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Personal Networks and Ethnic Identifications

The Case of Migrants in Spain

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abstract: This article investigates whether personal networks influenced ethnic self-identifications of migrants in Spain. During the years 2004–6, data were collected about personal networks of migrants in Spain ($N = 294$) through a questionnaire and a structured interview. The networks were classified into five network profiles on the basis of both variables about structure (e.g. density, betweenness and number of cohesive subgroups) and composition (e.g. country of origin and percentage of family members). Profiles were related to the different ways in which migrants identified themselves. Personal networks in which network members, mostly family and people from the country of origin, formed one dense cluster were associated with ethnic exclusive self-identifications, whereas more heterogeneous personal networks tended to exhibit more plural definitions of belonging. The results show that both individual and network characteristics contribute to an understanding of ethnic self-identification.

keywords: ethnicity ✦ migration ✦ personal network analysis ✦ social networks

Introduction

This article explores whether there is a relationship between personal networks and ethnic self-identifications of migrants in Spain. This relationship is interesting because it represents a link between social

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interactions and individual cognitions and this can contribute to our understanding of processes that are framing ethnic identification in our society. The case of migrants is again interesting because they experience a fast process of change both in their social relationships and in the new cultural experiences in the host country, and therefore we can assess, in a reasonable period of time, the main trends of those broad processes.

The terms identity and ethnic identity have a strong political dimension and these words are used by political actors in their contests for power. Following Brubaker and Cooper (2000), we prefer the term ethnic identification instead of ethnic identity. Identification clearly suggests that we are talking about a classification process, not about a primordial essence. Also, this term allows us to differentiate between auto- or self-identifications, and identifications by others. In both cases, as De Federico de la Rúa (2003) argues, the set of labels is institutionally ordered but the particular choice and the reasons for using specific labels in specific contexts are in part dependent on individual characteristics, relationships between people and the networks in which they are embedded.

Following the presentation of this special issue of *International Sociology* on networks and identifications (De Federico de la Rúa, this issue, pp. 683–99), our research falls under the theoretical framework of structural interactionism (Bourdieu, 1987; Degenne and Forsé, 1994), as far as we conceptualize personal networks as the result of both macro-structural forces (e.g. history, institutions, social structure, economy) and micro-individual processes (e.g. personal characteristics). Personal networks are positioned between these two levels, representing a meso-level influence in explaining ethnic identification. That is, the negotiation between the labels imposed by the dominant institutions in society and the practical situations of everyday life takes place within personal networks (selecting preferred network members, inventing new inclusive identifications, adapting identifications to different contexts and so on).

Two theories are commonly used to explain identities, namely social identity theory (SIT; Tajfel and Turner, 1979, 1986) and identity theory (IT; Stryker and Serpe, 1982). Both theories state that people have a repertoire of identities (both personal and social) and that the identity that becomes salient varies according to the social environment. The theories differ in their conceptualization of the social environment: SIT alludes to categories as social environments, and IT to social networks as environments. McFarland and Pals (2005), who combined these theories in an empirical study about the identities of adolescents with crowds in school, argued that several network properties guide actors' perceptions of identity salience: density, homogeneity, competing memberships and prominence. First, they expected there to be a larger conformity in networks that are dense (i.e. tightly connected) and homogeneous. Second, they hypothesized

that actors who are members of multiple groups have less stable identities. Last, they hypothesized that actors who are more central in social networks exert a greater control over identities. Results of their study among adolescents showed that these social network characteristics indeed affected identity changes.

Several studies have shown that the types of networks in which individuals are embedded are also related to ethnic or (trans)national identifications. De Federico de la Rúa (2003) showed that Erasmus[1] students who have high proportions of cross-national friendships are more likely to self-identify as Europeans. Also, she showed that friends from other countries with whom solidarity is strong are less likely to be considered as 'foreigners' by Erasmus students. Aguilar (2005) showed that the network members of individuals in Bosnia-Herzegovina use labels for self-identification that are related to the centrality in that person's personal network. That is, network members who are more central in a multiethnic network self-identified more often at the national level instead of ethnically. The relation between centrality and identification was also found by García Faroldi (2005), who showed that more central actors in a political discussion network identify more strongly with Europe (instead of nationally).

The present article investigates whether there is a relation between the personal networks of migrants and their ethnic identifications. In contrast to the aforementioned studies, the present study focuses on personal networks rather than networks that are either sociocentric (see next section) or focused on a single type of relation (such as friendship). Nevertheless, our expectations are in line with the expectations mentioned by McFarland and Pals (2005) regarding network properties. We hypothesized that migrants who have personal networks that are dense, consisting of strong ties and containing a high concentration of network members coming from or living in the country of origin, tend to identify more often ethnic-exclusively. On the other hand, we expected that migrants with loosely connected, more diverse personal networks, consisting for example of multiple subgroups, to identify more often ethnic-plurally, transnationally or generically (i.e. non-ethnically), as these types of networks allow more freedom in identity formation. Also, a novel aspect related to the focus on personal networks is the inclusion of kinship relations. We hypothesized that networks that contain a high proportion of kin are related to identifications that are closer to a person's roots (i.e. ethnic-exclusively), while networks with lower proportions of kin are related to identifications that are plural/transnational or generic. After studying the relations between separate network characteristics and identifications, we categorized the network characteristics into five network profiles, and

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related these as well to identifications. We did so because separate characteristics are interrelated, and erroneous conclusions may be drawn when this interrelatedness is not considered.

