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### Immigration, segregation and urban development in Athens: The relevance of the la debate for Southern European metropolises

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IMMIGRATION, SEGREGATION AND URBAN  
DEVELOPMENT IN ATHENS: THE RELEVANCE  
OF THE LA DEBATE FOR SOUTHERN  
EUROPEAN METROPOLISES\*\*

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ABSTRACT

*This paper focuses on the theoretical discussion of the links between segregation of immigrants and processes of urban development in southern European cities and on their empirical exploration in the case of Athens. From a theoretical point of view, this paper discusses how accounts of urban fragmentation, immigration, and ethnic segregation in the US debate would be beneficial to the exploration of similar issues in southern European cities. Empirically, a number of indices have been estimated, to outline for the first time in the Greek literature, key dimensions of segregation of different immigrant groups in Athens. The paper concludes that although Athens can be considered as one of the most plural Southern European metropolises new forms of centralised and decentralised socio-ethnic segregation have emerged deserving not only a detailed empirical investigation but also the elaboration of novel theoretical concepts.*

1. THEORETICAL DISCUSSION: THE RELEVANCE OF THE LA  
DEBATE FOR SOUTHERN EUROPEAN CITIES

Social segregation has been the subject of a vast literature and empirical research for many years in both North American and North European cities. Any theoretical as well as empirical effort refers to the founding principles

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and conceptualizations of the Chicago school since the 1920s. It is not within the aims of this paper to review the criticisms, revisions and alternatives suggested to the ecological paradigm of Chicago, but to focus on some of the most significant post-modern reappraisals that can be enlightening as to how contemporary immigration contributes to the reshaping of urban divisions along ethnic lines in south European Cities.

Indeed, terms such as “multi-ethnic cities”, “ethni-cities”, “ethnic segregation” “ethnic divisions of space”, appear in the literature of southern European cities only after the mid of the nineties when the metropolises of the South register as destinations in the new circuit of international migration. Researchers in southern Europe have been apt to relate their work to the international literature but stressed the need to contextualize the tools and concepts used in both the North European and the North American literature (Petsimeris, 1995; Maloutas, Karadimitriou, 2001; Malheiros, 2002, 2004; Arbaci, 2002, 2004; Lazaridis, Psimmenos, 2000).

A key argument has been that segregation based on ethnicity cannot be disassociated from the historical trajectories of south European cities. Notwithstanding, the Chicago School and ecological explanations have been criticised and modified even when studying earlier periods of urban development in southern Europe. For example it has been convincingly argued that metropolitan cities throughout Mediterranean Europe developed during their early period of industrialisation according to an inverse-Burgess spatial pattern; the bourgeoisie over-represented in the centre and the working class in the periphery (Leontidou, 1990). Malheiros (2002, 2004) seems to follow the same rationale by suggesting that lower levels of segregation in south European cities can be explained by the historical forms of informal working class suburbanisation and the contemporary processes of sprawling and fragmentation. Yet, there is empirical evidence pointing to complex processes which both intensify and diversify existing spatial divisions, thus shaping new forms of segregation in both central and suburban areas (Lazaridis, Psimmenos, 2000; Leontidou, 1995; Maloutas, Karadimitriou, 2001).

This complexity can perhaps be better understood if we take a closer look at the critical reassessments of the Chicago School by post-modern theorizations, particularly those attempting to link the dynamics of immigration with wider process of urban restructuring. Dear and Flusty (2002) in their “manifesto of the LA school” place the work of Waldinger and Bozorgmehr (1996) on “Ethnic Los Angeles” amongst the founding texts of a distinct LA school. Soja (2000) in his description of the LA mosaic, other than Waldinger and Bozorgmehr (1996), includes the empirical work

of Ong et al (1994) on “New Asian Immigration”, and the maps of Allen and Turner (1997) depicting the processes of ethnic change in southern California. A common theme in these approaches is that ethnic segregation results as immigrants from Latin America and Asia to southern California strive to find occupational and residential niches in the changing economy of expanding metropolitan areas. Consequently, contemporary processes of segregation cannot be understood in terms of filtering-down or white middle class suburbanisation, as in the Chicago prototype. Only some immigrants “invade” the inner city and even fewer “assimilate” to the majority rule by relocating to the suburbs.

Instead, Dear and Flusty (1998) attempt to map a variety of fragmented urban landscapes (such as “interdictory spaces”, “Ethnoburbs”, “gated communities”, “street warfare”) and explain urban restructuring in terms of processes which combine heterogeneous cultures with political and economic polarization. In the words of Dear (2000: 149) “it is the periphery which determines the center”, whilst at the same time, “restructuring is permeated and balkanized by a series of interdictory networks whose populations are socially and culturally heterogeneous but politically and economically polarized”.

Similarly, in Soja’s metaphorical vocabulary “Exopolis” represents the “city turned inside out” as the suburbs become compact and outer cities develop, but also the “city turned outside-in”, as the centre draws in its zone what was once considered “elsewhere”. Moreover in Soja’s (2000) account, fragmentation is not identical to bifurcation, and the explanation of inequality is not reduced to ethnic differences. His cautious reading of the empirical literature, mentioned above, suggests that a “mono-ethnic geography” studying the concentration of a single ethnic group in city areas might distort both the cartographic accuracy and the theoretical interpretation of segregation. Thus, he coins the term “fractal city” to capture the fragility and instability of the social mosaic resulting from contemporary transformations in the new ethnic divisions of labour and city space.

The works of Dear and Soja should rather be treated as attempts of theorization, which make use of the findings of empirical sociological and geographical research. As such they retain a higher level of abstraction indicating paths for further research to identify new forms of segregation and clarify theoretical concepts. However, despite differences in terminology and divergences as to the significance of particular processes, both Dear and Soja move away from a post-industrial or ethnic sociology, which most often

introduces modifications to the “spatial-ecological assimilation” paradigm.<sup>1</sup> They do not confine their analysis to the effects of de-industrialization or to the rise of the service economy and they do not hasten to celebrate ethnic diversity and pluralism. Rather they insist on the significance of post-fordist relations clearly speaking about new forms of capital accumulation, political neo-liberal strategies, and their interplay with cultural factors. Hence, the relevance of the LA debate for European cities should not be confined to the quest of similarities in patterns of segregation but rather expand to fuel research as to how political strategies and heterogeneous cultures channel immigrants to occupy positions within a new capitalist division of labour and residential space.

