Homophily in Adolescence: Is Similarity in Status Characteristics Associated with Similarity in Anti-school Behaviour?

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Hans Berten[1]
Ronan Van Rossem[2]

Abstract

This study asks to what extent similarity in status characteristics (gender and ethnicity) is linked with similarity in anti-school behaviour. We argue that the social forces responsible for homophily-based selection are also at work with regard to homophily-based influence. We use data from the Flemish Educational Assessment Study, which collected complete network data from a representative sample of Flemish secondary school adolescents (N = 11,872). Results indicate that similarity on gender and ethnicity is linked with similarity on behavioural characteristics. Furthermore, the association between status homophily and behavioural homophily is stronger for boys than girls. For minorities, status heterophily on ethnicity is associated with behavioural heterophily, which may be an indication that minority students distance themselves from their majority-group friends.

Keywords

adolescence, school deviant behaviour, social networks, homophily, selection, influence

Introduction

There are dozens of studies that demonstrate a robust association between the problem behaviour of adolescents and that of their friends, and that this holds for a wide range of behaviours including substance use (Ennett and Bauman, 1994; Sieving et al., 2000; Warr, 1993), delinquency (Baerveldt et al., 2008; Elliott and Menard, 1996; Haynie and Osgood, 2005; Piquero et al., 2005; Warr, 1993) and sexual

[1] Kind en Samenleving, Belgium.
[2] Department of Sociology, Ghent University, Belgium.

Corresponding author:
Hans Berten, Kind & Samenleving, Belgium.
Email: ha.berten@gmail.com

behaviour (Billy and Udry, 1985; Little and Rankin, 2001; Sieving et al., 2006; Udry and Billy, 1987). However, this literature tends to assume that all friends are equally important when it comes to their influence on behaviours. For example, indicators of peer influence are expressed as the average behaviour of one's friends, without taking into account that a friend's influence on behaviour might vary according to some of the status characteristics of this friend. In this article we examine whether similarity in status characteristics (i.e., status homophily) is linked with similarity in behaviours (i.e., behavioural homophily). The status characteristics we focus on are the respondents' sex and ethnicity, while the behavioural outcome is school deviance. By examining interaction effects of friends' behaviour with the status characteristics of these friendship relationships we investigate whether a person's school deviance is more similar to that of same-gender and same-ethnicity friends than to that of cross-gender and cross-ethnicity friends.

Homophily is widely recognized as a major organizing principle of social relations, especially friendship relations (McPherson et al., 2001). People are more likely to be friends with others who are like themselves in some key characteristics or behaviours. Homophily is driven by two processes: selection and influence. Selection is clearly the driving mechanism behind status homophily, as people prefer friendships with others who share salient status characteristics. Two of the most salient status characteristics are gender and ethnicity, and with the exception of romantic relationships, most adolescent friendships are between people of the same gender and ethnicity (Hallinan, 1979; Knecht, 2008; McPherson et al., 2001; Shrum et al., 1988). However, when it comes to behavioural or attitudinal homophily, both selection and influence (socialization) may be involved. Adolescents may select friends based on their behaviours or attitudes, but they also adopt behaviours and attitudes through interactions with their friends (McPherson et al., 2001). As such, selection and influence may reinforce each other. The extent to which selection plays a role in this case depends on the visibility of the behaviour, as highly visible behaviours and attitudes provide a much more obvious basis for selection than behaviours that are less visible or are invisible to peers. It is for this reason that in this article we look a highly visible behaviour within the school context, namely, anti-school behaviour.

Theoretical Framework

Although similarity may be an important factor in friendship formation, it does not mean that one cannot have friends who are dissimilar. Men and women can be friends, majority and minority students can be friends, and smokers and non-smokers can be friends. If friends, whose gender or ethnicity are the same, are more equal on behavioural indicators than friends who have dissimilar status characteristics, several explanations are possible: (a) the status background of people affects the behaviours in question, and thus people who share more status characteristics should also display more similar behaviours; (b) behavioural homophily is a more important selection criterion among friends who share status characteristics than among those who do not and (c) friends who share salient status characteristics may be more influential with regard to behaviours than friends who do not share these status characteristics.

The socialization of children and adolescents varies to a substantial degree according to status characteristics, including gender and ethnicity. These are two of the most salient status characteristics that affect the individual cultures or *habitus* of youth. Youth with similar background characteristics are therefore more likely to share preferences, tastes, interests, activities, languages, values, religions and so forth, which not only facilitate interactions but also result in friendships that are more often successful and are stronger (Aboud et al., 2003; Hallinan, 1979; Kao and Joyner, 2004; Kuttler et al., 1999). To the extent that people choose friends with similar status characteristics they also select friends with similar behaviours, without their being selection or influence processes regarding these behaviours. Any behavioural homophily, therefore, is simply a byproduct of existing status homophily. The second and third of the explanations listed above involve preferential selection and influence, respectively. Both can be explained by the same mechanisms, namely, reference groups and social identity.

Festinger (1954) noticed that when people are uncertain about their own opinions or behaviours, they tend to evaluate them against a reference group of similar others. Reference group theory (Merton and Rossi, 1968; Newcomb, 1961; Sherif, 1968) further elaborates on Festinger's ideas. Merton and Rossi (see also Bock et al., 1983; Merton and Rossi, 1968) acknowledged that, although reference groups do not always consist of others who are close to or similar to oneself, groups are more likely to function as reference groups when (a) their norms and values are highly visible, (b) an individual is in frequent interaction with them, (c) an individual shares some status attributes with them and (d) an individual is oriented towards the same values. Best friends clearly meet the first two conditions. However, as described earlier, at least some of an adolescent's friends differ on the last two conditions, which are closely intertwined. Homophilic friendships are more likely to meet these conditions than heterophilic friendships. Cross-gender and cross-ethnicity friendships are to some degree qualitatively different from same-gender and same-ethnicity friendships, as illustrated by the objective differences in values, norms, behaviours and so forth. Following reference group theory, peers who are alike on these status dimensions are not only preferable as friends, they are also preferable as a reference group for evaluating one's anti-school behaviour, and this in turn makes these homophilic friendships more influential.

