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## ***The Geographical Distribution of the Personal Networks of People Living in Catalonia: a dual society<sup>1</sup>***

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### **Abstract**

Based on a survey concerning personal networks of a sample of 416 people living in Catalonia we address two questions: First, are there differences between native-born and foreign-born residents in terms of the geographical repartition of their personal networks? Second, regarding active contacts providing support, where do they live?

Our data show that on average 70% of the active contacts of native-born residents live in the same city whereas immigrants have more than 50% of their active contacts living in another city or country, regardless of the length of residence in Catalonia. Natives and immigrants also differ in the location of supportive network contacts, mostly non-locals in the latter case.

With regard to the social interactions among nationals and immigrants, our results bring us to characterize the Catalan society as a “dual society”, with a social divide between the two groups. We suggest that this situation can be applicable to most of the countries where a “sub-functional class” is working in a dual labour market

### **Introduction**

Thanks to the widespread use of mobile phones, GPSs, bluetooth devices and internet resources as Googlemaps (among others), ubiquitous geographic information is now widely available for social research. In the case of the literature that pays attention to the collection and analysis of geographical information related to *social interactions* we find contributions in the field of Epidemiology (Obbo, 1993,

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Chen et al., 2007), Economic Geography (Glückler, 2007), travelling (Larsen et al., 2006, Carrasco et al., 2008; Frändberg, 2008; Urry 2010), phone calls (Onnela et al., 2007; Lambiotte et al., 2008; Licoppe et al., 2008) and Small-World simulations (Liben-Nowell et al., 2005), among others. In our case, the concept of “personal network geography” (Axhausen, 2008) is especially useful because it combines the information about active contacts of a given respondent with the current residence of each network contact in the geographic space.

In this article we explore the spatial dimension of personal networks of a sample of the Catalan population focusing specifically on the relationships among native-born (“national”) and foreign-born residents (“immigrants”) and the location of their supportive network contacts. Thus, our research questions are the following:

- Are there differences between “nationals” and “immigrants” in terms of the geographical distribution of their personal networks?
- Where do the support-providing contacts of nationals and immigrants live?

These questions are part of the research agenda launched in 1976 by Fischer (1982) and Wellman (1979) looking for responses to the “Community Question”, namely, if changes in “modern” societies, especially concerning urbanization and transport, affect the social support available to individuals. Catalonia has only become an important destination area for migrants in the last ten years, so it is of interest to investigate how this development affects the social interactions and social support of the Catalan population. Fischer and Wellman proposed to answer these questions by measuring the size, composition and structure of the *personal networks* of people, and relating them to geographic distance, ways of travel and communication. More recently, Grossetti (2007) applied Fischer’s design in Toulouse (France) in order to compare results cross-nationally. This rich literature has shown that social support is still available in the cities in both sides of the Atlantic (although it was possible to find variation in density in the case of Israel and USA, see Fischer & Shavit, 1995). Regarding the geographical distribution of personal networks, Hampton and Wellman (2002) coined the term “glocalization” to describe the characteristic distribution of personal networks in space, being most of the contacts available on a short radius but with a part of them spread throughout the World. Grossetti (2007) investigated the influence of mobility on social support, and found that it takes two years for

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people who moved to another place of residence to build up a local network, and five years to build up a local network as big as that of locals. Grossetti focused in particular on intranational mobility, whereas our study distinguishes between intra- en international migration.

Our contribution to this literature is threefold: First, we enlarged the compositional and structural information available for each individual about her strong and weak ties. We elicited a list of 30 network contacts (“alters”) from each respondent (“ego”) with a flexible name generator (see below for details) and we asked respondents about the attributes of alters and the relationships among alters, so compositional (attributes) and structural (network) information about both strong and weak ties are available in our data. Previous studies tended to elicit the names of fewer alters, a higher proportion of strong ties, and less structural information (because questions about alter-alter relationships were restricted to a subsample of important alters).

Second, thanks to the geographic tools available on the internet we are able to map the location of non-local alters (people living in a different city or town than the respondent), in order to visualize the “glocalization” phenomenon. This visualization shows variation between groups and helped us to elicit new hypotheses (Brandes et al., 2006).

