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SEGREGATION AND SOCIAL CHANGE IN MADRID METROPOLITAN REGION

1. INTRODUCTION¹

In recent years, the process of globalization in the Madrid Urban Region, as in other big European urban regions, with its strong economic and social impact, influenced both the form and (social) content of urban space leading to a strong renewal of the city and inducing a new pattern of urban growth with the development of new middle class suburbia and the social heterogeneity increasingly created by the flux of large numbers of foreign immigrants.

In the end of the 1980s and the beginning of the 1990s, some analyses linked the globalization process of the economy to the increasing differences in income and social stratification. Some of these analyses described a process of social and economic dualisation in the cities of London, New York and Tokyo (Sassen, 1990; Fanstein, Gordon and Harloe, 1992; Mollenkof and Castells, 1991). The general purpose of these researches was to show the relation between economic change induced by globalization and the increasing social and economic inequalities within these cities.

The relation between globalization and the increase of social inequalities is now widely accepted. The deep changes experienced in the production system by the introduction of new technologies, have had strong effects on the occupational composition, and subsequently on social relations and social differences, with strong changes contributing to the increase of social and economic inequalities. However, there are diverging claims about the way these differences are developed in different contexts.

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In the research literature dealing with the urban consequences of globalization, some key points were not properly developed. Consequently, the transfer of assumptions related to these points to different large cities of the world does not always work. Among the missing key points we should primarily consider state intervention in terms of welfare and urban policies. Differences in education, in health systems, in unemployment benefits, or in retirement benefits, as well as in urban and housing policies should be taken into account in order to explain different patterns of change among European cities.

This article tries to explain the eventually different pattern and path of change in the social structure and the distribution of resources in a city like Madrid, compared to change in the leading world cities. Similar situations could be found in other southern European cities. Strong cultural, political, economic and social differences in Madrid lead to varied ways of social and spatial restructuring. Segregation and the social value of space are concepts we use in the effort to interpret changes. Four variables constitute an important parameter of this analysis: social (occupational) categories, education level, income level and housing prices.

Spain experienced a strong welfare state development during the 1980s, after the restoration of democracy, which interacted with the effects of globalization on social and economic inequalities. Since the initial condition of welfare services was very poor and in spite of the strong progress, welfare state in Spain continues to be weaker and more rudimentary (a term coined by Esping Andersen, 1990) than in most other industrialised countries. Moreover, a deep change in the social and ethno-cultural composition of the population occurred with the strong inflow of foreign immigrants who fuelled the lower occupational categories.

2. THE PROCESS OF CHANGING URBAN SPACE

Segregation

Heterogeneity according to Louis Wirth (1938) is an essential attribute of cities, jointly with density and size. This attribute has many expressions in terms of race and culture, in terms of wealth and social class, and even more so in terms of integration and exclusion. Segregation within urban space is found where social inequality meets heterogeneity.

Segregation is an ambiguous concept (Brun and Rhein, 1994; Grafmayer, 1996; Leloup, 1999). It denotes the unequal distribution of social or economic

groups in urban space, but it may take several forms and hence may entail different ways to be confronted. Integration is not the opposite of segregation; there are segregated groups well integrated in urban society. If segregation is mostly a spatial concept, integration is an a-spatial social concept, and this is at the origin of some conceptual ambiguity.

But segregation is also a process, one of the ecological processes defined by the Chicago School. It refers to the tendency of “similar” people, and “dissimilar” with the rest, to aggregate in space; an ambiguous process, where many interacting variables are involved. It is a selective process which separates different social groups, but it is also a defensive process, appearing throughout the social scale group, though mainly at its edges. Upper class people may choose to live in areas where trespassing is controlled, with their living space closed to the public in gated communities. This practice is developed lately in several countries, but in Europe it remains much less developed than in America. The working class, cultural minorities or even excluded groups tend to aggregate in space as a way of fighting adversity and profiting from solidarity relations and networks as a defensive strategy against exclusion and rejection.

Segregation could be considered as an expression of the urban social structure, and can be measured by a number of indicators or rates giving comparative measures for different cities. This comparison is limited, however, because if, as Lefebvre (1974) claimed, every society creates its own space, when comparing cities all the specific conditions in which space is formed should be considered.

Segregation in urban areas can have different expressions, segregation in transport systems (different classes in public transport), in social services, or even in leisure activities. But residential segregation has been the principal object for urban sociology in its effort to explain the residential location patterns of different social groups.

Segregation is generally considered a negative process by urban policy makers mostly because of its impact on areas with a high proportion of excluded people, and also because it impedes social integration and social cohesion process, and does not create equal opportunity conditions in education and eventually in the access to the labour market. Fighting against segregation has become one of the principal objectives of urban policy, especially in housing and planning.

Research on segregation has revealed the processes of social change in urban areas. It mainly focussed on the study of the settlements of the working class, the excluded social groups, and social minorities such as foreign

immigrants or ethnic groups. Nevertheless, there is also research dealing with the changes in the settlement of middle and upper classes, as in the case of gentrification in inner city areas (Pinçon, 1996).

