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Defining and Measuring Transnational
Fields*

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Abstract

Transnational social *fields* and transnational social *spaces* are concepts used interchangeably in transnational literature. Although both of them refer to the complex of connections between borders, each of them represents a different – and complementary – perspective. In this paper, it will be argued that the adoption of the social networks approach by transnational studies actually inherited two different traditions for studying relational phenomena: the anthropological egocentric or personal network tradition and the sociological or whole network tradition. "Transnational fields" would reflect the former and "transnational spaces" would reflect the latter. In this way, transnational fields would be especially feasible for studying embeddedness in given places, whereas transnational spaces would be useful for studying dynamics between regions, representing two different levels of analysis of the same range of phenomena.

The operationalisation of the concept of transnational fields suggested in this paper involves a) the collection of ensembles of personal networks, b) the selection of a focal place, and c) the assessment of types and levels of embeddedness in the identified field using the method of Clustered Graphs, and the Index of Qualitative Variation. This proposal will be exemplified with the data collected in Barcelona from three groups (Chinese, Sikh and Filipino, N=25 in each group, 30 alters by ego). Finally, the pros and contras of the proposal will be discussed.

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Keywords

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Introduction

After two decades, transnational studies have contributed to a better understanding of a wide range of emergent social phenomena that take place across borders. The transnational perspective, originated in the field of migration studies (Glick-Schiller et al. 1992), has been adopted today by a wide variety of disciplines, covering issues as diverse as identity, social and economic remittances, ethnic businesses, religion, health, citizenship and politics (see Vertovec 2009). Possibly, one of the keys explaining this success is its *theoretical* potential. From the very beginning, the transnational perspective was intended not only to improve the understanding of the processes experienced by migrants and their social networks but to advance in an analytical framework that was able to encompass the paradoxes of "globalization" (Featherstone and Robertson 1997, Eriksen 2007). One of these paradoxes is the coexistence of growing global processes with the reinforcement of nation-states and nationalisms as hegemonic frames of representation of cultural diversity and collective action (Szanton et al. 1995). This intellectual positioning between the "network society" (Castells 1996) which implies the decoupling of space and time in modern experience (Giddens 1984, Harvey 1990, Marcus 1995), and the "methodological nationalism" (Wimmer et al. 2003), produced new theoretical concepts such as "transnational social fields" (Glick-Schiller and Fouron 1999), and "transnational social spaces" (Pries 2001). Despite their widespread use and the efforts made by some authors to elaborate and refine these concepts, the reality is that they are used interchangeably, mostly because of their metaphorical use.

We argue that both concepts are not alternative conceptualizations of transnational phenomena, but complementary perspectives of the same reality. In addition, we suggest that both concepts are actually explained by the existence of two different intellectual traditions existing in the field of social networks (namely, anthropological "personal networks" and sociological "whole networks"), and that the adop-

tion of the relational paradigm to develop transnational theory inherited these two (complementary) ways of conceptualizing and studying social relations. Following this suggestion, "transnational social field" would adopt the egocentric or personal networks perspective, positioning the analysis of transnational phenomena "from inside" in specific places, whereas "transnational social space" would adopt the whole networks perspective, positioning the analysis "from outside" in wide regions.

The former perspective has been developed by Nina Glick-Schiller and her colleagues (Glick-Schiller and Fouron 1999, Levitt and Glick-Schiller 2004, Glick-Schiller 2005). The latter has received possibly more attention and elaborated typologies of transnational spaces have been produced by several scholars (Faist 1999, 2000, 2004, 2010; Pries 2001, 2005, 2008; Dahinden 2010; Voigt-Graf 2004, 2005). The greater interest in this latter perspective is hardly a surprise considering the whole networks approach has been hegemonic since the Manchester School stopped publishing in 1972 (Kapferer 1972), and the baton was taken by the social network "analysis" of American Sociology during the 80s and 90s (*Cf.* Scott 1991, Molina 2001, Freeman 2004). Moreover, the whole networks perspective has been highlighted by the development of the "Network Science" by physicists and other non-social science scholars (Barabási 2002).

In this paper we intend to further conceptually elaborate both concepts and their mutual relationships, and to suggest a way of operationalizing the concept of "transnational social field" using personal network data and methods. For the sake of simplicity we will talk of "transnational fields" and "transnational spaces", and we will use the neutral term "transnational formation" to refer broadly to both of them. Moreover, we suggest that while the whole networks perspective has many advantages for the study of global flows among regions and their changing dynamics, personal networks are especially useful for assessing different levels and types of embeddedness in given focal *places* (Massey 2005, Gielis 2009), which would explain in turn the emergence of these transnational fields. We follow, in this vein, the suggestion made by Vertovec (2003, 2009) of combining the study of social networks and embeddedness in the field of transnational studies.

The article is divided into four sections. The first section presents a review of the literature on transnational fields and transnational spaces, and their mutual relationships. The second section presents the strategy for operationalising transnational fields using a personal network approach. In this section we will pay special attention to the study of embeddedness and the ways to capture it. The third section presents three case studies in which this proposal can be tested. Finally, in the fourth section

we summarize the conclusions and discuss of the suggested approaches in future studies of transnational social formations.

Transnational fields and transnational spaces

The concept of a *transnational field* (Glick-Schiller et al. 1999:344) was initially posed as follows:

> They live within a "transnational social field" that includes the state from which they originated and the one in which they settled (…). A social field can be defined as an unbounded terrain of interlocking *egocentric* networks. It is more encompassing than that of the *network* which is best applied to chains of social relationships specific to each person (Barnes 1954; Epstein 1969; Mitchell 1969; Noble 1973). (…) The concept of "transnational social field" allows us a conceptual and methodological entry point into the investigation of broader social, economic and political processes through which migrant populations are *embedded* in more than one society and to which they react. (…)

> The social relationships that form the substance of transnational social fields include *egalitarian*, *unequal*, and *exploitative* that often encompass immigrants, persons born in the country of origin who never migrated, and persons born in the country of settlement of many different ethnic backgrounds. (Italics added)

For the span of this article we can understand the terms "egocentric" networks and personal networks as synonymous (although technically an "egocentric network" is the subset of nodes connected to a given ego within a whole network, see Burt 1992, Borgatti 1997). The influence of the authors from the Manchester School is clear as is the interest of this approach in the study of the embeddedness of the ensemble of migrant egocentric networks. Actually, the first use of the term "social network" by John Barnes is intertwined with "social field": "I find it convenient to talk of a social field of this kind as a network" (1954:237).

