**Increasing Ethnic Diversity Moderates Longitudinal Effects of Individual Differences on Friendship Homophily**

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**Abstract:**

This study examined direct and interactive effects of social-emotional adjustment, national and ethnic identification and school ethnic composition on friendship homophily among 214 ethnic minority and 183 ethnic majority English children, aged between 5 and 11 years. The data came from a longitudinal study, which included two time points with a twelve-month interval. Results showed that among ethnic minority English children (teacher-rated) peer problems and ethnic identity increased friendship homophily whereas a bicultural identity did not lead to more friendship homophily. Among ethnic majority English children the effects of peer problems and English identity were moderated by school ethnic composition, such that these factors did not increase friendship homophily in more ethnically diverse schools. The findings are discussed based on theories of intergroup contact and intergroup threat.
Increasing Ethnic Diversity Moderates Longitudinal Effects of Individual Differences on Friendship Homophily

Keywords: Same-ethnic friendship preference, children, social-emotional adjustment, national and ethnic identity, school ethnic composition
Abstract

This study examined direct and interactive effects of social-emotional adjustment, national and ethnic identification and school ethnic composition on friendship homophily among 214 ethnic minority and 183 ethnic majority English children, aged between 5 and 11 years. The data came from a longitudinal study, which included two time points with a twelve-month interval. Results showed that among ethnic minority English children (teacher-rated) peer problems and ethnic identity increased friendship homophily whereas a bicultural identity did not lead to more friendship homophily. Among ethnic majority English children the effects of peer problems and English identity were moderated by school ethnic composition, such that these factors did not increase friendship homophily in more ethnically diverse schools. The findings are discussed based on theories of intergroup contact and intergroup threat.
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Increasing Ethnic Diversity Moderates Longitudinal Effects of Individual Differences on Friendship Homophily

Children in many European countries go to increasingly ethnically diverse schools. This opens the opportunity for children to form friendships with children from diverse ethnic groups, which could then reduce prejudice and improve intergroup relations (Allport, 1954; Pettigrew & Tropp, 2006). Cross-ethnic friendships are also beneficial for ethnic minority children as they buffer against the negative effects of discrimination (e.g., Bagci, Rutland, Kumashiro, Smith, & Blumberg, 2014). However, preference for same-ethnic friendships (hereafter called friendship homophily) is pervasive even when opportunities for cross-ethnic friendships are taken into account (Moody, 2001). In this paper, we are interested in explaining change in friendship homophily as a function of (1) individual differences in social-emotional adjustment and ethnic and national identity (individual-level variables) and (2) school ethnic composition (school-level variable). We are particularly interested in differences in the association of individual-level variables and friendship homophily depending on school ethnic composition. Our longitudinal design, spanning 12 months, permits slightly stronger causal inferences than is possible from cross-sectional designs, typical of the majority of research in this area.

Individual social-emotional adjustment is associated with friendship homophily. Children high in prosociality and with high leadership skills were found to have relatively more cross-ethnic friendships (Kawabata & Crick, 2008; Lease & Blake, 2005) while children who were relationally aggressive or scoring high on externalizing behaviours (e.g., fighting, name-calling) were found to have relatively fewer cross-ethnic friendships (Kawabata & Crick, 2011). While prosocial behaviour is predictive of having successful peer relations in general (Aboud & Mendelson, 1996), research suggests that it may be uniquely related to having cross-ethnic friendships (e.g., Kawabata & Crick, 2008). These findings are in line with social-cognitive theory, which suggests that children with higher social-emotional skills and
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lower behavioural problems are more able to form and maintain friendships across groups (Aboud & Levy, 2000). This may be because socially competent children (e.g., who are high in empathy, leadership skills, and sociability) are more likely to form diverse friendship networks and to be relationally inclusive. On the other hand, aggressive and withdrawn children find it harder to make friends and are more likely to have limited and exclusive friendship networks (Crick et al., 1999). Thus, these children may find it difficult to reach out across ethnic boundaries and form friendships with cross-ethnic peers. Apart from leadership skills other indicators of positive social-emotional adjustment are likely to be negatively associated with friendship homophily. Thus, we predicted that children high in self-esteem would show a decrease in friendship homophily. On the other hand, children who experience problems getting along with peers are at risk of negative social-emotional adjustment (Parker & Asher, 1987). Thus, we expected that children who were rated by their teachers to have peer problems to show an increase in friendship homophily.