Segregation in Madrid

The segregation process in Madrid Urban Region between 1981 and 1996 was different than in most of the large cities in developed countries. During this period there seems to be a decrease in segregation, a decreasing distance between different residential areas in terms of social composition. This is a result of a complex urban change: central areas, where the middle class settled since the 19th century, improved in terms of social value, though much less than the average in the whole urban region; peripheral areas, and mostly the previous working class areas in the far periphery, improved above the average. We can deduce consequently that there has been a decrease in segregation during this period in terms of the spatial distribution of social categories.

The evolution of housing prices in Madrid Metropolitan Region is correlated with the changing spatial distribution of social categories. The high rates of increase in housing prices expresses two different processes. In the ring of the outer suburbs it stems from the growing demand for urban housing and is related to the transformation of rural to urban land. But in most built-up areas, the increasing housing prices indicate a higher housing demand by the middle class and consequently a change in social composition.

The change in housing prices is a complex process, especially when they are increasing in all city areas. Empirical evidence in Madrid shows that prices increased proportionally more in areas with high proportion of upper socio-professional categories than in working class areas. In spite of the convergence in income distribution by residential areas, inequality in housing prices increased between 1981 and 1996.

The impact of increase in housing prices is direct in a society where the usual access to housing is through homeownership. Investment in housing represents a very substantial part of the households' expenses, and differences in housing prices may be even more important than differences in household income. Social differences in patrimony are rarely considered in the analysis of inequalities in urban areas, although their role is important, since real estate properties constitute the principal resource reserve to tackle potential social risks.

Moreover, with knowledge becoming a factor of increasing importance for social differentiation, the differences in the spatial distribution of educational levels inducing unequal possibilities of social mobility should also be taken into consideration in the analysis of segregation.

Segregation and housing markets

Housing markets have a growing importance in European cities in relation with segregation because of the decreasing intervention of the State in housing, due to a general growth of home ownership, and also because of the increasing cost of housing access for all social strata in modern societies.

Housing prices are a measurable expression of social differences and at the same time an explanation for the segregation process, since different groups select housing and are selected by different residential areas through prices. The unequal change in housing prices within the city shows the shift in the social value of areas. Differences in housing prices and housing conditions (including the condition of the urban environment) are in fact approximate measures of urban segregation.

The thesis advocated here is that the changes in the housing market illustrate the change in the social and economic value of urban areas. It is impossible to understand social segregation without understanding the way the housing market is functioning in each city. Changes in the housing market have a growing impact on segregation when combined with the declining public investment in housing especially in Southern Europe, where this investment is substantially lower than in the rest of the European Union.

Housing market changes in recent years have brought an increasing difference in urban settlement in terms of housing prices and also in other housing characteristics. Many of the recent segregational and residential exclusion processes are influenced by the housing market which organises housing production and distribution.

Gentrification

Social transformation in the inner city areas of several cities is usually leading to gentrification, i.e. the concentration of middle and upper class residents in areas previously occupied by working class or popular households. This process is due to the revaluation of centrality, often linked to public investment in improving living conditions with traffic restrictions etc. The process of gentrification may take different forms: it may be the result of transforming old industrial areas into residential settlements, like Villa Olímpica in Barcelona or

Arganzuela in Madrid, but it may also be the result of a slow process of change by demolition or renewal of old housing estates.

Gentrification had a smaller impact in Europe compared to North America because of the high social value attributed to living in the centre of historic cities. In Southern Europe this impact was even smaller since the 'gentry' has never abandoned the city centre. In Spain the spatial expansion of the middle and upper classes is limited to the growing urban areas surrounding the traditional bourgeois neighbourhoods of the city. This is clearly illustrated by the pattern of change in housing prices. Nevertheless, during the last few years in Madrid, the difference in prices between central middle-class areas and wealthy suburbs decreased, since price increase in central areas was much slower, except in few gentrified neighbourhoods.

The housing market plays an important role in this process, because high prices of certain goods in a liberal economy are a way of selecting the demand (like in an art auction). The speed and the extension of this process depend on housing policies and rent regulations. High income people demand central location and prices increase, as a consequence, and produce a change in the social composition of these areas. The less the housing market is controlled and the smaller the public housing stock available in these areas, the more rapid is this gentrification process. Empirical evidence shows that social change follows the change in housing prices.

In the Spanish case, the process of middle class expansion is produced mainly in the urban periphery. The growth in size of the upper and middle occupational categories produced an increasing demand by the young new middle class for new residential space, since space in the old bourgeois areas was not enough. The demand was boosted by the change in residential values and the increasing demand for privacy and proximity to nature, fitting better the individual home than the condominium in the city centre. This high appreciation of suburban housing estates is a new experience for Spanish cities and refers to well equipped areas with nice landscapes and improved environmental conditions, such as in the Northwest areas of Madrid or in the West of Barcelona. This new trend is due to the high growth of the middle class with the increasing number of professionals and the decreasing size of the working class in the context of economic restructuring heavily influenced by globalisation.