Finally, we are interested in the comparison among nationals and immigrants in terms of their personal networks and the social interactions among them. The results of our analysis has led us to characterize the Catalan society as a “dual society”, with a social divide between nationals and immigrants regardless of the years of residence of the latter. We suggest that this situation can be applicable to most of countries where a “sub-functional class” (Galbraith, 1992) is working in a dual labour market (Piore, 1972).

### **Data**

The data is part of a survey launched by the ongoing research project CASCIVI (2009-2011, see note 1 and Lozares et al., in press), regarding social cohesion, social capital and personal networks in Catalonia, an autonomous region in the north east of Spain. The data collection has two phases: The first phase consists of the elicitation of personal networks of a quota sample of the Catalan population. In the

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second phase, in-depth interviews were conducted with selected respondents. The personal network data phase (including the pilot test) was carried out mostly during the second semester of 2009 and the first of 2010 by the research team. In this article we draw on the personal network data ( $N = 416$ ).

### *Sampling strategy*

In order to obtain a first overview of the personal networks of the Catalan population, a quota sampling strategy was used. The sampling strategy was based on two axes, time and space. The time axe concerns the different migratory waves that explain the current composition of the Catalan population, starting with (1) people older than 55 years, who were born in Catalonia and whose parents were also born in Catalonia and (2) people younger than 55 years born in Catalonia and with parents born in Catalonia. The other target groups are (3) people older than 55 born in the rest of Spain, (4) people born in Catalonia with at least one parent born in the rest of Spain, and two of the main groups of immigrants living in Catalonia: (5) Moroccans and (6) Ecuadorians.

Catalonia received a strong migratory wave during the late 50s and 60s (hence the group of people older than 55 born in the rest of Spain). Also, the “second generation” of these migrants is represented (people born in Catalonia with at least one parent born in the rest of Spain). During the late 80s and 90s the first Moroccans arrived. They are currently the largest migrant group, who made up 19% of the total migrant population in Catalonia in 2009, and about 16% of the total migrant population in the province of Barcelona (IDESCAT 2009). Finally, only very recently (2000-2004), Ecuadorians started to migrate in larger numbers to Catalonia. Ecuadorians now make up 7% of the total migrant population in Catalonia (being the third largest group of migrants) and 9% of the migrant population in the province of Barcelona (the second largest group).

Taking into account these population groups, the distribution of interviews is shown in Table 1.

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Target groups	N	%	Cumulative %
Age>55, born in Catalonia with parents born in Catalonia	92	22,1	22,1
Age 25-55, born in Catalonia with parents born in Catalonia	56	13,5	35,6
Age>50, born in the rest of Spain	63	15,1	69,0
Age 25-55, born in Catalonia, with parents born in the rest of Spain	76	18,3	53,8
Born in Ecuador	56	13,5	82,5
Born in Morocco	73	17,5	100,0
<b>Total</b>	<b>416</b>	<b>100,0</b>	

**Table 1.** Target groups, representing migratory waves in Catalonia including “locals”.

The second axis represents the geographical distribution of the population in Catalonia, and more specifically in the province of Barcelona – one of the four provinces of Catalonia. The province is basically formed by Barcelona city (approximately 2 million inhabitants), the Metropolitan Area of Barcelona (AMB, with 3,2 million inhabitants in total, including the city of Barcelona) and the rest of the province (in total 5,5 million people). To represent the three types of regions, respondents were selected in Barcelona city, Sant Feliu de Llobregat (AMB) and Balaguer (a small town in the rural area with 16,000 inhabitants). Within each locality, respondents from the 6 targets groups were interviewed.

Target Groups	Place of residence			
	Barcelona	St. Feliu	Balaguer	Total
Age>55, born in Catalonia with parents born in Catalonia	35	33	24	92
Age 25-55, born in Catalonia with parents born in Catalonia	16	17	23	56
Age>50, born in the rest of Spain	22	19	22	63
Age-25-55, born in Catalonia, with parents born in the rest of Spain	27	22	27	76
Born in Morocco	25	24	24	73
Born in Ecuador	24	19	13	56
<b>Total</b>	<b>149</b>	<b>134</b>	<b>133</b>	<b>416</b>

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**Table 2.** Number of respondents within each of the target groups and its distribution over the places of residence.

