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Cross-ethnic Friendships: Are They Really Rare?
Evidence from Secondary Schools around London

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Abstract

This study examined current cross-ethnic friendship patterns in secondary schools around London, UK, and the effects of ethnic group and ethnic diversity on cross-ethnic friendship selection and quality. Questionnaires including self-report ethnic group definitions and measures of same-/cross-ethnic friendship numbers, along with the quality of 3 best crossethnic friends, were distributed to 684 Year 7 (aged 11) British students (256 White European, 63 Middle Easterner, 118 Black, 247 South Asian) recruited from 9 multi-ethnic secondary schools (37 classrooms) in Greater London. In contrast to most previous research which suggested the relative rarity of cross-ethnic friendships, findings showed that crossethnic friendships were in fact frequent and of high quality, outnumbering same-ethnic friendships for all ethnic groups. After controlling for gender, classroom gender composition, percentage of available same-ethnic peers, ethnic identity and perceived discrimination, classroom ethnic diversity still had a marginally positive effect on cross-ethnic friendship selection, but had no effect on cross-ethnic friendship quality. White British children reported higher cross-ethnic friendship selection and lower cross-ethnic friendship quality compared to other ethnic groups, but this depended on classroom ethnic diversity. Implications of the findings are discussed in the light of intergroup contact and friendship theories. We conclude that research on cross-ethnic friendships is crucial in providing insights into how integration at the social level starts during early childhood in modern multi-ethnic settings like London secondary schools.

Keywords: cross-ethnic; friendships; ethnic diversity; ethnic group; secondary schools

1. Introduction

Over the last decade, the UK has witnessed a considerable increase in ethnic minority populations residing in inner cities. London is today one of the most ethnically diverse cities in the UK and the world (Sturgis, Brunton-Smith, Khua, & Jackson, 2011), representing a unique and dynamic social environment for its residents coming from various cultural, ethnic and religious backgrounds. Although recent demographic trends have illustrated this particular context where the population of different ethnic minority groups has been increasing sharply, especially in educational settings (Hamnett, 2012; Wohland, Rees, Norman, Boden, & Jasinska, 2010), there is little recent empirical data examining how such multi-ethnic context might affect cross-ethnic friendships among secondary school year children.

Previous research on children's cross-ethnic friendships mainly originates from the intergroup contact literature, which has documented the robust effect of cross-ethnic friendships in promoting positive intergroup attitudes (Aboud, Mendelson, & Purdy, 2003; Feddes, Noack, & Rutland, 2009) and from the developmental psychology literature, which has emphasized the positive outcomes of cross-ethnic friendships in childhood (e.g., Kawabata & Crick, 2008, 2011a; Lease & Blake, 2005). Cross-ethnic friendships increase intimate knowledge, empathy and self-disclosure among members of different groups (Turner, Hewstone, & Voci, 2007), in addition to providing the typical benefits of friendships by increasing social competence and skills, adjustment and satisfaction in the school environment (Hunter & Elias, 1999; Lease & Blake, 2005).

Despite their social and developmental benefits, cross-ethnic friendships tend to be relatively rare and low in quality. Earlier studies after desegregation projects in the US (Hallinan & Smith, 1985; Hallinan & Williams, 1989) and more recent studies in the US (Bellmore,

Nishina, Witkov, Graham, & Juvonen, 2007; Graham & Cohen, 1997; Kao & Joyner, 2004), Canada (Schneider, Udvari, & Dixon, 2007) and Europe (Verkuyten, 2001) suggest that cross-ethnic friendships are uncommon and low in quality. Undoubtedly, the social context, in particular the ethnic composition of schools and classrooms, and the ethnic status of children (majority vs. minority), plays a significant role in how peer relationships are formed during childhood (Graham, Taylor, & Ho, 2009; Kawabata & Crick, 2008). Both intergroup contact and friendship theories provide explanations about how ethnic composition may affect the development of cross-ethnic friendships across different ethnic groups. However, no clear agreement has been reached about the effects of ethnic diversity and ethnic group on cross-ethnic friendships in ethnically diverse settings.

The current work investigated whether cross-ethnic friendships in a specific British context, multi-ethnic secondary schools in London, are necessarily as rare and low in quality as previous studies in various contexts have demonstrated. We further explored whether classroom ethnic diversity and ethnic group are associated with the selection and the quality of cross-ethnic friendships, after controlling for the percentage of available same-ethnic peers in classroom, gender, classroom gender composition, perceived ethnic discrimination and ethnic identity.

2. Cross-ethnic friendships in social context: Theoretical and empirical work

2.1. Cross-ethnic friendships and ethnic diversity

Cross-ethnic friendships in multi-ethnic contexts have been primarily investigated following the basic tenets of intergroup contact theory (Allport, 1954) which assumed that greater contact between members of different groups would improve positive intergroup relations. Schools in particular have been suggested as convenient social settings for the development of intergroup contact by ensuring equal status and common goals (Pettigrew, 1998;

Schofield, 1991). With the reformulation of the contact theory, more attention has been drawn to crossethnic friendships, which promote positive intergroup relations by providing long-term, mutual, and affective relationships that include self-disclosure, empathy and trust (Pettigrew, 1998; Turner et al., 2007). Empirical research has supported this assumption, and cross-ethnic friendships have consistently been found to improve positive outgroup attitudes among children and adolescents (e.g., Aboud et al., 2003; Feddes et al., 2009; Levin, Van Laar, & Sidanius, 2003; Pettigrew & Tropp, 2006).