Our second aim was to investigate whether an analysis that uses personal network properties as predictors for ethnic identification contributes to our understanding of ethnic identity generated by studies using a micro or individual perspective. Ethnic identifications have been regarded as an indicator of immigrant acculturation (e.g. Walters et al., 2007), and, therefore, they have been studied from the point of view of assimilation theories. Assimilation theory (see Alba and Nee [1997] for a reformulation of the classical theory) and segmented assimilation theory (Portes and Zhou, 1993) have generated a number of individual-level predictors of immigrant acculturation and adaptation. It has been shown, for example, that the years of residence in the host country affect the ethnic identifications of migrants, such that migrants gradually identify more cosmopolitanly, plurally or transnationally. Education also affects ethnic identity, and cultural and gender variations have been observed as well in ethnic identity (see, for example, Jensen et al., 2006). Further, it follows from segmented assimilation theory that outcomes of downward assimilation (e.g. unemployment, experiences of racism) lead to a reactive identity. And last, we expected that transnational remittances maintain a strong bond with the country of origin. We wanted to see whether we could find a relationship between personal networks and ethnic identifications even when we controlled for these individual-level predictors.

The macro level was not studied in this article, as it was more or less the same for all respondents. Respondents were selected in the two largest cities of Catalunya, one of the 19 autonomous communities of Spain, in which 9 percent of the inhabitants are foreigners. Of course, the macro level has differential effects on respondents due to individual-level variations. For example, the language of the host country happens to be the mother tongue of Argentineans as well, whereas Moroccans first need to master the Spanish language in order to be able to interact in Spanish. On the other hand, Moroccans form more than one-quarter of the immigrants in Catalunya, while Argentineans will find considerably fewer fellow Argentineans in this region.

In the next section, we briefly present the concepts and methods for studying personal networks. In the section 'Methodology', we present the data collected in Spain about migrants from different origins and introduce the measures used in this study. Then, we show the results of our analyses regarding the relationship between types of personal networks and identifications. Last, we discuss the implications of our findings for future research.

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Personal Networks and Social Networks

There are two traditions in the study of social networks: sociocentric or 'complete' networks and egocentric or 'personal' networks (McCarty, 2002). Sociocentric networks focus on a set of individuals or nodes and their links among them (Wasserman and Faust, 1994). This approach allows us to take into account the pattern of direct and indirect links in a group with fixed boundaries. Normally, the study of sociocentric networks implies selecting an institutional setting for defining the group, for instance a school class, a network of stakeholders or the email file in an organization. On the other hand, an egocentric or personal network is defined as the network of people surrounding a focal individual or 'ego' (who are also called 'alters') and their mutual relationships (Wellman, 2001; Wellman and Gulia, 1999). In this tradition, the type of relationship or institutional link between them is free (neighbours, friends, co-workers, kin, etc.). Until recently, the number of alters about whom information was collected in personal network analysis was small, and information about the mutual relationships among alters was typically collected only for a small subset of alters. In part this is due to the respondent burden related to reporting $n(n-1)/2$ evaluations (e.g. for 50 alters, we need to ask respondents to report 1225 ties), and in part because most studies were interested in strong ties (Fischer, 1982; Schweizer et al., 1998; Wellman et al., 1997). The questions that were used to elicit names of network members, or 'name generators', were typically designed to suggest that respondents think of five people they talk to about important matters, or three people they talk to about healthcare decisions, among others. In our study, we asked respondents to nominate 45 alters using a very flexible name generator in order to collect active contacts for all types of relationships (see Methodology). We chose a fixed-choice design of 45 alters, based on our previous experience with larger lists of 60 or more that implied an enormous burden upon the informant. Research in this area (McCarty and Killworth, 2007) shows that structural measures are stable between 30 and 60 alters, but compositional measures (measures about the alters' attributes, as for instance the percentage of women in the personal network or the number of close friends) become more accurate as the number of alters grows, so 45 is a convenient number, large enough for representing the different institutional settings in which informants are embedded (and of course both strong and weak ties), and a rather manageable burden for respondents. Also, the fixed number facilitates comparison across cases. Other strategies for enacting reliable data about personal networks have been proposed recently (Marin and Hampton, 2007).

The personal network, measured in this way, is a good proxy for both macro- and micro-level influences acting simultaneously upon identifications. The composition and structure of a personal network reflect the

day-to-day situation of the focal person. For instance, it was found that Cubans in Miami had hardly any personal relationships with relatives or friends in Cuba (Portes, 1984), while Puerto Ricans in New York maintained an important proportion of relationships with the country of origin. Furthermore, in Spain, the personal networks of people born in Equatorial Guinea we interviewed (not studied here) did not include relationships with people in Equatorial Guinea. The explanation is that in the late 1960s, with the independence of the former colony, Guineans living in Spain were told to choose nationality, and most of them preferred to remain in Spain as Spaniards. In this case, a compositional variable, the proportion of alters living in the country of origin, is telling us about a macro phenomenon, such as the Cold War, colonial history and so on. As another example, personal networks appeared to be smaller and consisting of strong ties in Communist societies, and larger and consisting of weak ties in democratic societies (Völker, 1997). At the same time, individual agency and decisions also affect the composition and the structure of personal networks. For instance, the proportion of alters who live in the country of origin is also influenced by, among others, an individual's years of residence, the employment situation of the individual in the host country and the extent to which the individual masters the language of the host country.