After the publications of the theoretical elaborations of Dear and Soja, data of the 2000 population census in the US were released and a number of empirical studies have embarked to explore changes in segregation patterns, which occurred during the 1990s. A key question for numerous studies is if immigration from Latin America and Asia increases segregation, thus shaping a pattern of separation of whites from non-whites, or if the new wave of immigration decreases segregation as new arrivals break down the colour line. The former pattern is associated with increasing economic polarisation and entrapment of immigrants together with blacks in degraded, mostly central, areas. The latter is associated with ethnic diffusion and the creation of labour niches and residential enclaves. In the following paragraphs I summarize the findings of the most comprehensive and technically advanced studies and discuss their implications for the south European context, and the Greek capital in particular.

First, overall segregation has decreased significantly and most of the US metropolises have become more mixed residentially (Glaeser, 2001; Frey, 2001; Logan et al., 2004). This finding has given rise to optimistic arguments about the “decline of the American ghetto” (Glaeser, 2001, 2003). Expanding his earlier work on LA, Allen (2002) has argued that clustering in ethnic enclaves is rather voluntary than coercive and respectively emphasis should be placed on mutual preferences for “separation”. However, as various economists note (Cutler et al., 1999; Annas, 2002; Glaeser, 2003), prejudiced preferences are still expressed in higher wages for “white workers” and also higher rents for “white neighbourhoods”. Consequently, new processes of

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1. As for example has been the case of Massey and Denton (1988, 1996) in their statistical documentation of segregation, Wilson (1996) in his analysis of the inner city underclass, and even more recently Rumbaut and Portes (2001) in their account of “segmented assimilation”.

segregation signify a shift from “coercive” or “institutional racism” to “market oriented” racism (Cutler et al., 1999, for a discussion of differences). Significantly, it can be argued that the older processes of “institutional” racism (embodied and enforced via zoning and planning regulations) were sustained by a conservative political agenda, whilst “market oriented” racism might more easily suit the political neo-liberal agenda of deregulation and profit driven urban growth.

The relevance of the regulatory framework has been documented by approaches analysing the effects of the southern European welfare regimes on urban segregation (Allen et al., 2004; Maloutas, 2004; Arbaci, 2002, 2004; Mingione, Quassili, 1999). The history of strong nationalism, clientelism, and authoritarianism render some local governments and urban planning institutions, apt to social control practices as is the case of selective cleansing operations in the central city and peripheral squats, extremely poor camp provisions for refugees, or tolerance of shadow housing markets (Psimmenos, 2004; Arapoglou, 2004 for Athens).

But more significantly, the weak regulative capacity of the state coupled with employment and housing informality has contradictory effects. On the one hand weak regulations and informality facilitate diffused development and mixed land uses, and as a result reduce residential segregation (Malheiros and Vala, 2004). On the other, when informality combines with land speculation then a deep dualism between the private renters of the old stock and owner occupiers of a renewed stock enhances segregation (Arbaci, 2002, 2004). The present paper addresses some of these contradictory tendencies, and suggests that research in the European South needs to consider both “informal” and “market oriented” segregation.

Second, recent research in the US has documented that inequalities cut across ethnic lines in both labour and real estate markets and create diffused forms of segregation. Although immigrants create a buffer between whites and blacks, continuous movements and dislocations have been recorded mostly at the expense of poorer blacks and the deepening of their segregation. Particular forms of sprawling amongst whites tend to increase segregation, whilst the moderate flight of blacks to the suburbs as well as the increase in their incomes has no effect on segregation (Logan et al., 2004). Furthermore, it has been convincingly argued that African Americans increasingly suffer from both “decentralised racism” and concentration in inner city “hyper-ghettos” (Glaeser, 2001; Charles, 2003; Wilkes and Iceland, 2004). At the same time the segregation of Hispanics has generally increased despite their tendency for suburbanization (Jonhston et al., 2003; Logan et

al., 2004). In some metropolises, such as Miami and to a lesser extend LA, the Hispanics tend to share deprived spaces with Blacks, thus giving rise to arguments about the formation of a “rainbow underclass” (Poulsten et al., 2003; Portes, 2001). Only the suburbanization of Asians, and particularly the Chinese, has been documented to decrease their levels of segregation (Logan et al., 2004; Allen, 2002; Painter et al., 2003, 2004). Again, evidence from the region of southern California, suggests that poverty amongst immigrants has shifted outwards and small pockets of poverty emerge in the midst of high-income neighbourhoods (Marcelli et al., 2005; McConville and Ong, 2003).

The implication for south European cities is that empirical research should differentiate between ethnic and occupational groups that make up a heterogeneous immigrant population. Malheiros (2002) reports that in some southern European metropolises the segregation levels of immigrants from developed countries are quite high. In a bifurcated system between owner and rental housing, informal settlements at the city periphery and subletting in the inner city create a complex pattern of both centralisation and diffusion (Arbaci, 2002). In the following, I will provide some initial maps of a complex pattern that also emerges in Athens.

Third, the economic structure of metropolitan cities has a significant effect on both the magnitude and the forms of segregation. Using a large data set for 255 US metropolises Logan et al (2004) were able to establish statistically that “old” industrial metropolises are more segregated than “new” post-fordist metropolises. Moreover, Poulsten, Forrest and Johnston (2002, 2003a, 2003b) also verify this position by making in-depth comparisons between the “modern fordist cities” (New York, Chicago) and the “post-modern ones” (LA and Miami).