Overall, gender is distributed approximately 50-50 in each target group (50,2% males and 49,8% females). Only in the case of Moroccans there are significantly more males (58%) than females, representing the gender distribution of Moroccans in Catalonia (59%, IDESCAT 2009).

### *Measures*

*Personal network elicitation.* The personal networks were collected with the aid of EgoNet<sup>2</sup>. EgoNet is a questionnaire authoring language structured in four modules: (1) questions about ego, (2) name(s) generator for generating alters, (3) questions about those alters, and (4) questions about the existence of relationships between alters.

In our case, each of the 416 egos nominated 30 alters using a free listing name generator looking for active contacts and, within the description of each alter, her geographical location was recorded. The name generator was formulated as follows:

“Please write down a list of 30 people who you know by name and who know you by name, with whom you have had contact in the last two years by any means of communication, and who could be contacted again if necessary. Do not include people under 18.

These people can be anyone. Try to include people who are close and important to you. Then you can include people whom you are not accustomed to be so close with or to see much. You can expand your memory to others. It may help to think of different groups of people in different places, family, friends, colleagues, neighbours... Enter the name and last name in abbreviated form so that only you can recognize people. It is important not to abbreviate too much to recognize them later. For example: Mig Cerv by Miguel de Cervantes.”

This flexible name generator (free-recall method, McCarty, 2002) combined with a large list of people, forces individuals to explore sets of people to whom they are

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<sup>2</sup> <http://sourceforge.net/projects/egonet>

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connected in different social settings and in different ways, so a realistic sample of the personal networks surrounding every individual is captured. This information, combined with the relationships in alter-alter pairs gives an accurate map of ego's personal network (Molina et al. in press).

*The geographical distribution of personal networks.* To investigate the geographical distribution of the personal networks, respondents were asked to indicate the locality of every alter nominated. After normalization, we calculated the longitude and latitude of each alter (GPSvisualizer<sup>3</sup>) and generated the maps (Googlemaps<sup>4</sup>) for each target group.

## Results

Social relationships of people born in Catalonia are essentially local: In general, over 70% of the contacts live in the same city or area of influence, confirming the "glocalization" phenomenon described by Hampton and Wellman (2002) among others Figure 1 shows the distribution of the non-local contacts jointly for all native-born respondents. With the aim of simplifying the exposition, only target group 4 is shown (people born in Catalonia with at least one parent born in the rest of Spain;  $N = 76$ ), because there is little variation in the pattern of distribution with the other national groups except for this group having more active contacts in the rest of Spain. In the figures, each node refers to a single location in which at least one of the alters lives.

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<sup>3</sup> <http://www.gpsvisualizer.com>

<sup>4</sup> <http://maps.google.es>

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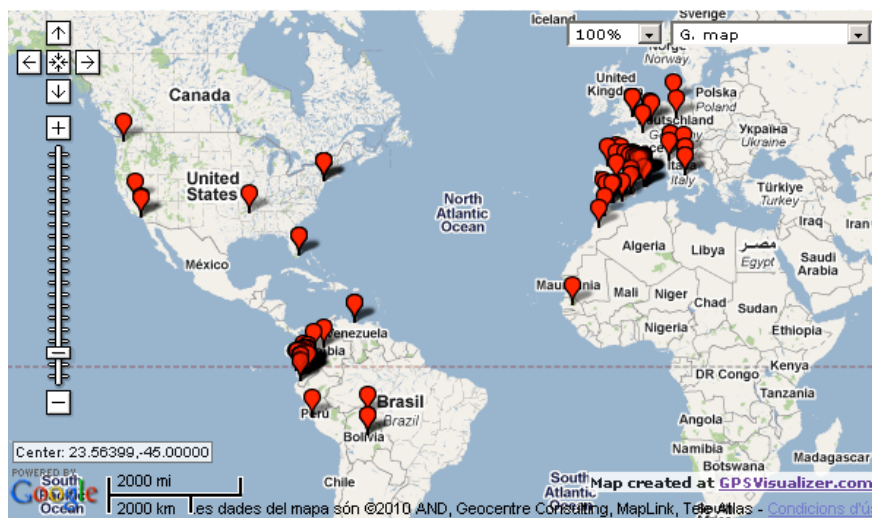
**Figure 1.** Distribution of non-local active contacts of target group 4 (Non-local active contacts, 35%). The pins show different *localities*.