Methodology

Data

The data for this article were collected during the years 2004–6 for a project funded by the NSF, titled 'Development of a Social Network Measure of Acculturation and its Application to Immigrant Populations in South Florida and Northeastern Spain'. For the Spanish part of the project, 294 immigrants in Barcelona and Girona were selected from four migrant groups using snowball sampling: Senegambians ($N = 78$), Moroccans ($N = 70$), Argentineans ($N = 81$) and Dominicans ($N = 65$). Results are shown for the subset of respondents who did not have missing data on any of the variables ($N = 271$, 92 percent). Forty-four percent are female, the average age is 31.1 (SD = 10.1) and the average years of residence 5.1 (SD = 5.0).

In 2005 and 2006, computer-assisted personal interviews were held with the use of the software EgoNet, a program designed specifically for the collection, analysis and visualization of personal network data. The survey had four modules: (1) questions about the respondents; (2) the question used to generate the names of network alters (or name generator). This was formulated as follows: 'Please, give us the names of 45 persons you know and who know you by sight or by name, with whom you have had some contact in the past two years, either face-to-face, by phone,

mail or email, and whom you could still contact if you had to.' The fixed-choice design was chosen in order to ensure that respondents not only nominated strong contacts, but also weaker contacts. The other modules were: (3) questions about each of those alters (e.g. gender and age), and (4) a question about the existence of relations between alters (as perceived by the respondent). At the end of the four modules, the program gives a visualization of the personal networks and allows to change visual variables and perform social network analysis procedures (e.g. to calculate centrality measures, to perform a cluster analysis and so on). The visualization is used for conducting a qualitative interview with the respondent about his or her personal network. The qualitative information allows us to contextualize the measures and record the cognitive world of the informant. The aid of interactive visualizations allows us to obtain new information because they trigger cognitive responses that are difficult to obtain by other means (McCarty et al., 2007).

With this methodology, it is possible to obtain compositional, structural and qualitative information about each personal network. Compositional information refers to the aggregation of attributes of the network members as we mentioned earlier. Along with the sex, age, education or income level of a respondent, the researcher may have the average age of their alters, the proportion of their network that is family, or the proportion of their network from whom people say they can borrow money, for instance. With structural information, we refer to aggregated measures about the relatedness among network members, typically number of components, clusters or centrality measures (density, betweenness, etc.). The qualitative information allows us to contextualize those measures and record the cognitive world of the informant about her life. The aid of interactive visualizations allows us to obtain new information because they trigger cognitive responses difficult to obtain by other means (McCarty et al., 2007).

Measures
The following measures were used in this study.

Ethnic Self-Identification. To elicit ethnic identifications, we used two open questions in Module 1 of the structured interviews: 'Which word or phrase best describes your ethnic identity?' and 'Which other word or phrase best describes your ethnic identity?' We used two identifiers instead of one in agreement with our earlier argument that identification is a dynamic, contextual and negotiable concept. Respondents entered their labels freely in the computer. In a content analysis, these were categorized as follows: (1) ethnic-exclusive – if both responses concern identification with the respondents' own ethnic group (e.g. Dominican,

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Dominican), $N = 76$; (2) ethnic-plural or transnational – if the first response refers to an ethnic identification and the second to another ethnic identification or more general identification (e.g. Wolof, African), or if the first response refers to an identification with a larger group that transgresses national boundaries (e.g. Latin-American), $N = 129$; (3) generic – if the first response refers to a non-ethnic category (e.g. woman, person), $N = 89$.

Meso-level Predictors of Ethnic Identification: Network Characteristics.

Percentage of Spanish: This variable measures the percentage of alters who are originally Spanish.

Percentage of migrants: This variable measures the percentage of migrants in the respondent's networks, that is, the percentage of alters who live in Spain but are not originally Spanish.

Density: This measure gives the density of the perceived alter–alter network, which is the proportion of pairs of alters whom the respondent indicated were very likely to have contact with each other when the respondent was not present.

Betweenness centralization (module 4): This measure gives the betweenness centralization of the perceived alter–alter network. The betweenness centralization ranges theoretically from 0 to 100. It should be noted that in alter–alter networks, the betweenness centralization is underestimated because all alters are connected with a two-path, via ego, who is excluded from the network, but nevertheless present. However, the betweenness centrality can be regarded as an indication of the structure of the network. Networks with a high betweenness indicate networks in which some individuals play a central role in the social lives of the respondents, as they (like the respondent) have relations with different subgroups.

Number of cohesive subgroups within the network: Within each network, a hierarchical clustering analysis was performed, using the Newman and Girvan algorithm implemented in Egonet, to identify cohesive subgroups (Girvan and Newman, 2002; Newman, 2001). This variable measures the number of subgroups that contain at least two alters.

