



**Doctoral School of
Sociology**

THESIS SYNOPSIS

Dorottya Kisfalusi

Interethnic Relations among Roma and Non-Roma Students in Hungary

titled Ph.D. dissertation

Supervisor:

Tamás Bartus, Ph.D
associate professor

Budapest, 2016

Institute of Sociology and Social Policy

THESIS SYNOPSIS

Dorottya Kisfalusi

Interethnic Relations among Roma and Non-Roma Students in Hungary

titled Ph.D. dissertation

Supervisor

Tamás Bartus, Ph.D

associate professor

© Dorottya Kisfalusi

Contents

Contents.....	3
1. Research Topic and Literature Review	4
1.1. Research Questions and Hypotheses	4
1.2. Literature Review and Previous Research Findings	5
1.2.1. Positive and Negative Interethnic Relations	5
1.2.2. The Social Construction of Ethnicity and Race	7
2. Methodology	8
2.1. Research Design and Data Collection.....	8
2.2. Analytical Strategy.....	9
2.2.1. The Determinants of Ethnic Classification (RQ1)	9
2.2.2. The Quality of Inter- and Intra-ethnic Friendships (RQ2)	9
2.2.3. Bullying and Victimization among Majority and Minority Students (RQ3)	10
3. Results	10
3.1. The Determinants of Ethnic Classification (RQ1).....	10
3.2. The Quality of Inter- and Intra-ethnic Friendships (RQ2).....	13
3.3. Bullying and Victimization among Majority and Minority Students (RQ3).....	15
3.4. Main Scientific Contributions of the Study	16
4. References	18
5. List of Publications.....	23

1. Research Topic and Literature Review

1.1. Research Questions and Hypotheses

The thesis focuses on the positive and negative relations between Roma and non-Roma Hungarian students. Educational integration of Roma pupils is a widely researched topic in Hungary (Berényi, Berkovits, and Eröss 2008; Havas and Liskó 2005; Kertesi and Kézdi 2011; Kertesi and Kézdi 2009), but less is known about the relational integration of classmates of different ethnic background. This study aims to fill this gap and investigates the extent and quality of positive and negative relationships between Roma, constituting the largest ethnic minority group in Hungary, and non-Roma Hungarian students. To better understand the nature of ethnic classification, we also concentrate on the determinants of ethnic classification among secondary school students. Moreover, we examine both ethnic self-identification and peers' perceptions of classmates' ethnicity in our empirical analyses.

Our research questions and hypotheses are the following:

RQ1: What are the determinant factors of ethnic classification?

Hypothesis 1: Students who live under better socio-economic circumstances are less likely to be classified as Roma by their peers than students living under worse socio-economic conditions.

Hypothesis 2: Students having more Roma friends in the class are more likely to be classified as Roma by their peers than students having fewer Roma friends in the class.

Hypothesis 3: Students who are perceived by peers and teachers as having better academic abilities and achievement are less likely to be classified as Roma by their classmates than students perceived as having lower academic abilities and achievement.

RQ2: Are there any similarities between the characteristics of inter- and intra-ethnic positive relations?

Hypothesis 1: Interethnic friendship nominations are less often reciprocated than intra-ethnic ones.

Hypothesis 2: Interethnic friendship nominations are less frequently characterized by a co-occurring trust nomination than intra-ethnic ones.

Hypothesis 3: Nominated interethnic friends are less often perceived helpful than intra-ethnic ones.

Hypothesis 4: Interethnic friendship nominations are less frequently characterized by a co-occurring jointly spent spare time nomination than intra-ethnic ones.

RQ3: Is bullying more common between same-ethnic students or between students of different ethnic background?

Hypothesis 1: Bullying occurs more likely between than within ethnic groups.

Hypothesis 2: Minority students are more likely to be bullied by majority peers than majority students by minority peers.

1.2. Literature Review and Previous Research Findings

1.2.1. Positive and Negative Interethnic Relations

Interethnic relations are important to study because positive relations may facilitate the formation of more positive attitudes towards other ethnic groups (Allport 1954; Pettigrew and Tropp 2006). This can decrease intergroup tensions and thus contribute to the social cohesion of the society (Kertesi and Kézdi 2009; Stark 2011). Negative interethnic relations, however, may further increase the level of ethnic prejudice (Pettigrew 2008; Stark, Flache, and Veenstra 2013).

Already the Coleman report (1966) pointed out that school integration can have advantageous effects on minority students' social integration. Ethnic or racial mixing of students may facilitate the formation of more positive attitudes towards ethnic outgroups as well as interethnic relationships between students. Thus, it can increase the accessible social capital of minority students, decrease interethnic tensions among groups, and strengthen the social cohesion of the given society (Kertesi and Kézdi 2009; Stark 2011).

School integration as an opportunity for contact, however, does not automatically lead to relational integration among students. Intra-ethnic friendships are usually more common in school classes than interethnic ones even if students have the possibility to make friendships with members of other ethnic groups (Baerveldt et al. 2004; Hallinan and Williams 1989; Kao and Joyner 2004; Moody 2001; Mouw and Entwisle 2006; Quillian and Campbell 2003). Moreover, empirical evidence does not always support the reasoning that integrated school settings contribute to the reduction of negative intergroup attitudes and to the formation of

interethnic social relationships (Stark 2011). In some cases, researchers even found the opposite effect (Csákó 2011; Moody 2001; Vervoort, Scholte, and Scheepers 2011).

Therefore, it is especially important to examine whether formal integration of students, measured as the ethnic heterogeneity of classes, contributes to substantive integration of pupils, measured as the quantity and quality of positive interethnic relations (Moody 2001). Furthermore, the investigation of negative relations between ethnic groups is also of particular interest, since formal integration of students can lead to the formation of negative interethnic relations and interethnic bullying, which may further increase the level of ethnic prejudice (Pettigrew 2008; Stark, Flache, and Veenstra 2013). Negative interethnic relations may undermine the positive effects of desegregation on social integration and social cohesion, if cross-ethnic negative relations and bullying among pupils of different ethnic background are more prevalent than positive ones.