Supporting intergroup contact theory, propinquity, i.e. physical proximity between different groups, has been suggested to increase intergroup contact and friendships in earlier theories of friendship formation (Blau, 1974, 1977; Homans, 1950). A great deal of previous empirical work found a direct positive link between the number of potential cross-ethnic friends in schools or classrooms and the frequency of cross-ethnic friendships (Damico & Sparks, 1986; Hallinan & Teixeira, 1987, Howes & Wu, 1990; Quillian & Campbell, 2003). Yet, opportunities for cross-ethnic friendships alone may not be sufficient for the actual development of cross-ethnic friendships (Mouw & Entwisle, 2006; Sigelman, Bledsoe, Welch, & Combs, 1996). It has been suggested that homophily, the tendency to choose friends with similar characteristics, also affects friendship formation. Research shows that racial/ethnic homophily is one of the strongest divides that influence friendships (Kandel, 1978, McPherson, Smith-Lovin, & Cook, 2001). Therefore, when people have opportunities to form relationships with their own ethnic group, they are inclined to do so (Moody, 2001).

Empirically, Joyner and Kao (2000) found that the likelihood of interracial friendships increases as the proportion of the available same-race peers decreases. Moody (2001), using the National Longitudinal Study of Adolescent Health in the US, concluded that friendship

segregation is at the highest level in moderately heterogeneous schools, but decreased significantly with extreme ethnic heterogeneity. He explained this nonlinear relationship by highlighting the effect of racial categorisation which becomes salient in moderately heterogeneous environments. Moody also based his findings on the ethnic competition theory (Blalock, 1967; Scheepers, Gijssberts, & Coenders, 2002) and indicated that in moderately heterogeneous settings, ethnic majorities may feel threatened by high numbers of ethnic minorities. In a study in the Netherlands, Vervoort, Scholte, and Scheepers (2011) found that White participants had more negative outgroup attitudes and more positive ingroup attitudes when there were higher numbers of ethnic minorities in the classroom. Therefore, racial/ethnic salience may increase in such environments, consequently restricting the formation of cross-ethnic friendships.

Quillian and Campbell (2003) argued that in ethnically diverse environments, propinquity and homophily operate in opposite ways; homophily appears to increase the number of same-ethnic friendships, while propinquity and opportunity for cross-ethnic contact may enhance the formation of cross-ethnic friendships. Similarly, Wilson and Rodkin (2012) suggested that one may tend to befriend same-ethnic peers as a way to promote one's social identity (Hamm, Brown, & Heck, 2005; Peshkin, 1991; Tajfel & Turner, 1979); whereas one may wish to form expansive social connections that would cross ethnic boundaries. The specific context may therefore play a significant role in the compromise between same-/cross-ethnic friendship selection.

Most empirical research in the US and Canada has supported the homophily principle and found that children and adolescents usually form friendships with their same-ethnic/race peers, with cross-ethnic friendships being infrequent (e.g., Clark & Ayers, 1992; Jackman & Crane,

1986; Kao & Joyner, 2006; Kawabata & Crick, 2008; Schneider et al., 2007). Similarly, studies in the UK, although scarce, demonstrate high in-group preference of children in their choice of friends and play mates (Boulton & Smith, 1992; Davey & Mullin, 1982; Leman & Lam, 2008). In parallel to their low frequency, cross-ethnic friendships have also been shown to be weak and low in intimacy (Aboud et al., 2003; Moody, 2001). Studies indicated that cross-ethnic friends have rarely been nominated as „best friends“ (Hallinan & Teixeira, 1987; Reynolds, 2007). Moreover, they have been found to be lower in intimacy and closeness (Aboud et al., 2003; Schneider et al., 2007), self-disclosure and partner“s responsiveness (Shelton, Trail, West, & Bergsieker, 2010) compared to same-ethnic friendships. Similarly, Kao and Joyner (2004) indicated that the quality of cross-ethnic friendships assessed by activities and time spent together was lower compared to the quality of same-ethnic friendships.

2.2. Cross-ethnic friendships across ethnic groups

Cross-ethnic friendship selection and quality may also vary across different ethnic groups. The general trend in the literature shows that White participants (majority group members) are especially likely to form more same-ethnic friendships than cross-ethnic ones. Accordingly, White children and adolescents are less friendly (Hallinan & Teixeira, 1987), less intimate (Shelton et al., 2010, Stearns, Buchman, & Bonneau, 2009), and give less importance to their cross-ethnic peers (Pica-Smith, 2011) compared to ethnic minorities. Similarly, White majority group members tend to report higher same-ethnic friendship numbers (Clark & Ayers, 1992; Howes & Wu, 1990; Margie, Killen, Sinno, & McGlothlin, 2005; Shrum, Cheek, & Hunter, 1988) and lower levels of diversity in their friendship group compared to ethnic minorities (Fischer, 2008).

Although most empirical research noted that Whites are inclined to choose more same-ethnic friends, this often depends on the ethnic composition of the social context. Kawabata and Crick (2008) found that, after controlling for the proportion of same-ethnic group members in the classroom, White Europeans tended to report higher cross-ethnic friendship selection compared to African and Latino Americans. Quillian and Campbell (2003) indicated that the effect of race/ethnicity on friendship preferences was still significant even after controlling for available same-ethnic peers in the environment. They found Asian and Hispanic Americans' cross-ethnic friendships to be more prevalent compared to White and Blacks' cross-ethnic friendships. Some studies, on the other hand, found that the in-group preference for friendships exists for both majority and minority ethnic groups and there was no effect of ethnic group in friendship selection (Aboud et al., 2003; Graham & Cohen, 1997; Howes & Wu, 1990).