3. THE EMPIRICAL APPROACH: THE SOCIAL VALUE OF URBAN SPACE

Attributing value to urban space

When dealing with social characteristics within urban space we need to give a kind of social qualification to each fragement of the city. We can divide the urban space according to different criteria. One way of division is the administrative division into municipalities and into administrative districts for the municipality of Madrid. Another possible division are the statistical units of the 1991 census, representing smaller fractions of urban space, with a maximum population of 3000 people and an average of 1500. A third type of division may be geographical, referring to the distance of the analysed areas from the city centre.

In 2001 the city of Madrid had a population of 5,4 million habitants, with an important increase over the last years due to immigration. In 1996 the city's population was distributed in five wide sub-areas as presented in Table 1.

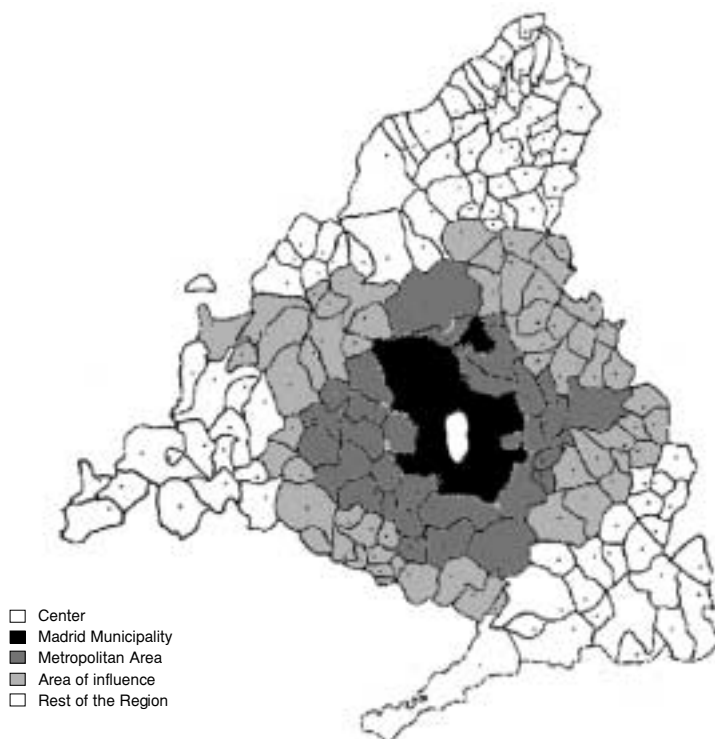
TABLE 1
Population distribution in the urban region of Madrid (1996)

Zones	%
Centre	18,3
First ring	37,3
Metropolitan area	35,3
Area of influence	7,0
Rest of the region	2,4
Total	100

Source: Padrfin municipal de habitantes 1996.

In order to qualify these areas in relation to the social characteritics of their population, we use their position on the first factor of a factor analysis on the spatial distribution of socio-economic categories. In fact, the social value of these residential spaces indicates their social hierarchy in the whole area, and the higher is the proportion of the upper socio-economic categories living in an area, the higher will be the social value attributed to it.

Three other variables also partake in the attribution of social value to residential areas. The first is related to the educational level in the area and is calculated following the same methodology, i.e. is measured by the areas' position on the first factor of a factor analysis on the spatial distribution of

FIGURE 1*Distribution of Madrid Metropolitan Region by areas*

educational categories. The second is income and is calculated as the average income of the people living in each area, on the basis of income tax data. Finally, the third variable is housing unified price (average price per square meter of housing sold in a year), following bank evaluations related to mortgage loans.

The evolution of these variables is linked in some way to a theoretical value of residential space. Each of these variables has some autonomy; housing value may depend on the local environment conditions and on the public and private services in the area; a short term change in this variable could have a faster impact on housing prices than on the social profile of the resident population. The same can be the case with the education variable; the areas near the university may have a higher proportion of intellectuals but not necessarily a higher income level.

Measuring social inequalities in urban space

We start the analysis by considering changes in the socio-professional structure, expressed by the combination of three main variables: profession, professional status and sector of economic activity.

The change produced in occupation positions as a consequence of economic restructuring is the main expression of the ensuing social restructuring, together with the increasing instability of job contracts. The number of professionals and managers increased rapidly during the eighties and the nineties, and the size of middle class categories grew rapidly, but at the same time their features changed. The new middle class has different social values and these values are clearly expressed in urban space by different residential practices and modes of consumption.

The expansion of middle class categories coincided with deep changes in the contents and size of the working class. Traditional working class and mainly skilled, and unskilled industrial workers, shrunk considerably. A new working class emerged, mostly occupied in services and having rather different social values. This new working class has also different occupation-related values, like continuity in employment, options for promotion in the work place, and social status related to occupation. The changes are important therefore not only because middle classes increased in number and the working class decreased, but also because there have been important internal changes in the social meaning of these broad categories.

