



**Doctoral
School of
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THESIS SYNOPSIS

Balint Neray

**Relational Integration
as The Analysis of Friendship, Negative Ties and Ethnic Identity
Among Adolescents**

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Institute of Sociology and Social Policy

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1. Introduction and research questions

Our departure in the beginning of this Thesis was the disadvantaged position of minority groups, who are often deprived from practically available liberties necessary to tackle everyday challenges originating from social, and economical inequalities in their host societies. More often than not they are found to have relatively low social, and economical status; their members are regularly and repeatedly excluded from the mainstream society in numerous ways (Alon and Haberfeld, 2007; Black et al., 2006; Cohen, 1999; Dustmann and Frattini, 2011; Neal and Johnson, 1995; Trejo, 1997).

Racial fractions often form the basis of such exclusion that coincides with the evolution of negative relations and prejudice, which can give rise to, and be reinforced by, various forms of interracial conflicts (Black et al., 2006; Espinosa and Massey, 1997; Greenman, 2011; Neal and Johnson, 1995; Trejo, 1997). The promise of integrated education is the reduction of racial inequalities through the development of the social, and human capital. In the core of this promise there is an assumption that positive interracial relations might develop among members of majority and minority groups (Moody, 2001; Pettigrew and Tropp, 2008; Stark, 2011; Swart et al., 2010; Turner et al., 2007).

Nonetheless, the possible beneficial impact that cross-race friendships could provide to individuals and to the society may be hindered if these relationships fail to develop and persist over time. Indeed, evidence of previous research undoubtedly indicates that adolescents' interracial friendship formation is a rare phenomenon. Even though Allport's contact theory requires intergroup contact to be sustained in order to effectively reduce prejudice (Allport, 1954), there are surprisingly few studies that analysed the stability of these relationships over time. Moreover, these studies had controversial results that provoke further investigation (Hallinan and Tuma, 1978; Kandel, 1978; McPherson et al., 2001; Tuma and Hallinan, 1979). Hence, we argued that relational integration should be defined not only by the development of positive intergroup ties but also by the stability of these ties. In *Chapter 4* explored *whether the racial composition of the friendship dyad influences its stability over time*.

Furthermore, we extend the definition of relational integration by accounting not only for the prevalence of positive intergroup relations but also for negative ones (see Chapter 5 and 6). Consequently, in *Chapter 5* we introduced two different aspects of ethnicity: self-declared ethnicity, and ethnicity based on peer perception. Here, we

studied social identity without focusing on groups that are conceptually fixed (Brubaker, 2009; Emirbayer, 1997; Saperstein and Penner, 2012; Tilly, 2005), and we *analysed how positive as well as negative interpersonal relations are influenced by the different aspects of race, and the discrepancy between them.*

In *Chapter 6* we applied a more complex approach in order to *model together the development and maintenance of friendship and negative ties as a result of self-identification and categorisation processes.* Here we took into account that not only ethnicity affects social relationships, but friendships and negative ties can also influence how students categorise each other. In this relational approach, we, like the majority of previous research, treated identities as characteristics of individual consciousness. However, we did more. By accepting and capitalising on the idea that identities are shaped by social relations, we argued that every individual has as many identities as it has relations with other individuals within the social group (Tajfel and Turner, 1979; Tilly, 2005).

2. Analytical and theoretical framework

In Chapter 2, our effort focused on the description of a relational analytical framework that is suitable to the theoretical understanding and empirical analysis of our research topic. In this chapter we argued that the empirical investigation of social relations is often a necessary and fruitful element of the research on a large variety of social phenomena. Even though relational approach has been present in theoretical thinking for a long time, its more precise formalisation as well as empirical application is relatively recent and scattered. Hence, we decided to draw up an analytical framework in which aims of empirical research can be articulated and analysed.

In this framework, we introduced the notion of dependence that connects the different levels of social scientific inquiry. Theoretically speaking, the dependence comes by the evolution of relations among individuals. They depend up on each other as their attributes get influenced by their relations, relations are selected as a result of the difference (or similarity) of their attributes, and finally, relations evolve as a consequence of other relations within a given context or social group.

Once we accept these arguments we can further reason that interpersonal relations evolve and operate on the meso level of the scientific inquiry, connecting individual attributes or outcomes (e.g. racial identification) on the micro level to

outcomes on the group or macro level (e.g. ethnic segregation).