In a later publication, Nina Glick-Schiller (2005) details the double intellectual roots of the concept: the Manchester School and Bourdieu's theory of society (1977):

> The notion of social field exists in social science literature in several different forms. I draw on those proposed by Bourdieu and by the Manchester school of anthropology. Bourdieu used the concept of social field to call attention to the ways in which social relationships are structured by power. The boundaries of a field are fluid and the field itself is created by the participants who are joined in a struggle for social position. Society for Bourdieu is the intersection of various fields within a structure of politics (…). In contrast I begin

with the social network that I define as an egocentric set of ongoing social relationships. A social field is a network of networks. The concept of transnational social fields, which are networks of networks that stretch across the borders of nation-states, should serve not only as an indictment of the container theory of society but as a step in the further development of a concept of society.

We can summarize the theoretical implications of the transnational field concept in the following way: *it describes the articulation of at least two nation-states through an asymmetrical emergent structure; this structure is constituted by the ensemble of personal networks of migrants – and not migrants – unequally embedded in it*.

This asymmetrical emergent structure takes advantage of the differences between nation-states (which in fact explain the migration process) in order to produce new values through the reduction of the transaction costs (Williamson 1975, Faist 2000) by the unequal embeddedness of actors. In this way the new social field allows the production and transference of resources among countries and creates new "capitals" (in Bourdieu's sense) for the competitive reproduction of the new social formation. We will further elaborate this argument later.

On the other hand, the concept of *transnational space* has been defined, as "configurations of social practices, artifacts and symbol systems that span different *geographic* spaces in at least two nation-states without constituting a new 'deterritorialised' nation-state" (Pries 2001: 18, italics added). This definition is close to that of transnational field apart from the introduction of the geographical dimension.

In a previous book edited by Pries (1999), *Migration and transnational social spaces*, Thomas Faist proposed a typology of "transnational spaces" organized by the cross-relation between time and embeddedness in both the sending and receiving country. In this typology "transnational communities" were only one type among different possible social formations (Table 1).

This preoccupation for identifying the modes of integration of these social formations brought him, in his next publication (Faist 2000), to specify reciprocity, exchange, and solidarity (in a similar way to the modes of integration of human societies identified by Polanyi in 1957) as the differential characteristics of "transnational kinship groups", "transnational circuits", and "transnational communities" respectively. Remittances to kin would be typical of the first type; trading networks of Chinese, Lebanese, Indian business people, etc., would be examples of the second type, and finally, *Diasporas* of Jews, Armenians, Palestinians, Kurds and frontier regions (Mexico-US, Mediterranean) would fulfill the third type.

Integration in domestic networks in both the sending and receiving countries Duration	Weak	Strong
Short-lived	*Dispersion and assimilation* Cut-off of social ties to sending country; often, relatively quick (cultural) assimilation in the receiving country 1	*Transnational exchange and reciprocity* Ties to sending country upheld in the "first" migrant generation; often: return migration 2
Long-lived	*Transnational networks* Social ties are used in one or several areas (e.g. business, politics, religion) 3	*Transnational communities* Dense networks of "communities without propinquity" in both sending and receiving countries 4

Table 1. A Typology of Transnational Social Spaces (Faist 1999).

In the same vein, Pries (2005), elaborating on the "absolutist" and "relativist" conceptions of space, distinguished for the latter the societal ideal types of "glocalization" (global warming, internet, media and cultural production such as CNN, Hollywood, etc.), "Diaspora-building" (religious diasporas, expatriates and refugees), and "Transnationalization" (transnational families, companies, and NGOs). The relative conception of space implies that a given "societal space" can span several geographic spaces and vice versa, a geographic space can contain several societal spaces.

Apart from the obvious shift in the level of analysis, and the theoretical concern of ideally classifying transnational phenomena among the wide range of societal forms, including organizations, it is worth emphasizing the shift in perspective here, from "inside" in the case of transnational fields to "outside" in the case of transnational spaces. The introduction of the concept of *Diaspora* is an example of this shift. Whether a transnational *field* refers to an ethnic community or a dispersed group with a common homeland it is neither the main concern nor a priori for its study (Glick-Schiller 2005). Conversely, identifying precisely "transnational communities", "Diasporas" and other forms of transnational formations, is the starting point for the study of these transnational *spaces*. Let us further elaborate this argument with an analysis of Voight-Graf's proposals (2004, 2005).

This author's objective was to study the different transnational spaces that connect Indians groups such as Punjabis, Kannadigas and Indo-Fijians with Australia. In order to do this, Voight-Graf draws on the "social network analysis" concepts presented in the influential manual written by Wasserman and Faust (1994). In each community selected, she distinguishes the elements present in Table 2.

Element	Definition
Cultural hearth	The country, region or place of origin of migrants and their descendants which often forms an important node in transnational networks. Since this term is understood in a geographical sense referring to the place where the culture of migrants originally developed, it does not imply an essentialist understanding of culture.
New center	If personal links to the cultural hearth are lost, the country where migrants and their descendants have lived sufficiently long to regard it as their home can become the new center of a transnational community.
Diasporic node	A country, region or place where migrants have settled long enough and in sufficiently large numbers to have created a permanent presence as a community, even if individual migrants are merely passing through.
Flows	Flows between nodes may include migration flows and flows of people, products, money, ideas, cultural goods, and information. They can be one-way or two-way.
Offshore flows	Flows between two diasporic nodes.
Transnational space	The transnational space is the sum of the nodes and flows between them. The emphasis is on the fact that it is shaped by social activities and in turn shapes them. The transnational space as a whole comprises different sub-spaces defined by the sphere of transnational activities such as transnational economic spaces and transnational cultural spaces.