Between 1981 and 1996 differences in the spatial distribution of socio-professional categories decreased in Madrid. The distance between the 'top' and 'bottom' areas were reduced and the standard deviation also decreased slightly (Leal, 1999).

The unequal distribution of education

There has been an important general improvement of the education level in most developed countries. South European cities have experienced this strong trend more recently and much more rapidly than the rest of the European cities, implying a greater recent impact on social change, and particularly on the socio-professional structure.

In Madrid there has been a change in the spatial distribution of education levels between 1975 and 1996, which led to moderately increasing differentiation and educational inequality. This increase of inequalities follows the general growth in all education levels. In this new knowledge society the lack of elementary education is no longer frequent, but is definitely more discriminating in general and in the job market in particular.

The unequal distribution of income in the urban space

The third variable to be considered is household income, which has a different type of distribution in urban space. There are many difficulties in analysing the spatial distribution of income, because the best sources of data are surveys, with limited sample size which cannot match the analysis of the other variables in small spatial units. Thus, we have been constrained to use data from income tax reports (income distribution for the period 1987-1997 in the Metropolitan Area of Madrid by large spatial units). This data source has some peculiarities, which must be taken into account. Some of the highest incomes are underestimated because they avoid declaring their full income and, at the same time, the lowest incomes are not in the picture because very low income households do not have to declare their revenue. This data source misrepresents the two edges of the income distribution, and as a consequence is not useful to measure the polarisation and dualisation processes, in which these parts of the distribution are mainly involved.

The housing market as a segregational factor

The fourth variable to be considered is housing prices. It is a variable to be dealt with care. Housing prices differences are the result of choices made by people in locating their residence, and in this process different variables are involved:

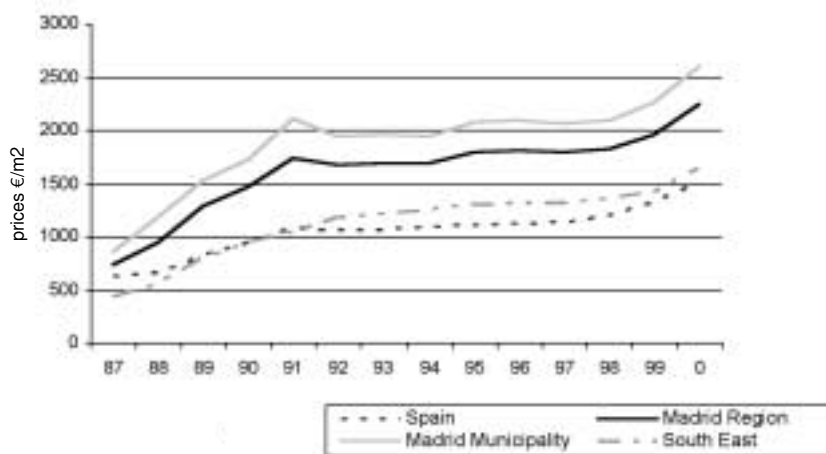
- Centrality, involved the distance to the major concentration of work places, to the centralized services (cultural, educational, etc.) and the easy access to the central transport system which allows the connection to all the areas in the region.
- Historical heritage, as a valorisation of continuity in the city as referred to by classical analyses like Burgess (1926), Hoyt (1939). Harris and Ullman (1945)
- Environmental value, in terms of urban landscape, proximity to green areas and other values such as the absence of air pollution etc.
- Social value of the area, as a summarised expression of positive scores on all other important variables.

The housing price variable is essential to measure social changes like gentrification or ghetto formation. This variable becomes more important in urban areas where housing access is performed mainly through home ownership. Increased residential mobility is obviously boosting the impact of this variable on processes like gentrification or ghetto formation.

Housing prices are also related to the patrimony of the household. In Southern European societies, housing patrimony constitutes more than half of the total patrimony of households, and its proportion is increasing as the household income decreases.

FIGURE 2

*Evolution of housing prices in Madrid Urban Region and Spain 1987-2000
(€/m²)*



Source: Ministry of Fomento.

The enormous increase in housing prices in recent years in all European cities and especially in Madrid, where average housing prices grew the most between then in the last twenty years gives to this variable a special importance. The spatial distribution of this change is shown in Figure 2. The working class part of the city in the South presented a price increase below average. The areas with the higher increase are those at the border, where there was a change from rural to urban land use. The middle class areas of the North and North West presented price increases over the average.

The analysis of spatial differentiation

We start by considering space as the element which structures and orders our perceptions, including our perception of social and economic differences, following what Lefebvre calls 'structural space', and referring to the capacity of urban space to order human perception. Space doesn't exist but as a human category following Kant or as a pure relational order following Leibniz. The

spatial distribution of variables gives us an important additional knowledge of urban space. We perceive in this way social and economic differences in their spatial dimension, which is too often abstracted from the analysis leading to the loss of meaningful aspects. There may be increased or reduced economic inequality in a city, but it makes a difference if this inequality is concentrated in some areas or is spatially distributed in a homogenous way. Socio-spatial inequalities are important *per se*.