Further, we argued that the social mechanisms responsible for the evolution of these inter-personal relations had been long described theoretically and can be empirically operationalised within the right methodological framework. We referred to ERGMs and SAOMs as theory driven methodological tools that allow the researcher to acknowledge the lack of independence of the observations. We showed that considering dependence among the different levels of scientific inquiry is not only fruitful from a theoretical point of view, but necessary empirically as well.

As a result of our efforts in Chapter 2, we presented an analytic framework that is well suited to answer substantive research questions concerning social relations, and analyse them according to statistical inference.

Moreover, we introduced social identity theory (Tajfel and Turner, 1979), an already existing theoretical approach, within the relational framework. Related to our empirical agenda, in Chapter 5 and 6 we illustrated that (racial) identity formation can be more precisely described within this framework. In a relational approach identity can be understood as a fluid attribute constantly shaped by within, and between group relations that are regulated through context specific social norms (Tilly, 2005). Consequently, identities can be interpreted as characteristics of individual consciousness: how you think of yourself, and also by social context and social relations: individuals might have as many identities as they have relations with other individuals and social groups (Tilly, 2005).

Following SIT we can argue that this is because the categorisation of someone as a member of the ingroup or the outgroup depends on perceived differences between individuals in the situation along important dimensions, and the perception of ingroups and outgroups is based on the cognitive grouping of environmental stimuli (Tajfel and Turner, 1979). Therefore, the identity formation process consists of two main parts: the perception of individual attributes, and their relevance in the given social situation. Consequently, we were able to explain the social construction of racial identity through transactional processes between the individual level and contextual level.

Our work supports earlier theoretical considerations claiming that there is no objective truth about someone's race. Therefore, it is suggested that researchers should define race in terms of beliefs, perceptions, and understandings (Brubaker, 2004). Most importantly, someone's racial self-identification is not necessarily the same as how it is categorised by others in different social interactions and relations (Saperstein and

Penner, 2012). We can call this the discrepancy between racial identification (self-perception) and racial classification (perception by others).

This argument may have crucial consequences in the relational integration process. If individuals achieving higher social status lose their racial memberships at the same time, they can hardly serve as positive examples for others in their original racial groups or for the outside society.

Furthermore, we argued that besides the external categorisation of others, there is evidence that individual racial membership is not fixed, but instead, it can be different across social contexts and change over time (Harris and Sim, 2002; Hitlin et al., 2006; Saperstein and Penner, 2012). Therefore, racial identity is socially constructed not only in a sense that its definition and categories change in the macro structure over time, but it is also conceptually fluid on the individual level. We refer to this as the micro level aspect of racial fluidity. Even though this theoretical contribution is not new, it is important nonetheless as the fluid aspect of racial identity is hugely neglected in empirical sociological research.

3. Data and research methods

3.1 Data

In order to find out whether the racial composition of the friendship dyad influences its stability over time, in *Chapter 4*, we used the data from the PROSPER project, a program originally designed to evaluate substance use interventions among American students.

There were two grade cohorts followed over 4 years in 28 rural school districts from Iowa and Pennsylvania. The first cohort of students were enrolled during the 2002-2003 school year, and the second a year later. In-school assessments were conducted in fall of the 6th grade, then again in the spring and every spring there after until the 9th grade. Approximately 6 months had passed between wave 1 and 2, while approximately a year between every other wave (5 waves in total). Over 16 000 students filled out at least one school questionnaire and about 12.000 students responded each wave. The average participation rate of students was 87% but the over-time rate of participation naturally lowered. Of the 12.245 wave-1 respondents, 90% completed 3 waves, 85% completed 4 and 71% completed all 5 waves. On average, in the 5-wave

sample 50% of the students was female, 35% of them was entitled for free lunch and 80% of them was White.

The relatively big size of the sample compensates for the moderate racial heterogeneity and the real advantage of the data is that the observation was repeated 5 times. This is important, because the duration a friendship choice is usually unknown for choices that were already in existence before the data collection and / or were still in existence at the end of the observation period. An other advantage of the data is that the large time span allows us to control for the time period the friendship was already in existence within the observation window.