Table 2. Adaptation of the "Terminology of a geography of transnationalism" (Voight-Graf 2004:29).

Applying these social network analysis concepts she presents a) a visualization of the transnational space of each ethnic group, and b) an ideal model of the diasporic process.

It is worth mentioning the selection ex ante of given "ethnic groups", and the major role attributed to the homeland ("cultural hearth"). Technically, we can operationalise her proposal in the following way (Table 3):

Geographic node	Attribute
Punjab	Cultural hearth
Australia	Diasporic node
United Kingdom	Diasporic node
East Africa	Diasporic node
North America	Diasporic node
South-East Asia	Diasporic node

Table 3. Attributes of nodes in the Punjabi transnational space.

The visualization of the corresponding network is shown in Figure 1 (the adjacency matrix is omitted and only one type of flow is represented).

Figure 1. Adaptation of "A model of the Punjabi transnational community" (Voight-Graf 2004:33). The black node represents the "Cultural hearth" and the white ones are the "Diasporic" nodes.

The transnational spaces of the Punjabi "community" depicted here have a different structure compared with the other cases studied, namely Kannadigas and Indo-Fijians. In the latter case, the geographic node "Fiji" has the attribute of "new center" from which new transnational spaces can be further developed (see Figure 2).
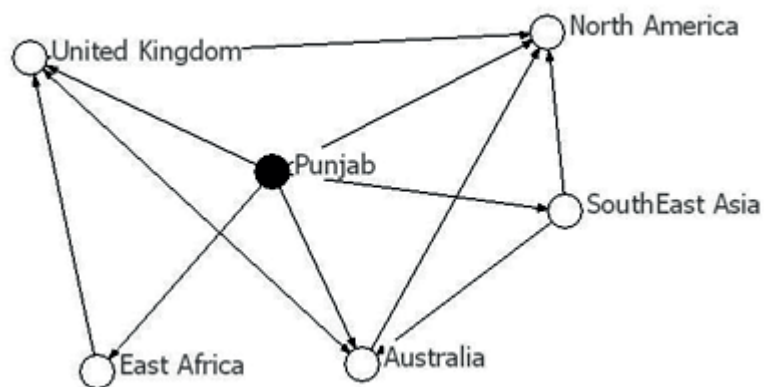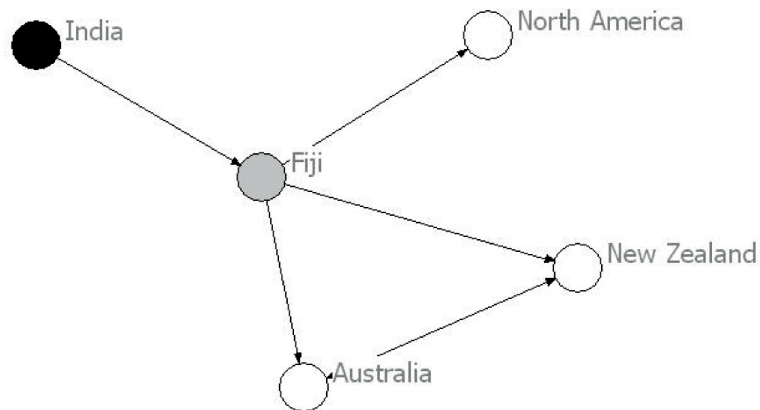
Figure 2. Adaptation of "A model of the Indo-Fijian transnational community" (Voight-Graf 2004:37). The black node represents the "Cultural hearth", the grey node represents the new center and the white nodes are the "Diasporic" ones.

After this review it is possible to agree that the concept of transnational space is broader than the concept of transnational field, and that theoretically the former can contain the latter if we look at them as two different levels of analysis. In addition, both terms express two different traditions and perspectives taken from the social networks field, i.e., the personal networks and the whole network approach. The latter is meant to take a global perspective of the flows and spaces whereas the former is meant to represent the actors' perspective from a given place.

Both perspectives can be combined either constituting different connected phases of one research or by integrating parallel enquiries. Table 4 presents a summary of this comparison between the two concepts.

Concept	Network tradition	Perspective	Locus	Social forma-tion	Intended to study
Transnational field	Personal-egocentric networks	From inside, actors	Place	Inductively constructed	Embeddedness
Transnational space	Whole net-works	From outside, external ana-lysts	Region	Selected	Dynamics

Table 4. Conceptualization of transnational fields and transnational spaces.

After this review of both concepts and their relationships we can now focus on the operationalisation of transnational fields.

Identifying and measuring Transnational fields

The operationalisation of transnational fields suggested here implies a) the use of personal network methods and data, b) the selection of a focal place or places, and c) the assessment of the different levels of embeddedness. Let us now study each point separately.

Personal network analysis

The application of the personal networks analysis methodology enables us to collect, for a given set of egos or focal individuals, the corresponding sets of alters elicited with the aid of one or more *name generators*. Alters are people connected to the ego. Typically, additional data is collected for every alter nominated through the use of *name interpreters.* In addition, the alter-alter pattern of relationships for each ego is also collected with a pair-tie definition. Finally, in order to collect the interpretations given by informants about their own personal networks, it is possible to conduct an interview using personal network visualizations (see Molina et al. in press; McCarty and Molina, in press).

The data collected following this methodology can be analyzed at the individual level or aggregated in different ways. Two sets of measures are obtained from this data: compositional and structural measures (*Cf.* Lazarsfeld and Menzel 1961). *Compositional* measures refer to the distribution for each ego of the variables collected with name interpreters. For instance, if we ask the gender and location of each alter, it is possible to obtain the percentage of men and women for every personal network, and their geographical distribution. *Structural* measures refer to the description of the alter-alter adjacency matrix, i.e., alters' centrality measures, extant subgroups, and density.