Although negative relations play a significant role in explaining performance, motivations, well-being, and perceptions of intergroup conflict (Labianca and Brass 2006; Labianca, Brass, and Gray 1998), social network researchers have mostly concentrated on the positive aspects of social networks. The investigation of negative relations, however, is particularly important in school contexts, where disliking relations and aggressive behaviour can lead to isolation, exclusion, low academic achievement, and psychological maladjustment (Card 2010; Faris and Felmlee 2014; McKenney et al. 2006; Veenstra et al. 2010). Though networks of negative relations are usually sparser than that of positive ones (Berger and Dijkstra 2013; Boda and Néray 2015; Huitsing et al. 2014; Huitsing et al. 2012; Rambaran et al. 2015), Card (2010) found in a meta-analytic review of earlier studies that approximately one third of children and adolescents have antipathetic peer relationships.

In Europe, most researchers investigating social relations of students have focused on relations between members of immigrant groups and the majority society (Baerveldt et al. 2004; Feddes, Noack, and Rutland 2009; Leszczensky 2013; Leszczensky and Pink 2015; Smith, Maas, and van Tubergen 2014; Tolsma et al. 2013; Vervoort, Scholte, and Scheepers 2011; Vervoort, Scholte, and Overbeek 2010). The Roma, one of the largest ethnic groups of Europe, have received less attention, though Roma people have been an integral part of many European countries for centuries. This thesis aims to fill this gap and investigates the extent and quality of positive and negative relationships between Roma, the largest ethnic minority group in Hungary, and non-Roma Hungarian students.

1.2.2. The Social Construction of Ethnicity and Race

In contemporary sociology, ethnic and racial categories are mostly regarded as social constructs (American Sociological Association 2003; Barth 1969; Brubaker 2009). It implies that in different countries and communities, different opinions exist on where ethnic and racial boundaries lie, and who belongs to the certain categories. Not only different societies, but groups or people within the same society might also lack consensus about ethnic and racial categorization (M. Harris 1970; Telles and Paschel 2014). Moreover, ethnic and racial self-identification of individuals might change in different contexts and over time (Eschbach and Gómez 1998; D. R. Harris and Sim 2002; Hitlin, Brown, and Elder Jr. 2006; Ladányi and Szelényi 2006; Saperstein and Penner 2012; Simonovits and Kézdi 2014; Telles and Paschel 2014).

Whereas social theories have widely recognized and emphasized that ethnicity and race are social constructs, empirical studies still usually treat these concepts as fixed characteristics of individuals. Saperstein et al. (2013) warn that except some subfields, empirical sociology has not yet incorporated the constructivist approach into the standard practice of research. They suggest that researchers should be more reflexive and critical when using ethnic and racial categories in their analyses, and explicitly address the question how the selected way of operationalization affects the results they find.

It has been shown in several studies that research findings depend on the way of ethnic and racial classification included in the analysis (Csepe and Simon 2004; Ladányi and Szelényi 2006; Saperstein and Penner 2012; Telles and Lim 1998). The research question may determine which way of measurement of ethnicity and race is most useful in the given situation (Kertesi 1998; Saperstein 2006; Wilkinson 2010). Classification by others, on one hand, might be more appropriate when the aim is to examine inequalities and discrimination in a social context, where members of majority society sharply differentiate themselves from minority groups (Havas, Kemény, and Kertesi 1998; Kertesi 1998; Penner and Saperstein 2008; Saperstein 2006; Telles 2002; Telles and Lim 1998). Ethnic self-identification, on the other hand, might be used in studies focusing on attitudes and motivations (Saperstein 2006).

In this dissertation, we aim to contribute to the understanding of the construction of ethnicity by examining the determinant factors of ethnic classification. Moreover, we explicitly address the question how different ways of ethnic classification affect our findings in quantitative empirical research. We study interethnic relations by analysing different social networks of Hungarian Roma and non-Roma adolescents, and investigate how the inclusion

of self-declared ethnic identification of students and peers' perceptions of classmates' ethnicity alter our results.

2. Methodology

2.1. Research Design and Data Collection

The research was conducted under the project 'Wired into Each Other: Network Dynamics of Adolescents in the Light of Status Competition, School Performance, Exclusion and Integration' funded by the Hungarian Scientific Research Fund (OTKA K/81336). Data collection of the four-wave longitudinal panel study took place between the autumn of 2010 and the spring of 2013 (N=1425, mean age = 15.1 years in T1). Data were collected by the MTA TK 'Lendület' Research Center for Educational and Network Studies (RECENS).

The sampling procedure followed the tradition of other network studies. Instead of having a large representative sample of the Hungarian secondary school students or classes, our main aim was to collect data on every student of the selected classes in order to get information on complete networks of the classrooms. To get a heterogeneous sample we selected 44 classes of 7 secondary schools including vocational, technical, and grammar schools. The schools were located in the capital city, in a large town, and in two middle-sized towns (with a population of 10 000-15 000 people) in Hungary. Due to our main research questions, schools with a high proportion of Roma students were overrepresented in the sample.

For the analyses presented in the thesis, subsamples of classrooms were selected. As the dissertation focuses on interethnic relations, the subsamples contain classrooms attended by at least 3 (10%) self-declared Roma students. Because of the high dropout-rate of the Roma students, we restricted our analysis to the first two waves. The first wave of the research was organized a few weeks after students had started their secondary education. Until this time students had limited opportunity to get to know each other. The second wave followed six months later. During this time pupils had chance to get to know their classmates better, and engage in various social relations with them.

We have also taken into account the response rate in the classrooms. In social network analysis, it is advised to concentrate on classes with less than 20% of missing data in the relevant network items (Huisman 2009). In chapters where individual nominations are analysed (Chapter 4 and 5), therefore, classrooms with less than 20% of missing data have

been selected. Where students are the units of analysis and aggregated measures are used (Chapter 3), classrooms with less than 30% of missing data have been selected.

2.2. Analytical Strategy

For the three different empirical analyses, different quantitative methods were used.