Intergroup factors also play a role in children’s decision-making about same- and cross-ethnic friendships. Children’s sense of group identity (e.g., identification with their ethnic or national group) should be relevant in this regard. Accordingly, Rutland and colleagues (2012) showed that among ethnic minority status English children bicultural identity (identification with both their ethnic group and the host society) was associated with less friendship homophily. However, their research did not look at children from the majority status group. We can assume that group identity will also play a role for majority status children’s friendship homophily. Thus, majority status children who identify strongly with the national group or minority status children who identify strongly with their ethnic group should show stronger friendship homophily. This higher preference for same-ethnic friendships can be explained in terms of social identity theory (Tajfel & Turner, 1979), which posits that people have a need for a positive social identity. When ethnicity is an important aspect of people’s social identity, they will think and act in terms of this collective identity and will thus favour
their ingroup. Previous research has also shown that bicultural identity is associated with less friendship homophily among minority group children (Rutland et al., 2012). Thus, we expect bicultural identity to be associated with a decrease in friendship homophily.

*School ethnic composition* (i.e., the share of ethnic minority members in a school ranging from low to high ethnic density) reflects different opportunities to form cross-ethnic friendships for majority and minority group members. Thus, for minority group children an increasing share of co-ethnic pupils should lead to more homophily as for them this means fewer opportunities for cross-ethnic ties and more opportunities for same-ethnic ties and vice versa for majority group children (for supporting evidence see Geven, Kalmijn, & van Tubergen, 2016).

How school ethnic composition moderates the influence of individual child characteristics on having interethnic relations has not to our knowledge been thoroughly investigated yet (cf. Thijs & Verkuyten, 2014). Greater presence of ethnic minority children in a school may increase the salience of an intergroup context (Brenick, Titzmann, Michel, & Silbereisen, 2012). Thus, individual social-emotional adjustment may become less predictive for friendship homophily in contexts where the intergroup context is salient. In these contexts intergroup factors, such as intergroup attitudes, perceptions of the intergroup climate, and the perception of group norms may instead become more relevant (Jugert, Noack, & Rutland, 2011). Therefore, we expected that peer problems would increase homophily but that this effect would be less pronounced in school contexts with a higher share of ethnic minority status pupils. Similarly, we expected that self-esteem would decrease homophily but that this effect would be less pronounced in high-ethnic density schools. This should apply to both ethnic majority and ethnic minority status children.

With regard to the interaction of ethnic and national identity with school ethnic composition, two opposing predictions can be made for ethnic majority group children. On one hand, ethnic majority group children who identify strongly with their national group may
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feel threatened by being in a more diverse context (Vervoort, Scholte, & Scheepers, 2011) and may thus show even greater friendship homophily. On the other hand, a higher share of ethnic minority children increases contact opportunities and actual contact between members of both groups. Thus, national identity may also become less relevant for making choices about intergroup friendships in contexts with a higher share of ethnic minority members where there are many opportunities for intergroup contact. With regard to ethnic minority children, we expected the effect of ethnic identity on increasing friendship homophily would be more pronounced as the share of ethnic minority members increases. This is because a higher share of ethnic minority members should allow ethnic minority children with a strong ethnic identity to make friends among the same ethnic group. In contrast, we did not expect the effect of a bicultural identity to be moderated by ethnic school composition because these children should want to have friends from the ethnic majority and the ethnic minority regardless of school ethnic composition.

Method

Participants and procedure

Participants consisted of 398 (203 boys, 195 girls; $M$ age = 7.56 years, $SD$ = 1.51) White English ethnic majority ($n$ = 183) and South Asian English ethnic minority ($n$ = 215) children. The children were recruited from 20 schools in ethnically heterogeneous, semi-urban, and lower-middle SES areas in South-East England. The ethnic breakdown of these children was as follows: 45.2% White, 41% Indian, 4% Pakistani, 2.3% Sri Lankan, 1.5% Bengali, 1.3% Nepalese and 0.3% Tamil. The ethnic composition of these schools varied from 2% to 62% ethnic minority status children (median 20%), and the classroom compositions were similar to these school figures. Children were assessed individually by a researcher, with all measures contained within a booklet, to ensure good comprehension of all items across the age range. The measures were piloted and were pictorially based, in order to aid understanding particularly among young children. The study was longitudinal with three
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assessments. We focused in our analyses on the first and the last measurement points, which
were 12 months apart. The study also contained other measures on acculturation and
multiculturalism not used in the present analyses.