Homogeneity of cohesive subgroups with respect to country of living: Even when the percentage of alters living in Spain (Spanish and fellow migrants) may be equal for two respondents, we observed that for some respondents these two worlds are separated in multiple subgroups, and for others the alters who are living in Spain and those not living in Spain formed one cluster. In order to investigate the average homogeneity of cohesive subgroups, we calculated the homogeneity with respect to the country of living for each subgroup (where 0 indicates complete

heterogeneity (i.e. 50 percent of the members live in Spain and 50 percent in another country) and 1 indicates complete homogeneity (i.e. either all subgroup members live in Spain or none of the subgroup members lives in Spain). Then, the variable was constructed as the weighted average of this set of homogeneities (weighted to subgroup size, so that small subgroups had less impact than large subgroups).

Percentage of family: For each alter, the respondents were asked what type of relation he or she had with this person. Responses could be made from 13 nominal categories, three of which were 'spouse or partner', 'direct family' and 'in-laws'. The percentage of alters who belonged to one of these three categories constitutes the variable 'percentage of family'.

Average closeness: For each alter, respondents were asked how close they felt with this person. Responses could be made from five categories: 'I don't feel close at all' (1) 'I don't feel very close' (2), 'I feel reasonably close' (3), 'I feel close' (4) and 'I feel very close' (5). The measure 'average closeness' averages the responses over the 45 alters and indicates how close ego feels on average with his or her network members.

Average frequency of contact: For each alter, respondents were asked how often they had contact with this person. Responses could be made from seven categories: 'every day' (recoded category 7), 'twice a week' (6), 'once a week' (5), 'twice a month' (4), 'once a month' (3), 'twice a year' (2), 'once a year' (1). This measure, 'average frequency of contact', averages the responses over the 45 alters and indicates the average amount of contact that ego has with his or her alters.

Network type: In order to identify network types, we performed a *k*-means cluster analysis in SPSS based on the nine network characteristics mentioned above. All characteristics were standardized beforehand so that all variables had equal impact on the calculation of the Euclidean distances. The cluster analysis was performed on the complete set of Spanish cases, less 14 cases ($N = 280$), which were excluded either because they had missing data on one of the network variables, or because they were outliers on one of the network variables. Since solutions with too few or too many clusters of personal networks would not be informative, we investigated three-, four-, five- and six-cluster solutions. From these, we chose the solution that was best interpretable and reasonably balanced with respect to the number of cases in each cluster. A five-cluster solution was best interpretable. So, we could distinguish five types of personal networks, which can be briefly described as (see for details Lubbers et al., in preparation): (1) 'The scarce network' ($N = 54$): networks that consist of alters who were mainly (75 percent) living in the country of origin (another 8 percent were Spanish and 17 percent were migrant), further characterized by a high closeness and a low average frequency of contact; (2) 'The dense family network' ($N = 28$): networks that consist of one dense group of alters

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(76 percent of all pairs of alters were related), with a high percentage (54 percent) of family members; most alters lived in the country of origin, 9 percent were Spanish and 20 percent a fellow migrant; (3) 'The multiple subgroups network' (*N* = 73): networks with a high proportion of fellow migrants (48 percent) and Spanish (26 percent), which consisted of multiple smaller cohesive subgroups; (4) 'The two worlds connected network' (*N* = 75): networks of which on average 51 percent of the alters lived in Spain (i.e. 16 percent of the alters are Spanish and 35 percent are fellow migrants) and 49 percent in the country of origin, and that were further characterized by a high interconnectedness between the two groups; (5) 'The embedded network' (*N* = 50), characterized by a high proportion of Spaniards (49 percent) and fellow migrants (29 percent) and a high average frequency of contact. Appendix 1 shows the cluster centres of each variable. The five types of networks appeared to differ significantly in average years of residence (see Lubbers et al., in prep.), and the order that is given above corresponds with an increasing average of years of residence. That is, respondents with 'scarce networks' migrated most recently and respondents with 'embedded networks' migrated least recently (see Lubbers et al., in prep.)

Micro-level Predictors of Ethnic Identification: Individual Characteristics.

Characteristics that were used as control variables in the analyses are:

Years of residence: This variable reflects the respondents' years of residence, running from 0 to 38. As this variable had a skewed distribution, we decided to categorize '11 years and longer' into one top category (*N* = 26), so this variable has 12 categories.

Country of origin: The four countries of origin were transformed into a set of three dummy variables; Morocco (in which 1 = Moroccan and 0 = not), Argentina (likewise) and Dominican Republic (likewise); Senegambia (Senegal and Gambia) was the base category.

Gender: Gender was coded as female = 0 and male = 1.

Education: Respondents were asked about the highest level of education they had attained. Responses were made in seven categories: no education (1), primary/elementary school (2), secondary school (3), college (4), graduate degree (5), koranic school (6) and vocational training (7). For the present article, we created two dummy variables, to distinguish secondary or vocational education (the variable 'secondary education') and college or graduate degree (the variable 'tertiary education') from primary or no education (the base category).

Employment: Respondents were asked whether they were currently employed. A binary variable was constructed from the responses so that 1 = employed (full-time, part-time, self-employed, or seasonal worker; *N* = 201) and 0 = unemployed or (in two cases) retired (*N* = 93).