A second explanation for homophily-based selection and influence processes relates to how adolescents view their membership of a particular group—their social identity—and how this perspective contributes to self-esteem and well-being. Social identity theory (Tajfel and Turner, 1979) predicts that people view members of their in-group more positively than they view members of an out-group, and that this reinforces their self-esteem. Moreover, studies have shown that both peer influence and fear of peer rejection peak during adolescence (Elliott and Menard, 1996; Warr, 1993, 2002), and that peer rejection is strongly linked to lower self-esteem and well-being (Leary et al., 2001). A sense of peer acceptance is thus crucial for adolescents' psychological well-being; this explains why fear of peer rejection, ridicule, or status loss are such important influence mechanisms (for an overview, see Warr, 2002), and why peers in general and friends in particular form important reference groups. To risk ridicule, status loss, or peer rejection, is to risk acceptance by one's peer group. As such, these influence processes act as compliance mechanisms for

inducing conformity in adolescent groups, and they operate regardless of whether the behaviour in question is deviant or not (Warr, 2002, p. 55).

Social identity theory explains that there is a stronger basis for both selection and influence processes in homophilic reference groups than in heterophilic reference groups, as both self-esteem and status are at stake. For instance, a boy who behaves like his female friends risks ridicule by his male friends for acting in a girlish way, which may lead to both status and identity loss and to poorer self-esteem. Homophilic friends, or friends who score similarly on important status characteristics, can therefore be expected to form more important reference groups than heterophilic ones, as the former are more important for social identity. In a situation where an ethnic majority-group student has two majority-group friends who exhibit anti-school behaviour and three minority-group friends who do not, social identity theory predicts that the youth will take cues mainly from same-ethnicity friends and will also exhibit anti-school behaviour. Social learning theory (Akers, 1998) predicts that the youth will behave more like the cross-ethnicity friends (and not deviantly), since they make up the majority of friends.

To summarize, the core question of this article is whether status homophily in friendships is associated with behavioural homophily. Or, in other words, we want to investigate the extent to which behavioural homophily differs between friends of the same gender or ethnicity (i.e., homophilic status relationships) and friends who diverge on these dimensions (i.e., heterophilic status relationships). We argue that the social forces responsible for status homophily-based friendship selection also govern behavioural homophily. Based on insights from both reference group theory and social identity theory, we expect similarity in gender and ethnicity to increase similarity in anti-school behaviour. Anti-school behaviour is a very visible antisocial behaviour in the social environment of the school, which peaks in adolescence, and is thus important in establishing identity or status. Therefore, we expect it to be subject to processes of selection and influence.

Methods

Data and Participants

All data were collected during the 2004–05 school year as part of the Flemish Educational Assessment study (FlEA), in which 11,872 students in the third and fifth years of secondary school (the ninth and eleventh grades in the American system) from 85 schools in Belgium's Flemish community were interviewed (see Van Houtte and Van Rossem, 2006). The Ethics Committee of the Faculty of Political and Social Sciences of Ghent University approved the data collection.

Of the respondents 48.5 per cent were boys and 51.5 per cent girls. The mean age was 15.41 years (SD = 0.75) in the third year and 17.53 (SD = 0.78) in the fifth; 11.2 per cent of the respondents were identified as immigrants. As with most Western European countries, Flanders (the northern, Dutch-speaking part of Belgium) has become a popular migration destination since the end of World War II with similar economically-driven migration waves. A first influx of immigrants came from Southern European countries (mainly Italians), followed by a second immigration

wave mainly from Turkey and Morocco (Reniers, 1999). In present-day Flanders, immigrants of Turkish or Moroccan descent make up by far the largest group of immigrants other than Western European immigrants. In the FlEA sample, they each made up 30 per cent of the immigrant group. Smaller numbers of immigrants had a Southern European (about 10 per cent), Eastern European (about 8 per cent), North-African other than Moroccan (about 5 per cent), or other unknown background (about 16 per cent). Natives are enrolled at all 85 schools in the data set. However, there were six schools at which no immigrants were enrolled. The proportions of girls (mean proportion per school 0.50, *SD* = 0.28) and of minority students (mean = 0.16, *SD* = 0.22) varied strongly across the schools. The large standard deviation for the proportion of minorities in these schools is indicative of the strong ethnic segregation that exists in Flemish secondary schools.

Measures

Dependent Variables

The anti-school behaviour scale consists of 17 items (see Appendix 1) scored on a 5-point scale (1 = *never*, 5 = *very often*), and is based on Stewart's (2003) school misbehaviour/school belief scale. Each item asks how often they have performed a certain behaviour, such as 'been late for school', 'skipped school', 'been involved in a fight at school', 'smoked, used drugs, or alcohol on school grounds' and so forth. Responses were summed, with higher scores indicating more anti-school behaviour (Cronbach's alpha = 0.87).