Individual-Level Measures

**Friendship homophily.** We defined friendship homophily as the percentage of same-
ethnic friends held by a child out of all their nominated friends (e.g., Titzmann & Silbereisen,
2009). We asked children to name their five best friends. Friendship homophily was
calculated by dividing the number of same-ethnic friends by the total number of same-ethnic
and cross-ethnic friends multiplied by 100. The resulting percentage was used as a measure of
friendship homophily in our analysis.

**Self-esteem.** We used an adapted version of the Self Perception Profile for Children
(Harter, 1985) to measure children’s global (e.g., ‘Some kids are often unhappy with
themselves BUT other kids are pretty pleased with themselves’) self-esteem with six items.
Children first selected the statement that best described them. They then indicated the extent
to which that statement applied to them (‘very true’ or a ‘a little true’). Ratings were later
combined to make up a 4-point scale. Cronbach’s alphas at Times 1 and 2 were .63, and .65
for ethnic majority and .64, and .69 for ethnic minority children.

**Peer problems.** Teachers completed the Strengths and Difficulties questionnaire
(SDQ; Goodman, 1997) for each participating child. The questionnaire assesses emotional
symptoms, conduct problems, hyperactivity/inattention, peer problems, and pro-sociality with
five items each. Items were scored on a 3-point scale from 1 ‘not true’ to 3 ‘certainly true’.
Cronbach’s alphas for peer problems at Times 1 and 2 were .65, and .71 for ethnic majority
and .70, and .66 for ethnic minority children.

**Ethnic and English identification.** Children were presented with four questions
regarding their identification with the ethnic group that they had rated as most important to
them (e.g., ‘How proud are you about being [ethnic group]?). Children responded on a scale
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from 1 ‘not at all’ to 4 ‘very’. The English identification measure was identical to the ethnic identification measure, but the items referred to ‘English’ rather than the child’s ethnic group. Cronbach’s alphas for ethnic identification at Times 1 and 2 were .62, and .79 for ethnic majority and .71, and .73 for ethnic minority children. Cronbach’s alphas for English identification at Times 1 and 2 were .69, and .76 for ethnic majority and .82, and .84 for ethnic minority children.

School-Level Measures

School ethnic composition. We used the percentage of ethnic minority status children in the school as a continuous measure of school-level ethnic composition (Range = 1.73 – 63, \( M = 25.64, SD = 14.56 \)).

Socio-economic status (SES). We used publicly available data at the level of local authority in which schools were situated to gauge the socio-economic background of students (school-level variable). Specifically, we used the Income Domain Affecting Children Index (IDACI; APHO, 2011), which assesses the percentage of children aged 0-15 living in income-deprived households across local authorities. In this sample, the IDACI ranged from .06 to .55 across schools (\( M = 0.22, SD = 0.10 \)).

Results

We used Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) with restricted maximum likelihood estimation to examine the antecedents of friendship homophily. The use of HLM was important because our data were hierarchically structured (students nested in schools) and our hypotheses concerned group level variables (ethnic composition). Correlations among all measures are presented in the Appendix. The analyses were first conducted with gender and age as predictors. There were no main or interactive effects of gender or age. Therefore, gender and age were excluded from subsequent analyses.

First, we tested an unconditional means model for friendship homophily at Time 2. This model tested whether the means of Time 2 friendship homophily differed across schools.
Results showed that school-level estimates were not significant ($B = -.24, p = .906$). The intraclass correlation suggested that 1% of the variance was attributable to differences across schools. However, when we tested the unconditional means model separately for majority and minority group children, results showed that school-level estimates were significant ($B = 83.90, p < .001$; $B = 35.49, p < .001$), for majority and minority group children, respectively. These separate analyses suggested that 30% of the variance for majority group children and 36% of the variance for minority group children was attributable to schools. We thus decided to continue with separate analyses of majority and minority group children.