Experiences of racism: Respondents were asked whether they had experienced racism in the host country. Responses were: 'never' (1), 'some' (2) and 'a lot' (3). The variable was recoded so that some or a lot of experiences of racism is 1 ($N = 144$) and no experiences of racism is 0 ($N = 149$).

Transnational remittances: Respondents were asked how often they sent money to their country of origin. The responses were 'never' (1), 'sometimes' (2) and 'a lot' (3). Two dummy variables were created to distinguish the responses 'sometimes' (the variable 'Remittances: sometimes') and 'a lot' (the variable 'Remittances: often') from no remittances (the base category).

Results

In order to study bivariate relations among network characteristics and ethnic identification, we used analysis of variance. As Table 1 shows, five of the nine network characteristics differed significantly in relation to the three types of ethnic identification: the percentage of Spanish alters in the network, the number of cohesive subgroups, density, betweenness and the percentage of family in the networks. Respondents who identified ethnic-exclusively had on average lower percentages of Spanish alters in their networks, slightly lower numbers of cohesive subgroups, their networks were more dense and they had a lower betweenness than the networks of respondents who identified ethnic-plurally/transnationally or generically. The latter two groups differed less in these variables. Furthermore, the percentage of family was slightly lower among respondents who identified plural or transnationally than among ethnic-exclusive

Table 1 *Unstandardized Means of Personal Network Characteristics per Identification (N = 271)*

	Ethnic-exclusive	Ethnic-plural or transnational	Generic	*F*
Percentage of Spanish	13.2	25.2	26.2	12.3**
Percentage of migrants	29.6	31.9	36.3	2.1
N cohesive subgroups	1.6	2.2	2.1	5.2**
Homogeneity of subgroups	60.9	63.5	56.3	1.7
Density	41.2	28.9	30.6	9.5**
Betweenness centralization	16.2	20.6	18.8	3.2*
Average freq. of contact	4.0	4.3	4.0	1.8
Average closeness	2.1	2.1	2.1	0.9
Percentage of family	36.3	30.4	35.2	3.1*

* $p < .05$; ** $p < .01$.

and generically identifying respondents. The relation among network composition and structure on the one hand and ethnic identification on the other was also significant multivariately (Wilk's lambda $F = 3.363$, $p < .001$).

Instead of looking at separate network characteristics, it may be more insightful to look at differences between network profiles. The separate network characteristics are interrelated (by far the highest correlation appeared between density and the number of cohesive subgroups, which was $r = -.52$), and we may draw erroneous conclusions if we do not consider this interrelatedness. A typology of networks does more justice to this fact. Table 2 shows the cross-tabulation of ethnic identifications and network profiles. As Table 2 shows, the majority (58 percent) of the respondents with a 'dense family network' (in which on average half of the members are family and 70 percent live in the country of origin; see Measures) had ethnic-exclusive identifications. Ethnic-exclusive identifications appeared much less often among respondents with other types of networks, least of all among respondents with so-called 'embedded networks' (8 percent): networks where half of the alters are Spanish and a quarter of the alters are fellow migrant. Plural or transnational identifications were most prevalent among individuals with 'scarce networks' (networks that are mainly based in the country of origin), and embedded networks (that are mainly based in the host country). Generic identifications were most prevalent among individuals with 'multiple subgroups networks', 'two-worlds connected networks' and 'embedded networks'. The results suggest that ethnicity is less salient among respondents who have more relations with alters who live in Spain. The relation between type of network and identification is significant ($\chi^2 = 31.5$, d.f. $= 8$, $p < .001$).

The question is whether including the meso level (personal networks) contributes to a better understanding of ethnic identification. In other words, does the inclusion of network compositional and structural characteristics

Table 2 *Cross-Tabulation of Types of Personal Networks and Identification Categories (N = 271)*

| | Identification | | | |
Network profile	Ethnic-exclusive	Ethnic-plural or transnational	Generic	Total N
'Scarce network'	23.5%	60.8%	15.7%	51
'Dense family network'	57.7%	26.9%	15.4%	27
'Multiple subgroups network'	21.1%	45.1%	33.8%	70
'Two worlds connected network'	31.1%	36.5%	32.4%	50
'Embedded network'	8.2%	55.1%	36.7%	49

contribute to an explanation of ethnic identification solely based on individual-level characteristics? For example, the 'dense family networks' are predominantly observed among Senegambian respondents (see Lubbers et al., in prep.). It is likely that the country of origin influences the type of identification, and that the relation between network profile and identification is only a spurious one. To investigate this, we performed a multinomial logistic regression analysis using SPSS, in which we predicted the type of identification from standard, individual-level predictors of ethnic identification (years of residence, country or origin, gender, employment, experiences of racism and remittances), and the network structure and composition. For these analyses, the middle and largest category of ethnic identification (i.e. plural-ethnic/transnational identification) served as the base category. All variables except binary variables were standardized, so that the sizes of their regression coefficients are comparable.