Control Variables

This study also controlled for several indicators of social control theory (Hirschi, 1969) and strain theory (Agnew, 2005), two other competing theoretical frameworks in the literature. Because these factors are associated both with peer effects and the outcome variables, their non-inclusion might lead to an overestimation of behavioural similarity. For instance, students who are a religious display more anti-school behaviour than religious ones; therefore, a student's a religious friends will on average have higher anti-school behaviour scores than religious friends. In this case, status similarity will also be linked with behavioural similarity, although there is no actual influence process occurring, or in other words, the effect of behavioural similarity is inflated. By controlling for the status characteristics that affect the outcome variables, this false (spurious) influence process is partial led out. All the included indicators are linked to either the family, the religious sphere, or the school sphere. *Religion* was measured by *religious attachment*, that is, by asking how important religion is in the adolescent's life. This item is scored on a 10-point scale (1 = *not important at all*, 10 = *very important*). *Family structure* was assessed with a dichotomous variable indicating whether the adolescent lives in an intact two-parent family (1 = *yes*, 0 = *no*). *Parental attachment* was measured using a 7-item scale (1 = *strongly agree*, 5 = *strongly disagree*) based on Brutsaert (2001). Examples of items are, 'My parents see only my mistakes', 'My parents accept me as I am' and

'I think my parents care little about me'. Responses were summed, with higher scores indicating strong parental attachment (Cronbach's alpha = 0.68).

Parental school involvement was measured using a 10-item scale, based on Muller (1998). Eight of the items were scored on a 5-point scale (1 = *never*, 5 = *always*). Examples of these items are, 'Do your parents take part in certain school activities?' 'Do your parents keep an eye on your homework?' and 'Are your parents interested in what you learn in school?' The other two questions addressed membership of parents' councils and their acquaintance with the parents of fellow students. The total score defined the parental school involvement index and ranged from 10 to 46 (Cronbach's alpha = 0.72).

For *school,* two indicators of educational commitment were included. We measured s*tudy commitment* using a scale consisting of six items adapted from Brutsaert (2001). Examples of items are, 'Studying is wasted time', 'I don't like studying', and 'I don't understand why studying is so important for my future life'. The reliability of this scale is good (Cronbach's alpha = 0.76). We also included the *age* of the respondent in the analysis as a proxy for development. To avoid multicollinearity with grade, age was operationalized as the deviation from the mean age of the grade group.

We measured *teacher attachment* using a scale consisting of seven items (1 = *strongly agree*, 5 = *strongly disagree*) based on Al-Methen and Wilkinson (1998). Examples of items are, 'The teachers respect me', 'The teachers punish me for no apparent reason', 'The teachers do not help me when I need it', 'The teachers are not interested in whether I understand the material or not' and 'The teachers do not encourage me to ask questions or to participate in discussions'. The items were summed; high scores reflect strong teacher attachment (Cronbach's alpha = 0.65).

Finally, we included a measure for the *importance of out-of-school friends*. Data on peer networks were collected within a school context, but one limitation of this approach is that it does not capture out-of-school friends. To capture, at least partially, these out-of-school connections, we added a variable asking respondents whether they considered out-of-school friends to be more important (1) or equally/less important (0) than in-school friends. Out-of-school friends were identified as more important by 20.4 per cent.

Socio-demographic Characteristics

Background characteristics included gender, ethnicity, and family socio-economic status (SES). Gender was included because studies show that girls are less likely to behave delinquently (Baerveldt et al., 2008; Giordano, 2003; Knecht, 2008; Piquero et al., 2005). We defined minority students as students of other than West European ancestry (North African, Southern or Eastern European, etc.).

We measured family SES based on the prestige of the employment and education level of the parents (Erikson et al., 1979). Other control variables were grade (the ninth or eleventh grade in the American system) and type of education. The Flemish secondary school system consists of four educational tracks, ranked from general college preparatory education to artistic education, technical education and vocational education.

Peer Behaviour Variables

Studies on homophily have been criticized for their reliance on perceptual measures of friends' behaviour as such measures tend to overestimate the similarity of friends (Kandel, 1996). In this study, the measures of peer behaviour are based on a combination of the reported networks of the respondents and the friends' self-reported behaviour. Students were asked to name their best friends among the other students in the same grade within their school (up to a maximum of 12 best friends). The mean number of friends mentioned was 6.01 ($SD = 3.27$), which is in line with previous studies that found that the true number of friends people can maintain is between 1 and 8 (Hallinan, 1974). The mean number of cross-ethnicity and cross-gender friendships was, respectively, 0.55 ($SD = 1.37$) and 1.16 ($SD = 1.73$). When an adolescent names someone as a friend, although the relationship may not be reciprocated, one can expect this friend to influence the adolescent. Although we did not use reciprocity as a criterion in defining friendships, reciprocity was very high in most networks (mean = 0.906, $SD = 0.070$). Overall, friends' behaviour was calculated as the mean score for the behavioural outcome variable of the peers nominated as friends. The gender and ethnicity specific friends' behaviour variables were calculated in the same way, but using only friends of a specific gender or ethnicity. That way, five peer behaviour scores were calculated for each behaviour type: (a) an overall peer behaviour score, and peer behaviour scores for (b) same-gender, (c) cross-gender, (d) same-ethnicity and (e) cross-ethnicity friendships. Isolates posed a specific problem in the model as their row totals equalled 0; these were given the mean behaviour of all actors in the network. In network analysis, isolates are those persons who reported having no friends in the school network. The number of isolates was 410 or 3.5 per cent of the sample. Finally, all peer behaviour variables were group mean centred to avoid convergence problems in estimation (Hox, 2002).