2.2.1. The Determinants of Ethnic Classification (RQ1)

In this chapter, the determinants of ethnic classification were analysed. The percentage of classmates who classified a given student as Roma was used as the dependent variable. The hypotheses were tested applying fractional regression analysis (Papke and Wooldridge 1996; E. A. Ramalho, Ramalho, and Murteira 2011) with robust cluster variance estimator, which reports standard errors that adjust for clustering of students within classrooms. Regression models were estimated with the R package ‘frm’ (J. J. S. Ramalho 2015).

First, cross-sectional analyses were conducted, based on the first- and second-wave data separately. These analyses show the partial associations between ethnic classification and the independent variables at the beginning of secondary education and half a year later. Parameters estimated based on the first-wave data might represent the associations between social status, social ties, and perceptions of the students’ academic achievement and abilities, on the one hand, and ethnic classifications, on the other hand, based on the first impressions of the students a few weeks after getting to know each other. Second-wave models show whether or not these associations differ half a year later, when the students learnt much more about each other.

Second, a longitudinal analysis was conducted. To better understand changes in ethnic classification over time, the second-wave values of the Roma classification score were explained by taking into account the first-wave values of the independent variables, also controlling for the first-wave values of Roma classification.

2.2.2. The Quality of Inter- and Intra-ethnic Friendships (RQ2)

To answer the second research question nominations among students were analysed. First, descriptive statistics of the networks were calculated. Second, the number of all types of interethnic (from Roma towards non-Roma; from non-Roma towards Roma) and intra-ethnic (from Roma towards Roma; from non-Roma towards non-Roma) directed friendship nominations were summed, separately for all classes. Then, in each class and each group, the

proportion of reciprocated friendship nominations was calculated. We also calculated the number of cases when the friendship nomination co-occurred with 1.) an outgoing trust, 2.) an outgoing perceived helpfulness, and 3.) an outgoing jointly spent spare time nomination, respectively, and we calculated the proportions of these ties among the friendship nominations separately in the classrooms. At the end, we calculated the same indicators for the whole subsample as well, and tested the hypotheses using chi-squared test. We took into account receivers' ethnic self-identification first, then, we repeated the same analysis using peer perceptions of receivers' ethnicity.

2.2.3. Bullying and Victimization among Majority and Minority Students (RQ3)

Dyadic peer nominations on bullying and victimization were analysed using exponential random graph models (Lusher, Koskinen, and Robbins 2013; Robins et al. 2007) that provide statistical models for social networks. ERGMs explicitly model the dependence among ties by conditioning the likelihood of the presence of a tie on the presence or absence of other ties in the network (Lusher, Koskinen, and Robbins 2013).

To estimate our ERG models, we used the MPNet program¹ (Wang et al. 2014). The estimation procedure was similar as described by Huitsing et al. (2012). We aimed to find a relatively low number of configurations that represent the structure of bullying networks in all of our classes. We estimated ERG models with the configurations for each classes separately. Then, we meta-analysed the parameters and the standard errors of the separate models based on the procedure described by Snijders and Baerveldt (2003). We tested whether the values of the parameters significantly differed from 0, indicating general tendencies in the networks. We took into account receivers' ethnic self-identification first, then, we repeated the same analysis using peer perceptions of receivers' ethnicity.

3. Results

3.1. The Determinants of Ethnic Classification (RQ1)

In this study we examined which factors influence the way students' ethnicity is classified by their classmates. The analysis was conducted on data from 23 classes (N=629). Based on previous research on Roma classification, we expected that students who live under better

¹ The program is available at www.sna.unimelb.edu.au/PNet.

socio-economic circumstances are less likely to be classified as Roma by their peers than students living under worse socio-economic conditions. We hypothesized that students having more Roma friends in the class are more likely to be classified as Roma than students having fewer Roma friends. We also expected that students who are perceived by peers and teachers as having better academic abilities and achievement are less likely to be classified as Roma by their classmates than students who are perceived as having lower academic abilities and achievement. To test our hypotheses we used cross-sectional and dynamic fractional regression models.

We found both in the cross-sectional and dynamic models that self-declared Roma students are more likely to be classified as Roma by a higher proportion of their peers than self-declared non-Roma students. Consistently with previous studies (Ladányi and Szélenyi 2006; Saperstein and Penner 2012), however, we found some variation in the Roma classification scores of students. In some cases, moreover, perceptions of students' ethnicity and ethnic self-identification changed between the two waves. The findings show that analyses focusing on interethnic relations should distinguish between the effects of ethnic identification and classification, and take into account the fluid nature of both of them.

In line with our first hypothesis and previous studies (Csepe and Simon 2004; Ladányi and Szélenyi 2006), we found that students with poorer socio-economic background are more likely to be classified as Roma by a higher proportion of classmates than students living under better conditions. Furthermore, students having more outgoing friendship nominations towards Roma classmates are more likely to be classified as Roma by a higher proportion of peers than students having fewer Roma friends. These associations were shown both in the cross-sectional and the dynamic models. These findings suggest that characteristics of students' social and economic environment are strongly associated with ethnic classification.

In the cross-sectional models based on the first-wave data, we did not find any statistically significant effects of the variables measuring students' and teachers' perceptions of academic abilities and achievement. The reason for this might be that first-wave data capture ethnic classification based on students' first impressions of their classmates. A few weeks after getting to know each other students might be more likely to classify others based on social status and social relations, because academic abilities and achievement might have not yet been revealed. In the second wave, students perceived by peers and teachers as clever and smart were classified as Roma by a lower proportion of peers.

In the dynamic models we also found that students perceived by classmates and teachers as clever and smart were less likely to be classified as Roma over time, than students being not perceived as clever and smart. Having been honoured, moreover, had a negative effect on the change in Roma classification. The effect of having good grades, however, pointed in the opposite direction we expected, although the coefficient was significant only in Model 8, and not robust, using other statistical models. Moreover, the cross-sectional bivariate relationship between being perceived as having good grades and being perceived as Roma in T1 is negative. It is possible, that students' initial perceptions about their Roma classmates' grades represented by the negative bivariate relationship between these variables measured in T1 changed into the positive direction over time, and the negative correlation coefficient in T2 became smaller or even disappeared. But we could not examine this assumption because data on the variable measuring peer perception of having good grades were not available in the second wave. It is also possible that there is a negative bivariate relationship between the score on peer perception of having good grades and the change in the Roma classification score, but controlling for other variables in the regression models, the associations are positive.

