analyses.

Measure	M	SD	N	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age, T1	14.87	0.79	381	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2. Contact Quan., T1	1.53	0.78	369	-0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Contact Qual., T1	3.75	0.97	366	-0.20 ^a	0.44 ^a	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Attitudes, T1	76.45	23.97	358	-0.26 ^a	0.41 ^a	0.53 ^a	—	—	—	—	—	—	—	—	—	—	—	—
5. OG prosocial, T1	2.01	0.89	355	-0.14 ^b	0.44 ^a	0.45 ^a	0.47 ^a	—	—	—	—	—	—	—	—	—	—	—
6. Contact Quan., T2	1.61	0.80	248	-0.20 ^a	0.55 ^a	0.33 ^a	0.37 ^a	0.29 ^a	—	—	—	—	—	—	—	—	—	—
7. Contact Qual., T2	3.91	0.86	246	-0.20 ^a	0.38 ^a	0.63 ^a	0.51 ^a	0.41 ^a	0.37 ^a	—	—	—	—	—	—	—	—	—
8. Attitudes, T2	80.33	22.60	241	-0.13	0.39 ^a	0.53 ^a	0.64 ^a	0.39 ^a	0.43 ^a	0.55 ^a	—	—	—	—	—	—	—	—
9. OG prosocial, T2	2.16	0.85	275	-0.16 ^c	0.31 ^a	0.36 ^a	0.34 ^a	0.35 ^a	0.39 ^a	0.46 ^a	0.45 ^a	—	—	—	—	—	—	—
10. Contact Quan., T3	1.55	0.71	255	-0.07	0.42 ^a	0.36 ^a	0.33 ^a	0.33 ^a	0.45 ^a	0.34 ^a	0.31 ^a	0.32 ^a	—	—	—	—	—	—
11. Contact Qual., T3	3.85	0.95	255	-0.16 ^c	0.33 ^a	0.52 ^a	0.47 ^a	0.41 ^a	0.37 ^a	0.58 ^a	0.43 ^a	0.36 ^a	0.47 ^a	—	—	—	—	—
12. Attitudes, T3	78.11	22.62	244	-0.21 ^b	0.40 ^a	0.64 ^a	0.59 ^a	0.37 ^a	0.42 ^a	0.56 ^a	0.57 ^a	0.36 ^a	0.43 ^a	0.67 ^a	—	—	—	—
13. OG prosocial, T3	1.90	0.91	285	-0.13 ^c	0.28 ^a	0.28 ^a	0.29 ^a	0.35 ^a	0.33 ^a	0.38 ^a	0.39 ^a	0.41 ^a	0.48 ^a	0.37 ^a	0.40 ^a	—	—	—
14. Civic Eng., T1	(0)	(1)	(1)	0.02	0.03	-0.02	-0.02	0.09 ^b	0.08 ^c	0.01	-0.03	0.10 ^b	0.01	0.07	0.04	0.00	—	—
15. Civic Eng., T2	(0)	(1)	(1)	0.00	-0.01	-0.01	-0.01	0.10 ^b	0.04	-0.01	-0.06	0.11 ^a	0.01	0.04	-0.03	0.04	0.20 ^a	—
16. Civic Eng., T3	(0)	(1)	(1)	-0.01	0.02	-0.04	-0.02	0.08 ^c	0.03	-0.02	0.02	0.05	0.08 ^b	0.06	0.00	0.14 ^a	0.17 ^a	0.19 ^a

Note: Higher scores indicate a higher level of the construct in question. Contact Quan. = Contact Quantity; Contact Qual. = Contact Quality; Attitudes = attitudes towards ethnic minorities; OG prosocial = prosocial behaviour towards ethnic minorities; Civic Eng. = Civic Engagement (latent variable with six indicators). The total number of participants was 420. The correlations involving civic engagement were computed with Mplus employing FIML.
^ap ≤ 0.001. (all two-sided).
^bp ≤ 0.01.
^cp ≤ 0.05.