A disadvantage of working with average peer behaviour scores is that the size of the friendship network is not taken into account. However, one might expect to find that the larger the friendship network, the more pressure there will be from the peer group. A large network of friends generates more pressure to conform to the group norms within that network. For this reason, we included the number of friends nominated (total and gender and ethnicity specific) in the model as well as its interactions with the peer behaviour variables.

Statistical Methods

Given that the data was collected in a sample of 85 schools, multilevel techniques were used that allowed for variance at the school and grade level to be taken into account. To statistically model processes of homophily, spatial effects regression (Anselin, 1988; Marsden and Friedkin, 1993) is most appropriate. These models take into account the spatial (or network) autocorrelation that results from the various observations (students in a grade) influencing each other. As yet, no software exists that allows the estimation of multilevel, spatial effects models with multiple autocorrelation effects in a single step, so we opted for an alternative strategy, namely, the two-stage approach proposed by Anselin (1988) and Land and Deane (1992). As a

first stage, this approach substitutes the peer behaviour variables with instrumental variables estimated on all the variables in the model as well as on a set of exogenous variables not in the model. In a second stage, these instrumental variables, which are free of autocorrelation, are then used as independent variables in the regression equations for the outcome variables rather than the original influence variables. The explained variance for both outcome variables in the first-stage models was quite high, showing that the first stage is quite good at predicting adolescents' behaviour ($R^2 = 0.57$ for the school deviancy model).

Respondents who did not complete the questionnaire on network data or with missing values on gender or ethnicity were omitted from the analysis, as missing data is a serious problem in social network analysis (Burt, 1987). Further, because parameter estimates may be unreliable when there are less than 30 students in the higher level groups (Raudenbush and Bryk, 2002), those grades were not selected for analysis. The final sample for analysis was 11,188 students.

Results

Descriptive Statistics

Table 1 shows the descriptive statistics for both the dependent variable and for the friendship nominations by gender and ethnicity. The mean score for school deviancy was 30.03. When split according to grade, school deviancy was higher in the eleventh grade than the ninth grade ($t = –16.329$, df = 10,395, $p < 0.001$). Boys scored significantly higher on school deviancy than girls ($t = –22.736$, df = 11,315, $p < 0.001$).

The mean number of friendship nominations was 6.01, with males reporting more friends than females ($t = 5.446$, df = 11,620, $p < 0.001$), and majority students reporting more than minority students ($t = 9.496$, df = 1,625, $p < 0.001$). The mean number of friendship nominations was somewhat lower in the eleventh grade than in the ninth grade ($t = 9.576$, df = 11,800, $p < 0.001$). Further, we noted (results not shown) that for 79.1 per cent of the students, in-school friends were either equally important or more important than out-of-school friends and out-of-school friends were more important for boys than for girls (24.30 per cent versus 17.58 per cent, $\chi^2 = 78.291$, $p < 0.001$). The mean number of cross-ethnicity friendships was 0.55 and the mean number of cross-gender friendships was 1.16, or 9.15 per cent and 19.30 per cent, respectively, out of all the friendship nominations. Minority students reported more cross-ethnicity relations than majority students (2.43 versus 0.32, $t = 26.913$, df = 1,340, $p < 0.001$), while the reverse was true for cross-gender relations (0.79 versus 1.21, $t = –9.691$, df = 1.831, $p < 0.001$). Boys reported significantly more cross-gender friendships than girls (1.23 versus 1.10, $t = –4.055$, df = 11,391, $p < 0.001$).

When comparing the percentages of cross-ethnic friendships for minority and majority students, cross-ethnic integration seems to be mainly a phenomenon among minority teens (47.00 per cent versus 5.23 per cent). However, this does not necessarily mean that ethnic boundaries exist. The observed differences could merely reflect the balance of available relationships (i.e., the opportunity structure) which is strongly determined by, in this case, the majority group of native students. Testing for homophily preferences in friendship relations requires taking into account the

Table 1. Descriptive Statistics for Anti-school Behaviour, and the Friendship Nominations

Percentages or Means (*SD*)	% Total	Anti-school Behaviour	All Friendships	Cross-ethnicity Friendships		Cross-sex Friendships		Friendhips Density (%)	
		Mean	Mean	Mean	% Total	Mean	% Total	Same	Cross
Total		30.03 (8.46)	6.01 (3.27)	0.55 (1.37)	9.15	1.16 (1.73)	19.30		
Minorities	11.14	29.74 (9.17)	5.17 (3.41)	2.43 (2.83)	47.00	0.79 (1.45)	15.28	12.08	4.36
Majorities	88.86	30.06 (8.37)	6.12 (3.24)	0.32 (0.79)	5.23	1.21 (1.75)	19.77	5.62	4.56
Girls	51.48	28.30 (7.04)	5.85 (3.16)	0.55 (1.36)	9.40	1.10 (1.61)	18.80	7.37	2.59
Boys	48.52	31.84 (9.40)	6.18 (3.38)	0.55 (1.39)	8.90	1.23 (1.84)	19.90	8.10	2.72

different opportunity structures that exist for same-gender and cross-gender relationships on the one hand, and same-ethnicity and cross-ethnicity relationships on the other, in other words, controlling for the marginal distributions. This opportunity structure is operationalized by the density of the network (measured as the number of observed dyadic friendship pairs divided by the number of theoretically possible friendship pairs for that network). The two last columns in Table 1 show these density measures for same-ethnicity, cross-ethnicity, same-gender and cross-gender friendships. We find that when controlling for the opportunity structure, clear ethnic boundaries exist, as the percentage of same-ethnicity friendships is larger than that for cross-ethnicity friendships. However, the density of same-ethnicity friendships is much higher among minority students than among majority students (12.08 per cent versus 5.62 per cent). The picture for gender boundaries is even clearer than for ethnic boundaries, as the respondents clearly preferred same-gender friendships.