This finding is particularly interesting because having good grades might better represent academic achievement and aspirations than being clever and smart. Cleverness might manifest itself in other areas of life as well, whereas having good grades is more closely related to proper adaptation to schools' requirements. We calculated the correlation between the scores on being perceived as having good grades and being perceived as clever and smart, on the one hand, and the mean grade students received at the end of their first school-year (two month after the second wave), on the other hand, for a subsample of 252 students (for those with data on grades). Being perceived as having good grades was indeed slightly more strongly associated with better grades ($r=0.510$, $p<0.01$ in T1) than being perceived as smart ($r=0.472$ and 0.478 in T1 and T2, respectively, $p<0.01$). Thus, perceptions of having good grades were slightly more strongly related to later academic achievement measured by grades than perceptions of being smart. The literature on oppositional culture and the acting white phenomenon suggests that perceptions of having good grades, as a better proxy for academic achievement, should have larger effect on Roma classification than being perceived as clever and smart after controlling for both variables. Our results, however, show the opposite tendency.

Furthermore, students who were reported by teachers to help others in achieving better academic progress had higher scores on Roma classification over time than students not being reported, although cross-sectional bivariate analyses between these variables showed significant negative associations, and the comparison of the bivariate correlations in T1 and T2 suggested the opposite tendency. These results suggest that the positive relationship between being perceived by teacher as helping others and being perceived by classmates as Roma is only present when we control for other factors in the regression model that are probably associated with both variables. In sum, our results are only partially consistent with the third hypothesis; the cross-sectional and longitudinal analyses suggest that the effects of peers' and teachers' perceptions of academic abilities and achievement on Roma classification are not unambiguously negative.

3.2. The Quality of Inter- and Intra-ethnic Friendships (RQ2)

In this study we compared the quality of inter- and intra-ethnic friendships, and examined whether results are different including self-declared ethnic identification of students than including peer perceptions of classmates' ethnicity. Based on previous studies we expected that interethnic friendship nominations are less likely to be reciprocated, and to be characterized by co-occurring trust and jointly spent spare time nominations than intra-ethnic ones. We also assumed that nominated interethnic friends are less likely to be perceived helpful than intra-ethnic ones. Moreover, based on the argument of Windzio and Bicer (2013) we examined whether closer relations are more likely to be segregated along ethnic lines than friendship networks.

First, we did a descriptive analysis of data from 13 classes of a Hungarian panel study conducted among Roma and non-Roma secondary school students. We investigated whether there is ethnic segregation in the friendship, trust, and perceived helpfulness relations, and shared activities analysing network matrices of the classes. Second, we examined and tested whether inter- and intra-ethnic friendship nominations differ from each other with regard to the proportion of reciprocated ties, and co-occurring trust, perceived helpfulness, and jointly spent spare time nominations.

Our main finding is that in line with our expectations, interethnic friendship nominations are indeed less often characterized by co-occurring outgoing trust, perceived helpfulness, or jointly spent spare time nominations than intra-ethnic ones. This association holds if we include self-declared ethnicity as well as peer perceptions of ethnicity in the

analysis. In the case of Roma students as senders of nominations, however, the difference between outgoing inter- and intra-ethnic nominations regarding these indicators is larger if we include peer perceptions of receivers' ethnicity compared to receivers' ethnic self-identification. In the case of outgoing nominations of non-Roma students, the difference is smaller if we include ethnic peer perceptions.

Analysing self-declared ethnicity of both senders' and receivers', we also found that interethnic friendship nominations are less often reciprocated than intra-ethnic ones. In the case of peer perceptions of receivers' ethnicity, however, outgoing nominations of non-Roma students are slightly more often reciprocated by classmates perceived as Roma than by classmates perceived as non-Roma. In other words, friendship nominations where Roma students are the receiver of the ties are more often mutual, than ties sent to non-Roma students, independently of the ethnicity of the sender of the nomination.

This phenomenon can be explained by different mechanisms. First, it is possible that friendship nominations sent by non-Roma students towards students they perceive as Roma are slightly more often reciprocated by the receivers than nominations sent towards peers perceived as non-Roma. Second, it is also possible that non-Roma students tend to slightly more often reciprocate friendship nominations they receive from classmates they perceive as Roma, than those they receive from classmates they perceive as non-Roma. Third, it is also possible that the high mutuality between non-Roma and perceived Roma peers is a by-product of other endogenous network formation processes. Future studies should examine tie formations between Roma and non-Roma students longitudinally to test which one of these mechanisms causes the observed patterns of reciprocity in friendship nominations.

These findings support the expectations that peer perceptions of ethnicity may add valuable insights to the analysis of interethnic relations (Boda and N  ray 2015; Saperstein 2006). In this study we explicitly addressed the questions how the selected way of operationalization affects the results and found that the inclusion of peer perceptions of classmates' ethnicity considerably alter the findings compared to including self-declared ethnic identification of students.

Another important finding is that students in the sample tended to nominate very few classmates with whom they do different activities together outside the school (such as doing sport, having private classes, studying, spending spare time, or going home together). Several researchers pointed out that extracurricular activities can provide important mixing opportunities for students of different ethnic background (Crain 1981; Holland and Andre

1987; Slavin and Madden 1979; Moody 2001). Friendship integration might thus increase if schools could provide more extracurricular activities and attract more students to participate in these programs.

3.3. Bullying and Victimization among Majority and Minority Students (RQ3)

In this study, we examined whether bullying occurs more frequently between students of different ethnic background than between same-ethnic students. The analysis was conducted on data from 12 classes (N=347). We highlighted the difference between different types of measurements of ethnicity and examined whether self-declared ethnicity or perceptions about others' ethnic belonging matters more when bullies select their victims. We analysed dyadic peer nominations applying exponential random graph models to control for the structural characteristics of the networks. We also controlled for gender and socio-economic status of students. Bullying relations were analysed from the perspectives of both the bullies and victims to get a more accurate view about bullying in classrooms.