Table 3 shows the results of these analyses. First, a model was estimated including only individual-level characteristics (see Model 1 in Table 3). It appeared that years of residence had a negative impact on the odds of ethnic-exclusive and generic identifications, which implies that the higher the years of residence, the less likely it is that respondents have either ethnically exclusive or generic identifications. Furthermore, Argentineans and Dominicans had significantly lower odds to identify ethnic-exclusively than Senegambians (the base category), and Moroccans had higher odds to identify generically. When we studied the responses of the Moroccans, it appeared that many had engendered identifications. Respondents who went to college or had a graduate degree had lower odds to identify ethnic-exclusively or generically. Furthermore, respondents with experiences of racism identified somewhat more often generically, and those who were sending remittances to their home country had higher odds to identify ethnically exclusive. The effects were controlled for each other. Gender and employment did not contribute to the explanation of ethnic identification. The model had a good fit (χ^2 = 123.8, d.f. = 22, p < .001). The percentage of correct classifications was 62 (note: this percentage was 46 percent when predictors were excluded).

In Model 2 (see Table 3) we added the separate network characteristics. Controlling for individual characteristics and between network characteristics, we found significant effects of network characteristics. More specifically, those who had more Spanish contacts and more contacts with other migrants had higher odds to identify generically, controlled for individual characteristics and the other network characteristics. Furthermore, the respondents who had higher numbers of subgroups in their networks had lower odds to identify ethnic-exclusively. This finding is in line with the bivariate results for the number of subgroups from Table 1, in which we did not control for other characteristics. And last, a higher average

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Table 3 *Multinomial Logistic Regression Coefficients* (N = 271)

	Model 1		Model 2		Model 3	
Predictors	Ethnic-exclusive	Generic	Ethnic-exclusive	Generic	Ethnic-exclusive	Generic
Intercept	-0.21	-1.19	-0.29	-1.23	-0.897	-1.95
Individual predictors						
Years of residence	-0.56**	-0.60**	-0.41	-0.82**	-0.68**	-0.74**
Country of origin: Moroccan	-1.13	2.54**	-1.47*	2.53**	-1.09	2.49**
Country of origin: Argentinean	-1.61**	0.58	-1.37*	0.58	-1.31*	0.42
Country of origin: Dominican	-1.47**	0.86	-1.93**	1.04	-1.45**	0.94
Gender: male	-0.36	-0.49	-0.59	-0.53	-0.34	-0.50
Education: secondary level	-0.11	-0.12	0.06	-0.33	-0.21	-0.24
Education: tertiary level	-0.94*	-1.00*	-0.71	-1.07*	-0.90	-1.06*
Employment: employed	0.59	0.12	0.54	0.14	0.43	0.11
Racism: Yes	-0.49	0.71*	-0.41	0.60	-0.48	0.58
Remittances: sometimes	0.75	-0.39	0.64	-0.30	0.78	-0.34
Remittances: often	1.37**	-0.54	1.47**	-0.32	1.43**	-0.49
Network characteristics						
Percentage of Spanish			-0.44	0.49*		
Percentage of migrants			0.06	0.55*		
N cohesive subgroups			-0.83*	0.04		
Homogeneity of subgroups			0.06	-0.39		
Density			0.03	-0.12		
Betweenness centralization			0.01	-0.18		
Average freq. of contact			-0.45*	-0.44		
Average closeness			-0.43*	0.11		
Percentage of family			-0.03	0.16		

(continued)

Table 3 *Continued*

Predictors	Model 1		Model 2		Model 3	
	Ethnic-exclusive	Generic	Ethnic-exclusive	Generic	Ethnic-exclusive	Generic
Network profiles						
Dense family networks					1.22	0.33
Multiple subgroups networks					0.92	1.23*
Two worlds connected networks					1.15*	1.15*
Embedded networks					−0.23	1.12

Note: Base category for ethnic identification is 'Ethnically plural or transnational'.
* $p < .05$; ** $p < .01$.

frequency of contact and a higher average closeness also decreased the odds to identify ethnic-exclusively. The model had an improved model fit ($\chi^2 = 157.0$, d.f. = 40, $p < .001$). The percentage of correct classifications was improved by 5 percent (a 67 percent correct rate).

Again, we ran the analysis using the five network profiles instead of the separate network characteristics (see Model 3 in Table 3). Controlling for individual characteristics, the network profile had a significant effect overall. Respondents with a 'two worlds connected network' had higher odds to identify ethnic-exclusively and also higher odds to identify generically than respondents with 'scarce networks'. Furthermore, respondents with 'multiple subgroups networks' have higher odds to identify generically. These results are in line with the uncontrolled results. However, the considerable differences between the 'scarce network' on the one hand and the 'dense family network' or the 'embedded network' on the other hand, shown in Table 2, disappeared when individual characteristics were controlled. The model had a good model fit ($\chi^2 = 138.4$, d.f. = 30, $p < .001$). The percentage of correct classifications was slightly lower than that of Model 2 (64 percent), but this is comprehensible given that the nine variables were replaced by only one variable (translated into a set of four dummy variables).

Conclusion: Other Insights about Identifications

Personal networks reflect both macro and micro phenomena affecting cognitive representations such as ethnic identifications. Looking at their composition, structure and trends of change, we are able to understand better the world of cognitions or representations. Social interactions and cognitions are related, as are institutions and feelings, but until recently these levels were studied separately. With the personal networks perspective, it is possible to assess this interaction in a comprehensive way.