Multivariate Analysis

Control Variables

A hierarchical model was used to assess whether friends' behaviour was associated with adolescents' behaviour. Model 1 of Table 2 simply provides a baseline model in which only socio-demographic and other control variables are estimated. Although not the primary concern of this study, we observe that boys score higher on school deviancy while students from a lower SES background are less prone to exhibit anti-school behaviour. The results regarding SES background are surprising but correspond with previous research (Demanet and Van Houtte, 2011; Stewart, 2003; Van Houtte and Stevens, 2008). No differences are observed based on education type.

Consistent with prior research, this study found that variables that tap dimensions of social control and strain are associated with the adolescents' school deviancy. To summarize, students who have a low commitment to studying, who repeat classes, who feel discriminated against at school, or who consider out-of-school friends as more important than in-school friends are more likely to be engaged in school deviancy. The results for family- and religion-related indicators are less pronounced. A religious students, students from broken families, or students with low parental attachment and low parental school supervision are more prone to delinquent behaviour.

Behavioural Homophily

Model 2 in Table 2 assesses whether the measure for friends' anti-school behaviour was associated with that of the adolescent. Clearly, peer behaviour is a significant predictor for both outcome variables: the adolescent and his/her friends tend to be similar regarding their anti-school behaviour. In Model 3, we estimated whether behavioural similarity differs according to the gender and ethnicity of the respondents. It is important to note that the meaning of the main effects has changed in this model: the main effect is now the effect of peer behaviour for the reference category (i.e., majority boys). As Model 3 shows, there are significant interactions with gender and ethnicity. Similarity is significantly lower among

Table 2. Results of Multilevel Analyses: Unstandardized Estimates (and Standard Errors) for Anti-school Behaviour

	Anti-school Behaviour		
Variables	Model 1	Model 2	Model 3
(Intercept)	41.965***	41.241***	41.187***
	(0.830)	(0.813)	(0.813)
Socio-demographic variables			
Gender: female	–1.823***	–1.178***	–1.156***
	(0.160)	(0.160)	(0.160)
Minority group	0.817	0.775	0.944*
	(0.427)	(0.417)	(0.421)
Female x minority group	0.462	0.496	0.140
	(0.514)	(0.501)	(0.514)
Family SES	0.206***	0.181***	0.182***
	(0.040)	(0.040)	(0.040)
Grade: 11th year	1.722***	1.793***	1.760***
	(0.239)	(0.251)	(0.250)
Education type (Ref: general)			
Artistic	0.982	0.854	0.849
	(0.606)	(0.610)	(0.609)
Technical	0.167	0.083	0.098
	(0.224)	(0.225)	(0.225)
Vocational	0.094	–0.107	–0.102
	(0.275)	(0.276)	(0.275)
Family and religion			
Two-parent family	–1.155***	–1.102***	–1.108***
	(0.186)	(0.181)	(0.181)
Parental attachment	–0.068***	–0.071***	–0.073***
	(0.014)	(0.014)	(0.014)
Parental school involvement	–0.146***	–0.139***	–0.139***
	(0.015)	(0.015)	(0.015)
Importance of religion	–0.160***	–0.127***	–0.128***
	(0.030)	(0.029)	(0.029)
School			
Study commitment	–0.568***	–0.516***	–0.514***
	(0.021)	(0.021)	(0.021)
Dev. age[a]	1.540***	1.233***	1.219***
	(0.122)	(0.120)	(0.120)
Teacher attachment	0.299***	0.263***	0.263***
	(0.018)	(0.018)	(0.018)
Out-of-school friends	1.293***	1.198***	1.192***
	(0.183)	(0.178)	(0.178)
Friends' behaviour (FB)			
FB		0.497***	0.590***
		(0.023)	(0.032)

(Table 2 Continued)

(Table 2 Continued)

	Anti-school Behaviour		
Variables	Model 1	Model 2	Model 3
FB x female			–0.147** (0.045)
FB x minority group			–0.206** (0.069)
Variance components			
(Intercept null model)	6.226		
(Residual null model)	65.007		
Intercept	0.990	1.201	1.190
Residual	44.841	42.572	42.479

Note: [a]Deviation of the mean age of the age group.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

girls ($b = –0.147$, $p < 0.01$) and minority students ($b = –0.206$, $p < 0.01$) than among boys and majority students.

Same-gender versus Cross-gender Friendships

We now turn to the model that tests whether behavioural homophily differs between same- and cross-gender friendships (Table 3) and between same- and cross-ethnicity friendships (Table 4). Three different models were estimated. In the first model, we estimated the two main effects—the association between the adolescents' anti-school behaviour and that of their same-status versus cross-status friendships. In Model 2 and 3 we tested two specific interactions. In Model 2, we tested whether the size of the friendship network interacts with both of these peer behaviour scores, and in Model 3 we estimated whether behavioural similarity, and its relation with same-status versus cross-status friendships, interacts with the gender and ethnicity of the respondents.

As shown in Model 1 of Table 3, same-gender friendships are considerably more important than cross-gender friendships, as the association between the adolescents' anti-school behaviour and that of their same-gender friends is stronger. The association is significant only for same-gender friendships ($b = 0.490$, $p < 0.001$).