We found that while self-declared ethnicity of the students did not have a significant effect on the likelihood of bullying, perceptions about the classmates' ethnicity showed a relationship with bullying relations. Our results suggest that students perceived as Roma are significantly more likely to be nominated both as victims and bullies than students perceived as non-Roma. More specifically, non-Roma students are more likely to report that they bully peers they perceive as Roma and that they are bullied by peers they perceive as Roma, than to bully peers and being bullied by peers they perceive as non-Roma. Roma students are also more likely to report that they are bullied by classmates they perceive as Roma, than by classmates they perceive as non-Roma. From the perspective of the bullies, however, Roma–non-Roma nominations are not significantly more likely, than Roma–Roma nominations. However, it is important to emphasize that while it is more likely that non-Roma students report to bully and being bullied by students they perceive as Roma than by classmates they perceive as non-Roma, self-declared Roma students do not report to bully and being harassed by non-Roma peers more likely, than non-Roma students do.

We also found that Roma students are likely to report that they bully peers they perceive as Roma, but who do not identify themselves as Roma. This findings is in line with Boda and Néray's (2015) results who found that Roma students tended to exclude those classmates whom they perceived as Roma, but who, at the same time, identified themselves with the Hungarian group. These findings suggest that not only interethnic relations are

relevant to study but minority students' relations towards peers with inconsistent ethnic classification is also an important issue for future research.

The most important novelty of our study is that we included peer perception of ethnicity in our models. We argued that ethnicity is a social construct; therefore, there can be differences in the ways people classify themselves and are classified by others in different social contexts and over time. We claimed that perception of others' ethnicity is an important factor explaining social relations. Our findings suggest that future studies should indeed focus more on ethnic perceptions when examining positive or negative social ties.

Another interesting finding of our research is that students were more likely to report that they bully others, than to report being bullied by others. Previous studies comparing self-reports on bullying and victimization mostly found the opposite tendency: students were more likely to report being victimized (Faris and Felmlee 2014; Salmivalli et al. 1996; Tolsma et al. 2013; Veenstra et al. 2007). A possible reason for this difference can be the different formulation of the questions measuring the prevalence of bullying and victimization. Students' tendency to report more victimization, however, seems to be consistent across studies using different definitions of bullying. Another possible explanation might be that there are cultural differences in the inclination of admitting bullying behaviour. To test this assumptions further research is needed in Hungarian schools. In line with our findings, however, another study conducted in 186 Hungarian primary and secondary school classes also showed that students were more likely to report being aggressive towards other students than to report being victims of others' aggressive behaviour (Hajdú and Sáska 2009).

3.4. Main Scientific Contributions of the Study

Our study extends previous research in several major ways.

1. To our knowledge, the *'Wired into Each Other'* is the first study in which dyadic ethnic perceptions were measured, asking every student's opinion about the ethnic belonging of every classmate, at different points in time. This way of measurement not only allowed us to examine ethnic classification processes, but also to use data on ethnic perceptions in social network analysis.
2. The thesis extends our knowledge of ethnic classification processes by showing that students are more likely to be classified as members of the minority group if they choose minority friends. Moreover, the empirical findings provide a new understanding of the

relationship between ethnic perceptions and perceptions of academic achievement. Our results suggest that students' perceptions of their peers' academic abilities and achievement might affect the way they perceive these peers' ethnicity.

3. We analysed a wide variety of social network items to examine interethnic relations among Roma and non-Roma Hungarian students. To extend previous knowledge on attitudes and relations among the Roma and non-Roma, we studied friendship networks, trust relations, shared activities, and negative relations of secondary school students. We confirmed previous findings that friendship relations are ethnically segregated, and contributed additional evidence that suggests that interethnic friendships are less frequently reported to be characterized by trust, helpfulness, or joint activities than intra-ethnic ones.
4. Only few studies used statistical models that are appropriate for analysing dyadic peer nominations to investigate whether bullying occurs more often between or within ethnic groups (Hooijsma 2015; Tolsma et al. 2013). To our knowledge, this is the first study, which analysed data on complete social networks, and controlled for endogenous network processes applying exponential random graph models to investigate interethnic bullying among Roma and non-Roma Hungarian students.
5. The findings of this study add to a growing body of literature on the empirical analysis of the effects of different classification systems (Boda and Néray 2015; Penner and Saperstein 2015; Telles and Lim 1998). Since we not only included the ethnic self-identification of students in the analysis, but also examined ethnic perceptions of classmates, we showed that including different ways of classification provides different estimates for the effect of ethnicity in empirical analyses.