For the analysis we restricted the original PROSPER sample to those with valid data on race and we focused only on students who declared themselves to be either White, Hispanic or Black. The proportion of students who identified differently was so small (6.4%) that these students were removed from the sub-sample. Moreover, we selected only schools where the proportion of the non-White population was at least 15% in each and every wave and the proportion of missing data on Race was less than 20%. We decided to further restrict our sample for observations with valid data on being entitled for free lunch in school, because it serves as the key control variable of the analysis. This procedure resulted in a sub-sample of 2190 students in 10 school communities. Among them, 48% was female, 37% was entitled for free lunch in school and regarding race, 72% of them was White, 19% was Black and 9% Hispanic.

The *dependent variable* of the analysis is the retention of the friendship dyad between two consecutive waves. In order to create dyadic-level data records were created for all possible dyadic combinations of students within each schools and each waves. Then, measurement of friendship retention was created in the form of a binary variable that takes the value 1 if the friendship dyad existing in a particular time of observation already existed in the previous time of observation.

To answer our research questions in *Chapter 5 and 6*, we analysed two waves of a four-wave social network database of Hungarian secondary school students. This data has several unique features and provides the researcher with an abundance of opportunities to study different social phenomena in relational framework.

The data were collected by the MTA TK “Lendület” Research Centre for Educational and Networks Studies (Budapest, Hungary) within the frame of the project: “Wired into Each Other: Network Dynamics of Adolescents in the Light of Status

Competition, School Performance, Exclusion and Integration”. The author of this Thesis also participated in the research design of the project as well the data collection and data management.

The four-wave survey started in November 2010 and ended in April 2013. In the beginning, the overall 1425 students were distributed among 7 secondary schools and 44 school classes in the sample; in total, approximately 1750 students participated in at least one wave of the data collection. They were attending to the 9th grade during the first data collection period which means that they were freshly brought together and barely knew each other at that time. Hence, starting the analyses with the first wave makes it possible to examine the development of interethnic attitudes and interpersonal relations from a “neutral” situation. The original sample is representative for settlement size and type as well as institution type within Hungary.

During the 3 waves, the a relatively big number of students dropped out of the sample. While there were 1425 students in the sample at wave 1, this number was only 980 at wave 4. Because the drop out rate was largest in the vocational training schools with high number of Roma students, the ethnic heterogeneity of the sample substantially decreased from wave 1 to wave 4. Since we are interested in interracial relations within school classes, this composition change makes the third and especially the forth wave of the data less useful for our research.

Our analysis in *Chapter 5* relied on the second data-wave of the RECENS data, which was collected in the second half of the first academic year of secondary school (in 2011), therefore students already had time to get to know each other by then. We restrict our sample to classes with appropriate levels of ethnic heterogeneity. We use a subsample (N = 420) which includes 16 classes.

In *Chapter 6* we analysed the first two waves of a four-wave social network database of the RECENS data. The examined subsample was chosen based on appropriate levels of ethnic heterogeneity within school classes, appropriate density and turnover between waves. In each classes there are at least 10% of Roma students based on their ethnic self-assessments, and there is less than 25% of missing cases in the social network data. The density of the negative networks were above 0.1 and the jaccard index was at least 0.2 for every network. The resulted subsample (N = 357) includes 12 classes.

Both in *Chapter 5 and 6* friendship and negative relations are the main *dependent variables of the analysis*, measured with one scale. Each student was asked

to judge all of their classmates along a five-point scale: “-2” for “I hate him/her, he/she is my enemy”; “-1” for “I do not like him/her”; “0” for “He/she is neutral for me”; “+1” for “I like him/her”, and “+2” for “He/she is my friend”. For our analysis, we chose friendship networks (“+2”) as a measurement for positive nominations as we believe that this network contains the most important and most influential positive nominations. For negative nominations, however, we have decided to include both weak (“-1”) and strong (“-2”) negative ties, as these networks separately were not dense enough.

In in Chapter 5 and 6, both aspects of ethnicity were taken into account. First, self-declared ethnicity had four different values: “Hungarian”, “Roma”, “Hungarian and Roma”, and “Other”. For the analysis, we created two groups: “Roma” (from “Roma” and “Roma and Hungarian”), and “non-Roma” (from “Hungarian” and “Other”). Perceived ethnicity was measured by network rosters, meaning that all students had to nominate classmates whom they considered Roma based on the complete list of their classmates which resulted in a network of Roma nominations.