What distinguishes personal networks from whole networks is that the boundaries of the network members are *unconstrained* – that is, all types of relationships and institutional settings are allowed (whereas whole networks normally are restricted to explore a single institutional setting). This makes personal networks particularly interesting for eliciting transnational ties and levels and types of embeddedness since personal networks are intended to capture all settings and kinds of meaningful contacts for individuals.

Selection of a focal place

David Kyle, in his book *Transnational Peasants* (2000), studied four villages in Ecuador: two in the Otavalo region, and the other two next to the city of Cuenca, in the Azuay region. The two villages in Otavalo showed a pattern of circular migration for selling textile goods produced in the region along with other marketable products. This activity reached the astonishing figure of 23 countries visited within one year, mostly in Europe. In the case of the villages in Azuay he found a flow of irregular migrants to New York, who could only visit their families when the situation allowed it. This comparative study shows us that *every focal place* can have a *different* transnational field.

Drawing on the conceptual elaboration performed in the former section we could identify two transnational *spaces*: one connecting Cuenca to New York, and the other connecting Otavalo to cities in Europe (and other regions as well). These two spaces are not interconnected. The first one could be represented as a *tunnel* and the second one as a *funnel* (these metaphors are used by the same author).

Moreover, in order to identify the transnational *field*(s) in a selected *place* it is necessary to collect personal network data along with *geographical* information about alters' locations. The criteria for selecting individuals are not specified a priori. They can be people owning a souvenir shop in a tourist destination (migrants, former migrants or nationals), or people from a given nationality attending a church. The unit of analysis and the sample strategy has to be justified by the research itself. Once the population of interest has been sampled, and their personal networks have been collected the levels of embeddedness can be assessed, either in the focal place, in the transnational place(s) or in both at the same time. It is worth mentioning that if this operation is repeated in the transnational place identified, let us say, in New York, the transnational field as a whole would not be the same, although a certain level of redundancy would be expected (see Mazzucato 2009 for a matching contact methodology in transnational fields). This happens because every place brings different local contacts to the transnational field which in turn can be connected with other fields.

Assessing embeddedness

The concept of embeddedness was initially posed by Karl Polanyi in his work about the economy as an institutionalized process (1957), starting the "Substantivist" school of economic anthropology. The core argument is that economic action is

an institutionalized process that cannot be decoupled from other institutions in the same society, as neoclassic economy claims. This approach to the study of economic institutions was later used by Granovetter (1985) to explain the role of economic action within social network structures, bringing the concept of embeddedness to the center of sociological debate once again. This theoretical concept has been used in a variety of fields and levels of analysis (see Zukin and DiMaggio 1990 for a review). In this paper we will use the term embeddedness as the complex of interdependencies of social entities within a network (Uzzi 1996). These interdependencies can be analyzed both at the horizontal and vertical levels (Portes 1993, Schweitzer 1997, Vertovec 2003). The horizontal level describes the ways in which economic or other types of actions are influenced by the consideration of other multiple simultaneous institutional ties connecting people (or organizations and places as well). The vertical level shows the articulation of ties within greater social or geographical structures.

In the case of transnational fields we could expect to find *different levels* of embeddedness. This variation would explain the existence of a certain degree of specialization, which would enable the flow of new values among extant structures and the emergent one. The "mixed embeddedness" of Islamic butchers in The Netherlands described by Kloosterman et al. (2002) is a clear example of this. Thanks to the simultaneous embeddedness in both the local Dutch institutions and the co-ethnic networks it is possible for them to run the businesses. Another proxy for capturing different levels of embeddedness can be the pattern of mobility. In this vein, Dahinden (2010) distinguishes different patterns of mobility among migrant groups in Switzerland – cabaret dancers, Albanian-speaking migrants and Armenians –, suggesting a typology of transnational spaces based on the combination of place and mobility. In order to allow the circulation of cabaret dancers, she argues, some people have to be *local*. The same phenomenon is described by Zhou (2004) regarding the Chinese transnational activities in Los Angeles, where deeper localization has fostered the businesses and contributed to strengthening the existing ethnic enclave. Finally, in the ethnic enclave of Lloret de Mar (Girona, Spain), the owners of souvenirs shops tend to be local whereas the employees tend to follow a pattern of circular migration (see Molina et al. 2012).

The concept of embeddedness captures simultaneously top-down processes, such as regulations, policies and job-markets for instance, and the effect of agency and the mobilization of all sorts of capital by the actors themselves. These diverse dimensions cannot be measured with one single indicator but with a series of proxies.

In this paper we focus on the Clustered Graph methodology (Brandes et al. 2008, Lerner et al. 2007, 2008), and furthermore, we suggest the application of a diversity index (Budescu and Budescu 2012) to transnational personal networks. This index is intended to capture individual and group variation in the proportion of ego-alter different countries of residence. Let us now analyze the two proposals.

The "Clustered graph" consists of representing personal network data according to some relevant study variables, for instance "sending country" and "host country" (see Figure 3). With this fixed and simplified layout, the clustered graph methodology enables a comparison to be made between individual cases or groups.
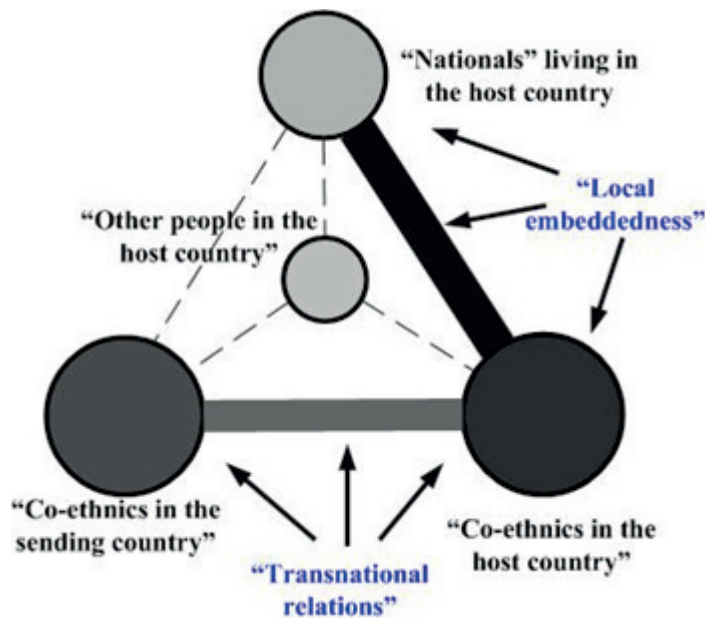