Of particular concern is the demise of the spatial mismatch hypothesis and its association with the “underclass” debate, according to which the suburbanization of jobs following de-industrialization increased inequalities between low skilled blacks entrapped in inner city neighbourhoods and increasing job opportunities in predominantly white suburbs [Kasarda (1989) and Wilson (1996) for most well known variations of the hypothesis]. The new argument put forth by Waldinger (1996) is that there are plenty of low paid and instable inner city jobs which immigrants are likely to obtain due to lower expectations and wages in the country of origin. However, access to jobs is regulated by ethnic niches and queues, as recent arrivals wait for their compatriots to advance in the occupational hierarchy. Using LA as a case study Ellis and Wright (1997 a,b) and most recently Wright, Ellis and Parks (2005) made a significant contribution by explaining how the assimilation effects of ethnic networking are dependent on local economic contexts and

processes of restructuring. Ethnic niches can operate more effectively in dynamic industrial sectors whilst in declining or slow growing sectors ethnic competition prevails in the effort to access low paid and unskilled jobs. Most significantly, it has been documented that the residential mobility of immigrants is shaped by strong connections and proximities between residence and work places. Both the arrivals and the relocation of immigrants to the outer city areas have been driven by economic restructuring and in particular by the location of growing industrial and service sub-sectors.

The above mentioned problematic is very much relevant to southern European metropolises. The inclusion of southern European countries in the post-fordist circuit of immigration has been linked to a distinctive model of development since the early 1990s (King, Fielding and Black, 1997; Mingione and Quassili, 1999). Informality and labour market segmentation have been pivotal concepts for the analysis of economic transformations including the expansion of the service sector, the casualisation of work, and the specialisation of labour market niches on the basis of ethnic characteristics. However, the effects of changes in the industrial and ethnic division of labour on urban segregation have not been yet analysed in detail. Recent evidence in the case of Athens (Kandyliis, Arapoglou, Maloutas, forthcoming) indicates that the concentration of immigrants in both fast growing sectors (such as tourist related activities and constructions) and in declining sectors (such as textiles and garments) is a good predictor for the pattern of immigrants' settlement. Some further results indicating the possibility of ethnic networking among unskilled occupations will be presented in the sections to follow but a detailed comparison between sub-sectors remains to be undertaken.

## 2. DIMENSIONS OF SEGREGATION: INDICES AND DATA

A long tradition of empirical research has yielded significant controversy over the measurement of segregation. Amongst the variety of measures of residential segregation I will mostly refer to the seminal work of Massey and Denton (1988), who identified 19 indices and classified them into five key dimensions of residential segregation: "evenness", "exposure", "concentration", "centralization", and "clustering". For the purposes of this paper I will present results of the calculation of indices concerning only three dimensions.<sup>2</sup> First, I

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2. It must be emphasised that many of these indicators have been devised and often interpreted based on the assumptions of the spatial assimilation model. In the following, I attempt to interpret the statistical results by diverting from such theoretical assumptions.



will present indicators concerning “unevenness”, i.e. the unequal distribution of immigrant populations with different national origin across the Athenian space. Second, I will present some modified measures of “exposure” to discuss residential proximities among different occupational groups of immigrants. Third, I will present indices of “centralization” indicating the degree to which different immigrant groups are located near the historical city centre. Formulae for the calculations of indices are given in Appendix 2. References to formulas and the significance of values for specific indices are presented within the main text to explain in detail the social and spatial implications for separate dimensions of segregation. Estimations were possible by utilising the 2001 census data available at the spatial database of the Institute of Urban and Rural Sociology at the Greek National Centre for Social Research [hereafter IURS/NCSR-NSSG (2005)].

Measures of segregation are influenced by how different class, race, or ethnicity groups are defined and operationalized. Because Greece became a host country for immigrants only since the last decade, it is important first to establish an aggregate picture of segregation using indices for the total number of foreign nationals residing in Athens in 2001. A more detailed picture of how ethnic and occupational hierarchies give shape to segregation can be painted by presenting results for several groupings of the immigrant population using wider geo-political classifications, which reflect the economic background of the immigrants’ origin. For this paper I do not use the distinction between “economic immigrants”, “asylum seekers” and “refugees” or between “legal” or “illegal” immigrants (distinctions which theoretically are disputable and operationally impossible to sustain in the Greek context). The international standard classification of occupations (ISCO88) is used to estimate indices of segregation for immigrants exercising different professions.

Some results for selected nationalities, which compose the majority of the immigrant population, are also provided to examine in greater detail how social networking and position in the occupational hierarchy shape segregation. Noteworthy, the use and classification of “nationality” is only an indicative measure of socio-ethnic segregation. The distinction between “nativity” and “ethnicity” is a crucial factor for social and spatial inclusion (Ellis and Wright, 1997b address the relevance of the distinction in LA). Moreover, the ethnic history and the geopolitical fluidity of the Balkans, the enlargement of the European Union, and the “repatriation” of Greek immigrants (first or second generation) introduce a more complex array of political categorisations and socio-ethnic subjectivities among the immigrant population than the present paper investigates.

Because segregation can occur at any geographic level, a sensitive issue is how to define the appropriate area (urban agglomeration, metropolitan area, region, etc). Related is the question of how to define the component parts of the area under investigation (zones, districts, tracts, etc.). Although it is most appropriate to use census tracts as units of the analysis, data from the Greek census at the time of writing were not still available. From the region of Attica I have selected 117 adjacent municipalities (local government entities) as units for the spatial analysis, excluding distant islands. These can be taken to form the wider Athens metropolitan area (an administrative or statistical definition does not still exist).

### 3. THE (UN)EVEN DISTRIBUTION OF IMMIGRANTS IN ATHENS

New immigration has been a key component of economic growth and socio-spatial transformation in the metropolitan area of Athens during the last decade (Arapoglou, 2005; Lianos, 2001; Rovolis and Tragaki, 2006). Almost 55% of the total number of immigrants in Greece is concentrated in the region of Attica counting up to 403,000 people (approximately 10% of the total population or 12% of the active population). Albanian nationals are by far the most important group, as they constitute more than half of the total number of immigrants in the area under consideration (51%). Nationals from the EU15 member states, USA, Canada, Japan, Australia and New Zealand were classified, for the purposes of this analysis, as immigrants from developed countries; they amount to 15% of the foreign nationals residing in the area under investigation. Another 15% is made up of nationals from other Central and Eastern European countries (including the new states established after the collapse of the Soviet Union, the new EU member states –but not Cyprus– and the Balkan countries excluding Albania). Finally, 19% of the total foreign population originates from less developed countries in North and South America, Asia, and Africa.