4. References

- Allport, Gordon W. 1954. *The Nature of Prejudice*. Cambridge: Addison-Wesley.
- American Sociological Association. 2003. *The Importance of Collecting Data and Doing Social Scientific Research on Race*. Washington, DC: American Sociological Association.
- Baerveldt, Chris, Marijtje A.J Van Duijn, Lotte Vermeij, and Dianne A Van Hemert. 2004. 'Ethnic Boundaries and Personal Choice. Assessing the Influence of Individual Inclinations to Choose Intra-Ethnic Relationships on Pupils' Networks'. *Social Networks* 26 (1): 55–74. doi:10.1016/j.socnet.2004.01.003.
- Barth, Fredrik. 1969. 'Introduction'. In *Ethnic Groups and Boundaries: The Social Organization of Cultural Difference*, edited by Fredrik Barth, 9–38. London: Allen & Unwin.
- Berényi, Eszter, Balázs Berkovits, and Gábor Eröss. 2008. 'Iskolarendszer És Szabad Választás. A Jóindulatú Szegregációról'. In *Iskolarend. Kiváltság És Különbségtétel a Közoktatásban*, edited by Eszter Berényi, Balázs Berkovits, and Gábor Eröss, 15–26. Budapest: Gondolat.
- Berger, Christian, and Jan Kornelis Dijkstra. 2013. 'Competition, Envy, or Snobbism? How Popularity and Friendships Shape Antipathy Networks of Adolescents'. *Journal of Research on Adolescence* 23 (3): 586–95. doi:10.1111/jora.12048.
- Boda, Zsófia, and Bálint Néray. 2015. 'Inter-Ethnic Friendship and Negative Ties in Secondary School'. *Social Networks* 43: 57–72. doi:10.1016/j.socnet.2015.03.004.
- Brubaker, Rogers. 2009. 'Ethnicity, Race, and Nationalism'. *Annual Review of Sociology* 35: 21–42. doi:10.1146/annurev-soc-070308-115916.
- Card, Noel A. 2010. 'Antipathetic Relationships in Child and Adolescent Development: A Meta-Analytic Review and Recommendations for an Emerging Area of Study'. *Developmental Psychology* 46 (2): 516–29. doi:10.1037/a0017199.
- Coleman, James S, United States, Office of Education, and National Center for Education Statistics. 1966. *Equality of Educational Opportunity*. Washington: U.S. Dept. of Health, Education, and Welfare, Office of Education; U.S. Govt. Print. Off.
- Crain, R. 1981. 'Making Desegregation Work: Extracurricular Activities'. *Urban Review* 12 (2): 121–27. doi:10.1007/BF01956013.
- Csákó, Mihály. 2011. 'Idegenellenesség Iskoláskorban'. *Educatio* 2011 (2): 181–93.
- Csepeli, György, and Dávid Simon. 2004. 'Construction of Roma Identity in Eastern and Central Europe: Perception and Self-identification'. *Journal of Ethnic and Migration Studies* 30 (1): 129–50. doi:10.1080/1369183032000170204.
- Eschbach, Karl, and Christina Gómez. 1998. 'Choosing Hispanic Identity: Ethnic Identity Switching among Respondents to High School and Beyond'. *Social Science Quarterly* 79 (1): 74–90.
- Faris, Robert, and Diane Felmlee. 2014. 'Casualties of Social Combat School Networks of Peer Victimization and Their Consequences'. *American Sociological Review* 79 (2): 228–57. doi:10.1177/0003122414524573.
- Feddes, Allard R., Peter Noack, and Adam Rutland. 2009. 'Direct and Extended Friendship Effects on Minority and Majority Children's Interethnic Attitudes: A Longitudinal Study'. *Child Development* 80 (2): 377–90. doi:10.1111/j.1467-8624.2009.01266.x.
- Hajdú, Gábor, and Géza Sáska. 2009. *Iskolai Veszélyek. Az Oktatási Jogok Biztosának Vizsgálata*. Budapest: Oktatási Jogok Biztosának Hivatala.

- Hallinan, Maureen T., and Richard A. Williams. 1989. 'Interracial Friendship Choices in Secondary Schools'. *American Sociological Review* 54 (1): 67–78. doi:10.2307/2095662.
- Harris, David R., and Jeremiah Joseph Sim. 2002. 'Who Is Multiracial? Assessing the Complexity of Lived Race'. *American Sociological Review* 67 (4): 614–27. doi:10.2307/3088948.
- Harris, Marvin. 1970. 'Referential Ambiguity in the Calculus of Brazilian Racial Identity'. *Southwestern Journal of Anthropology* 26 (1): 1–14. doi:10.2307/3629265.
- Havas, Gábor, István Kemény, and Gábor Kertesi. 1998. 'A Relatív Cigány a Klasszifikációs Küzdőtéren'. *Kritika* 27 (3): 31–33.
- Havas, Gábor, and Ilona Liskó. 2005. *Szegregáció a Roma Tanulók Általános Iskolai Oktatásában*. Budapest: Felsőoktatási Kutatóintézet. http://www.biztoskezdet.hu/uploads/attachments/havas_lisko_szegregacio_altalanos.pdf.
- Hitlin, Steven, J. Scott Brown, and Glen H. Elder Jr. 2006. 'Racial Self-Categorization in Adolescence: Multiracial Development and Social Pathways'. *Child Development* 77 (5): 1298–1308. doi:10.1111/j.1467-8624.2006.00935.x.
- Holland, A., and T. Andre. 1987. 'Participation in Extracurricular Activities in Secondary School: What Is Known, What Needs to Be Known'. *Review of Educational Research* 57 (4): 437–66. doi:10.3102/00346543057004437.
- Hooijsma, Marianne. 2015. *Broadening the Range of Research: Links between Bullying and Ethnicity in Philippine Classrooms*. MA Thesis. Groningen: Rijksuniversiteit Groningen.
- Huisman, Mark. 2009. 'Imputation of Missing Network Data: Some Simple Procedures'. *Journal of Social Structure* 10 (1): 1–29.
- Huitsing, Gijs, Tom A. B. Snijders, Marijtje A. J. Van Duijn, and René Veenstra. 2014. 'Victims, Bullies, and Their Defenders: A Longitudinal Study of the Coevolution of Positive and Negative Networks'. *Development and Psychopathology* 26 (3): 645–59. doi:10.1017/S0954579414000297.
- Huitsing, Gijs, Marijtje A. J. van Duijn, Tom A. B. Snijders, Peng Wang, Miia Sainio, Christina Salmivalli, and René Veenstra. 2012. 'Univariate and Multivariate Models of Positive and Negative Networks: Liking, Disliking, and Bully–victim Relationships'. *Social Networks* 34 (4): 645–57. doi:10.1016/j.socnet.2012.08.001.
- Kao, Grace, and Kara Joyner. 2004. 'Do Race and Ethnicity Matter among Friends? Activities among Interracial, Interethnic, and Intraethnic Adolescent Friends'. *The Sociological Quarterly* 45 (3): 557–73. doi:10.1111/j.1533-8525.2004.tb02303.x.
- Kertesi, Gábor. 1998. 'Az Empirikus Cigánykutatások Lehetőségéről'. *Replika* 29: 201–22.
- Kertesi, Gábor, and Gábor Kézdi. 2009. 'Általános Iskolai Szegregáció Magyarországon Az Ezredforduló Után'. *Közgazdasági Szemle* 56 (11): 959–1000.
- . 2011. 'The Roma/Non-Roma Test Score Gap in Hungary'. *American Economic Review* 101 (3): 519–25. doi:10.1257/aer.101.3.519.
- Labianca, Giuseppe, and Daniel Brass. 2006. 'Labianca and Brass (2006) Exploring the Social Ledger: Negative Relationships and Negative Asymmetry in Social Networks in Organizations'. *Academy of Management Review* 31 (3): 596–614. doi:10.5465/AMR.2006.21318920.
- Labianca, Giuseppe, Daniel Brass, and B. Gray. 1998. 'Social Networks and Perceptions of Intergroup Conflict: The Role of Negative Relationships and Third Parties'. *Academy of Management Journal* 41 (1): 55–67. doi:10.2307/256897.