Figure 3. Clustered Graphs and the assessment of embeddedness.

The levels of embeddedness in the host country can be assessed by looking at the size, internal connections and number of ties with "nationals", "co-ethnics" and "other" types of people living in the same country. The categories for grouping individuals are not fixed beforehand. In addition, transnational relations can be assessed by looking at the connections with co-ethnics in the sending country. Overall, the clustered graph of a selected group will give us a picture of the pattern and characteristic of both transnational relations and local embeddedness – the transnational field.

Another way to address the operationalisation of transnational fields is by taking into account not only the dyad sending country – host country – but the distribution of alters living in countries different from the ego. This can be done by calculating the *diversity index* of transnational personal networks. The diversity index is conceived as follows.

Firstly, the diversity index raises the possibility that two randomly chosen network members (alters) reside in different countries. It ranges from 0, indicating no diversity at all (i.e. all alters reside in the same country – not necessarily the ego's country of residence), to a maximum value lower than 1, indicating highest diversity (i.e. all alters reside in equal shares in all countries). An advantage of the diversity index is that it can easily be interpreted as a proportion.

Secondly, the index is not standardized between 0 and 1 because the maximum value depends on the number of countries, which do not allow comparisons across cases if the number of countries is different. In order to avoid this pitfall we have developed an *index of qualitative variation* (IQV) which is a standardized derivative of the diversity index that ranges from 0 to 1, and can therefore be compared across different networks (although in this case the values themselves have no intuitive meaning).

With these two indices the *span* of the transnational field in terms of diversity of countries of residence of alters can be assessed. For instance, in the case of the Ecuadorian networks mentioned above, we could expect a lower value for the Cuenca-New York case (most alters living in Ecuador and some others in New York), and a high value for the Otavalo-European countries case (alters living in different countries).

In the following section we apply these two methods to three case studies.

Sikh, Chinese and Filipino people in Barcelona

The data presented in this section is drawn from a study designed to compare three collectives of people living in Barcelona from Sikh, Chinese, and Filipino origins (Molina and Pelissier 2010). The study was funded by the Council of Barcelona and the ACSAR Foundation in order to detect uncovered social needs. The fieldwork was conducted in the period November 2008 – April 2009 with a quota sample of 25 cases in each collective considering the age, sex and residence time in Spain. The interviews were conducted with the aid of EgoNet (http://sourceforge.net/projects/egonet/), and the anonymized dataset is publicly available[1]. In this section we do

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1 **http://visone.info/wiki/index.php/Signos_%28data%29** [visited 26-06-2012].

not provide the background information and the qualitative data collected during the project. We focus, instead, on the potentiality of personal networks analysis in a given place for eliciting transnational fields and their different levels and types of embeddedness.

Let us compare the clustered graphs of the three groups (Figure 4).

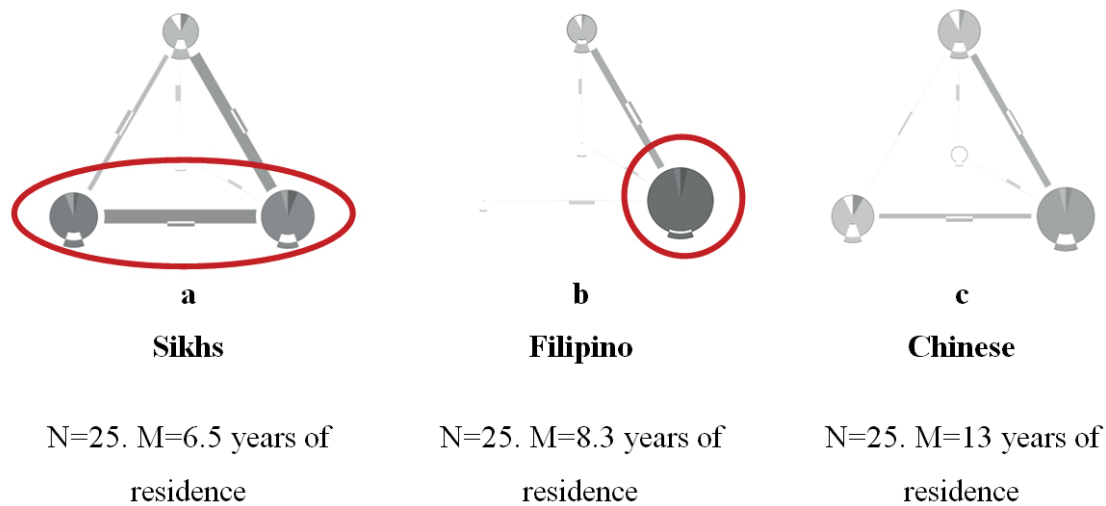| a	b	c
Sikhs	**Filipino**	**Chinese**
N=25. M=6.5 years of residence	N=25. M=8.3 years of residence	N=25. M=13 years of residence

Figure 4. The personal networks of Sikhs (a), Filipino (b) and Chinese (c) people in Barcelona. Size indicates the number of people in each class, darkness indicates density and its standard deviation is indicated by the grey scale.