2.3. Control variables

We also took into account a number of control variables that could potentially affect cross-ethnic friendship selection and quality in addition to ethnic diversity and ethnic group. First, we accounted for the percentage of available same-ethnic peers in the classroom which has been found to affect the formation of cross-ethnic friendships and may restrict cross-ethnic friendship selection (Joyner & Kao, 2000; Moody, 2001). Second, we controlled for gender-related variables, such as gender and classroom gender composition (mixed vs. all-girls), as gender has been found to be one of the categories children related to in forming friendships. Yet, results are mixed; Lee, Howes, and Chamberlain (2007) showed that girls had more cross-ethnic friends than boys, while boys have been found to have more extensive social networks than girls in other studies (Graham & Cohen, 1997). Third, socio-economic status indicated by house type (e.g., council house or private house) was included as a control variable, as previous research

suggested that social group status may have effects on intergroup attitudes of children (e.g., Bigler, Brown, & Markell, 2001; Nesdale, Durkin, Maass, & Griffiths, 2004).

Finally, we also accounted for two ethnically-related variables - perceived ethnic discrimination and ethnic identity. First, Levin et al. (2003) showed that perceived ethnic discrimination increased the formation of same-ethnic friendships, and other studies show that negative intergroup experiences and intergroup anxiety have negative impacts on intergroup relations (Stephan & Stephan, 1985). Second, ethnic identity also appears to affect friendship selection, albeit the presence of mixed findings in the literature. One line of research suggests that high group identification is associated with positive views of ingroup members among adults (e.g., Brown & Hewstone, 2005) and ethnic minority adolescents (Kao & Vaquera, 2006). On the other hand, other research suggests that high ethnic identification may actually encourage the formation of cross-ethnic friendships, by increasing confidence in ethnic identity, which provides people with security needed to promote understanding of other ethnic groups and intercultural thinking. Phinney, Ferguson, and Tate (1997) demonstrated that ethnic identity increased positive ingroup attitudes, which in turn improved outgroup attitudes. In fact, ethnic identity and other-group orientation (i.e., the desire to interact with other ethnic groups) have been suggested to be positively associated (Phinney, Jacoby, & Silva, 2007).

The Present Study

2.4. The context

Although Britain still remains a majority White nation, recent census data indicated that the percentage of White ethnic majorities decreased from 91.3% in 2001 to 86% in 2011 (Office for National Statistics, 2012). In particular, London now has a strikingly different ethnic composition compared to the rest of the UK, with 45% of the population consisting of ethnic

groups other than White British (Cohen, 2012; Office for National Statistics, 2012). Sturgis et al. (2011) focused on London as a specific environment and found that meaningful contact between members of different ethnic groups is substantially different in London compared to the rest of the UK; social mixing and meaningful regular contact are higher for White British Londoners compared to White British residents in other parts of the UK. London is also noteworthy for the variety and diversity of ethnic groups which reside in the inner city. Although Asians and Blacks constitute a major part of the ethnic minority population in London (18.5% and 13.3% of the total London population according to 2011 Census data), there are approximately 300 different languages spoken, with at least 50 non-indigenous communities (Von-Ahn, Lupton, Greenwood, & Wiggins, 2010).

The growth of ethnic minority populations is also emphasized in educational settings. The percentage of ethnic minority groups in Britain's state secondary schools has increased from 17.7% in 2007 to 23.2% in 2012 (Ryan, D'Angelo, Sales, & Rodriguez, 2010; Office for National Statistics, 2012). Ethnic minority students have started to outnumber White British students in secondary schools, reaching a proportion of 53% in Greater London (Hamnett, 2012). As schools constitute one of the social contexts where children spend time with peers and develop friendships (Coleman, 1961), the environment of secondary schools around London provides a specific social setting for the formation of cross-ethnic friendships.

Research shows that children start to construct stronger schemas about social categories such as race and gender and hold a clear understanding of these categories by the age of 10 (Quintana, 2011). Hence, we focused on early adolescent students (aged 11) who started secondary school at the time of measurement. This period may be especially challenging for children, due to the need to form friendships in a new school environment, while encountering

potential risk of ethnic discrimination (Jugert, Noack & Rutland, 2011; Spears-Brown, 2008).

The examination of cross-ethnic friendships during this period is also critical, since such interactions are often strong predictors of intergroup relationships later in life (e.g., Ellison & Powers, 1994; Stearns et al. 2009). Moreover, importance given to friendships and the rate of self-disclosure among friends increase during transition to secondary school, as early adolescents become less dependent on parents and more affiliated with peers (e.g., Dunn, 2004; Fuligni & Eccles, 1993).

2.5. Aims and hypotheses

The first aim of this study was to explore the current trend of cross-ethnic friendships in Greater London. We evaluated both ethnic minority (Black, South Asian and Middle Easterner) and majority British (White) students' self-reported cross-ethnic friendships, using the number of cross- and same-ethnic friends as an indicator of cross-ethnic friendship selection, and the closeness and intimacy of three best cross-ethnic friends as indicators of cross-ethnic friendship quality. The second aim was to explore how cross-ethnic friendship selection and quality vary across different ethnic groups and classroom ethnic diversity. We also controlled for a number of relevant variables which may have potential effects on cross-ethnic friendship selection and quality, including the percentage of same-ethnic peers in the classroom, gender, classroom gender composition (mixed vs. all-girl), ethnic identity and perceived ethnic discrimination.

This study aims to extend previous findings in several ways. Most previous studies investigating secondary school cross-ethnic friendships examined only Black-White or majority-minority interracial friendships (e.g., Hallinan & Williams, 1989; Sigelman et al., 1996; Vervoort et al., 2011), which may not represent current social environments in big cities. In this study, we accounted for cross-ethnic friendships among various ethnic groups residing in London.