Model 2 shows that having a large number of same-gender friends in conjunction with a high score for same-gender friends' behaviour is associated with a significant increase in anti-school behaviour ($b = 0.048$, $p < 0.001$). In contrast, there is no such interaction for cross-gender friendships. Note also that the main effects of cross-gender friendship nominations made are significant ($b = 0.241$, $p < 0.001$), indicating that students who have a large network of cross-gender friends score higher on anti-school behaviour than students who have few such friends. We observed no such relationship for students with a large network of same-gender friends.

Interactions between same- and cross-gender friends' behaviour and gender and ethnicity are examined in Model 3. For the sake of clarity we also added a visual representation of the interaction effects in Figure 1. In interaction models

Table 3. Results of Multilevel Analyses: Unstandardized Estimates (and Standard Errors) for Anti-school Behaviour, Same- and Cross-gender Friends' Behaviour Model

	Anti-school Behaviour		
Variables	Model 1	Model 2	Model 3
Friends' behaviour (FB)			
Same-sex FB	0.490*** (0.021)	0.305*** (0.036)	0.579*** (0.030)
Number of same-sex friends		0.017 (0.026)	
Same-sex FB × number of same-sex friends		0.048*** (0.008)	
Same-sex FB × female			–0.153*** (0.043)
Same-sex FB × minority group			–0.077 (0.047)
Cross-sex FB	0.035 (0.023)	–0.014 (0.034)	0.082* (0.037)
Number of cross-sex friends		0.241*** (0.040)	
Cross-sex FB × number of cross-sex friends		0.018 (0.013)	
Cross-sex FB × female			–0.186** (0.066)
Cross-sex FB × minority group			–0.028 (0.077)
Variance components			
Intercept	1.356	1.400	1.328
Residual	42.310	41.949	42.205

Note: All models include control variables listed in Table 2.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

the interpretation of the corresponding effects is as follows: the parameter estimate for same-sex friends' behaviour ($b = 0.579$, $p < 0.001$) is the influence of same-sex friends' anti-school behaviour on majority boys' anti-school behaviour (i.e., the reference group). The effect sizes of same-sex friends' behaviour for the other three categories can be calculated from the equation by summing up the corresponding values for each group. For instance, the influence of same-sex friends' anti-school behaviour on minority boys' anti-school behaviour is 0.502 (0.579 – 0.077= 0.502) and the corresponding estimates for majority and minority girls are 0.426 (0.579 – 0.153= 0.426) and 0.349 (0.579 – 0.077–0.153= 0.348). When interpreting these interaction effects we can conclude that behavioural similarity is stronger for males than for females ($b = –0.153$, $p < 0.001$), but also that behavioural similarity is lowest for minority girls.

While in Model 1 no main effect exists for cross-gender friendships, in Model 2 a weak homophily effect for anti-school behaviour is observed among majority boys with cross-gender friendships ($b = 0.082$, $p < 0.05$). Thus, the deviant anti-school

Table 4. Results of Multilevel Analyses: Unstandardized Estimates (and Standard Errors) for Anti-school Behaviour, Same- and Cross-ethnicity Friends' Behaviour Model

	Anti-school Behaviour		
Variables	Model 1	Model 2	Model 3
Friends' behaviour (FB)			
Same-ethnicity FB	0.463*** (0.022)	0.233*** (0.037)	0.557*** (0.031)
Number of same-ethnicity friends		0.073** (0.023)	
Same-ethnicity FB × number of same-ethnicity friends		0.056*** (0.007)	
Same-ethnicity FB × female			–0.133** (0.043)
Same-ethnicity FB × minority group			–0.079 (0.052)
Cross-ethnicity FB	0.075** (0.026)	0.119*** (0.036)	0.139*** (0.040)
Number of cross-ethnicity friends		0.035 (0.064)	
Cross-ethnicity FB × number of cross-ethnicity friends		–0.034* (0.015)	
Cross-ethnicity FB × female			–0.225*** (0.058)
Cross-ethnicity FB × minority group			–0.149* (0.060)
Variance components			
Intercept	1.206	1.286	1.204
Residual	42.618	42.269	42.269

Note: All models include control variables listed in Table 2.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

behaviour of majority boys is associated with that of their female friends, while for girls, no similarity of anti-school behaviour is observed for cross-gender friendships. When calculating the equation for girls the parameter estimate is negative for both majority (0.082 – 0.186 = –0.104) and minority girls (0.082 – 0.186 – 0.028 = –0.131). Note further that the association of cross-sex friends' anti-school behaviour with minority boys' anti-school behaviour is not-significant (0.082 – 0.028 = 0.054).

Same-ethnicity versus Cross-ethnicity Friendships

Table 4 presents the results for same- and cross-ethnicity friendships. Model 1 of Table 4 shows that behavioural similarity is stronger for same-ethnicity friendships than for cross-ethnicity ones ($b = 0.463$, $p < 0.001$). However, we also found a similarity in anti-school behaviour for cross-ethnicity friendships ($b = 0.075$, $p < 0.01$). Behavioural similarity is observed for both same-ethnicity and cross-ethnicity friendships.