3.2 Research methods

In Chapter 4 we used *hierarchical logistic regression* models to analyse the stability of interracial friendship relations. We chose this methodological approach in order to be able to better reflect on the results of the rather limited number of earlier studies.

However, as we discussed in the methodological part of the Chapter 2, there are more appropriate statistical tools to carry out such an analysis. Hence, in Chapter 5 exponential random graph models (ERGM) were estimated. These models, also known as p^* models, were introduced by Frank and Strauss (1986) developed by Frank (1991) and Wasserman and Pattison (1996) in order to analyse complete networks.

In ERGMs, the unit of analysis is a binary tie variable that can be denoted by Y_{ij} . A tie from actor i to actor j can be denoted by $i \rightarrow j$, it can be present or absent and can take value 1 and 0 respectively. The network is constituted by the tie variables, represented by an $n \times n$, adjacency matrix, where n stands for the total number of actors and self-nominations are excluded.

This statistical approach estimates the probability that a tie exists and a probability is a function of structural network parameters (e.g.: reciprocity) and actor or dyadic attributes (e.g.: race and similarity on race). The model estimation is based on simulation. During the simulation process the model generates thousands of

networks that were randomly permuted from the original, empirically observed adjacency matrix. It aims to reproduce the empirical network by adjusting structural network parameters to the simulated networks. The simulation stops after the model has converged, meaning that the simulated network significantly fits the empirical one.

In Chapter 6, in order to be able to examine network dynamics while allowing for change in individual attributes on the basis of longitudinal data, and evaluate these according to statistical inference, the model of analysis should be able to represent the network dynamics as being driven by micro-mechanisms. Being such a *stochastic actor-oriented model* (SOAM), Siena was used to test our longitudinal hypotheses about the interplay of racial identity and inter-personal relations.

The relational changes within the network can exist due to the effect of the structural position of the actors within the network, characteristics of actors, characteristics of pairs of actors, the class composition and residual random influences. It is assumed in the model that changing network ties can be defined as the outcome of a Markov process, suggesting that in any point in time, the present state of the network determines probabilistically its further development and there are no additional effects of the earlier past. For this reason, all relevant information is assumed to be included in the current state of the network. Therefore, Snijders, van de Bunt and Steglich argue that this presumption can be made more plausible by choosing independent variables that embody essential information from the past (Snijders et al., 2010).

The important feature of this approach is that between two consecutive discrete observation moments the total process of dynamic interplay between network and individual attributes happens in continuous time (provided by simulation processes). This feature makes SOAMs appropriate to examine interpersonal relations together with social identity processes within a relational approach.

4. Results

In Chapter 4, using unique long-term longitudinal network data from the US, we are able to examine the stability of cross-race friendships in detail, while controlling for potential mediators of interracial friendship stability such as socio-economic status, local-friendship embeddedness and school context effects as well as dynamic features related to duration, development and changes in school contexts.

Contrary to previous research on this topic we found that what at first glance appears to be the effect of race is rather the consequence of socio-economic status. The effect of racial difference on friendship retention is completely accounted for when controls for socio-economic status are included in the model and other individual attributes do not alter this effect. More precisely, our results show that the effect of race operates through differences in socio-economic position in a way that the latter intensifies the effect of race when Ego has low SES whereas Alter has not.

Moreover, we decomposed the friendship dyad based on its racial composition in order to describe the previous mechanisms more clearly. Our results indicate that the negative effect of different race is driven by the fickle nature of White-Black and Black-White friendships. One important distinction can be made between these two friendship nominations, however. While White-Black friendships proved to be more unstable than Black-White nominations, similarity on low socio-economic position makes the previous ones more likely to be retained, but it does not effect the latter ones. This is probably because the actor who makes the decision (Ego) in a Black-White dyad is likely to be already in low status position, whereas Alter in a Black-White dyad is more likely to have high status.