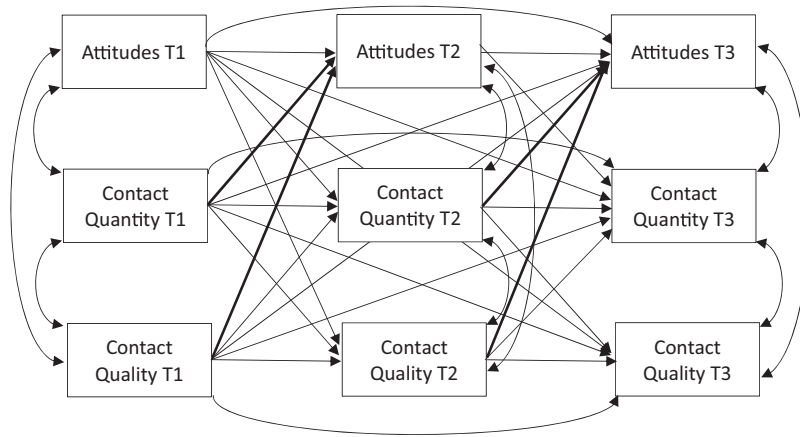


FIGURE 1 | Representation of our conceptual model used in our analyses. The figure depicts the model with the outcome variable “attitudes towards ethnic minorities” as an example. The paths relevant to our hypotheses are shown in bold. Control variables (age, gender, community background, and financial situation) were used as predictors for all criteria and are not shown, for better readability. In our statistical analyses, one model is specified for each of the outcome variables. The outcome variables were: Attitudes towards ethnic minorities, prosocial behaviour towards ethnic minorities, and civic engagement.

In a further model variety, all the cross-lagged effects across time points were set to be equal. For example, the path from contact quality at Time 1 to attitudes at Time 2 and the path from contact quality at Time 2 to attitudes at Time 3 were set equal. Analogously, the paths from attitudes at earlier time points to contact quality at later time points were set equal. Additionally, the paths from contact quality to contact quantity and from contact quantity to attitudes were set equal across intervals, as well as the reverse paths. These constraints did not lead to a significant deterioration of the fit, compared to the unconstrained model ($\Delta\chi=5.03$, $df=6$, $p=0.540$). Since the unconstrained model was saturated, the model fit of this model with constrained cross-lagged effects was still very good (CFI=1.00; TLI=1.00; RMSEA=0.00; SRMR=0.01). In this constrained model, contact quality (at Time 1 and Time 2) had a significant effect on attitudes towards ethnic minorities (at Time 2 and Time 3; $b=0.24$, $SE=0.07$, $p=0.001$), with a trend-level effect observed for contact quantity ($b=0.13$, $SE=0.07$, $p=0.060$). Contact quality at Time 1 also had a significant positive effect on attitudes towards ethnic minorities at Time 3 ($b=0.44$, $SE=0.00$, $p<0.001$). There were no reverse effects of attitudes towards ethnic minorities at Time 1 and Time 2 on contact quality or quantity at Time 2 and Time 3.

Amongst the control variables, gender ($b=0.32$, $SE=0.013$, $p=0.012$) and SES ($b=-0.35$, $SE=0.15$, $p=0.024$) had significant effects from Time 1 to Time 2, with females and youth without receipt of free school meals having a more positive attitude towards minorities. No other control variable had a significant impact.

3.3 | Intergroup Contact and Prosocial Behaviour Towards Ethnic Minorities

To test our second hypothesis, a path analysis was conducted to examine whether intergroup contact with ethnic minorities at Times 1 and 2 has an influence on youth's prosocial behaviour towards ethnic minority groups at Times 2 and 3. In this model, contact quantity and quality measured at Time 1 were employed as predictors for prosocial behaviour targeted