The large proportion of Albanian nationals in the total immigrant population distinguishes the demographic profile of the city compared to other south European metropolises which receive a much more diverse ethnic population (Malheiros and Vala, 2004). The demographic and ethnic structure of the immigrant population may have profound effects on both the extent and the forms of segregation.

Next, the distribution of immigrants according to the above classification is examined by estimating some widely used measures of evenness, namely the dissimilarity index, the Gini coefficient, the Atkinson and the Entropy

indices (formulae in Appendix 2). The dissimilarity index is the most widely used measure of residential segregation. This index ranges from 0 (complete integration) to 1 (complete segregation). The Gini coefficient, the Atkinson<sup>3</sup> and the Entropy indices also range from 0 to 1; values close to zero indicating a spatially even and homogeneous distribution of the foreign population. The estimated values<sup>4</sup> for Athens are presented in Table 1.

**TABLE 1**  
*Measures of evenness for non-Greek citizens in Athens, 2001*

	Dissimilarity Index (Evenness)	Gini Coefficient	Atkinson (b=0,5)	Entropy
Total Foreign Nationals	0,189	0,217	0,038	0,075
Albanians	0,211	0,305	0,081	0,153
Central and Eastern Europe	0,233	0,315	0,081	0,171
Developed Countries	0,317	0,453	0,165	0,353
Less Developed Countries	0,456	0,452	0,164	0,344

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

The overall picture obtained from the dissimilarity index is that segregation is not pronounced according to international standards. Values of the dissimilarity index for the total foreign population as well as for wider geographical groupings of the immigrants' origin are relatively low even when compared to other south European Metropolises for which comparable data are available (Musterd, 2005; Malheiros, 2002; Kandylis, Arapoglou, Maloutas, forthcoming). The same can be argued about the values of the Gini coefficient, the Atkinson and the Entropy index. Calculated values for these three indices, are to the best of my knowledge, not available in the South European literature, but, as with the dissimilarity index, the values

3. The parameter b expresses the aversion of the total population to segregation. When the parameter b=0.5 then areas of underrepresentation or overrepresentation of immigrants contribute equally to the segregation index.

4. The total population is the reference group: formulae in Appendix 2.

calculated for Athens are two to three times smaller than those provided by Massey and Denton (1993) for major US metropolises.

However, values for immigrants from developed, less developed, central and eastern European countries are higher than those for the total foreign population and Albanians. Higher values for nationals of “developed” countries indicate a tendency for segregation of the higher economic and social status populations residing in most affluent areas. This finding, points to the significance of economic and social divisions within the total foreign population.

Table 2 presents values of the dissimilarity index<sup>5</sup> that has been estimated for the nationalities forming the majority of the foreign population in the metropolitan area.

**TABLE 2**  
*Dissimilarity indices for non-Greek citizens in Athens, 2001*

Ethnic Groups	Dissimilarity Index	% in foreign population
Albania	0,211	50,9%
Poland	0,469	2,7%
Bulgaria	0,337	2,6%
Ukraine	0,308	2,5%
Romania	0,324	2,4%
Russian F	0,327	2,1%
USA	0,286	4,0%
UK	0,341	2,1%
Egypt	0,421	1,8%
Pakistan	0,420	2,4%
Iraq	0,542	1,6%
Philippines	0,577	1,5%

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

The value of the dissimilarity index reaches high values compared to international standards for small population groups. This is indicating a mosaic of small ethnic communities along a relatively even distribution of large ethnic communities.

5. The total population is the reference group: formulae in Appendix 2.

#### 4. INTERACTIONS ACROSS OCCUPATIONAL AND ETHNIC HIERARCHIES

Employment data about the indigenous and the immigrant population illustrate drastically different situations as shown in Table 3. Immigrants are mostly recruited as skilled and unskilled workers (categories 7 and 9), while their presence in higher-status jobs (managers, professionals and technicians) is very limited. Service and sales workers also contain a significant share of the immigrant labour force.

**TABLE 3**

*Occupational distribution of immigrants and Greeks in Athens, 2001*

ISCO categories	% in immigrant labour force	% in Greek labour force
(1) Legislators, senior officials, and managers	3,1%	10,5%
(2) Professionals, scientists and artists	4,3%	15,9%
(3) Technicians and associated professionals	2,8%	11,2%
(4) Clerks	2,9%	14,8%
(5) Service workers and shop and market sales workers	12,1%	13,8%
(6) Skilled agricultural and fishery workers	2,0%	1,2%
(7) Craft and related workers	30,9%	13,5%
(8) Plant and machine operators and assemblers	5,2%	7,3%
(9) Elementary occupations	36,7%	10,4%

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

The above distribution depicts some of the post-fordist transformations that occurred in the region of Attica during the 1990s. A significant increase in waged and salaried labour at the expense of independent crafts and trades, accompanied the growth of services and the decline of manufacturing (Arapoglou, 2005). Immigrant labour sustained both the survival strategies of small firms diffused in the urban fabric and the growth of dynamic industrial sectors and constructions developing in outer city areas. Hence, an interesting question is if this new industrial division of labour affects the residential segregation of immigrants. To provide an initial answer to this question, the dissimilarity index<sup>6</sup> has been estimated for the nine occupational categories of the foreign population (results presented in Table 4).

6. The total active population is the reference group: formulae in Appendix 2.

**TABLE 4***Dissimilarity index for different occupations of immigrants in Athens, 2001*

ISCO categories	DIS
(1) Legislators, senior officials, and managers	0,295
(2) Professionals, scientists and artists	0,290
(3) Technicians and associated professionals	0,248
(4) Clerks	0,219
(5) Service workers and shop and market sales workers	0,237
(6) Skilled agricultural and fishery workers	0,385
(7) Craft and related workers	0,233
(8) Plant and machine operators and assemblers	0,239
(9) Elementary occupations	0,258

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

The results reported in Table 4 reveal that the upper and the lower occupations of the foreign population are the most unevenly distributed in the metropolitan area of Athens. The highest values have been estimated for agricultural workers (category 6), followed by relatively high values for senior officials and managers (category 2), professionals, scientists, and artists (category 3). Significant values have also been recorded for elementary occupations (category 9). The lowest values of the dissimilarity index have been calculated for clerks. It also appears that skilled occupations (such as technicians and semi-professionals, salespersons, craft workers, and machine operators) are only moderately separated from the total active population.