- Ladányi, János, and Iván Szelényi. 2006. *Patterns of Exclusion: Constructing Gypsy Ethnicity and the Making of an Underclass in Transitional Societies of Europe*. New York: Columbia University Press.
- Leszczensky, Lars. 2013. 'Do National Identification and Interethnic Friendships Affect One Another? A Longitudinal Test with Adolescents of Turkish Origin in Germany'. *Social Science Research* 42 (3): 775–88. doi:10.1016/j.ssresearch.2012.12.019.
- Leszczensky, Lars, and Sebastian Pink. 2015. 'Ethnic Segregation of Friendship Networks in School: Testing a Rational-Choice Argument of Differences in Ethnic Homophily between Classroom- and Grade-Level Networks'. *Social Networks* 42: 18. doi:10.1016/j.socnet.2015.02.002.
- Lusher, Dean, Johan Koskinen, and Garry Robbins. 2013. *Exponential Random Graph Models for Social Networks : Theories, Methods, and Applications / Editors, Dean Lusher, Johan Koskinen, Garry Robbins*. Structural Analysis in the Social Sciences ; 35. Cambridge ; New York: Cambridge University Press.
- McKenney, Katherine S, Debra Pepler, Wendy Craig, and Jennifer Connolly. 2006. 'Peer Victimization and Psychosocial Adjustment: The Experiences of Canadian Immigrant Youth'. *Electronic Journal of Research in Educational Psychology* 4: 1696–2095.
- Moody, James. 2001. 'Race, School Integration, and Friendship Segregation in America'. *American Journal of Sociology* 107 (3): 679–716. doi:10.1086/338954.
- Mouw, Ted, and Barbara Entwisle. 2006. 'Residential Segregation and Interracial Friendship in Schools'. *American Journal of Sociology* 112 (2): 394–441. doi:10.1086/506415.
- Papke, Leslie E., and Jeffrey M. Wooldridge. 1996. 'Econometric Methods for Fractional Response Variables with an Application to 401(k) Plan Participation Rates'. *Journal of Applied Econometrics* 11 (6): 619–32. doi:10.1002/(SICI)1099-1255(199611)11:6<619::AID-JAE418>3.0.CO;2-1.
- Penner, Andrew M, and Aliya Saperstein. 2008. 'How Social Status Shapes Race'. *Proceedings Of The National Academy Of Sciences Of The United States Of America* 105 (50): 19628–30. doi:10.1073/pnas.0805762105.
- Penner, Andrew M., and Aliya Saperstein. 2015. 'Disentangling the Effects of Racial Self-Identification and Classification by Others: The Case of Arrest'. *Demography* 52 (3): 1017–24. doi:10.1007/s13524-015-0394-1.
- Pettigrew, Thomas F. 2008. 'Future Directions for Intergroup Contact Theory and Research'. *International Journal of Intercultural Relations* 32 (3): 187–99. doi:10.1016/j.ijintrel.2007.12.002.
- Pettigrew, Thomas F., and Linda R. Tropp. 2006. 'A Meta-Analytic Test of Intergroup Contact Theory'. *Journal of Personality and Social Psychology* 90 (5): 751–83. doi:10.1037/0022-3514.90.5.751.
- Quillian, Lincoln, and Mary E. Campbell. 2003. 'Beyond Black and White: The Present and Future of Multiracial Friendship Segregation'. *American Sociological Review* 68 (4): 540–66. doi:10.2307/1519738.
- Ramalho, Esmeralda A., Joaquim J.S. Ramalho, and José M.R. Murteira. 2011. 'Alternative Estimating and Testing Empirical Strategies for Fractional Regression Models'. *Journal of Economic Surveys* 25 (1): 19–68. doi:10.1111/j.1467-6419.2009.00602.x.
- Ramalho, Joaquim J. S. 2015. *Frm: Regression Analysis of Fractional Responses* (version 1.2.2). <https://cran.r-project.org/web/packages/frm/index.html>.
- Rambaran, J. Ashwin, Jan Kornelis Dijkstra, Anke Munniksma, and Antonius H. N. Cillessen. 2015. 'The Development of Adolescents' Friendships and Antipathies: A Longitudinal Multivariate Network Test of Balance Theory'. *Social Networks* 43: 162–76. doi:10.1016/j.socnet.2015.05.003.