towards ethnic minorities at Time 2, while contact quantity and quality of Time 2 served as predictors for prosocial behaviour targeted towards ethnic minorities at Time 3, with lagged controls applied as previously. As previously, a constrained model was specified, in which the cross-lagged paths were set equal across intervals. The fit of the constrained model did not significantly differ from the fit of the unconstrained model ($\Delta\chi=4.88$, $df=6$, $p=0.559$). The model fit was therefore still very good (CFI=1.00; TLI=1.00; RMSEA=0.00; SRMR=0.02). In the constrained model, contact quantity (at Time 1 and Time 2) had a significant effect on prosocial behaviour towards ethnic minorities (at Time 2 and Time 3, respectively; $b=0.15$, $SE=0.06$, $p=0.007$). The path coefficient for contact quality on prosocial behaviour approached significance ($b=0.10$, $SE=0.05$, $p=0.054$). There was also an effect of prosocial behaviour (at Time 1 and Time 2) on contact quality (at Time 2 and Time 3; $b=0.14$, $SE=0.05$, $p=0.008$), but no effect of contact quantity on prosocial behaviour.

Prosocial behaviour towards ethnic minorities was relatively stable across the two intervals. Specifically, the autoregressive effect of prosocial behaviour measured at Time 1 to prosocial behaviour measured at Time 2 was significant ($b=0.22$, $SE=0.06$, $p=0.001$), as were the effects from Time 1 to Time 3 ($b=0.17$, $SE=0.08$, $p=0.027$) and from Time 2 to Time 3 ($b=0.28$, $SE=0.09$, $p=0.002$). Amongst the control variables, both age ($b=-0.17$, $SE=0.07$, $p=0.023$) and gender ($b=0.22$, $SE=0.10$, $p=0.030$) had an effect from Time 1 to Time 2, meaning that younger people and females reported more prosocial behaviour towards ethnic minorities, while community background had an effect from Time 2 to Time 3 ($b=-0.35$, $SE=0.12$, $p=0.002$), indicating that Catholics stated more prosocial behaviour towards minorities compared to Protestants.

3.4 | Intergroup Contact and Civic Engagement

To test our third hypothesis regarding the effect of contact with minority group members on general civic engagement, we specified structural equation models. Contact quantity and

contact quality measured at Times 1 and 2 served as predictors for civic engagement measured at Times 2 and 3. Civic engagement was entered into the models as a latent variable, with its six items as indicators per time point. The residual variances of each of the six indicators were allowed to intercorrelate across time points, to reflect that a part of the specific measurement error unique to a certain item might be stable across time points. Since in longitudinal research that uses identical items across waves correlations of measurement errors between the same items are unavoidable, this is a situation in which modelling inter-item correlation is acceptable (Landis, Edwards, and Cortina 2009).

In the constrained model variety, the cross-lagged paths were set to be equal across intervals, analogously to the previous analyses. The constrained model did not significantly differ from the unconstrained model ($\Delta\chi=1.03$, $df=6$, $p=0.984$). The model fit in the constrained model was acceptable (CFI=0.95; TLI=0.94; RMSEA=0.03; SRMR=0.06). Neither contact quantity ($b=-0.05$, $SE=0.04$, $p=0.197$) nor contact quality ($b=0.01$, $SE=0.03$, $p=0.755$) had a significant effect on civic engagement. There was, however, an effect of civic engagement at Time 1 on contact quality at Time 3 ($b=0.27$, $SE=0.14$, $p=0.047$). The stability of civic engagement (measured as latent variables across waves) was high, indicated by the high regression coefficients of the autoregressive effects ($bs \geq 0.533$, $SEs \leq 0.133$; $ps < 0.001$). Gender had an effect on civic engagement at Time 2 ($b=0.14$, $SE=0.07$, $p=0.042$), indicating that females evinced higher degrees of civic engagement. None of the other control variables were significant.

3.5 | Supplementary Analyses

3.5.1 | Contact Quality \times Contact Quantity

We ran additional analyses to test for potential interaction effects between contact quantity and contact quality on our outcomes. To do this, we added product terms of contact quantity and quality, measured at Times 1 and 2, to predict the outcome variables, while auto-regressing the product term at Time 2 on the Time 1 measure. The unconstrained models were again compared to models in which the cross-lagged paths were set equal across intervals.