However, the dissimilarity index provides information as to how immigrants of different occupations reside close to the total active population irrespectively of the occupational or the ethnic distribution of the latter. A fuller account should include both the occupational distribution of immigrants and the occupational distribution of Greeks. To do this a modified index of exposure has been devised and calculated. This is an index of residential proximity which measures the probability that an immigrant of a given occupation lives in the same municipality with: (a) immigrants of the same occupation as his/hers, (b) Greeks of the same occupation as his/her, (c) immigrants of a different occupation than his/hers, (d) Greeks of a different occupation than his/hers. Hence, for each immigrant the total probability of sharing residential space is broken down to four different types of neighbours. The results of this index are presented in Table 5.

**TABLE 5**  
*Residential proximities of different occupational groups  
of immigrants in Athens, 2001*

Immigrant groups	(A) Proximity to immigrants of same occupation	(B) Proximity to Greeks of same occupation	(C) Proximity to immigrants of other occupation	(D) Proximity to Greeks of other occupations	Total probability of neighboring (A+B+C+D)
(1) Legislators, senior officials, and managers	0,83	12,79	15,48	70,90	100
(2) Professionals, scientists and artists	0,88	19,89	15,31	63,92	100
(3) Technicians and associated professionals	0,54	11,93	15,94	71,59	100
(4) Clerks	0,56	15,09	16,18	68,17	100
(5) Service workers and shop and market sales workers	2,31	13,83	15,83	68,03	100
(6) Skilled agricultural and fishery workers	1,02	3,10	15,97	79,91	100
(7) Craft and related workers	5,88	13,11	12,25	68,76	100
(8) Plant and machine operators and assemblers	1,05	8,10	15,89	74,96	100
(9) Elementary occupations	7,23	10,30	11,38	71,09	100

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

As shown in Table 5, proximity to immigrants of the same occupation (column A) is low, indicating that a combined occupational and ethnic “closure” does not exist in the Athenian space. Moreover, the same values imply that it would be difficult to locate specialised ethnic niches, with the exception of moderate concentrations among skilled and unskilled workers.

The probability to share residential space with Greeks of the same occupation (column B) is also low in most cases. Only immigrants who exercise a scientific profession have a high probability to reside close to Greek professionals; this being a sign for professional rather than ethnic closure.

However, there are considerable probabilities to neighbour immigrants belonging to different occupational categories (column C), indicating that ethnic networks spread across occupations and also across large geographical areas. Lower probabilities have been estimated for relatively large occupational groups of immigrants (i.e., elementary occupations, craft and related workers).

Last, but not least, high values in column D, verify that the immigrant population, although unevenly spread, shares in most cases residential spaces with Greeks belonging to different occupational categories. This is particularly the case for farm workers, plant and machine operators, who form only a small portion of the immigrant labour force. Although these values provide evidence for socio-ethnic mix, they do not preclude spatial fragmentation or the concentration of immigrants within both deprived and affluent neighbourhoods. But to this end, statistics on urban deprivation need be elaborated at a smaller scale.

## 5. CENTRALISATION AND SEGREGATION OF IMMIGRANTS

According to Massey and Denton (1993: 291) “centralization is the degree to which a group is spatially located near the center of an urban area”. Two measures of centralisation have been calculated in this paper: absolute and relative centralisation (formulae in Appendix 2). Initially, these measures were taken to reflect the extent to which blacks concentrated in deprived and densely populated inner city areas. In contemporary metropolises this measure fails to depict diffused forms of segregation but this disadvantage can be rectified by using additional measures of spatial clustering and cartographic techniques (Massey, 1996; Wong, 1999; Joassart-Marcelli et al., 2005).

Absolute centralization examines only the distribution of a particular population group around the center and varies between -1.0 and 1.0. This index compares population densities for particular groups as we move away from the city center. Positive values indicate a tendency for particular immigrant group members to reside close to heavily populated central areas, while negative values indicate a tendency to live in outlying areas. Relative centralisation compares the spatial profile of specific population subgroups to the spatial profile of the total population. It may be interpreted as the relative share of the



immigrant population that would have to change their area of residence to match the centralization of the total population. The index takes values between -1.0 and 1.0. Positive values indicate that immigrant groups are located closer to the center than the total population, and negative values the reverse. A score of 0 means a group has a uniform distribution throughout the metropolitan area of Athens. Average values for the largest minorities in US metropolises are close to 0,75 for absolute and 0,25 for relative centralisation.

The centralisation of immigrants by a broad geopolitical classification of their country of origin is presented in Table 6. The values reported in Table 6 can be better interpreted by referring to maps depicting the percentages of different immigrant groups in the total population of municipalities included in the wider metropolitan area of Athens (Maps 1-5 in Appendix 1).

**TABLE 6**

*Indices of Centralisation for Immigrant Groups and Greeks in Athens, 2001*

	Absolute Centralisation	Relative Centralization
Foreign Population	0,801	0,139
Greek Population	0,772	-0,017
Developed Countries	0,825	0,035
Albania	0,773	0,116
Central and Eastern Europe	0,847	0,245
Less Developed Countries	0,839	0,213

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

Data shown in Table 6 confirm that immigrants are more centralised than Greeks. Usually, the centralisation of the majority population is not calculated. The centralisation index applied here compares both the majority (Greeks) and minority (foreigners) groups to the total population. This choice was made to depict if the majority still exhibits a centralisation tendency. Relatively high values for the absolute centralisation of Greeks indicate that the Athenian space is still dominated by the gravity of the central city despite noticeable tendencies for suburbanisation of the Greek population (negative values of the relative centralisation index). Interestingly, the distribution of Albanians is less centralised than any other immigrant group and in that respect approximates the distribution of Greeks. This finding is in line with values of all other indices, which establish a pattern of spatial proximity between Greeks and Albanians.