For Ecuadorians, the situation is very different (see Figure 2). First, the active contacts are distributed in a truly “transnational field” (Levitt & Glick Schiller, 2004),



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from Europe to America having different countries as destination migration places. Second, the proportion of non-local active contacts is higher (51%). Ecuadorians are a relatively recent migration group (In our sample,  $M = 7,7$  years of residence,  $SD = 2,6$ ) that had a fast growth during the 90s because the special agreements between Spain and Ecuador among other factors (Bretón et al., 2007). Now (2010), some of them are coming back to Ecuador because of the economic crisis and the bilateral plans for facilitating the remigration process<sup>5</sup>.



<sup>5</sup> <http://www.migranteecuadoriano.gov.ec/content/view/2066/522/> [Retrieved: 7-08-2010].

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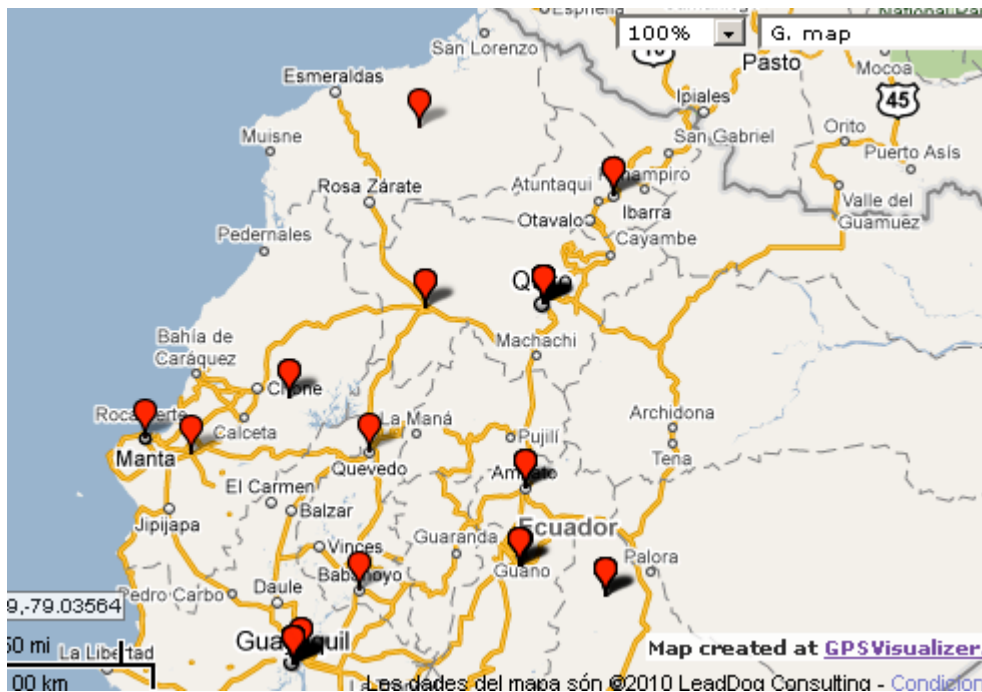
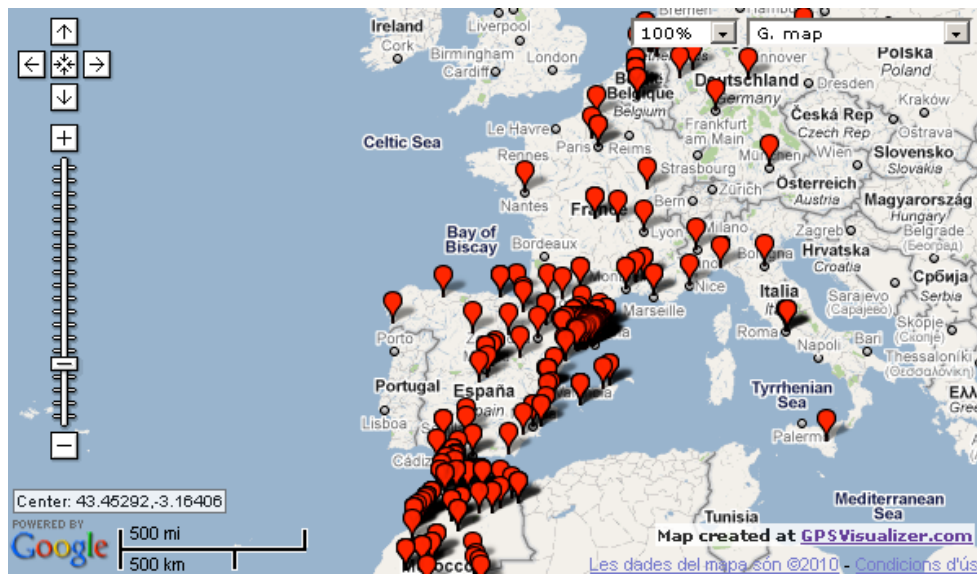