For attitudes towards ethnic minorities, the constrained model did not significantly differ from the unconstrained model ($\Delta\chi=5.40$, $df=9$, $p=0.798$). There was a significant negative interaction effect of contact quality and contact quantity on attitudes towards ethnic minorities ($b=-0.22$, $SE=0.06$, $p<0.001$). This suggests that for high-quality contact the effect of contact quantity on attitudes was stronger than for low-quality contact. In other words, when the quality of contact is high, then more contact does not make such a big difference regarding attitudes than when the quality of contact is low. For prosocial behaviour towards minorities as the outcome variable, the constrained model did not significantly differ from the unconstrained model ($\Delta\chi=8.93$, $df=9$, $p=0.444$). There was no significant interaction effect of contact quality and contact quantity on prosocial behaviour ($b=-0.07$, $SE=0.05$, $p=0.160$). Similarly, for civic engagement as the outcome

variable, the constrained model did not significantly differ from the unconstrained model ($\Delta\chi=4.30$, $df=9$, $p=0.891$). There was no significant interaction effect of contact quality and contact quantity on civic engagement ($b=0.03$, $SE=0.04$, $p=0.395$).

3.5.2 | Multigroup Analyses

To test whether Catholic and Protestant participants in our sample differ in terms of contact effects, we ran multigroup analyses. For attitudes towards ethnic minorities as the outcome variable, a baseline model was specified, in which the cross-lagged effects were constrained to be equal across intervals within groups but were allowed to vary between the Catholic and the Protestant groups.

The baseline model was not significantly different from the unconstrained model ($\Delta\chi=16.38$, $df=12$, $p=0.175$). This model was compared to a more constrained model variety, in which all cross-lagged effects were constrained to be equal both across intervals and across groups. The fit of this more constrained model, however, was significantly different from the baseline model ($\Delta\chi=24.28$, $df=6$, $p<0.001$), indicating differences between cross-lagged effects between groups. Another model variety was therefore run, in which only the effects of contact quantity and contact quality on attitudes were constrained to be equal across groups, but also this model had a significantly worse fit than the baseline model ($\Delta\chi=10.90$, $df=2$, $p=0.004$). In the baseline model, contact quality at Time 1 and Time 2 had a significant influence on attitudes towards ethnic minorities at Time 2 and Time 3 (respectively) in the Catholic sample ($b=0.57$, $SE=0.11$, $p<0.001$), but not in the Protestant sample ($b=0.12$, $SE=0.08$, $p=0.152$). (Contact quality at Time 1 had a significant effect on attitudes towards ethnic minorities at Time 3 in the Protestant sample ($b=0.63$, $SE=0.10$, $p<0.001$), but not in the Catholic sample.) Contact quantity at Time 1 and Time 2 did not have a significant influence on attitudes towards ethnic minorities at Time 2 and Time 3 in either the Catholic ($b=0.07$, $SE=0.09$, $p=0.431$) or Protestant sample ($b=0.14$, $SE=0.09$, $p=0.113$).

For the outcome of prosocial behaviour towards ethnic minorities, we also ran a baseline model in which the cross-lagged effects were constrained to be equal across intervals within groups but were allowed to vary between the Catholic and the Protestant groups. This model was compared to a more constrained model variety, in which all cross-lagged effects were constrained to be equal both across intervals and groups. The model fit of the more constrained model was not significantly different from the preceding model ($\Delta\chi=5.56$, $df=6$, $p=0.474$), suggesting that there are no significant differences between the cross-lagged paths comparing the two groups. In the more constrained model, contact quantity at Time 1 and Time 2 had a significant influence on prosocial behaviour at Time 2 and Time 3 ($b=0.17$, $SE=0.06$, $p=0.002$). Contact quality did not have a significant influence on prosocial behaviour ($b=0.08$, $SE=0.05$, $p=0.113$).

When taking civic engagement as the outcome variable, a baseline model in which the cross-lagged path coefficients differ

between the Catholic and the Protestant group could not be run, as the number of free parameters was higher than the number of participants in the Catholic sample, rendering an estimation impossible.