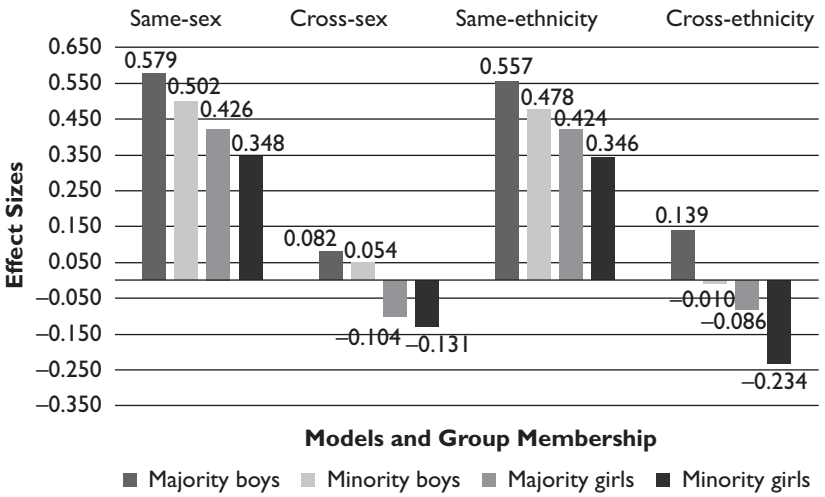

Figure 1. Visual Representation of the Interaction Effects for the Four Groups of Students (Majority Boys, Minority Boys, Majority Girls, Minority Girls)

Model 2 shows that students with a large number of same-ethnicity friends score higher on anti-school behaviour ($b = 0.073$, $p < 0.01$). It further shows that the size of the peer network again moderates these relationships. Here as well, having a large network of same-ethnicity friends in conjunction with a high score on same-ethnicity friends' behaviour is associated with a significant increase in anti-school behaviour ($b = 0.056$, $p < 0.001$).

Again, a slightly different picture emerges when the interactions with gender and ethnicity are added to the model (Model 3). See Figure 1 for a visual representation of the interaction models. Behavioural similarity is stronger for boys with same-ethnicity friendships than it is for girls with same-ethnicity friendships ($b = –0.133$, $p < 0.01$).

A behavioural similarity in anti-school behaviour between students whose ethnic background is dissimilar seems to exist mainly for majority boys ($b = 0.139$, $p < 0.001$); thus, the deviant school behaviour of minority-group friends is associated with that of majority boys. Compared to majority boys (i.e., the reference group), minority boys and both majority and minority girls show less similarity with their cross-ethnicity friends regarding anti-school behaviour. Moreover, we observed no similarity in anti-school behaviour between cross-ethnicity friendships for minority boys ($0.139 – 0.149 = –0.010$) or for majority girls ($0.139 – 0.225 = –0.086$), while there is a strong indication of dissimilarity in anti-school behaviour for minority girls ($0.139 – 0.149 – 0.225 = –0.234$) when compared to their majority group friends. These results indicate that the behaviour of the minority girls seems to be counter to the deviant school behaviour of their majority teenage counterparts.

Discussion

In the present study, we have focused on the question of whether similarity in status characteristics is linked with similarity in adolescents' anti-school behaviour. We expected homophily related to this behavioural outcome to be stronger for friendships

that are similar in gender and ethnicity than for friendships that are dissimilar in these status characteristics and our results clearly confirmed this. Peer networks are, to a considerable extent, separated into male and female networks, and into minority and majority networks. The few cross-status friends that adolescents do have are considerably less similar in behaviour than the same-status ones. Thus, behavioural homophily operates mainly within friendship networks that are similar in terms of gender and ethnicity. These results are in accord with core assumptions of both reference group theory and social identity theory. Adolescents may rely on salient peer status characteristics—gender and ethnicity—as indicators of similarity in other domains (e.g., cultural values, norms, interests). Furthermore, self-esteem and status in the peer group is more dependent on the opinions of adolescents' homophilic friendships, making adolescents especially vulnerable to these friendships (Festinger, 1954; Merton and Rossi, 1968; Newcomb, 1961; Sherif, 1968; Tajfel and Turner, 1979).

Nevertheless, the variance in behaviours explained by peer homophily was relatively low, when compared with the other predictors in the models. Another drawback is that this study focused exclusively on school friendships. Although most students form friendships in schools (Ennett and Bauman, 1994; Haynie and Osgood, 2005), out-of-school friendships should not be disregarded, especially as these may be more important when it comes to anti-school behaviour (Knecht, 2008). We controlled for these out-of-school friends by including a variable that referred to whether respondents considered out-of-school friends to be more important than in-school ones. Of course, other relationships in adolescence, such as romantic partners, siblings, and parents may also be important and may even significantly counteract negative peer effects. Another limitation is treating Turkish, Moroccan, and cross-ethnicity students as a single ethnic group, and neglecting cultural and linguistic differences between the various groups. The choice for such an operationalization was made on a technical basis as the various minority groups are too small to include in the analysis separately. The consequences of this dichotomous classification remain unclear, but it may be that the number of same-ethnicity friendships are overrated and cross-ethnicity friendships underrated, leading to underestimated behavioural homophily for these minority students' same-ethnicity friendships and to an overestimated behavioural homophily for their cross-ethnicity friendships.

While strong behavioural homophily was observed for same-status friendships, both for outcome variables and for same-gender and same-ethnicity friendship relations, this was not the case for cross-status friendships. Our study found evidence of a little amount of behavioural homophily for cross-ethnicity friendships. While the anti-school behaviour of minority friends was strongly linked with that of majority boys, this did not hold for the other groups. Moreover, we found indications within cross-ethnicity friendships of dissimilarity in anti-school behaviour for minorities and for minority girls in particular. This may be an indication that minority students are reacting against the anti-school behaviour of their majority-group friends. Such an interpretation is consistent with literature indicating that, in the context of negative experiences such as overt expressions of prejudice, discrimination and the cultural devaluation of the minority-group culture, opposition may become a survival strategy for many minority students (Spencer and Dornbush, 1990). To be against anything 'white'—to reject majority-group values—may thus

become a way of defining an alternative identity in the face of such negative experiences, and acceptance by one's own peer group may hinge upon *not* acting white.