To examine how social-emotional adjustment was related to relative changes in friendship homophily, we ran HLM models with Time 2 friendship homophily as the outcome variable. All continuous variables were grand-mean centred. Significant interactions were examined further using simple slopes analysis (Preacher, Curran, & Bauer, 2006). We included Time 1 friendship homophily, and school ethnic composition as covariates. We added the social-emotional adjustment variables (self-esteem, and peer problems) and the respective two-way interaction terms with school-ethnic composition. We also included English identification for majority group children and English and ethnic identification as well as their interaction for minority group children. The results are summarized in Table 1 for majority group and in Table 2 for minority group children.

The results for majority group children showed that Time 1 friendship homophily ($b = .26, p < .01$), and school ethnic composition ($b = -.69, p < .001$), were significant predictors. Time 1 friendship homophily was associated with relative *increases* in friendship homophily; by contrast, school ethnic composition (i.e., a higher share of ethnic minority members in school) was associated with relative *decreases* in friendship homophily. As predicted, the cross-level interactions peer problems $\times$ school ethnic composition ($b = -.75, p < .05$) and English identification $\times$ school ethnic composition ($b = -.45, p < .05$) were significant. To examine these interactions, simple slopes were calculated to indicate the relationship between
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these variables and friendship homophily at 1 standard deviation above and below the mean school ethnic composition for the sample (Aiken & West, 1991).

The simple slopes between peer problems and friendship homophily were not significant for children in low, $t = 1.39, p = .166$, or in high ethnic composition schools, $t = -1.29, p = .201$ (see Figure 1), although it is noteworthy that they were differently signed. The simple slopes between English identification and friendship homophily were not significant for children in low, $t = 1.39, p = .167$, or for children in high ethnic composition schools, $t = -1.53, p = .128$ (see Figure 2), although again they had different valences. The cross-level interactions suggest that majority group children with more peer problems and stronger English identification showed more friendship homophily over time only in low but not in high ethnic density schools. Put another way, school composition attenuated the effects of social-adjustment and national identity on friendship homophily for majority group children.

The results for the minority group children showed Time 1 friendship homophily ($b = .41, p < .001$), peer problems ($b = 17.69, p < .01$), ethnic identification ($b = 14.29, p < .01$), and school ethnic composition ($b = .69, p < .01$) were associated with relative increases in friendship homophily. The main effect of ethnic identification was qualified by a significant English $\times$ ethnic identification interaction ($b = -11.37, p < .05$). We calculated simple slopes to clarify the nature of this interaction. The simple slopes between ethnic identification and friendship homophily were significant for children with low English identification, $t = 3.15, p < .01$, but not for children high in English identification, $t = 0.77, p = .441$ (see Figure 3).

Thus, ethnic identification only increased friendship homophily when English identification was low but not when it was high. In other words, a bicultural identification did not increase friendship homophily. None of the cross-level interactions was significant. We also tested whether ethnic or English identification or their interaction interacted with school ethnic composition but none of these interactions was significant (not included in final model).

Discussion
In this study we examined for the first time the longitudinal effect of individual differences in social-emotional adjustment, national and ethnic identity on friendship homophily among English ethnic minority and majority group children. Moreover, we considered whether these effects are moderated by school ethnic composition. Significantly, the findings of this longitudinal study showed that school ethnic composition moderated the influence of individual social-adjustment and national identity on friendship homophily for White English but not for ethnic minority English children. Thus, for one indicator of social-emotional adjustment (peer problems) and for English identity we found that that a higher share of ethnic minority children at the school level attenuated the effect of social-emotional adjustment and national identity on friendship homophily.

Why did these interactive effects occur only among majority group children? We had argued that a higher proportion of minority group children at the school level increases salience of an intergroup context (cf. Brenick et al., 2012). However, one may also argue that ethnic boundaries and ethnicity are chronically accessible for ethnic minority children by virtue of being a minority member in society (McGuire, McGuire, Child, & Fujioka, 1978). In contrast, for ethnic majority children their ethnic group membership is usually less salient. Thus, it may be that varying levels of ethnic minority members at school have more of an impact in terms of intergroup salience for majority than for minority group children. This may explain then why individual differences in peer problems become less relevant as a predictor of friendship homophily among ethnic majority group children in schools with a higher proportion of ethnic minority pupils.