4 | Discussion

The present research aimed to examine the effects of intergroup contact quantity and quality with ethnic minorities early in the school year on attitudes towards ethnic minorities, prosocial behaviour in support of ethnic minorities, and civic engagement later in the school year. Building on previous research, our findings demonstrate evidence for the importance of good-quality intergroup contact as being associated with subsequent more positive attitudes towards ethnic minorities and higher self-reported engagement in prosocial behaviour in support of ethnic minorities. We also find that more frequent contact was associated with subsequent self-reported engagement in prosocial behaviour towards ethnic minorities over time. We did not, however, find any longitudinal effects of contact experiences on civic engagement. We now discuss each of these findings in turn, connecting to previous research and offering suggestions for the future.

In partial support of our predictions, our findings corroborate previous evidence on the positive effects of intergroup contact on attitudes towards outgroup members (Pettigrew and Tropp 2006). Specifically, whilst we found a trend of contact quantity being correlated with more positive attitudes towards ethnic minorities, this was not statistically significant in a two-tailed test when applying the standard $p \leq 0.05$ cut-off common in the literature. We did, however, find robust evidence that earlier good-quality intergroup contact was associated with more positive later attitudes towards ethnic minorities. Whilst it may be somewhat unusual to fail to find an effect of contact quantity on outgroup attitudes, previous research has demonstrated the importance of contact quality over quantity in promoting more positive attitudes towards refugees in Europe (De Coninck et al. 2021).

In our supplementary analysis, we found a significant negative interaction effect between contact quality and contact quantity on attitudes towards ethnic minorities, suggesting that the effect of contact quantity is weaker when contact quality is very high, compared to the effect of contact quantity when contact quality is lower. This indicates that very positive contact experiences seem sufficient for making a difference in terms of attitudes, whereas it requires more frequent contact experiences to change attitudes when contact experiences are (only) somewhat positive. It is worth noting, however, that 91% of the valid percent for contact quality (i.e., the proportion of participants without missing values for this variable) indicated “somewhat pleasant” to “very pleasant” contact, which means that we are unable to fully test the claim that contact works best when it is good (i.e., high quality) versus bad (i.e., low quality).

In addition to demonstrating the potential of intergroup contact for promoting more positive attitudes towards the minority ethnic community, our findings also evidence contact effects that reach beyond prejudice reduction. Specifically, in line with our

hypothesis, we found that earlier intergroup contact quantity was associated with more self-reported prosocial behaviour targeted towards ethnic minorities later in the school year. The finding of the effects of contact on prosocial behaviour aligns with previous research by Johnston and Glasford (2018), who, across a series of studies, observed that contact was associated with increased intentions to help outgroup members. It also aligns with research with a sample of Northern Irish youth which found that intergroup contact between Catholics and Protestants in Northern Ireland is associated with prosocial behaviour towards the respective traditional conflict-related (Catholic or Protestant) outgroup (McKeown and Taylor 2018). However, our result extends this by demonstrating an effect over time and towards a different outgroup (i.e., ethnic minority group members). We did not, however, find evidence for an effect of contact quality on prosocial behaviour towards ethnic minorities, nor did we find evidence for an interaction effect between contact quantity and quality on prosocial behaviour towards ethnic minorities. This lack of effect of contact quality differs from that of Johnston and Glasford (2018) who found stronger effects of contact quality compared to quantity on prosocial behaviour, but may be due to ceiling effects in our measure of contact quality.

In contrast to our predictions, we did not observe a relationship between earlier intergroup contact quantity and quality and later civic engagement. This is somewhat surprising given that previous research has found an association between intergroup contact and increased campus engagement in the US (Gurin, Nagda, and Lopez 2004) as well as demonstrated an association between intergroup contact with the traditional conflict group and civic engagement through more supportive peacebuilding values in Northern Ireland (McKeown and Taylor 2017). It is conceivable, however, that a longer time lag between measurement periods and/or stronger contact experiences are required to observe earlier contact experiences trickling into later wider societal engagement activities. This is suggested by the relatively high stability of the measure of civic engagement in our research, indicated by large regression coefficients of the autoregressive effects. Part of this relative stability of civic engagement might be related to the fact that some of the activities covered in our measure are influenced by parents and the social context (e.g., being active in the local church or volunteering time in a community centre), so that other factors, such as contact experiences, might need to be strong and/or long-term to affect this kind of civic engagement. Future work is needed to explore if and when intergroup contact might reap wider societal benefits in terms of various forms of civic actions and civic action intentions.