The case of Sikhs shows a strong transnationalism. The case of Filipinos indicates a strong concentration of contacts among co-ethnics living in Barcelona, and few connections with the sending country. Finally, the Chinese group shows more "nationals" in their networks, and a moderate concentration of co-ethnics, basically kin working in family businesses.

This analysis can be performed at the individual level as well. For instance, for the Filipino case we can select women working in the domestic service sector and look at their individual clustered graph in order to explore variation in embeddedness at the gender level (Figure 5).

Figure 5 shows a similar pattern of adaptation for these women: a strong co-ethnic cluster, in this case structured by the local Filipino Catholic Church and informal organizations connected with it, and a few Spaniards/Catalans (from the houses in which they work), not connected with other Filipinos. In addition, relationships with the Philippines are very limited (some of them are not visible in this representation).
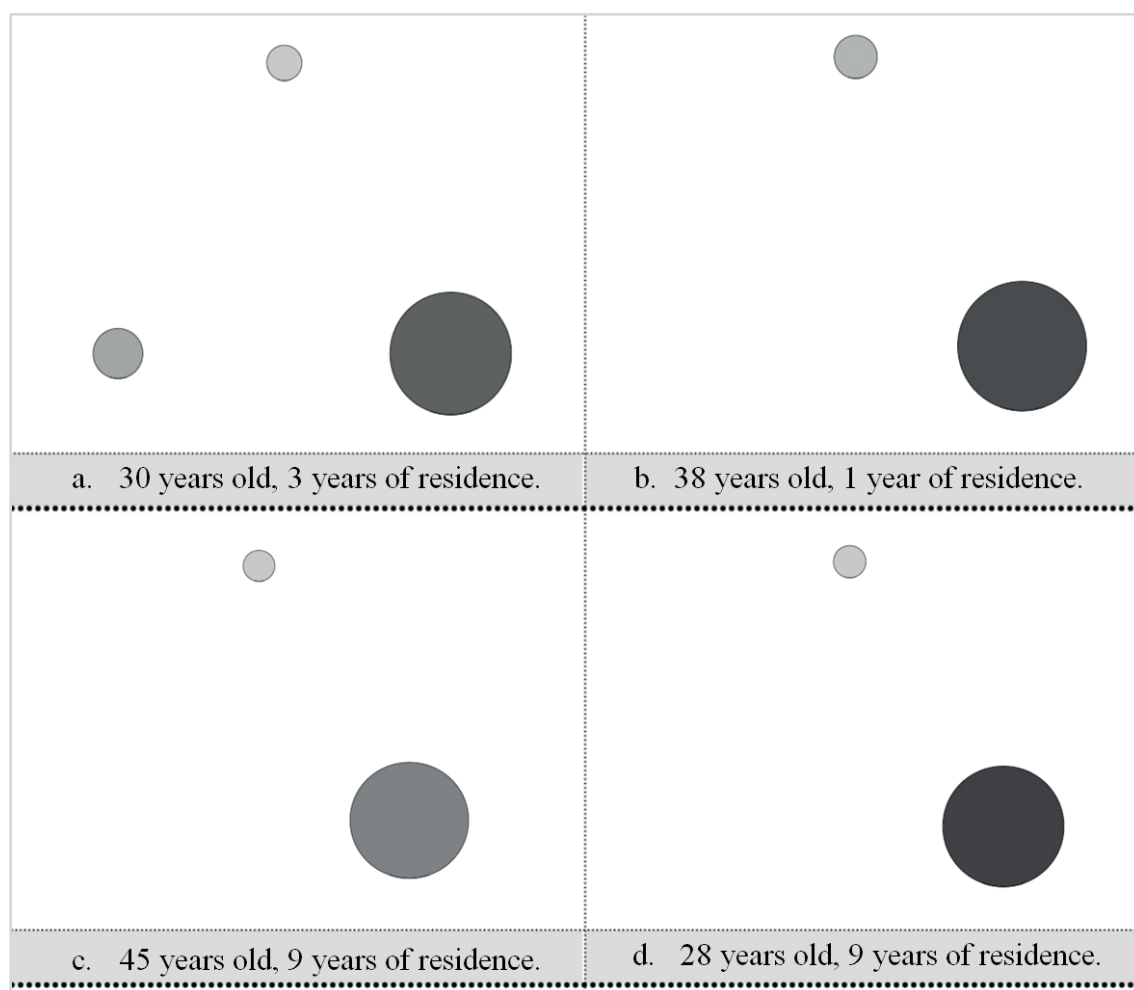
Figure 5. Clustered graph of Filipino women working in the domestic service sector in Barcelona.

Clustered graphs are a powerful tool for assessing embeddedness both at the individual and group levels, and for comparing across cases. Nevertheless, as we have just mentioned, there are other dimensions of transnational fields that are not captured by this methodology. One of these is the geographical distribution of the personal networks.