Although some studies included more ethnically/racially diverse samples (e.g. Quillian & Campbell, 2003; Kawabata & Crick, 2011b), these studies have been almost exclusively limited to cross-ethnic/racial friendships in the US setting, which may be primarily shaped by the American history of racial segregation (Van Houtte & Stevens, 2009). Also by controlling for a number of variables that may affect cross-ethnic friendships in an ethnically diverse environment, we aimed to illustrate specific relationships between ethnic group, ethnic diversity and cross-ethnic friendships.

In summary, we hypothesized that:

H1: Students would report higher numbers of same-ethnic friendships than cross-ethnic ones based on the general trend in most previous empirical work.

H2: Classroom ethnic diversity would have positive effects on cross-ethnic friendship frequency and quality after accounting for control variables.

H3: Ethnic group would have an effect on cross-ethnic friendship selection and quality, but due to the lack of previous research in the British context, we did not hypothesize about the specific effect of ethnic group.

3. Method

3.1. Participants

Questionnaires were distributed to Year 7 students (age: $M = 11.09$, $SD = .45$) within the first month of their first year at secondary school. The sample consisted of 910 students (367 male, 539 female, 4 did not reveal their gender) from different ethnic backgrounds including White European British (29.3%), White Non-European British (1.6%), Middle Easterner British (7.2%), Black African – Caribbean British (13.5%), South Asian British (28.3%), Other Asian British (2.3%), Mixed White – Other British (12.4%) and Other (5.4%). Socioeconomic status

was based on residence type, as pilot work showed that many pupils could not give useful data on parental occupation; 32.9% reported living in council accommodation (i.e., public or social housing), 22.8% in a rented flat/house, 44.1% in an owned flat/house, and 0.02% in other type of residence. 3.2.

Procedure

Data were collected in 9 multi-ethnic schools (37 classrooms) in Greater London during the first half of the autumn term (Autumn 2011). At the start of the school term, secondary schools drawn randomly from multi-ethnic areas of London were sent an e-mail letter describing the aim and the procedure of the study. Students were informed specifically about the ethical aspects of the research and were invited to give informed consent. The first author or the class teacher indicated that participation was voluntary and that participants could withdraw at any time if they felt uncomfortable. Debriefing forms were distributed at the completion of the questionnaires. The students were introduced to the questionnaires with an explanation about important concepts of the study such as '*ethnic group*' and '*cross-ethnic friend*'. Ethnic group was defined as '*a group of people who share a cultural, religious and geographical history, for example: White British, Black Caribbean British, Indian British*', whereas a cross-ethnic friend was described as '*a friend who is of a different ethnic group than yours, for example: White British and Black African British*'. Questionnaires were completed within 45 minutes. The participating secondary schools in the study were all comprehensive state secondary schools (i.e., not private schools) and were located mostly in suburban areas of London where the percentage of ethnic minorities was at least 30% of the total school population.

3.3. Materials

3.3.1. Ethnic diversity measurement.

Ethnic diversity was measured by the Simpson Diversity Index (1949) which is widely used in studies investigating ethnic/racial diversity in classrooms/schools (See Bellmore et al., 2007; Juvonen, Nishina, & Graham, 2006). The ethnic composition of classrooms was computed according to self-reported ethnicities of students in the sample. Each classroom ethnic diversity index was based on main ethnic categories in the total sample including White European, White Non-European, Black, Middle Easterner, South Asian, Other Asian, Mixed children and other ethnic category children. The index is computed using the formula below:

$$D_C = 1 - \sum_{i=1}^g p_i^2$$

where D_C is the ethnic diversity of a given classroom, p is the proportion of students in the classroom who are in ethnic group i and p_i^2 is summed across g groups in a classroom. Simpson Diversity Index ranges from 0 to 1, with higher scores indicating greater ethnic diversity. The index takes into account the number of different ethnic groups in the context and the relative proportion of each ethnic group.

Ethnic diversity was also calculated at the grade level (Year 7) for each school where more than one classroom was included in the study. Ethnic diversity computed at the grade level in the present sample ranged between .34 and .84 with a mean of .68 ($SD = .11$) and the classroom diversity ranged between .34 and .85 with a mean of .68 ($SD = .13$). The percentage of White European British students in each classroom varied between 0 and 84. The correlation between classroom and grade-level diversity was .85, $p < .001$. Because most schools did not disclose information about the ethnic composition at the school level, it was not possible to investigate ethnic diversity at the school level. Table 1 summarizes the characteristics of secondary schools which participated.

4.3.2. *Friendship measurements.*

To assess friendship frequencies, we specifically asked students to think about their friends that they ‘*hang out*’ with regularly. The first question involved two open-ended items that assessed participants’ approximate number of friends from the same and different ethnic groups (‘*how many friends do you have from the same / different ethnic group?*’).

To assess cross-ethnic friendship quality, we used a second question involving exclusively cross-ethnic friendships where the participants were asked to think about their three best cross-ethnic friends. Additionally, each friend’s initials and ethnicities were asked, followed by two items about the frequency of interaction (‘*how much do you interact with this friend?*’) ranging from 1 (*not very frequently*) to 5 (*very frequently*) and closeness (‘*how close do you feel to this friend?*’) ranging from 1 (*not very close*) to 5 (*extremely close*). A composite variable of ‘*friendship quality*’ was then computed by combining the mean interaction and closeness for three best cross-ethnic friends.

4.3.3. *Control variables.*

Percentage same ethnicity. The percentage of available same-ethnic peers was calculated by dividing the total number of same-ethnic students (minus one) to the total number of students (minus one) in the classroom for each student. For example, in a classroom where the number of students is 21 and the number of South Asian students is 6, each South Asian student would have 25% chance to form a same-ethnic friendship. The variable was computed based on major ethnic categories used in the diversity index (White European, White Non-European, Middle Easterner, Black, South Asian, Other Asian, Mixed and Other). The same measure was used in previous research to define whether the participants were numerical majority/minority in the classroom

(Bellmore, Witkow, Graham, & Juvonen, 2004) and as a classroom characteristic describing classroom ethnic composition (Bellmore et al., 2007).