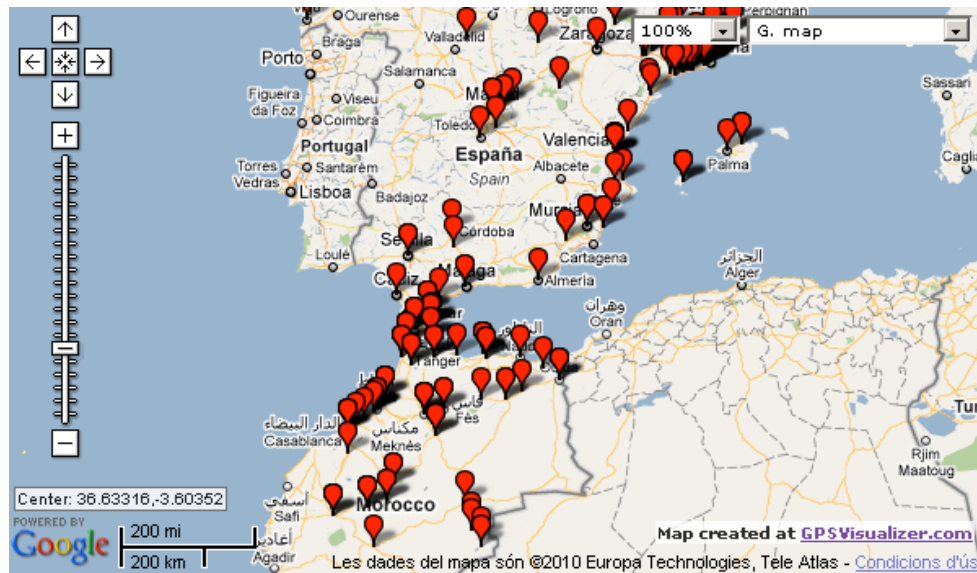
Figure 2. Distribution of non-local active contacts of people born in Ecuador (non-local active contacts, 51%).

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Finally, in the case of Moroccans the proportion of non-local active contacts raises to 58% ( $M = 7,3$ ,  $SD = 6,3$ ).



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**Figure 3.** Distribution of non-local active contacts of people born in Morocco (non-local active contacts, 58%).

The distribution of active contacts follows the path of migration chains, through the Spanish “Levante” (the Mediterranean coast) until different destinations in Western Europe (e.g., France, Italy, The Netherlands; see Figure 3). The proportion of contacts in Morocco is also very high reflecting the importance of visits to the country of origin and the existence of new marriages (Molina et al. 2008).