- Robins, Garry, Pip Pattison, Yuval Kalish, and Dean Lusher. 2007. 'An Introduction to Exponential Random Graph (P*) Models for Social Networks'. *Social Networks* 29 (2): 173–91. doi:10.1016/j.socnet.2006.08.002.
- Salmivalli, Christina, Kirsti Lagerspetz, Kaj Björkqvist, Karin Österman, and Ari Kaukialnen. 1996. 'Bullying as a Group Process: Participant Roles and Their Relations to Social Status Within the Group'. *Aggressive Behavior* 22 (1): 1–15. doi:10.1002/(SICI)1098-2337(1996)22:1<1::AID-AB1>3.0.CO;2-T.
- Saperstein, Aliya. 2006. 'Double-Checking the Race Box: Examining Inconsistency between Survey Measures of Observed and Self-Reported Race'. *Social Forces* 85 (1): 57–74. doi:10.1353/sof.2006.0141.
- Saperstein, Aliya, and Andrew M. Penner. 2012. 'Racial Fluidity and Inequality in the United States'. *American Journal of Sociology* 118 (3): 676–727. doi:10.1086/667722.
- Saperstein, Aliya, Andrew M. Penner, and Ryan Light. 2013. 'Racial Formation in Perspective: Connecting Individuals, Institutions, and Power Relations'. *Annual Review of Sociology* 39: 359–78. doi:10.1146/annurev-soc-071312-145639.
- Simonovits, Gábor, and Gábor Kézdi. 2014. 'Poverty and the Formation of Roma Identity in Hungary: Evidence from a Representative Panel Survey of Adolescents'. SSRN Scholarly Paper ID 2428607. Rochester, NY: Social Science Research Network. <http://papers.ssrn.com/abstract=2428607>.
- Slavin, R. E., and N. A. Madden. 1979. 'School Practices That Improve Race Relations'. *American Educational Research Journal* 16: 169–80. doi:10.3102/00028312016002169.
- Smith, Sanne, Ineke Maas, and Frank van Tubergen. 2014. 'Ethnic Ingroup Friendships in Schools: Testing the by-Product Hypothesis in England, Germany, the Netherlands and Sweden'. *Social Networks* 39: 33. doi:10.1016/j.socnet.2014.04.003.
- Snijders, Tom A.B., and Chris Baerveldt. 2003. 'A Multilevel Network Study of the Effects of Delinquent Behavior on Friendship Evolution'. *Journal of Mathematical Sociology* 27 (2): 123–51. doi:10.1080/00222500390213119.
- Stark, Tobias H. 2011. *Integration in Schools: A Process Perspective on Students' Interethnic Attitudes and Interpersonal Relationships*. Dissertations. Groningen: Rijksuniversiteit Groningen.
- Stark, Tobias H, Andreas Flache, and René Veenstra. 2013. 'Generalization of Positive and Negative Attitudes toward Individuals to Outgroup Attitudes'. *Personality & Social Psychology Bulletin* 39 (5): 608–22. doi:10.1177/0146167213480890.
- Telles, Edward E. 2002. 'Racial Ambiguity among the Brazilian Population'. *Ethnic & Racial Studies* 25 (3): 415–41. doi:10.1080/01419870252932133.
- Telles, Edward E., and Nelson Lim. 1998. 'Does It Matter Who Answers the Race Question? Racial Classification and Income Inequality in Brazil'. *Demography* 35 (4): 465. doi:10.2307/3004014.
- Telles, Edward E., and Tianna Paschel. 2014. 'Who Is Black, White, or Mixed Race? How Skin Color, Status, and Nation Shape Racial Classification in Latin America'. *American Journal of Sociology* 120 (3): 864–907. doi:10.1086/679252.
- Tolsma, Jochem, Ioana van Deurzen, Tobias H. Stark, and René Veenstra. 2013. 'Who Is Bullying Whom in Ethnically Diverse Primary Schools? Exploring Links between Bullying, Ethnicity, and Ethnic Diversity in Dutch Primary Schools'. *Social Networks* 35 (1): 51–61. doi:10.1016/j.socnet.2012.12.002.
- Veenstra, René, Siegwart Lindenberg, Andrea F. De Winter, Bonne J. H. Zijlstra, Frank C. Verhulst, and Johan Ormel. 2007. 'The Dyadic Nature of Bullying and Victimization:

- Testing a Dual-Perspective Theory'. *Child Development* 78 (6): 1843–54.
doi:10.1111/j.1467-8624.2007.01102.x.
- Veenstra, René, Siegwart Lindenberg, Anke Munniksma, and Jan Kornelis Dijkstra. 2010. 'The Complex Relation between Bullying, Victimization, Acceptance, and Rejection: Giving Special Attention to Status, Affection, and Sex Differences'. *Child Development* 81 (2): 480–86. doi:10.1111/j.1467-8624.2009.01411.x.
- Vervoort, Miranda H. M., Ron H. J. Scholte, and Geertjan Overbeek. 2010. 'Bullying and Victimization Among Adolescents: The Role of Ethnicity and Ethnic Composition of School Class'. *Journal of Youth and Adolescence* 39 (1): 1–11. doi:10.1007/s10964-008-9355-y.
- Vervoort, Miranda H.M., Ron H.J. Scholte, and Peer L.H. Scheepers. 2011. 'Ethnic Composition of School Classes, Majority–minority Friendships, and Adolescents' Intergroup Attitudes in the Netherlands'. *Journal of Adolescence* 34 (2): 257–67. doi:10.1016/j.adolescence.2010.05.005.
- Wang, Peng, Garry Robins, Philippa Pattison, and Johan Koskinen. 2014. *MPNet, Program for the Simulation and Estimation of (P*) Exponential Random Graph Models for Multilevel Networks*. Melbourne, Australia: Melbourne School of Psychological Sciences, The University of Melbourne.
- Wilkinson, Lindsey. 2010. 'Inconsistent Latino Self-Identification in Adolescence and Academic Performance'. *Race and Social Problems* 2 (3–4): 179–94. doi:10.1007/s12552-010-9036-9.
- Windzio, Michael, and Enis Bicer. 2013. 'Are We Just Friends? Immigrant Integration into High- and Low-Cost Social Networks'. *Rationality & Society* 25 (2): 123–45. doi:10.1177/1043463113481219.

5. List of Publications

Peer-reviewed journal articles

Kisfalusi, Dorottya (2016): The Quality of Inter- and Intra-ethnic Friendships among Roma and Non-Roma Students in Hungary. *Corvinus Journal of Sociology and Social Policy*, forthcoming.

Others

Kisfalusi, Dorottya and Judit Pál (2015): *Capturing Status Positions: The Role of Peer Admiration and Peer Acceptance in Adolescents' Bullying Networks*. XXXV International Sunbelt Social Network Conference. Brighton, UK

Kisfalusi, Dorottya and Judit Pál (2014): *Perception of Your Ethnicity Makes You Be More Bullied? Peer Perception and Self-Declaration of Ethnicity in Bullying and Victimization Processes*. 1st European Conference on Social Networks, Barcelona, Spain

Kisfalusi Dorottya, Sára Horlai and Krisztina Andrási (2013): *Interethnic Relations, Ethnic Classification by Peers, and Identity Change: Is There a Connection?* XXXIII: Sunbelt Social Network Conference, Hamburg, Germany

Kisfalusi Dorottya, Sára Horlai and Krisztina Andrási (2013): *Interethnic Relations and Ethnic Classification by Peers: Is There a Connection?* 9th HUNNET Conference, Budapest, Hungary