We are accustomed to think of spatial differences as projections of social differences in space, but in fact they are the two sides of the same coin. We could also consider the opposite view according to which social inequalities exist because there is an unequal distribution of social categories in space: this unequal spatial distribution may sometimes take a vertical form as Maloutas and Karadimitriou (2001) describe for Athens, or the horizontal pattern, that classic authors like Burgess (1926) have described for Chicago.

4. THE SEGREGATION PROCESS IN MADRID URBAN REGION

Social categories and spatial change

The social structure of the Metropolitan Area of Madrid immediately reveals a division into two different parts separated by a virtual line from the North East to the South West. Most of the middle class and wealthy population is located in the Northern part, while the working class and the poorest households live in the South. This division correlates with the location of employment, city services, and other urban functions. But this has not always been the case.

The social structure of the city has changed in its spatial division pattern during the last fifty years, from a division based on the (spatial) distance from the city centre to the partition between North and South. In the fifties the city was organized in relation to the distance from the city centre where most of the best jobs were located and almost all of the regional services like secondary schools, hospitals, museums, cultural centres, shopping areas and so on. Middle class and bourgeois households were located in the centre or in the first ring planned in the middle of the 19th century ('*ensanche*'). The second ring has a complex structure with some industrial areas, some working class areas and some middle class settlements. The third ring was composed by some villages, which increased in population following the spread of urbanisation (Leal, 1990; Arias, 2000).

As in most Southern European cities, with little public investment in transport and in new services, the middle class in Madrid found in central areas

the value of proximity to services and job opportunities, as well as the values linked to the historical and architectural heritage, and hence never abandoned the urban centre. This was a different path from most North American cities and some North European ones, where historical heritage was much less important and public investment was distributed throughout the city in a more homogenous way.

During the 1970s and 1980s the city pattern changed and followed Hoyt's model (1939), projecting some of the functions located in the third ring to the edge of the Metropolitan Area. The North part of the ring projected its middle class values to the Northern edge, and the South and East projected the industrial functions and working class housing to the Southern and Eastern edges. Social housing was located mostly in the South and the East, while a part of it remained in the North, isolated in areas surrounded by zones of a different social character.

A gradient pattern is progressively superposed to the rings structure making several areas change in social composition, in residential typology and in real estate value. This is, however, a long process since residential mobility is low and the transformation of the social structure in an area takes time as it implies migration from other areas.

In some parts of the periphery there is change towards more independence from the city centre, with the formation of independent nuclei of social services, shopping space, jobs etc.

The recent history of the city reveals the transition from a circular pattern to a gradient involving the spreading of middle class space in low social value areas. This change reinforces the process of differentiation, through its role in the access to housing (home ownership) by new households. Most of the new households need the financial contribution of their family to become owners, and this often results in the proximity to their parent's house. The main reason for choosing the location of the first owner occupied house is the vicinity to the parents, implying the continuity of the extended family in urban space. This is affecting the reproduction of social categories, by reducing segregation through the spatial mixing of social categories, especially in periods with high intergenerational social mobility.

These trends are a consequence of social change in the Metropolitan Area of Madrid during the last decades. The factor analysis, comparing the socio-economic structure of the Metropolitan area between 1975 and 1996 shows, among other things, that the upgraded areas are mainly located in the new developing middle class areas of the North-West periphery. These spaces are the most representative of the new young middle class. It is perhaps the most

important spatial change experienced recently in the Metropolitan area: the birth of a suburban middle-class periphery, which never existed, as middle and upper classes always settled in the central areas of the city Leal (1994).

The reason for this change in the social value of the peripheral areas of the city is related to the urban and environmental conditions and to the choice of residential location by new households. This process is much slower than the processes described by Human Ecology authors regarding the city of Chicago. Residential mobility in Madrid was 4,5 per cent in 1997,² contrasting with 19 per cent in the United States or 9 per cent in Great Britain. The social change experienced in the development of the Metropolitan area is due to the colonising of new peripheral spaces by the middle class rather than to changes in the existing urban spaces.

This emerging middle class suburbia, which mainly includes professionals, has a relatively different character in the South and East edges of the Metropolitan area, linked to the high level of inter-generational social mobility in the past two decades. Children of industry or service workers, have become professionals or managers through the massive access of lower social strata to higher education and chose to live near their parents in some upgraded housing estates in the broad peripheral areas of the working class. As a consequence, the social ranking of these areas is upgraded, although less than the North and West periphery.