The present article provided a cross-sectional approach to the relation between the type of personal networks that migrants form in their host country and their ethnic self-identifications. Our results demonstrated that network structure and network composition are related to self-identifications. First, it appeared that ethnic-exclusive identifications were most often found among respondents who had dense networks, low numbers of subgroups and low proportions of Spanish in their network. This was in line with our expectations. Higher percentages of family were found for respondents who identified either ethnically-exclusive or (contrary to our expectations) generically. The strength of ties and the percentage of migrants were (as separate characteristics) not related to ethnic identifications.

Results indicated that ethnic-exclusive identifications (e.g. 'Moroccan') appeared most often among respondents with a so-called 'dense family network', dense networks that contained a high proportion of family

members and a high proportion of network members who lived in the country of origin. However, it appeared that this effect disappeared when we controlled for individual-level characteristics (basically, Senegambians had these types of networks and they also identified most often ethnic-exclusively). Second, ethnic-plural (e.g. 'Moroccan-Spanish') or transnational identifications (e.g. 'Latino') occurred most often among respondents who were either least embedded in Spanish society or most embedded in Spanish society (i.e. who had so-called 'scarce networks' or 'embedded networks'). Generic identifications (e.g. human, woman) were most often observed among respondents who had any of three types of networks that were relatively integrated in Spain. The latter two relations were largely observed as well when individual-level characteristics (such as years of residence) were controlled for. This suggests that ethnicity becomes less salient, and is replaced with generic identifications, when relational embeddedness in Spain increases – it is mostly a higher percentage of Spanish and migrants living in Spain that explains this effect.

These findings are consistent with those of Aguilar and Molina (2004) and Tazé and Ferrand (2007), who showed that dense personal networks were strongly associated with convergence in opinions or identifications whereas more diverse personal networks lead to more variation. We interpret those results in the following way: people with dense, homogeneous networks adopt the dominant categories as a natural expression of their social environment. They are 'Dominicans' or 'Spaniards', for instance, and their cognitive experience is totally coherent with this. Conversely, people with more heterogeneous networks are freer to adapt themselves to the different relational contexts in which they are embedded, using more generic categories, inclusive or plural. Of course, they can also use ethnic-exclusive categories for defining themselves, but our point is that in this case it is an individual choice depending on contextual processes. People with more diverse networks have more social capital (Burt, 1992), more diverse cognitive experiences and, of course, more resources to develop their ideological concerns.

A limitation of the study is that it is cross-sectional. Therefore, it is not possible to investigate the evolution of identity according to the time of residence, for instance. We are currently collecting a second wave of interviews with a random selection of the respondents of the first wave. This will allow us to study whether changes in the characteristics of personal networks indeed lead to changes in self-identifications. This may give us more detailed results about the causal direction and the sources of change in self-identification. Furthermore, we intend to compare the results of the present study with the results of the data that were collected among migrants in New York. This comparison may give us valuable insights into macro-level variations in ethnic identification.

Appendix

Table A *Cluster Centres for the Standardized Network Properties (N = 280)*

Network properties	Network profiles (clusters)				
	Scarce	Dense family	Multiple subgroups	Two worlds connected	Embedded
Percentage of Spanish	–0.76	–0.72	0.18	–0.33	1.37
Percentage of migrants	–0.73	–0.59	0.78	0.14	–0.15
N subgroups	0.11	–0.68	0.77	–0.53	–0.35
Homogeneity subgroups	0.68	0.24	0.54	–1.22	0.08
Density	–0.18	2.18	–0.79	0.22	–0.09
Betweenness	0.02	–1.21	0.35	–0.21	0.40
Average freq. of contact	–0.59	–0.25	0.06	–0.18	0.70
Average closeness	0.62	–0.03	–0.69	0.28	–0.11
Percentage of family	–0.04	1.18	–0.61	0.41	–0.29

Notes

1. Erasmus is a European exchange programme for university students.

References

Aguilar, C. (2005) 'Visualización de redes personales en Sarajevo', *Redes. Revista hispana para el análisis de redes sociales* 9(4): at: revista-redes.rediris.es/html-vol9/vol9_4.htm (accessed 1 March 2007).

Aguilar, C. and Molina, J. L. (2004) 'Identidad étnica y redes personales entre jóvenes de Sarajevo', joint issue of *Redes* and *Araucauria. Revista iberoamericana de filosofía, política y humanidades* 7(6); at: revista-redes.rediris.es/html-vol7/vol7_6.htm (accessed 15 May 2007).

Alba, R. and Nee, V. (1997) 'Rethinking Assimilation Theory for a New Era of Immigration', *International Migration Review* 31: 826–74.

Bourdieu, P. (1987) *Choses dites*. Paris: Les Éditions de Minuit.

Brubaker, R. and Cooper, F. (2000) 'Beyond "Identity" ', *Theory and Society* 29(1): 1–47.

Burt, R. S. (1992) *Structural Holes: The Social Structure of Competition.* Cambridge, MA: Harvard University Press.

De Federico de la Rúa, A. (2003) 'Réseaux d'identification à l'Europe. Amitiés et identities d'étudiants Européens./Redes de identificación con Europa. Amistades

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e identidades de estudiantes europeos', doctoral dissertation, Université des Sciences et Technologies de Lille 1 and Universidad Pública de Navarra.