Furthermore, from Table 6 it cannot be established that immigrants from less developed countries and non EU foreigners have a higher degree of suburbanization as has been reported by Malheiros (2002) for other south European Cities. On the contrary, it appears that central and eastern Europeans as well as immigrants from less developed countries tend to be more centralised.

An examination of the proportion of the region's immigrants residing in the central municipality of Athens confirms this picture. For example, eighty eight percent (88%) of Pakistanis, forty eight percent (48%) of Filipinos, sixty five percent (65%) of Russians and fifty two percent (52%) of Ukrainians in the region of Attiki were registered in the municipality of Athens, whilst the respective shares for all foreign nationals and Greeks were only thirty four (34%) and eighteen percent (18%) respectively.

However, map 1 depicts an interesting pattern according to which the distribution of foreign nationals approximates a concentric model. High concentrations are shown in the central city of Athens and its immediate neighbouring municipalities, low concentrations appear on a first inner suburban circle, and then high concentrations appear again on peri-urban areas. This pattern is more clearly depicted for Albanians, who compose the majority of the immigrant population, in Map 2.

A different picture emerges for immigrants from central and eastern European countries (Map 4) as well as for immigrants from less developed countries (Map 5). Centralisation is a common feature of their location, but they spread unevenly across peri-urban and particularly inner-suburban areas.

Moreover, nationals of developed countries exhibit a completely different pattern of location. Centralisation, in their case, is not a prominent feature and only a few peri-urban coastal municipalities attract them. Mostly, they reside along an axis developing North to South East affluent suburban areas.

Centralisation indices have also been calculated for immigrants belonging to different occupational categories (Table 7). Values reported in Table 7 indicate both an absolute and a relative decentralisation pattern for foreign farm workers, mostly residing in peri-urban areas. In contrast, office clerks, service workers, artisans and craft workers have the most centralised distribution. In part, this can be explained by the concentration of clerical and service jobs in the city centre. Industrial workers and assemblers, unskilled workers are less centralised and reside close to peri-urban industrial zones (at the North East and West side of the metropolis). Domestic labourers, comprising the largest share of elementary occupations, tend to follow the settlement of the Greek households who employ them and respectively appear to be less centralised as

well. Values close to zero for senior officials, managers, and directors indicate a relatively weak pattern to reside in suburban areas.

**TABLE 7**

*Indices of centralisation for immigrants' occupational groups in Athens*

Occupational groups of immigrants	Absolute Centralisation	Relative Centralization
(1) Legislators, senior officials, and managers	0,838	0,079
(2) Professionals, scientists and artists	0,845	0,123
(3) Technicians and associated professionals	0,834	0,100
(4) Clerks	0,862	0,170
(5) Service workers, shop & market sales workers	0,847	0,220
(6) Skilled agricultural and fishery workers	0,454	-0,331
(7) Craft and related workers	0,816	0,192
(8) Plant and machine operators and assemblers	0,784	0,056
(9) Elementary occupations	0,795	0,164

*Source: IURS/NCSR-NSSG (2005), author's estimations.*

The above indices and the respective maps depict a pattern which both urges to consider and explore in further detail both centralized and decentralized forms of segregation.

## CONCLUSIONS

The Chicago School and its most prominent modifications have been associated with a model of assimilation according to which the city centre functions as a geographical entry to the city and the suburbs as the ultimate destination to success and mixing with the affluent majority. Post-modernist accounts challenge these assumptions. Urban fragmentation and diffused forms of segregation are seen as effects of neo-liberal strategies and economic restructuring. Immigrants draw on heterogeneous cultures and networks to navigate within a new post-fordist division of labour and residential space.

Research in southern Europe has historically acknowledged, contested, and modified the assumptions of the Chicago School. Informality and the weak regulative capacity of the state have been pivotal concepts in understanding how expanding city areas were colonised and transformed by rural populations which attempted to escape proletarianisation by gaining access to urban land and housing. It would be of particular importance to add in existing theoretical accounts that the regulation of out-migration flows has also been a distinctive feature of social and economic integration in South European welfare regimes.

In the current period, trans-national flows of labour and capital urge us once again to consider the modes of economic and social integration of immigrants as distinctive features of Southern welfare regimes. Tendencies for Southern cities to become more “liberal” and rely for their development on the service sector and financial capital contest the primary role of informality in safeguarding social and spatial integration. Of course informality may also complement the development of service industries, real estate markets, and profit driven growth (Sayas in this volume). In this case the research task is to map the position of immigrants in the changing social and spatial hierarchies of South European cities. Hence, different conceptualisations of urban restructuring and fragmentation, which were advanced in the LA debate, may also facilitate the understanding of contemporary socio-ethnic divisions in South European cities.

Taking Athens as a case study, this paper has been an attempt to map some novel forms of segregation in Southern Europe. Although immigrants are unevenly distributed across space, Athens has to be considered as one of the most diverse and plural European metropolises, but this should not preclude exploring particular forms of segregation and socio-economic inequalities at a smaller spatial scale. Notwithstanding, significant differences exist amongst immigrants of different nationality and origin. On the one hand, Albanian nationals appear to share residential space with Greeks and, given that they constitute the largest proportion of the total immigrant population, their capacity to spread across large city areas contributes to overall low segregation levels. On the other hand, immigrants from central and eastern European and from less developed Asian and African countries tend to concentrate in smaller, communities. Such is also the case for foreign nationals from developed countries.

The uneven spatial distribution of immigrants is, to a large extent, shaped by their position at the upper and the lower levels of a changing occupational structure. Significantly, segregation tendencies are most evident for the upper

managerial and the lower unskilled occupations of the foreign population. It also appears that ethnic and occupational networks spread across large geographical areas, and, rather, contribute to socio-ethnic mix than separation.