At the individual level we found effects of social-emotional adjustment, national and ethnic identity only for ethnic minority group children. As expected, minority group children who were rated by their teachers to have peer problems and who identified strongly with their ethnic group showed more friendship homophily. The effect of ethnic identity was qualified by an interaction effect, such that ethnic minority children with a bicultural identity (high in
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ethnic and English identity) did not show more friendship homophily (cf. Rutland et al., 2012).

The interaction of national identity and school ethnic composition for ethnic majority group children runs counter to the argument that ethnic majority group members feel threatened by a higher presence of ethnic minority members, and thus, strongly identified individuals should feel particularly threatened and react by showing even greater ingroup preference (Thijs & Verkuyten, 2014; Vervoort et al., 2011). Our finding is more in line with intergroup contact theory, which suggests that more contact opportunities should help to break down ethnic boundaries. The effect of contact opportunity, however, was greater for children with a strong English identity. One can assume that highly identified children will also have more favourable attitudes towards their own compared to ethnic outgroups (Nesdale, Durkin, Maass, & Griffiths, 2005). Previous research has shown that cross-ethnic contact only improved ethnic attitudes for students with initially unfavourable attitudes (Munniksma, Stark, Verkuyten, Flache, & Veenstra, 2013). In addition, studies have shown that intergroup attitudes are predictive of having cross-ethnic friends (Jugert et al., 2011). Thus, strongly identified White English children may have had more room for improvement in their intergroup attitudes and this was reflected in their less homophilious friendship choices.

Our finding that school ethnic composition moderates the impact of national identity for White English children but not for ethnic minority English children may be explained in light of findings showing that intergroup contact is less effective for improving intergroup attitudes among ethnic minority group children (Feddes, Noack, & Rutland, 2009). Another reason for this group difference may be that English identity may be more malleable than ethnic identity. Thus, what it means to be English may differ depending on contextual factors such as whether one is in a more mono-ethnic or multi-ethnic school. In a more diverse setting White English children’s English identity may also encompass children from other
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ethic groups. Thus, their concept of Englishness may be more inclusive than that of White
English children attending ethnically homogeneous schools (see Barrett, 2005; Rutland,
1999). This fits with the findings of Knifsend and Juvonen (2014) which suggest that school
level diversity can promote social identity complexity. In contrast, ethnic identity is less
ambiguous as to who is included in this category (only ethnic minority members) and is often
subjectively defined dichotomously by skin colour.

Limitations and Practical Implications

Our measure of friendship was limited to within-school friendships and based on one-
sided rather than reciprocal nominations. Another limitation was our measure of school ethnic
composition, which was based on the percentage of ethnic minority children in a school. It
would have been preferable to have a measure of ethnic diversity, such as the Simpson index
(Simpson, 1949) that takes into account the number of different cultural groups in the school
and the relative representation of each group. It would also have been desirable to test for
ethnic group differences within one joint analysis. However, variance between schools existed
mainly within ethnic and not between ethnic groups and joint analysis would have required
testing three-way interactions terms (e.g., ethnicity × peer problems × composition), which
was not feasible given limited power of our sample. Care should also be taken when
extrapolating our findings to other ethnic minority groups. South Asian ethnic minority
members are a very settled group in the UK and may not be comparable to other ethnic
minority groups who may be perceived as more threatening (e.g., Syrian refugees).

The results of this study suggest that at least for ethnic majority children a higher share
of ethnic minority members in school may be beneficial for intergroup relations. This is
because individual factors that may inhibit cross-ethnic friendships, such as problematic
social behaviour and strong national identity seem to become less relevant in more ethnically
dense school contexts. As ethnic minority children still exhibited much lower friendship
homophily than ethnic majority children even in high ethnic density schools, the beneficial
effects of ethnic density to intergroup relations may not be limited to ethnic majority children but may benefit all children.