Degenne, A. and Forsé, M. (1994) *Les Réseaux sociaux.* Paris: Armand Colin.

Fischer, C. (1982) *To Dwell Among Friends: Personal Networks in Town and City.* Chicago, IL: University of Chicago Press.

García Faroldi, M. L. (2005) 'El proceso de difución de la identificación europea y de las actitudes hacia la Unión a través de las redes sociales', doctoral dissertation, Universidad Complutense de Madrid.

Girvan, M. and Newman, M. E. J. (2002) 'Community Structure in Social and Biological Networks', *Proceedings of the National Academy of Science USA* 99: 7821–6.

Jensen, L., Cohen, J. H., Toribio, A. J., de Jong, G. F. and Rodríguez, L. (2006) 'Ethnic Identities, Language, and Economic Outcomes among Dominicans in a New Destination', *Social Science Quarterly* 87: 1088–99.

Lubbers, M. J., Molina, J. L. and McCarty, C. (in prep.) 'Acculturation Revisited: A Model of Personal Network Change'.

McCarty, C. (2002) 'Measuring Structure in Personal Networks', *Journal of Social Structure* 3; at: www.cmu.edu/joss/content/articles/volume3/McCarty.html

McCarty, C. and Killworth, P. (2007) 'Impact of Methods for Reducing Respondent Burden on Personal Network Structural Measures', *Social Networks* 29: 300–15.

McCarty, C., Molina, J. L., Aguilar, C. and Rota, L. (2007) 'Personal Network Visualization as an Aid for Qualitative Interviews', *Field Methods* 19: 145–62.

McFarland, D. and Pals, H. (2005) 'Motives and Contexts of Identity Change: A Case for Network Effects', *Social Psychology Quarterly* 68: 289–315.

Marin, A. and Hampton, K. N. (2007) 'Simplifying the Personal Network Name Generator: Alternatives to Traditional Multiple and Single Name Generators', *Field Methods* 19: 163–93.

Newman, M. E. (2001) 'Scientific Collaboration Networks. II. Shortest Paths, Weighted Networks, and Centrality', *Physical Review E. Statistical, Nonlinear and Soft Matter Physics* 64: 016132.

Portes, A. (1984) 'The Rise of Ethnicity: Determinants of Ethnic Perceptions among Cuban Exiles in Miami', *American Sociological Review* 49: 383–97.

Portes, A. and Zhou, M. (1993) 'The New Second Generation: Segmented Assimilation and its Variants among Post-1965 Immigrant Youth', *Annals of the American Academy of Political and Social Science* 530: 74–98.

Schweizer, T., Schnegg, M. and Berzborn, S. (1998) 'Personal Networks and Social Support in a Multi-Ethnic Community of Southern California', *Social Networks* 20: 1–21.

Stryker, S. and Serpe, R. T. (1982) 'Commitment, Identity Salience and Role Behaviour: Theory and Research Example', in W. Ickes and E. S. Knowles (eds) *Personality, Roles, and Social Behavior*, pp. 199–218. New York: Springer-Verlag.

Tajfel, H. and Turner, J. C. (1979) 'An Integrative Theory of Intergroup Conflict', in W. G. Austin and S. Worchel (eds) *The Social Psychology of Intergroup Relations*, pp. 33–47. Monterey, CA: Brooks/Cole.

Tajfel, H. and Turner, J. C. (1986) 'The Social Identity Theory of Intergroup Behaviour', in S. Worchel and W. G. Austin (eds) *Psychology of Intergroup Relations*, pp. 7–24. Chicago, IL: Nelson-Hall.

Tazé, S. and Ferrand, A. (2007) 'Les Savoirs profanes sur le Sida: des incertitudes relationnelles aux certitudes relationnelles', special issue 'Savoirs profanes et système de santé. Enjeux de santé et sociologie' of *Revue Sociologie Santé* II: 26.

Völker, B. (1997) *Should Auld Acquaintance Be Forgot . . . ? Institutions of Communism, the Transition to Capitalism, and Personal Networks: The Case of East Germany*. Amsterdam: Thesis Publishers.

Walters, D., Phythian, K. and Anisef, P. (2007) 'The Acculturation of Canadian Immigrants: Determinants of Ethnic Identification with the Host Society', *Canadian Review of Sociology and Anthropology* 44: 37–64.

Wasserman, S. and K. Faust (1994) *Social Network Analysis: Methods and Applications*. New York and Cambridge: Cambridge University Press.

Wellman, B. (2001) 'Physical Place and CyberPlace: The Rise of Personalized Networking', *Networks, Class and Place* (Special issue of *International Journal of Urban and Regional Research*) 25: 227–52.

Wellman, B. and Gulia, M. (1999) 'Net-Surfers Don't Ride Alone: Virtual Communities as Communities', in B. Wellman (ed.) *Networks in the Global Village: Life in Contemporary Communities*, pp. 83–118. Oxford: Westview Press.

Wellman, B., Yuk-lin Wong, R., Tindall, D. and Nazer, N. (1997) 'A Decade of Network Change: Turnover, Persistence and Stability in Personal Communities', *Social Networks* 19: 27–50.

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