Figure 6 shows the geographical distribution of alters for the Sikh case. The geographical scale is shown at the local level (Barcelona city), regional level (Catalonia and Punjab), and global level. Moreover, the meeting points with alters in Barcelona city and Punjab are analyzed in terms of diversity of contacts. As can be expected, the diversity is greater in Barcelona where the variation in color indicates diversity of origins. Overall, the geographical distribution shows a remarkable geographical span of alters' places of residence.
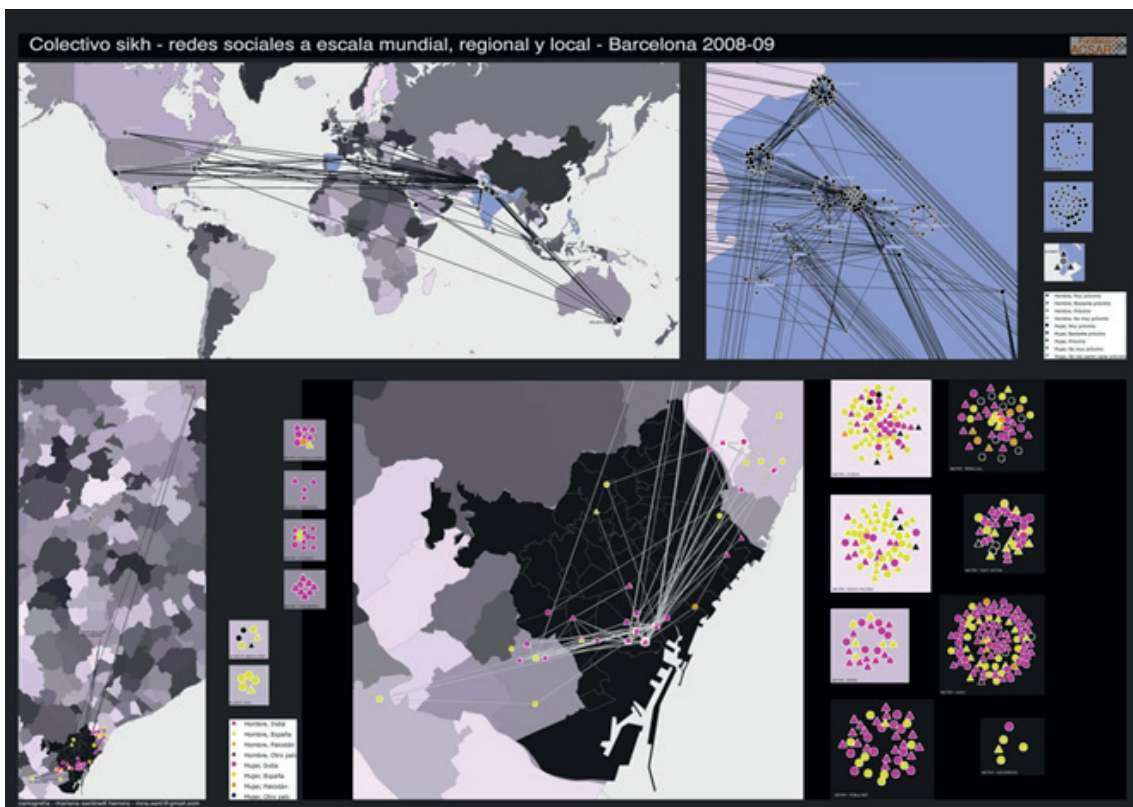
Figure 6. The geographical distribution of alters for the Sikh case in Barcelona.

Figure 7. The geographical distribution of alters for the Filipino case in Barcelona.

The maps show local (Barcelona), regional (Catalonia and Punjab) and global scales. Meeting points show the diversity of alters by color. Triangles represent men and circles represent women.

The Filipino case is totally different. As can be assessed in Figure 7, the pattern of distribution is mostly *dyadic* between Barcelona and Manila and other places in the Philippines. Also, the diversity of contacts is lower than in the Sikh case as we could expect.

The maps show local (Barcelona), regional (Catalonia and the Philippines) and global scales. Meeting points show the diversity of alters by color. Triangles represent men and circles represent women.

Finally, the Chinese group shows an interesting pattern of local and regional distribution (Spanish east-coast, and continental China and Taiwan), and a wide span of countries of residence (Figure 8).
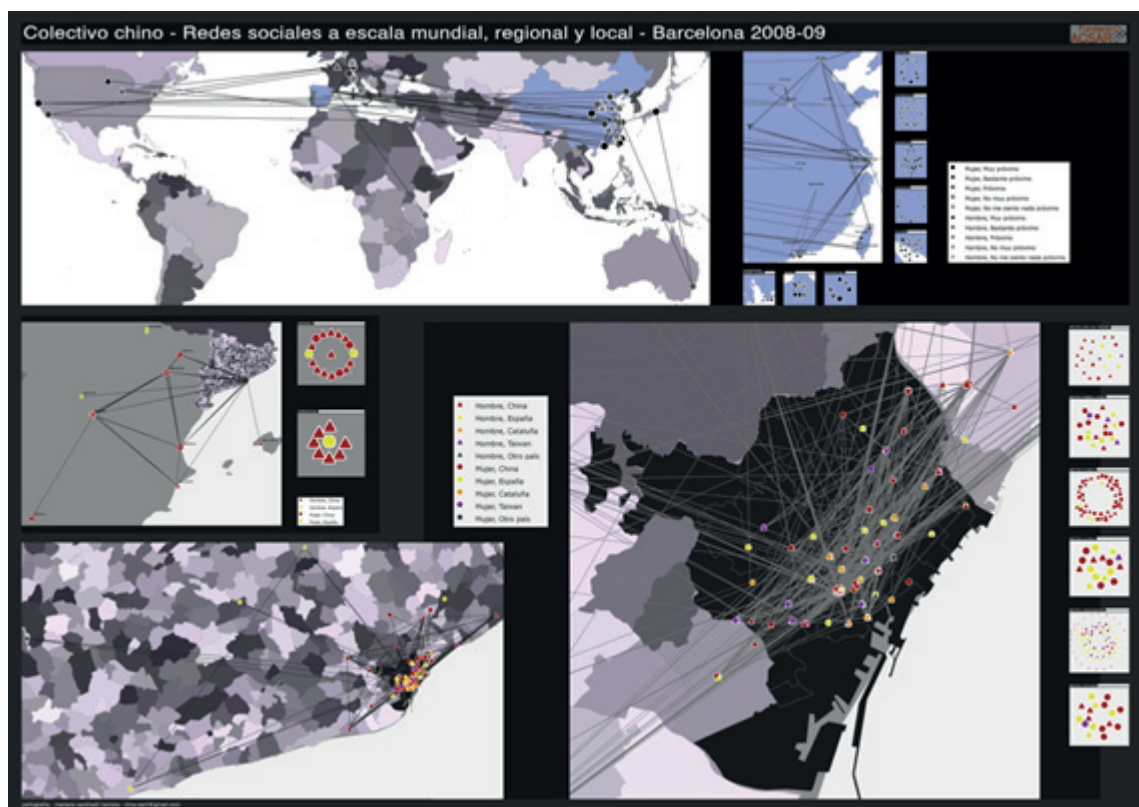

Figure 8. The geographical distribution of alters for the Chinese case in Barcelona.