Gender and Classroom gender composition. We included gender and classroom gender composition (mixed gender vs. all-girls) as dichotomous variables.

Ethnic identity. Ethnic identity was assessed by 3 items that addressed how much the participant identified with his/her ethnic background. The scale included the following items: ‘*I feel good about my ethnic group*’, ‘*I am proud of being a member of my ethnic group*’ and ‘*It is important to me that I am a member of my ethnic group*’. The response scale ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). The reliability of the scale in the present sample was .80.

Perceived ethnic discrimination. Perceived ethnic discrimination was measured by an 8-item scale which assessed how often children perceived each ethnic discrimination experience. Some of the items were ‘*how often do you feel that teachers call on you less often than they call other kids because of your race or ethnicity*’ and ‘*how often do you feel like you are not picked up for certain teams or other school activities because of your race or ethnicity*’. The response scale ranged from 1 (*never*) to 5 (*all the time*). The reliability of the scale was high with a Cronbach alpha coefficient of .90.

1.1.Data Strategy

Participants who defined their ethnicity as ‘Non-European White’, ‘other Asian’ and ‘other’ were excluded from the analysis due to the small number of participants in these ethnic groups. We further excluded mixed ethnicity children, due to complications that may stem from the assessment of cross-ethnic friendships for this group, as it is unclear what would constitute cross-ethnic friendships for this group. Moreover, this group contained a variety of ethnic mix,

including not only White-Black and White-South Asian children, but also other groups, such as Black-South Asian and Black-Middle Easterner children, as well as multiple ethnic categories, leading to further complexities. With the exclusion of 226 students, a total of 684 participants (256 White European British, 63 Middle Easterner British, 118 Black British, 247 South Asian British) were included in the final analysis.

We first investigated means and standard deviations for same-/cross-ethnic friendship numbers, cross-ethnic friendship quality, and control variables across 4 major ethnic groups. We examined results about same-/cross-ethnic friendship numbers by conducting paired sample t-tests for each ethnic group.

Based on previous findings in the literature (Moody, 2001), an initial curve estimation was performed to ascertain that the relationship between classroom ethnic diversity and cross-ethnic friendship outcomes is linear. Results revealed that the linear relationship fitted best the current data. To explore the effects of ethnic group and ethnic diversity, Hierarchical Linear Modelling (HLM) was used; this method scrutinizes the dependencies that could stem naturally from the fact that students share the same classroom (Raudenbush & Bryk, 2002). Since students are nested within classrooms and friendship measurements might be similar within the same classroom, a two-level hierarchical linear modelling procedure which accounts for the effect of classroom variance was considered the most appropriate strategy.

We performed two multilevel models on cross-ethnic friendship quality and selection (at this stage, we preferred to use the ratio of cross-ethnic friendship numbers to total friendship numbers in order to decrease the variability in cross-/same-ethnic friendship estimations). We first checked for unconditional models with no predictor, to find out about how much variance is explained by between-classroom (level-2) effects. Next, we entered main predictor variables

(ethnic group and classroom ethnic diversity), along with control variables (percentage same-ethnicity, gender, classroom gender composition, ethnic identity and perceived ethnic discrimination). Finally, we entered the interaction term classroom ethnic diversity X ethnic group, to determine whether ethnic diversity would have different effects across different ethnic groups. All continuous variables were transformed to *z-scores*, except our level-2 variable, classroom ethnic diversity. This was required to interpret its main effect independent of the interaction term.

2. Results

2.1. Same-/cross-ethnic friendship numbers

In general, children reported high numbers of both same- and cross-ethnic friendships. Only 3% of the total sample reported that they did not have any cross-ethnic friends and 9% reported that they did not have any same-ethnic friend. Also, children estimated significantly higher numbers of cross-ethnic friends ($M = 12.98$, $SD = 15.09$) than same-ethnic friends ($M = 8.27$, $SD = 12.34$), $t(563) = -6.68$, $p < .001$. Separate analyses for each group indicated that for all ethnic groups cross-ethnic friendship numbers were higher than same-ethnic ones; $t(203) = -3.24$, $p < .01$ for White Europeans; $t(51) = -7.73$, $p < .001$ for Middle Easterners; $t(95) = -4.36$, $p < .001$ for Blacks and $t(211) = -1.91$, $p = .05$ for South Asians.

Cross-ethnic friendship quality was also generally high ($M = 3.77$, $SD = .79$) ranging from 3.73 to 3.92 on a scale of 1 to 5, on which a higher score represents better quality cross-ethnic friendships. Means and standard deviations are presented in Table 2.

2.2. Multilevel Modelling

2.2.1. The effect of ethnic group and ethnic diversity on cross-ethnic friendship selection

The unconditional model with no predictors revealed that the intercept-only model was significant and the variance between classrooms explained 11% of the total variance of cross-ethnic friendship selection ($p < .01$). This finding confirmed that the procedure was necessary for the current data analysis.

After the inclusion of the main and control variables in the model, gender had a significant main effect ($\beta = .06, p < .05$); boys had higher cross-ethnic friendship selection compared to girls. While classroom gender composition and ethnic identity did not have significant effects, perceived ethnic discrimination had a marginally positive association with cross-ethnic friendship selection ($\beta = .02, p = .09$). Percentage same-ethnicity had a substantial negative effect ($\beta = -.11, p < .001$). Classroom ethnic diversity had a marginally positive effect ($\beta = .34, p = .06$). Ethnic group also had an association with cross-ethnic friendship selection; White European children reported a significantly higher same-ethnic selection compared to other ethnic groups ($\beta = .44, p < .01$). An interaction effect between ethnic diversity and ethnic group was observed; White Europeans estimated higher cross-ethnic friendship selection compared to other groups, when classroom ethnic diversity was low ($\beta = -.63, p < .01$).