However, a spatial pattern of both centralised and decentralised forms of segregation is emerging. Although the Athenian space is still dominated by heavy concentration of service jobs and population in the central city there are significant trends for suburbanisation and sprawling. Immigrants are more centralised than Greeks, although different patterns are shaped for different ethnic and occupational groups. Moreover, important socio-ethnic and demographic differences appear among inner residential suburban areas, which only nationals of developed countries and professionals share with Greeks, and peri-urban areas of sprawling, where unskilled foreign workers tend to reside.

Reflecting on the review of post-modern theorisations in the first section of the paper, it would perhaps be inaccurate to conclude that in contemporary Athens the periphery determines the centre. Perhaps ironically, it is more realistic to deprive Dear's (2002) phrase from its metaphorical meaning and claim that restructuring in Athens "is *balkanized* by a series of networks whose populations are socially and culturally heterogeneous", although this paper has not established that they are "politically and economically polarized". However, evidence justifies Soja's (2002) metaphorical descriptions and neologisms: Athens is gradually "turning inside out" as long as the suburbs become compact and the city expands to peri-urban areas. Also Athens is "turning outside-in", as the centre draws in its zone the populations that were once considered "elsewhere". These ideas are perhaps provocative; but old processes have already been named; new processes deserve new names and maps.

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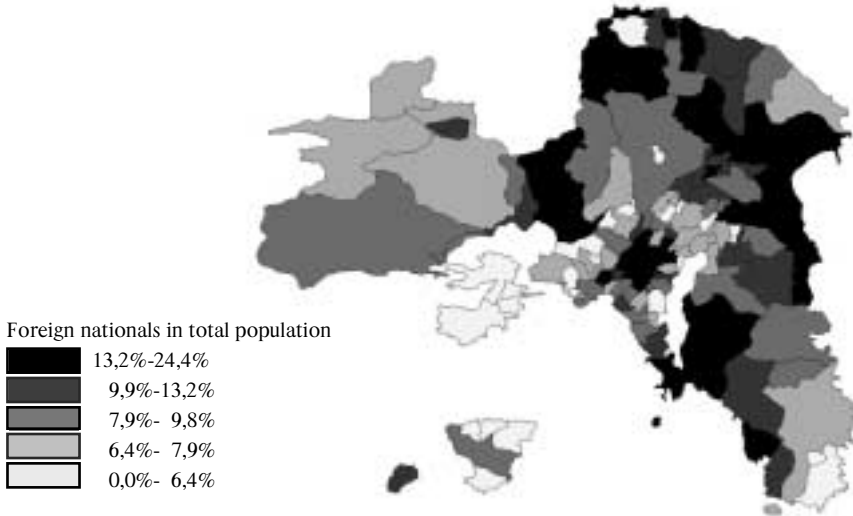
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**APPENDIX 1**  
**Maps of concentration of immigrant groups**  
**in the metropolitan area of Athens**