In *Chapter 5*, we estimated cross-sectional exponential random graph models separately for the friendship and the negative networks. Our analysis suggests that examining positive and negative relationships together with different concepts of ethnicity add more detail to the picture of same-ethnic and inter-ethnic relationships. Besides, we provided evidence that positive and negative outgroup attitudes were not directly related, as they were found to appear in different inter-group relationship types. Based on the results, it seems that ethnic segregation in these schools is somehow maintained by both Roma and non-Roma students, even if they contribute to the situation in different ways. Non-Roma students do so by excluding those from different ethnic background, while Roma students by excluding those who they think are willing to “hide” or disown their Roma ethnicity.

The discrepancy observed between someone's self-declared and perceived ethnicity might also be understood and interpreted as a sign for an assimilation effort: students may be reluctant to represent their Roma identity if they would like to be assimilated to the non-Roma students. This behaviour seems to have a price, as Roma classmates tended to punish these students by social rejection. In addition to this, their

non-Roma self-declaration was not enough for being accepted by the non-Roma, either: they were also rejected by those non-Roma classmates who still perceived them as Roma. The combination of these two results suggests that students with this kind of ambiguous ethnicity might be in a very difficult situation that may hinder seriously the process of assimilation.

In *Chapter 6*, we relied on SAOMs in order to study the evolution of friendships, negative ties and network of ethnic perception among students. We designed a model specification in which negative and friendship networks are estimated in the same model, as two dependent variables. Moreover, perceived ethnicity is also modelled together with the relationships, since this way we can take into consideration changes in the perception networks over time, and the fact that they can be partially caused by relationships themselves. This way, technically ethnic perceptions are also treated as a dependent variable.

Our results showed that indeed, friendship ties do not become significantly more (or less) ethnically segregated over time, controlling for structural mechanisms. This seems to imply that our groups do not follow a path of segregation over time, that is, the case of social creativity is the most important strategy in these communities. However, when we take a look at our results on the negative ties as well, this interpretation seems to be false. Even though we did not find ingroup preference in the classrooms, we did find evidence for outgroup rejection from the side of majority students. Moreover, minority students also tend to dislike other minority members, showing significant ingroup rejection. This suggests that instead of integration, our groups follow a path towards a state where majority students exclude minority students, who, at the same time, also develop a rejection towards their own group. This implies strong hierarchical differences between the two groups.

These results, again, highlight the role of negative ties in school communities, and the importance of examining them when analysing relational integration. Without modelling negative ties, tendencies of segregation could have stayed hidden, since they did not have signs in the friendship networks. Moreover, it was demonstrated again that potential inconsistencies between self-declared and perceived ethnicity play a crucial role in the development of interethnic relations. Hence, these findings contribute to the understanding of social identity as they emphasise the duality of racial identification and categorization.

5. Contributions

5.1 Theoretical contributions:

- It establishes a relational framework in which the notion of dependence is introduced making it possible to connect the different levels of social scientific inquiry.
- It introduces social identity theory within the relational framework in order to examine racial identity formation more precisely.
- It describes and operationalise a dual identity concept, as it takes not only self-identification but also perceived identity into account.
- It provides arguments of the socially constructed and context-dependent nature of race from a relational viewpoint.
- Finally, it provides further arguments that individuals' racial membership is not fixed, but instead, it can be different across social contexts and change over time.

5.2 Empirical contributions:

- It provides evidence that adolescents, in general, are constantly looking for possible friends, among which only a few become stable ones.
- It finds that racial heterogeneity of the friendship dyad reduces the stability of the friendship, but social status can mitigate the effect of race on friendship retention. That is: individuals with low SES are more likely to terminate friendship relations.
- It reveals relational segregation operates through negative ties more strongly than through friendship.
- Further results show that different aspects of race influence friendships and negative ties differently, and inconsistencies in someone's racial categorisation play a crucial role in social rejection.
- It finds, moreover, that that in inter-racial relationship formation, perceptions have even more important role than self-identifications which highlights the importance of studying racial identity in a relational framework.

- The big picture suggests that instead of integration, the examined groups follow a path towards a state where majority students exclude minority students, who, at the same time, also develop a rejection towards their own group.

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7. List of publication

2017 –

Néray B. The relational approach in sociology: a study of dependence. *Szociológia Szemle*. Under publication (accepted on the 16th of December, 2016)

2015 -

Boda Zs., Néray B.: Inter-Ethnic Friendships and Negative Ties in Secondary School. *Social Networks*. (43) 57-72.

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