The general upgrading in the value of the periphery runs parallel to the stagnation of all the central middle class areas. The reason for this stagnation is the aging of its population. The stagnation in the central areas, in comparative terms, is in fact the result of a complex process: a loss of social value for the traditional middle class areas, joined to the strong rise in value of the new middle class peripheral settlements, as well as the working class periphery. It is the result of changes in the social structure of the whole city, rather than the consequence of internal social change in the central area. Nevertheless, the change in these central areas is also important, as they become less residential, with the apartment houses in the multi storey buildings transformed into offices, and mostly into small offices for professionals whose number increased strongly in recent years.

But the general improvement of social conditions and the decrease in differentiation rates in general do not imply a decreasing segregation. The

2. 4,5 per cent of households changed their residence during that year. Data from the 1997 survey on housing demand for the Consejería de Obras ùblicas de la Comunidad de Madrid.

intermediate urban periphery in the South and the East remains the area with the lowest value. People at risk of exclusion remain there, and some of these areas, in particular the areas with a high proportion of public housing, experience a growing social distance from the middle class settlements.

The question regarding change in the spatial pattern of segregation is whether a slight general decrease of total social inequality can coincide with the further distantiation of some limited areas, where a large proportion of socially excluded people are concentrated, from the rest. It is difficult to measure this process, but there should be an analysis controlling for the allegation that in the new global cities a no-return process of social exclusion befalls on a part of their population.

In the last five years the increasing number of immigrants from developing countries, has changed particular areas in the city centre into new segregated areas of ethnic minorities, as each minority tends to gather in specific areas.

Change in the spatial distribution of education levels

The education level of the population of Madrid has greatly improved in the last 15 years. The number of people with university degrees has increased and at the same time the proportion of illiterate people decreased along with the proportion of those who have only gone through compulsory education.

The process of change in the spatial distribution of education levels of is in some way similar to that of the occupational structure. The centre remains practically unchanged (slight increase) compared to high improvement in the periphery. There are several reasons explaining this difference and, first of all, the different age structure between centre and periphery. The number of young couples and new families is proportionately much higher in the periphery. Younger boroughs and areas have in general a higher increase in education levels than older areas.

The reason explaining the disparity between the evolution of the social value of residential areas and the education level of their population is related to differences in social mobility. For the intermediate classes social mobility is more directly linked to education accomplishment. Meritocracy is often the way of climbing the social scale. For the lower classes social mobility is more related to success in their work. Small entrepreneurs often started as salaried workers and became independent as a response to the restructuring of the production system. Such differences in the pattern of social mobility imply that there are bound to be differences in the spatial configuration of social (occupational) mobility and of the evolution of educational levels.

There is also a marked difference between the spatial distribution of the evolution of education levels and that of income distribution. Difference in

average income between municipalities in Madrid decreased in the period between 1987 and 1996 and increased thereafter.³ They remain however very high, and in some cases the difference between municipalities at the top and the bottom of the income scale maybe threefold, even for large municipalities approximating 100.000 inhabitants.

Social mobility is also an inter-generational process. The education of the children of working class families leads them eventually to a higher occupational category and the rapid growth of professional and other white collar jobs is obviously boosting inter-generational mobility. Such mobility explains the increase of the social value of residential areas in the working class periphery, due to low residential mobility discussed earlier.

However, class differences in education are maintained and can, partly at least, be attributed to the unequal distribution of educational services. As Tobio (1989) shows, public education centres are different in quality depending on the social profile of the areas they are located in. In poor areas the possibility of failing and abandoning high school is much higher than in the rich areas of the city. The distribution of high schools and universities is also an important issue. Most of the public universities and all the new private universities are located in the North and West of the Metropolitan area, and so are all the private secondary schools. It is true that through the past twenty years there has been a considerable public effort in locating new universities in the working class areas (South and East): Alcala de Henares, Carlos III and Juan Carlos I universities are located in these areas. But the number of their students is still small in comparison with the other universities. Thus, only in recent years it has been possible for the young in these areas to study near their place of residence. This unequal distribution of public universities affects the differences in educational value of the surrounding residential areas, which increase due to the fact that all the private universities are located in the centre or the North West periphery.

Spanish cities have a high proportion of private schools: almost half of the children in Madrid go to private schools, most of them financed by the state. Private elementary and high schools, often bilingual or with improved and experimental methods of learning, are a way of educational and social promotion for affluent groups. The access to these schools for the young living in the South or in the working class areas is not easy, even in practical terms since the lines of private school buses do not cross these areas.

3. In Spain, inequalities in income distribution decreased in the 1980s (Ayala, 1993).

Moreover, the installation of private schools in the North-West of the metropolitan area precedes the growth of their middle class population. Moving to the affluent periphery was usually a way of renovating these schools in the 1960s and 1970s. Previously, most of these schools were located in central middle class areas, where the value of land was very high. By selling their land, it was possible to build new and bigger schools in peripheral areas, according with the demand of new ways of teaching and taking advantage of better environmental conditions and lower land prices. This kind of action is no longer possible, since land uses in central areas are fixed and it is impossible to make a profit by selling school central parcels for a different land use. Thus, the value of the land where the schools are situated decreased, and at the same time land prices in the affluent periphery areas increased over the average.