The maps show local (Metropolitan area of Barcelona), regional (south-east coast of Spain and China) and global scales. Meeting points show the diversity of alters by color. Triangles represent men and circles represent women.

The *span* of transnational fields (the number of different countries in which alters live) can be captured with the diversity index explained above. In order to compare the three cases we can focus on the index of qualitative variation (IQV, see Table 6).

Statistic	Filipino	Chinese	Sikhs
min	0.000	0.000	0.000
p25	0.000	0.070	0.252
median	0.000	0.301	0.485
p75	0.156	0.441	0.553
max	0.556	0.626	0.691
mean	0.101	0.280	0.408
standard deviation	0.161	0.207	0.210
skewness	1.825	-0.057	-0.865
kurtosis	5.307	1.682	2.528
N	660	510	690

Table 6. Descriptive statistics of the Index of Qualitative Variation (diversity of alters' countries of residence).
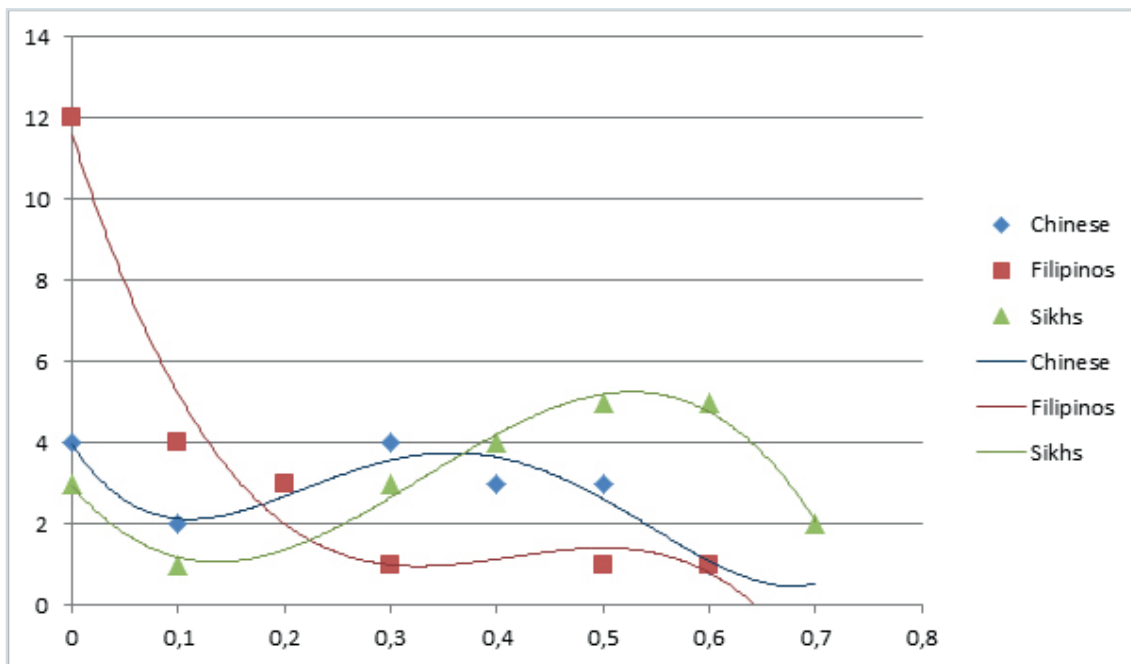

Figure 9. Diversity of alters' countries of residence (frequencies of IQV).

The three index distributions show that IQV is highest for Sikhs (median=.5) and lowest for Filipinos (=.0) whereas the Chinese group (=.3) is in between. This index confirms the visual representation of the geographical span of the three transnational fields. It is worth pointing out that "diversity" means, in most cases, that alters belong to varying degrees to the host country (Spain) or the country of origin. To a lesser extent, diversity implies that alters reside in a broad range of countries. This is the case for some Sikhs and a few Chinese (Figure 9).

Conclusions and discussion

In this paper we have proposed a conceptualization of transnational fields as forming part of transnational spaces, as nested level of analysis. Both concepts represent a complementary perspective of the same reality, and can be combined in a single study. We have argued that each concept inherits a different social network tradition, anthropological personal networks, and sociological whole network analysis respectively.

Furthermore, transnational fields have been described as emergent structures that articulate asymmetrically at least two extant structures or hierarchies through unequal modes of embeddedness of people, facilitating the creation of new values and the reproduction of the field. The emergent structure has to be identified by looking at specific focal places. The identification and analysis of the transnational fields implies the application and use of personal networks data and methods, and the development of a family of indices and strategies in order to capture variation in embeddedness. In this vein we have shown how Clustered Graphs and the Index of Qualitative Variation developed here, are powerful ways of visualizing, analyzing and assessing embeddedness in transnational fields.

One of the advantages of these methods is their scalability. Both methods allow individual and group-level analysis and comparison. This helps researchers to combine ethnographic information, statistical data and individual-group description in a single, mixed method strategy (Creswell 2003, Holstein 2009).

We are aware that collecting personal network data is an expensive and time-consuming research strategy, and that it is not always feasible depending on the place and the population under study. Nevertheless, the advantages of this approach for transnational studies are undeniable because it provides an empirical approach to the identification of a myriad of transnational fields which, in turn, can be analyzed at a

higher level in order to contribute to the theoretical development of the field. Possibly, the universal use of smartphones and the corresponding geolocalisation of alters will enable, in the future, the study of transnational fields in new and innovative ways. The authors do believe that an open science endeavor of this nature, concerned with ethics and reliability, will enable transnational studies to continue to contribute decisively to gaining a better understanding of our time.

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