2.2.2. The effect of ethnic group and ethnic diversity on cross-ethnic friendship quality

The unconditional model revealed that the intercept-only model explained 4% of the variance between classrooms and the effect was marginally significant ($p = .09$). Although between classroom variance explained a small part of the variance, this model was preferred in order to account for any further classroom-level variance.

With the inclusion of the control and main variables, gender had a significant main effect. Boys had lower cross-ethnic friendship quality compared to girls ($\beta = -.17, p < .05$). Ethnic identity also had a marginally significant positive association with cross-ethnic friendship quality

($\beta = .08, p = .08$). Classroom ethnic diversity and percentage same-ethnicity did not have significant effects. There was a marginally significant main effect of ethnic group; White Europeans estimated lower quality cross-ethnic friendships compared to other ethnic groups ($\beta = -.83, p = .07$). Ethnic group also had a marginally significant interaction with ethnic diversity; White Europeans reported higher quality cross-ethnic friendships, when classroom ethnic diversity was high ($\beta = 1.37, p = .06$). Table 3 presents multilevel models for cross-ethnic friendship selection and quality.

5. Discussion

The aims of this study were to investigate same-/cross-ethnic friendship numbers and selection, the quality of cross-ethnic friendships, and whether ethnic diversity and ethnic group have significant effects in cross-ethnic friendship selection and quality in a multiethnic UK setting. In this study, cross-ethnic friendships were in fact more frequent than same-ethnic ones, and of high quality. Even after controlling for other potential variables, classroom ethnic diversity still had a marginal, but significant and positive effect on cross-ethnic friendship selection. There was no evidence for the effect of ethnic diversity on cross-ethnic friendship quality. Ethnic group also had significant effects: White European children had higher cross-ethnic friendship selection but lower quality cross-ethnic friendships compared to other groups. However, White Europeans reported lower cross-ethnic friendship selection but higher quality cross-ethnic friendships when classroom ethnic diversity was higher.

5.1. Cross-ethnic friendship numbers and quality

Our first important finding concerns same-/cross-ethnic friendship numbers. Contrary to Hypothesis I and the widespread evidence in the literature until now, which has suggested that cross-ethnic/racial friendships are rare and low in friendship quality among children (e.g., Quillian & Campbell, 2003; Schneider et al., 2007), cross-ethnic friendships reported by the current sample were not rare and of low quality, even at the beginning of a new school year when students may be expected to gather around their own ethnic group (Jugert et al., 2011).

Only a few studies have shown that cross-ethnic friendships may be common (e.g., DuBois & Hirsch, 1990; Hunter & Elias, 1999) and to our knowledge no studies have shown that cross-ethnic friendship numbers are higher than same-ethnic ones for both ethnic majority and minority participants. In a Canadian study, Smith and Schneider (2000) showed that their sample

was relatively non-ethnocentric in their choice of friends. This study was conducted in two multi-ethnic schools in Toronto, which therefore may represent a similar environment to the setting in the current study.

The current study's findings about high cross-ethnic friendship numbers may be controversial, but not unexpected. Recent findings have shown that residential ethnic segregation has been decreasing in the UK over the last decade (Sabater, 2008; Simpson, 2007). Ford (2008) indicated a generational decline in prejudice among young British children as a result of social contact between ethnic groups. Although Ford's study is based on explicit prejudice which is known to be transformed into subtle forms (e.g., Dovidio & Gaertner, 1986; Pettigrew & Meertens, 1995), recent research in London has shown that White British children's both explicit and implicit attitudes were positive for Black children (Davis, Leman, & Barrett, 2007). Also, in the current sample, perceived ethnic discrimination was generally low (with a mean of 1.47 on a scale from 1 to 5). These improvements in social integration may further point to why cross-ethnic friendships today might not be as rare as they used to be in previous research.

Similarly, social norms about cross-ethnic friendships and the racial climate of the schools could explain the findings. Developmental research has shown that children's intergroup attitudes and behaviors are influenced by social norms that highlight the inappropriateness of ethnic discrimination (e.g., Killen, Lee-Kim, McGlothlin, & Stangor, 2002; Rutland, 2004). During elementary school years, social norms in multiethnic settings often encourage the tolerance and appreciation of cultural diversity and eventually children's outgroup attitudes are heavily influenced by such norms and concerns for self-representation (Rutland, Cameron, Milne, & McGeorge, 2005). Accordingly, Feddes et al. (2009) found that cross-ethnic friendships improved outgroup attitudes through perceived social norms which indicate cross-

ethnic friendships as *acceptable* behavior in a multi-cultural environment. Similarly, the promotion of extended cross-ethnic friendship in which knowing that an ingroup friend has an outgroup friend lead to increases in positive intergroup relationships amongst children (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Cameron, Rutland, Hossain, & Petley (2011) indicated that extended contact effects on positive outgroup attitudes were mediated by ingroup norms among children. Therefore, a positive school climate where social norms indicate the promotion of positive intergroup relationships may foster the development of cross-ethnic friendships (e.g., Damico, Bell-Nathaniel, & Green, 1981; Hallinan & Teixeira, 1987).