When we focused on the social interactions *among* nationals and immigrants, we observed a segregated landscape where intra-ethnic relationships are dominant. Nationals interact mostly with other nationals and the two migrant groups also interact predominantly with co-ethnics (see Table 5 / Figure 4). Of all the active contacts of Spaniards, 97% were with other Spaniards. This percentage is considerable given that 16% of the Catalan population are foreign-born. On the other hand, massive immigration is only a very recent phenomenon in Catalonia, and Spain in general, and it can be expected that such developments lead to changes in social networks with some inertia. In 2000, only 3% of the Catalan population was foreign-born, a percentage that corresponds with the interactions of Spaniards

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nowadays. The percentage of intra-ethnic relationships is 73% for Moroccans and 72% for Ecuadorians.

Origin of Ego		Alters Origin (Spain, Ecuador, Morocco, Other Country)				Total
		Born in Catalonia - Spain	Born in Morocco	Born in Other Country	Born in Ecuador	
Born in Catalonia - Spain	N	8.430	17	271	12	8.730
	%	<b>91,8%</b>	1,0%	49,3%	1,0%	69,1%
Born in Ecuador	N	309	29	147	1.225	1.710
	%	3,4%	1,8%	26,7%	<b>97,5%</b>	13,5%
Born in Morocco	N	444	1595	132	19	2190
	%	4,8%	<b>97,2%</b>	24,0%	1,5%	17,3%
<b>Total</b>		9.183	1641	550	1.256	12.630
%		100,0%	100,0%	100,0%	100,0%	100,0%

**Table 5.** Distribution of active contacts by origin Ego-Alter.

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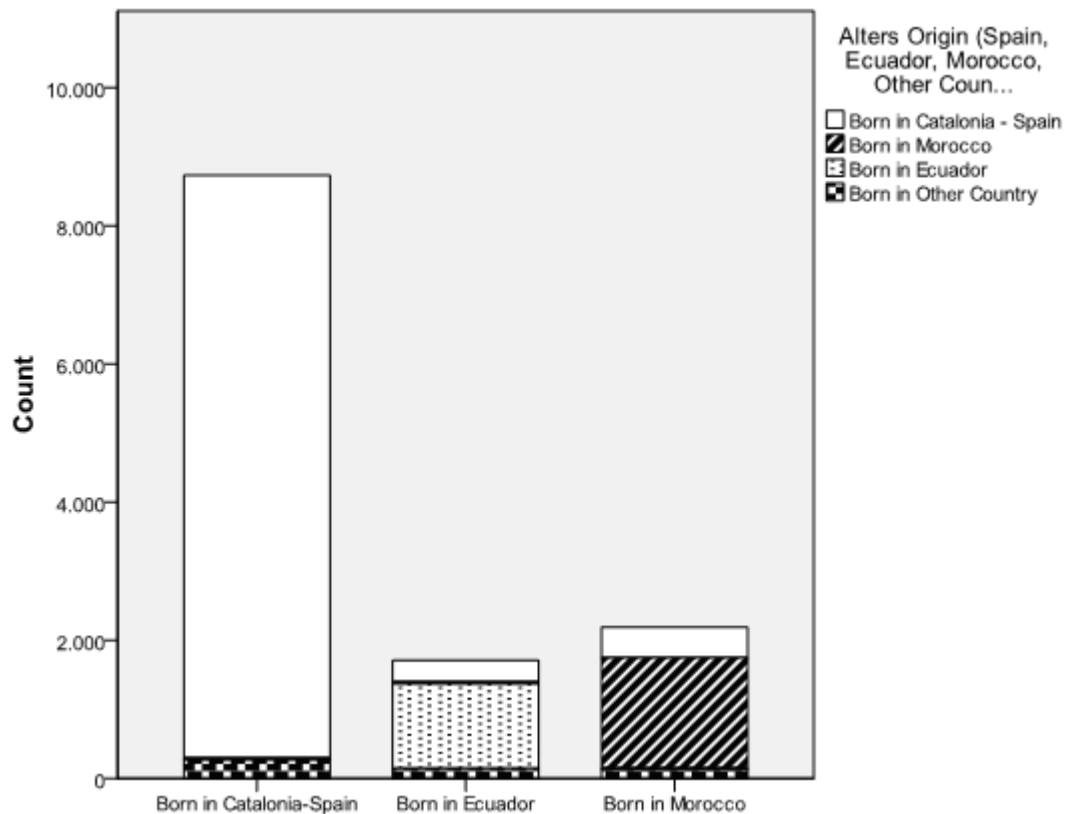


Figure 4. Ego-Alters origin.