For a number of years children of professionals and entrepreneurs were commuting from the centre, where they lived, to their school in the periphery. Although this is still a frequent practice, a growing of new middle class families moved to these peripheries due, among other things, to the proximity to high quality schools.

The constitutive process of these affluent areas in the North and North-West of Madrid was completely different from the South and East. Most of the educational services, like high schools and universities, were there before their rapid growth in the 1980s and 1990s; hospitals were not far; environmental quality was high and the proximity to some protected green natural parks was a further asset; the high income level of inhabitants attracted commercial activities, located mostly in big shopping centres. The only problem was the location of jobs. However, the concentration of services in the area gives it the best and more stable balance between workers and jobs in the Madrid peripheral ring.

As a result, there is a process of independence of rich peripheral municipalities from the city centre, with a considerable amount of jobs and all types of services. Their dependence on the city centre remains only in respect to certain services, leisure, and especially jobs, because even if the area has almost the same number of jobs and economically active residents, commuting for work is also high, with a substantial proportion of outsiders working in the area and an equally, if not more, substantial proportion of residents working in the city centre, where the best jobs are still located.

Distribution of income inequalities

The higher rate of increase of retirement pensions than wages during the 1980s and early 1990s, explains the fact that income inequalities were reduced during

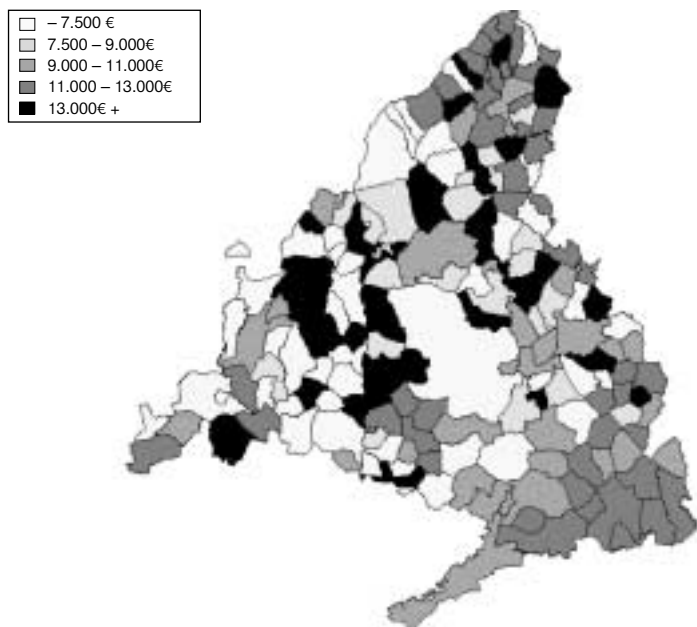
that period. The growth of unemployment benefits brought a general growth of income which contributed in turn to this reduction in economic inequalities. The differences in the average income between the municipalities of the metropolitan area of Madrid decreased.

In the following period, from the mid 1990s to the beginning of the 21st century, the tendency changed because the increase in pensions was slower than the cost of living. Thus, in a period characterised by strong economic growth, inequalities in households' income increased substantially. Madrid has joined other big cities in the trend of increasing economic inequality.

Figure 3 shows the change of the average income per household in the municipalities of Madrid urban region between 1996 and 1999. In the wealthy areas of the Northwest income grew more than average and in the working class areas of the South and East it decreased more than average.

FIGURE 3

*Growth of average household income by municipalities
in Madrid Urban Region (1996-99)*



The impact of the new housing production system

The segregation process is more obvious in Spanish than in other European cities due to specific features of housing production.

In Spain, land laws and urban policy have resulted in the concentration of building activity in large size promoters or builders who have homogenised their designs and their product and have consequently created homogeneous new urban areas. There is a close relation between the homogeneity in building forms and social homogeneity. The relation is so close that sometimes, when the form changes in adjacent areas built by the same promoter, there is also a change in the social structure. This clearly happens in sixties and beginning seventies, in areas where private promoters owned large pieces of land and begun by building working class housing which they subsequently upgraded until they attracted middle class households. In Madrid this has been possible because of the existence of big pieces of land concentrated in the hands of a few land owners.

This entrepreneurial way of producing new settlements results in a speedy transformation of social values to prices, and it should be stressed that this happens at the end of the building process, when houses are sold. If the demand from high income households in the area becomes high, profits will become higher. It is different in the case of self promotion or cooperative housing production, where the social constitution of the demand is produced at the beginning of the process and often the price does not correspond unequivocally to the social condition of the demand.