5.2. The effect of ethnic diversity

Partially confirming Hypothesis II, which predicted positive effects of ethnic diversity on cross-ethnic friendships, ethnic diversity had positive effects on cross-ethnic friendship selection, after controlling for a number of variables. However, this effect was marginal and opportunities to form same-ethnic friendships (percentage same-ethnicity) also had significant negative associations with cross-ethnic friendship selection. These findings are in line with intergroup contact theory, suggesting a positive relationship between intergroup contact and positive intergroup relationships. Findings also fit more the principle of propinquity, rather than homophily. Research shows that homophily in friendships is not only related to racial/ethnic groups, but also to other shared categories such as shared activities (McGlothlin, Killen, & Edmonds, 2005).

Ethnic diversity did not have a significant effect on cross-ethnic friendship quality, as we initially hypothesized. This might be because we only included three best cross-ethnic friends for quality; students could have reported high cross-ethnic friendship quality when classroom ethnic diversity was either high or low. Alternatively, the quality of friendships may be influenced more

by personal factors, rather than environmental factors. With a late adolescent Belgium sample, Dejaeghere, Hooghe, and Claes (2012) found no direct effect of ethnic diversity on ethnocentrism and concluded that the effect of ethnic diversity was moderated by the perceived quality of interaction.

We also found a significant effect of gender on both cross-ethnic friendship measurements; boys reported higher cross-ethnic friendship selection, whereas they had lower quality cross-ethnic friendships compared to girls. These findings fit previous work demonstrating girls to have higher quality friendships compared to boys (Eder & Hallinan, 1978), while boys usually form more expansive social networks (Graham & Cohen, 1997) and more cross-ethnic friendships compared to girls (Kawabata & Crick, 2008). Moreover, ethnic identity also had a marginally positive effect on cross-ethnic friendship quality. Although theories of social identity imply a negative effect of ethnic identity on cross-ethnic friendships, recent research pointed to the positive effect of ethnic identity on positive outgroup attitudes (Phinney et al., 2007).

5.3. The effect of ethnic group

Confirming Hypothesis III which predicted that ethnic group would affect cross-ethnic friendships, findings showed that White European children estimated a higher cross-ethnic friendship selection compared to other ethnic groups. Although a great deal of research show Whites' same-ethnic selectivity (e.g., Clark & Ayers, 1992; Howes & Wu, 1990), other studies pointed to White Europeans' cross-ethnic selectivity in ethnically diverse environments (Kawabata & Crick, 2008; Wilson & Rodkin, 2011). More importantly, we found an interaction effect between ethnic group and ethnic diversity. White European children reported a lower cross-ethnic friendship selection when classroom ethnic diversity was higher. This could be

explained by the ethnic competition theory (Blalock, 1967), which suggests that ethnic majority groups may feel threatened by the increasing numbers of ethnic minorities and therefore select more same-ethnic friendships in highly diverse environments in order to preserve their high social status.

There was also a marginally significant effect of ethnic group on cross-ethnic friendship quality, as we expected. White European children reported lower cross-ethnic friendship quality compared to other ethnic groups. This is in line with previous research (e.g., Shelton et al., 2010, Stearns et al., 2009). Furthermore, White Europeans had higher quality cross-ethnic friendships, when ethnic diversity was higher. Therefore, even though White Europeans estimated a lower cross-ethnic friendship selection when ethnic diversity was higher, these friendships could still be of high quality. When ethnic diversity is high, White children may be inclined to approach more their same-ethnic peers as an initial friendship preference, but they do not necessarily form low quality cross-ethnic friendships.

5.4. Limitations and future directions

One of the limitations of this study was the complexity of defining ethnicity and interethnic relationships in the UK context. We allowed children to define their own ethnicity and their cross-ethnic friendships, which introduces some subjectivity in the interpretation of findings. In terms of analysis, we used four main ethnic categories, which also involve some simplification. Nazroo and Karlsen (2003) suggested that the use of broad ethnic categories is of limited use in terms of understanding the processes underlying the formation of ethnic identities. Distinctions between further subcategories among particular ethnic groups, such as Indian-Pakistani or African-Caribbean may be worth considering in future research.

Another issue might be the differentiation between *'friends* and *'best friends*'. Research has shown that children are usually ethnically exclusive with their best friend (Reynolds, 2007; Smith & Schneider, 2000). Therefore, children might have chosen their best friends from the same-ethnic group. Furthermore, we only included cross-ethnic friendship quality in the present research; findings could be significantly extended by comparing same- /cross-ethnic friendship quality. Also, it would have been interesting to examine further the ethnic composition of the cross-ethnic friendships. This would have contributed substantially to our understanding about specific intergroup relationships in the UK setting. For example, are White Europeans' outgroup attitudes equally favourable towards different ethnic minority status groups? Do ethnic minority status children tend to befriend other ethnic minority status children or ethnic majority status children? Research shows that children's outgroup attitudes are often influenced by these social status differences (e.g., Bigler et al., 2001). Hence, future research should address these research questions.

6. Conclusion

Previous research has shown that cross-ethnic friendships not only relate to more positive intergroup relations, but also to various positive outcomes for children, such as social competence and skills (e.g., Kawabata & Crick, 2008; Lease & Blake, 2005). Our findings show that cross-ethnic friendships are common and of high quality, which imply that children may develop unique social skills by engaging in ethnically diverse relationships which may provide important developmental outcomes that go beyond the limit of same-ethnic friendships.

This study demonstrates that, in a multicultural city environment such as London secondary schools, children seem to report more cross-ethnic friendships than same-ethnic ones. Findings also suggest that ethnic group, ethnic diversity and cross-ethnic friendships have unique

associations in the current context which offered an excellent milieu to investigate how different ethnic group members relate to each other. Although, it is difficult to generalize the findings to less ethnically diverse school environments in London, the rest of the UK or other European multicultural cities, the results are promising in reflecting new understandings about how ethnic segregation may be decreased over time and integration at the social level starts to take shape in early childhood in modern big multi-ethnic cities.