Finally, our exploration of group-based variation in the relationship between intergroup contact and our outcomes for Protestants and Catholics revealed few differences. Specifically, no differences between the groups were observed for contact effects on prosocial behaviour towards ethnic minorities. There was, however, a significant difference found for contact quality on attitudes towards ethnic minorities. Specifically, the strength of the relationship between contact and attitudes was stronger for Catholics than for Protestants. This seems to contrast with the observation that contact effects are typically stronger for majority groups than for minority groups (Tropp and Pettigrew 2005) but likely represents the complicated nature

of intergroup relations in Northern Ireland where perceptions of group status can vary numerically depending on whether referring to Northern Ireland vs. on the island of Ireland more broadly, and given that neither group constitutes 50% of the population within Northern Ireland.

4.1 | Limitations and Future Directions

Despite the strength of our research, there are some important limitations of the present research that should be acknowledged. First, several of our measures, including our predictors of intergroup contact quantity and quality, were measured using single survey items. Whilst this was intentional to reduce the burden on our youth participants as part of our larger overall project, it also reduces the complexity of the captured contact experiences and possibly the reliability of our core measures. Although the relative stability of these single-item measures across the three-time points in our research can be regarded as a conservative test of its reliability, future research should aim to explore intergroup contact effects using more comprehensive measures as appropriate to the research design.

Second, our measure of prosocial behaviour towards ethnic minorities relied on self-report rather than observation or measurement of prosocial behaviour. Future research could aim to assess behaviour more directly, to better understand the potential behavioural consequences of intergroup contact through, for example, experimental designs.

Third, whilst our longitudinal design has strengths, we are unable to capture developmental processes or changes that would enable us to understand the links between contact and outcomes at particular developmental phases. This is something that could be addressed in future research.

Fourth, our lack of an observed relationship between intergroup contact and civic engagement suggests that more research is needed to understand if and how contact might have wider societal benefits. It could be, for example, that the influence of intergroup contact on civic engagement requires a longer time period than we captured in our studies.

Finally, the broad use of the term “ethnic minority” that we used in the present research may not have been interpreted by all of our participants in the same way. It is plausible, for example, that different participants were thinking about different ethnic groups when responding to our survey questions. And, even though we provided a definition of ethnic minority in our survey, some participants might have considered themselves as being part of a societal or local minority as Catholics or Protestants, given the complex nature of relations in this context. Future research may wish to delve deeper into understandings of ethnic minority status amongst youth growing up in Northern Ireland.

4.2 | Implications

Like in many societies across the globe, youth in Northern Ireland are growing up with rising ethnic diversity. In the

present research, we examined the effects of youth in Northern Ireland having contact with ethnic minority group members on attitudes towards ethnic minorities, prosocial behaviour in support of ethnic minorities, and broader civic engagement over the period of a school year. Using a three-time point survey, we found lagged effects of intergroup contact quality on positive attitudes towards ethnic minorities. We also found that more frequent contact was associated with subsequent more self-reported engagement in prosocial behaviour towards ethnic minorities. These findings have important implications both for research and for practice in socially divided and diverse societies. Most notably, we find further evidence for the importance of intergroup contact in promoting not only positive attitudes but also prosocial behaviours directed towards an outgroup, for youth growing up in an increasingly diverse society. This underscores the need for researchers to continue to better understand the role of both frequent and good-quality intergroup contact, and how they work together and separately over time on outcomes that include, but also go beyond, prejudice reduction. Our findings also emphasise the importance of facilitating intergroup contact in practice, to promote more positive attitudes towards ethnic minorities as well as engagement in helping behaviour targeted towards ethnic minorities. This may have knock-on effects for interventions that aim to build more cohesive societies by promoting intergroup contact experiences.

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Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that supports the findings of the study will be made available on the UK Data Archive following the completion of the research project.

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