Our results yielded some important interactions of homophilic status friendships with the gender and ethnicity status of the respondent. Additionally, the interaction effects for same-ethnicity friendships paralleled those of same-gender friendships, which is, of course, a consequence of the fact that most same-ethnicity friendships are also same-gender friendships, yielding similar results. Behavioural homophily was weaker for girls with same-gender and same-ethnicity friendships than for boys. The strong gender differences in delinquency and the tendency to form gender-homophilic friendships may explain these results. As girls are more likely to choose other girls as friends, and as girls individually are less deviant than boys, girls may simply have less exposure to delinquent friends (Giordano, 2003; Piquero et al., 2005). Moral inhibitions may also act as a stronger barrier against behavioural homophily for girls than for boys, and gender role socialization may provide a framework in which anti-school behaviour is considered inconsistent with what it means to be female, thus acting as a protective barrier against similarity in behavioural outcomes (Giordano, 2003; Piquero et al., 2005; Warr, 2002). Another explanation is that there is simply less variation in anti-school behaviour among girls than boys, yielding weaker associations.

Furthermore, the observation that behavioural homophily is stronger in same-status friendships than in cross-status friendships raises the question of whether or not similarity in gender and ethnicity may be seen as just one indicator of the intensity of the friendship relation. According to Sutherland (1978), *intensity* has to do with the prestige of friends and with emotional reactions related to these friendships, as well as with the significance, relevance, or importance of the association to the individual (Akers, 1998: 64). Furthermore, previous studies show that cross-gender and cross-ethnicity friendships are less intimate and stable, and much easier to terminate than homophilic ones (Aboud et al., 2003; Hallinan, 1979; Kao and Joyner, 2004; Kuttler et al., 1999). A lack of loyalty, trust, intimacy, and so forth, may characterize cross-ethnicity friendships in particular. In this respect, these friendships may be weaker than homophilic ones. Another issue is the vagueness of *best friends* as operationalized in our study. We simply asked respondents to name their friends at school. However, not all adolescents interpreted the concept of best friends in the same way. Houtzager and Baerveldt (1999), for instance, showed that the criteria for friendship differ between boys and girls, and it is reasonable to assume that this holds true for minority and majority students as well. It is not clear how other conceptualizations of friendship based on criteria that are more extensive might affect results. Future studies should focus more attention on this subject.

It may be that we underestimated similarity in anti-school behaviour, as we used a rather broad composite of several kinds of school offences. In social learning theory (Akers, 1998), *imitation* implies that the copied behaviour is identical to the model; it is not clear to what extent offences in one dimension may influence behaviour in another dimension (Warr, 2002). Furthermore, the analyses presented here assume that the four groups of students (minority boys, majority boys, etc.) score similarly on the various items regarding anti-school behaviour. In reality, however, different kinds of anti-school behaviour are relevant to different groups

of students. For instance, further analyses revealed that compared to majorities, minorities score much lower on items that relate to smoking, alcohol, and substance use, while they score much higher on items relating to skipping classes, being late to school and so forth.

A disadvantage of using average peer behaviour scores is that we cannot take the size of the friendship group into account. Because we expected large groups to create more pressure to conform, we included an interaction term for each peer behaviour score with the size of the friendship networks. As expected, these results confirmed that a large friendship network reinforces the association between the behaviour of the adolescent and that of their friends, but this interaction held only for same-status friendships. No matter how many cross-status friends an adolescent has—and these are rare—having a large cross-status friendship network does not reinforce this behavioural homophily. Thus, the results pertaining to cross-status friendships are more in line with reference group theory assumptions that homophilic friends are the preferred reference group; the results pertaining to same-status friendships are in line with assumptions from both social learning theory (Akers, 1998) and reference group theory (Merton and Rossi, 1968; Newcomb, 1961; Sherif, 1968), which posit that behavioural homophily is particularly strong in a situation where there is an excess of definitions favourable to school deviancy.

To summarize, this study confirms that some friends are more important than others and that status homophily regarding gender and ethnicity is an important mechanism for structuring homophily in behavioural outcomes.

Appendix 1. Means and Standard Deviations for the Anti-school Behaviour Scale

How often have you…	Valid	Mean	S.D.
1 been late for school	11579	2.15	1.024
2 skipped classes	11516	1.65	.833
3 skipped school the whole day	11532	1.24	.639
4 cribbed from classmates at tests	11539	2.38	1.089
5 copied school tasks from classmates	11548	2.77	1.052
6 refused to make school tasks	11538	2.74	1.014
7 fighted on school grounds	11536	1.48	.812
8 stealed on school grounds	11544	1.10	.422
9 committed vandalism on school grounds	11527	1.18	.536
10 smoked on school grounds	11533	1.44	1.078
11 drunk alcohol on school grounds	11544	1.23	.630
12 used drugs on school grounds	11554	1.13	.499
13 argued with/talked back to teachers	11535	1.14	.556
14 violated school rules	11530	2.47	1.117
15 had to write lines	11515	2.21	1.031
16 got detention	11524	2.10	1.020
17 been suspended from school	11509	1.64	.932
School deviant behaviour (sum)	11561	30.04	8.471

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Authors' bio-sketch

Hans Berten, PhD, is a sociologist and works at Kind & Samenleving. His research interests cover social networks, social influence, peers, risk behaviour and reproductive health in adolescence.

Ronan Van Rossem, PhD, is associate professor at the Department of Sociology, Ghent University. His current research focuses on social networks and social capital, the dynamics of the global system, and reproductive health issues.