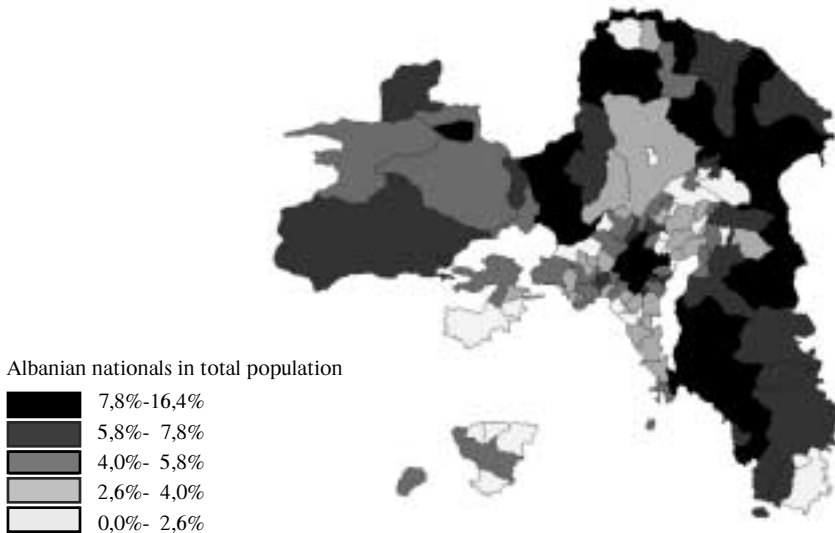
**Map 1**

*Percentage of foreign nationals in the total population*



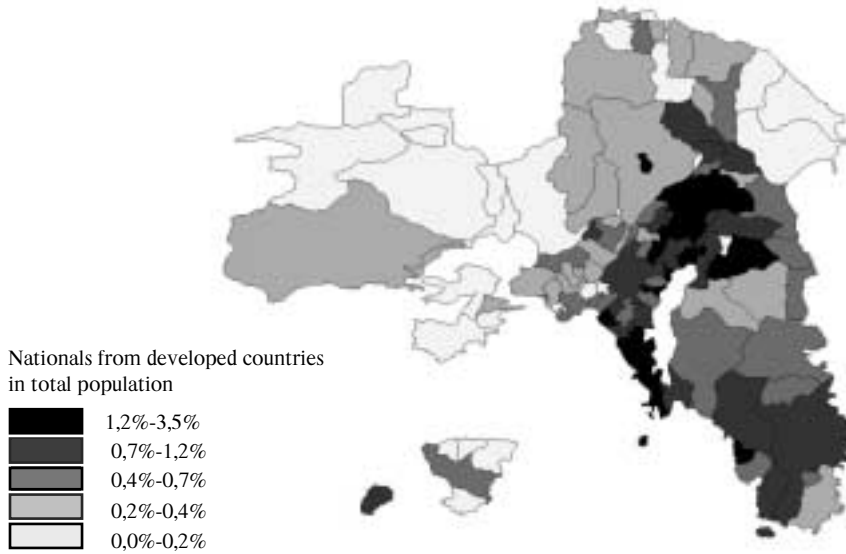
**Map 2**

*Percentage of Albanian nationals in the total population*



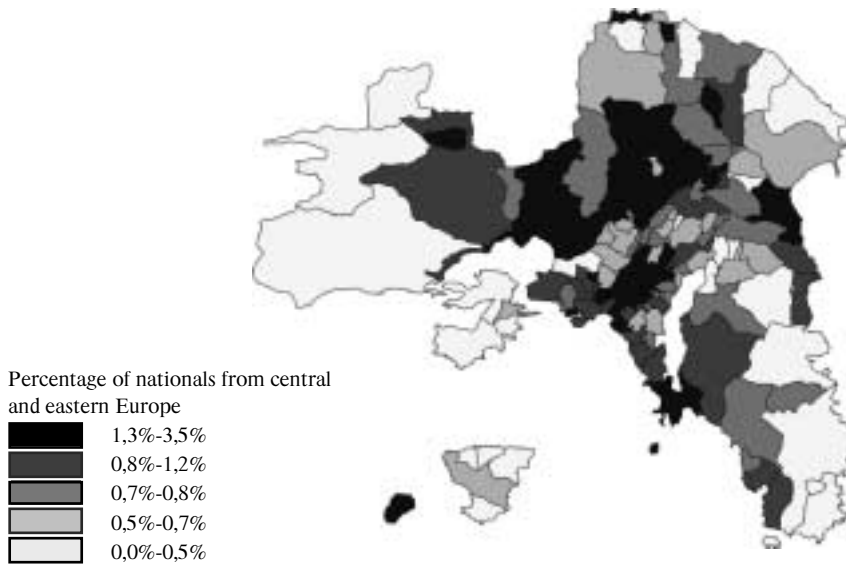
**Map 3**

*Percentage of nationals from developed countries in the total population*



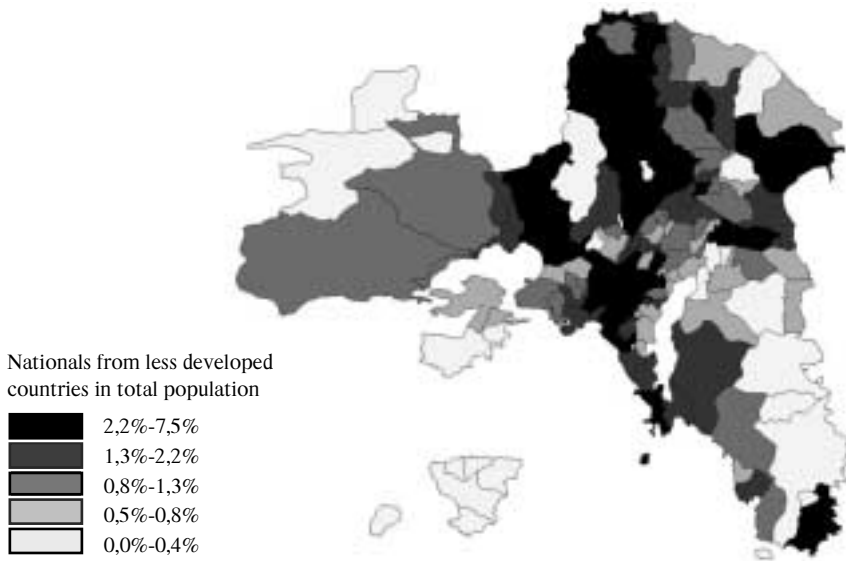
**Map 4**

*Percentage of nationals from central and eastern European countries in the total population*



**Map 5**

*Percentage of nationals from less developed countries in the total population*



**APPENDIX 2**  
**Calculation formulae for Indices of Segregation**

Index	Formula
Dissimilarity	$\frac{\sum_{i=1}^n (t_i   p_i - P )}{2TP(1 - P)}$
Gini	$\frac{\sum_{i=1}^n \sum_{j=1}^n [t_i t_j  (p_i - p_j )]}{2T^2 P(1 - P)}$
Entropy	$\frac{\sum_{i=1}^n [t_i (E - E_i)]}{ET}$ <p>Where <math>E_i = p_i \ln\left(\frac{1}{p_i}\right) + (1 - p_i) \ln\left(\frac{1}{1 - p_i}\right)</math></p> <p>And <math>E = P \ln\left(\frac{1}{P}\right) + (1 - P) \ln\left(\frac{1}{1 - P}\right)</math></p>
Atkinson	$1 - \left(\frac{P}{1 - P}\right) \left  \frac{1}{PT} \sum_{i=1}^n [(1 - p_i)^{(1-b)} p_i^b t_i] \right ^{\left(\frac{1}{1-b}\right)}$
Residential Proximity	$\sum_{i=1}^n [(x_i / X) (z_i / t_i)]$
Absolute Centralization	$\sum_{i=1}^m (X_i - 1 A_i) - \sum_{i=1}^m (X_i A_i - 1)$
Relative Centralization	$\sum_{i=1}^m (X_i - 1 t_i) - \sum_{i=1}^m (X_i t_i - 1)$

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<b>Symbol</b>	<b>Definition*</b>
$m$	the number of municipalities in the metropolitan area, ranked by increasing distance from the centre of the city of Athens
$x_i$	The population of an immigrants group of municipality $i$
$y_i$	the Greek population of municipality $i$
$y_j$	the Greek population of municipality $j$
$t_i$	the total population of municipality $i$
$t_j$	the total population of municipality $j$
$X$	the sum of all $x_i$ (the total population of an immigrant group in the metropolitan area)
$Y$	the sum of all $y_i$ (the total Greek population in the metropolitan area)
$T$	the sum of all $t_i$ (the total population in the metropolitan area)
$p_i$	the ratio of $x_i$ to $t_i$ (proportion of a municipality $i$ 's population that belongs to an immigrant group)
$P$	the ratio of $X$ to $T$ (proportion of the metropolitan population that belongs to an immigrant group)
$a_i$	the land area of municipality $i$
$A$	the sum of all $a_i$ (the total land area)
$z_i$	Each time the members of a different type of neighbour to an $x_i$ immigrant group
$b$	Atkinson parameter for aversion of segregation (set at 0,5)

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\* For indices of occupational groups the active population is used instead of the total population.