### Location of alters providing support

Now, we can understand better why migrants have *less* active contacts in the neighbourhoods, measured as the proportion of active contacts living in the same locality. Nationals have a mean of 26% of their contacts living nearby whereas this mean is 17% for immigrants (there are no gender differences), although in the latter case the concentration in cheaper neighbourhoods can be larger.

When we selected alters who provided at least one type of social support to ego (housing, money, job information, etc.), we also found significant differences among nationals and immigrants ( $\chi^2 = 371,05$ ,  $df = 2$ ,  $p < .001$ ;  $N = 7,735$ , see Table 4): the majority of the support providers of nationals live in the same locality, while in the case of immigrants, most of the alters who provide support live in another city.

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Place of residence alters providing support - origen Ego						
		origen_ego			Total	
		Catalonia	Spain	Other		
Place of residence	Same city	N	1782	1796	1190	4768
		%	70,7%	67,5%	46,6%	61,6%
	Other city	N	737	866	1364	2967
		%	29,3%	32,5%	53,4%	38,4%
Total		N	2519	2662	2554	7735
		% Origin	100,0%	100,0%	100,0%	100,0%

Test chi-square			
	Valor	gl	Sig. asintótica (bilateral)
Chi- square de Pearson	371,051 <sup>a</sup>	2	,000
Razón de verosimilitudes	367,404	2	,000
Asociación lineal por lineal	313,830	1	,000
N de casos válidos	7735		
a. 0 casillas (,0%) tienen una frecuencia esperada inferior a 5. La frecuencia mínima esperada es 966,24.			

**Table 4.** Place of residence of alters providers of social support.

### Conclusion and discussion

In this article, we showed that the personal networks of native-born inhabitants of Catalonia were predominantly local, whereas the networks of foreign-born residents reflected a transnational space. This observation was similar when we only selected the network contacts who provided social support. The situation, where immigrants have more active contacts living outside the country, and less social support locally available, is particularly serious as the economic crisis has affected this group more severely: Two years before the survey, the unemployment rate was 6% among immigrants (compared to 3% among nationals) and during the data collection this rate raised to 31% (compared to 18% for nationals, IDESCAT, 2009).

Apart from the economic situation and focusing on the social interactions among nationals and immigrants, we observed a segregated social landscape where intra-ethnic relationships are dominant. Nationals interact mostly with other nationals and the two migrant groups also interacted predominantly with co-ethnics (see Table 5). Moreover, the place of meeting people from different ethnic origins is basically the workplace. This striking reality leads us to characterize the Catalan society as a “dual society”, where the divide between “nationals” and “migrants” is obvious and where

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migrants have to rely on ethnic social networks for making a living. These social networks are weaker than those of nationals due to the migration process.

This finding can be explained in terms of the “sub-functional class” (Galbraith, 1992) that is working in a “dual labour market” (Piore, 1972). This sub-functional class does the worst jobs and is constituted basically by immigrants. The core labour market is occupied by the nationals with higher salaries and better working conditions, who can therefore cope better with the current economic crisis.

Although the situation depicted here is clear (ethnic segregation, dual job system, social vulnerability of immigrants), we should make some caveats. First, the quota sample does not allow us to generalise our conclusions to the global Catalan population. We think that the results we presented are a good starting point for widening the sample and creating a sound basis for generalising. Second, the proportion of non-locals is sensitive to the level of education (Grossetti, 2006) so new samples should be selected in order to assess the extent of this effect. Third, other important migrant groups (as Romanians, who represent the second largest foreign-born group in Catalonia, and the third in the province of Barcelona; European Union citizens) should be included in the sample in order to have a better understanding of the situation. Previous research (Lubbers et al. 2010) showed that Argentineans, with a higher average level of education than the migrant groups studied here, had a larger proportion of Spaniards in their networks, so this factor should be also taken into account for a better overview of the Catalan society as a whole.

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