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Table 1

Diversity index, ethnic and gender composition of the participating schools

School ID	School type ^a	Diversity Index at Grade Level (Year 7)	% of White Europeans	Gender composition	No. of students recruited ^b
1	Community	.56	67.4%	Mixed	209
2	Community	.34	4.3%	Mixed	23
3	Foundation	.59	2.3%	Mixed	95
4	Community	.81	36.7%	All-girls	40
5	Community	.69	47.8%	Mixed	28
6	Academy	.84	37.1%	Mixed	50
7	Community	.73	34.1%	Mixed	101
8	Community	.68	17.8%	Mixed	167
9	Foundation	.78	19.1%	All-girls	197

Notes. ^a All schools are state comprehensive schools. Differences in school types are based on school governance. Community schools are controlled by local authorities, foundation schools and academies are governed by an independent governing body.

^b The number of students recruited involves the initial number of students before the exclusion of some ethnic groups for the statistical analyses.

Table 2

Descriptive statistics across ethnic group and gender

	Mean No. of SE friends	Mean No. of CE friends	Percentage SE peers	CE quality	PED	Ethnic Identity
White European	8 (12.11)	12.03 (15.49)	.43 (.21)	3.73 (.77)	1.32 (.59)	4.12 (.76)
Boys (<i>n</i> = 119)	8.73 (10.52)	14.31 (18.3)	.46 (.21)	3.51 (.84)	1.37 (.61)	3.97 (.82)
Girls (<i>n</i> = 137)	7.35 (13.38)	10 (12.16)	.40 (.21)	3.93 (.63)	1.27 (.56)	4.26 (.68)
M. Easterner	5.37 (7.24)	17.12 (13.89)	.13 (.10)	3.90 (.79)	1.62 (.79)	4.30 (.88)
Boys (<i>n</i> = 15)	6.67 (6.78)	23 (14.85)	.03 (.03)	3.68 (.82)	1.72 (.89)	4 (1.10)
Girls (<i>n</i> = 48)	5.09 (7.38)	15.86 (13.54)	.16 (.10)	3.98 (.78)	1.58 (.76)	4.40 (.78)
Black	10.86 (16.94)	19.55 (20.96)	.14 (.09)	3.92 (.68)	1.62 (.77)	4.34 (.79)
Boys (<i>n</i> = 44)	13.28 (17.31)	24.87 (25.97)	.13 (.08)	3.91 (.59)	1.76 (.82)	4.25 (.81)
Girls (<i>n</i> = 74)	9.66 (16.76)	16.89 (17.57)	.15 (.09)	3.93 (.74)	1.55 (.74)	4.39 (.78)
South Asian	10.20 (11.21)	10.15 (10.66)	.43 (.20)	3.69 (.86)	1.53 (.77)	4.34 (.77)
Boys (<i>n</i> = 108)	6.95 (11.23)	11.55 (11.49)	.51 (.17)	3.67 (.71)	1.66 (.92)	4.27 (.87)
Girls (<i>n</i> = 139)	8.34 (11.31)	6.95 (11.23)	.38 (.19)	3.70 (.95)	1.43 (.63)	4.34 (.77)
Total	8.27 (12.34)	12.98 (15.09)	.35 (.22)	3.77 (.79)	1.47 (.72)	4.26 (.78)
Boys (<i>n</i> = 286)	9.72 (12.00)	14.87 (17.38)	.40 (.23)	3.65 (.77)	1.55 (.79)	4.13 (.86)
Girls (<i>n</i> = 398)	7.28 (12.49)	11.66 (13.12)	.32 (.21)	3.85 (.80)	1.41 (.65)	4.35 (.71)

Notes. *N* = 684. Standard deviations presented in parentheses.

SE = Same-ethnic, CE = Cross-ethnic. PED = Perceived ethnic discrimination, M. Easterner = Middle Easterner

Table 3

Parameter estimates for multilevel models predicting cross-ethnic friendship selection and cross-ethnic friendship quality

	Cross-ethnic friendship selection	Cross-ethnic friendship quality
Intercept	.33 (.13)**	3.97 (.48)***
<i>Individual-level variables</i>		
Gender		
Boys	.06 (.03)*	-.17 (.09)*
Girls (ref.)	-	-
SES	-.01 (.01)	.02 (.04)
Opportunity for same-ethnic friendships	-.11 (.02)***	.01 (.07)
Ethnic Identity	.00 (.01)	.08 (.04)†
Perceived ethnic discrimination	.02 (.01)†	.03 (.04)
Ethnic group		
White European	.44 (.13)**	-.83 (.49)†
Middle Easterner	.24 (.36)	.26 (1.13)
Black	.16 (.28)	-.17 (.91)
South Asian (ref.)	-	-
<i>Classroom-level variables</i>		
Classroom ethnic diversity	.34 (.18)†	-.20 (.70)
Classroom gender composition		
Mixed	.06 (.03)	-.10 (.15)
All girl (ref.)	-	-
<i>Individual-level X classroom-level interaction</i>		
Classroom ethnic diversity X ethnic group		
Diversity X White European	-.63 (.20)**	1.37 (.73)†
Diversity X Middle Easterner	-.44 (.49)	.12 (1.53)
Diversity X Black	-.23 (.39)	.56 (1.26)
Diversity X South Asian (ref.)	-	-
Variance		
Within classroom variance	.05***	.60***
Between classroom variance	.00	.03
-2 Restricted Log Likelihood	22.74	985.73

Notes. $N = 648$. Standard errors presented in parentheses. ref. = reference category.

† $p < .10$, * $p < .05$. ** $p < .01$. *** $p < .001$.