**Conclusion**

This study showed that individual differences in social adjustment and group identification are quasi-causally related longitudinally with changes in friendship homophily. Importantly, however, for ethnic majority children these longitudinal relationships were moderated by school ethnic composition while they were not for ethnic minority children.
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References


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Table 1

Fixed effects and random effects of hierarchical linear models predicting friendship homophily at T2 from intergroup factors, social-emotional adjustment, and school ethnic composition for majority group children (N = 182)

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<td>Intercept</td>
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<td>Homophily T1</td>
<td>0.26 (0.07)**</td>
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<tr>
<td>Self-esteem</td>
<td>4.64 (3.81)</td>
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<tr>
<td>Peer problems</td>
<td>3.48 (6.45)</td>
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<tr>
<td>English Identification</td>
<td>1.56 (3.55)</td>
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<th>Level 2 – school level</th>
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<td>School Ethnic Composition</td>
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<td>SES</td>
<td>38.89 (20.28)</td>
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<tr>
<td>Self-esteem × Ethnic Composition</td>
<td>-0.28 (0.17)</td>
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<tr>
<td>Peer problems × Ethnic Composition</td>
<td>-0.75 (0.36)*</td>
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<tr>
<td>English Identification × Ethnic Composition</td>
<td>-0.45 (0.22)*</td>
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<td>Level 1</td>
<td>344.46 (18.56)</td>
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<td>Level 2</td>
<td>14.53 (3.81)</td>
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Note. *p < .05; **p < .01.
Table 2

Fixed effects and random effects of hierarchical linear models predicting friendship homophily at T2 from intergroup factors, social-emotional adjustment, and school ethnic composition for minority group children (N = 214)

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<td>Homophily T</td>
<td>0.41 (0.07)***</td>
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<tr>
<td>Self-esteem</td>
<td>3.56 (4.02)</td>
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<td>Peer problems</td>
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<td>Ethnic Identification</td>
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<tr>
<td>English × Ethnic Identification</td>
<td>-11.37 (4.74)*</td>
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<tr>
<td>School Ethnic Composition</td>
<td>0.69 (0.21)**</td>
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<tr>
<td>SES</td>
<td>-35.59 (28.27)</td>
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Cross-level interactions

| Self-esteem × Ethnic Composition | -0.30 (0.26) |
| Peer problems × Ethnic Composition | -0.16 (0.39) |

Random effects

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<td>549.54 (23.44)</td>
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<td>67.41 (8.21)*</td>
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Note. *p < .05; **p < .01; ***p < .001.
Figure captions

Figure 1. Cross-level interaction: Peer problems and friendship homophily moderated by school ethnic composition among White English children.

Figure 2. Cross-level interaction: English identification and friendship homophily moderated by school ethnic composition among White English children.
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![Graph showing the relationship between peer problems and T2 Homophily for lower and higher ethnic density.](image-url)
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![Graph showing the relationship between English identification and T2 Homophily under different ethnic density conditions.](image-url)
Appendix

Correlations, means, and standard deviations of all variables for majority group (N = 182) and minority group (N = 215) children

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<td>.26**</td>
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<td>-.03</td>
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<td>.25**</td>
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<td>4. SES (IDACI)</td>
<td>.04</td>
<td>.04</td>
<td>.26**</td>
<td>-</td>
<td>.03</td>
<td>.05</td>
<td>.11</td>
<td>.04</td>
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<tr>
<td>5. Self-esteem</td>
<td>.17*</td>
<td>.06</td>
<td>.07</td>
<td>.02</td>
<td>-</td>
<td>-.19*</td>
<td>.09</td>
<td>.10</td>
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<tr>
<td>6. Peer problems</td>
<td>.04</td>
<td>-.05</td>
<td>-.01</td>
<td>-.05</td>
<td>-.20*</td>
<td>-</td>
<td>.11</td>
<td>-.01</td>
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<tr>
<td>7. English identification</td>
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<td>.01</td>
<td>.05</td>
<td>-.15*</td>
<td>.07</td>
<td>-.07</td>
<td>-</td>
<td>-.23**</td>
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<tr>
<td>8. Ethnic identification</td>
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<td>-</td>
<td>.13</td>
<td>-.11</td>
<td>-</td>
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</table>

Mean: 78.31 80.78 25.45 0.22 3.28 1.26 3.77 -
SD: 25.53 23.53 14.44 0.10 0.57 0.33 0.63 -

Note. Correlations for majority group children below and correlations for minority group children above the diagonal. Means and SDs for majority group children in top row, and means and SDs for minority group children in bottom row.

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