The high proportion of housing built by private promoters conditioned the settlement of social classes in urban space in a different way than in other housing production systems. Social value of space is translated in a speedy way to prices, and creates a clear relation between social value and economic value. Public promotion, on the contrary, operates differently since it is, partly at least, decommodified, and prices do not reflect the social value of the areas. Public intervention can place low income households in rich areas or manual workers inside middle class areas. Nevertheless, this happens only when there is a clear local policy against segregation, which is not the case in Madrid, where it is usual to sell public land in rich areas in order to build more social housing in less expensive areas. This alleged search for efficiency contributes clearly to increase segregation.

The spatial distribution of social classes in cities, where public intervention is weak, is in general less mixed than in cities where public promotion is responsible for a high proportion of housing provision. Moreover, the greater

the private entrepreneurial intervention in housing production, the more apparent becomes the social division of city space. Big Spanish cities, like Madrid, have a clearer socio-spatial division than French cities, like Paris, because of less public intervention in housing.

But this process is not deterministic; the growth of cities can lead to many exceptions to this general rule. In fact, some of the most socially mixed areas of Madrid were built by private capital, but their socially mixed character is due more to the process of peripheral areas becoming central than to any other reason. The city expands rapidly, and thus some peripheries become central in a short process which alters their land values as well as their social content. Transport amelioration, improved shopping facilities and expanding public and private services, like schools, healthcare centres and sport facilities can upgrade the social value and/or induce gentrification in areas of the urban ring.

To grasp the changes in the housing market in relation to social class it is important to understand the residential practices of households, particularly in terms of choice of residential location. These practices are significantly correlated with age and social class.

The first criterion for searching a new residential location for young households in Spain is proximity to parents and friends, and it is much more important than the social standing or the living conditions in the area in terms of transport, proximity to the workplace and to services like schools or health centres. This strategy of young households may be explained with reference to the weak welfare state which does not provide enough kindergarten and other such support. Esping Andersen (2001) argues that in Southern European countries the welfare state is primarily beneficial to the elderly and the long established households, through pensions and unemployment benefits. Kindergarten are scarce and aid to first housing access is also not frequent in the big cities. Family solidarity becomes, as a consequence, the resource often used to solve problems, following the familialist model of the Southern welfare system, as described by Abrahanson (1995) and Ferrera (1995).

There is another important difference in relation to the rest of European cities, and that is the big difference in activity rates between middle aged women and young women. The low activity rate of grandmothers allows them to spend time taking care of grandchildren, when young mothers work to increase the household income in order to be able to face the high mortgage loan, which gave access to owner occupation. Proximity to family is obviously a way of practically establishing family solidarity, not only in terms of childcare but also in preparing meals or solving everyday problems when both young parents are working.

The practice of new households to locate near their parents is more frequent in the working class than in the middle class milieu. First, because middle class grandmothers have a higher activity rate. Second, because the resources of middle class households are higher and thus they can pay for private services (kindergarten or maid servant) to take care of children. Third, because middle class family solidarity is more often implemented through cash transfers than through direct assistance.

The higher level of independence of young middle-class households in choosing their residential location explains their rapid spread in the distant periphery and the related growth of suburbanisation. There is a growing contrast between dense working class suburbs, with apartment housing, and extended middle class settlements with high proportions of single family housing in the wealthy suburbs of Madrid.

The tendency of new households originating from the working class to locate near their parents changes the social composition of traditional areas in the working class periphery. The motor of change is the intergenerational social mobility in recent years, related to their massive access to education and to the restructuring of the labour market. New professionals or intermediate status job holders locate near their working class parents and contribute to a growing occupational mix in former working class areas, in a process which contrasts with the socially homogenising impact of the housing production system.

The lack of an accumulated capital and the recent increase in housing prices during the second half of the 1990s have also influenced this process. Children of manual workers cannot benefit of an anticipated inheritance, which would pay part of the cost of a new house, as it is often the case with middle class offspring. Thus, even if the wage differences between these two groups were relatively small, there is a disproportionately big part of household income in the working class milieu that has to be spent for paying mortgages.

These differences can explain the contradiction between, on the one hand, the emergence of more socially mixed urban areas and of a slight decline in segregation in terms of socio-professional categories and, on the other, of the increase in housing price differences between the different areas of Madrid.

The class differences in the anticipated family inheritance is extremely relevant when the average price of a house (second hand or new) in Madrid in 2000 implies that a middle income household should spend half its income during twenty years to buy it. The average price of all the houses sold in Madrid Metropolitan Region in 2000 was seven times the average annual income of households. Under these circumstances the prospect of a new household to become a home owner depends on the help of the extended

family, and this dependence becomes in fact more discriminatory than the differences in wages. Some young households may have a higher income than some others, but if they have to use half of their income to pay a mortgage loan, their real income level will be substantially lower than households with lower incomes whose owner occupation is already paid-for. It is not easy to measure such differences, which nevertheless discriminate young households and contribute to reproducing income inequality in the city.

The housing access process is increasing its influence on segregation in Spanish cities, due to the dominance of home ownership and the huge increase of housing prices that grew faster than income. In this sense, the concept of 'housing classes' is now more relevant than in the mid 1960s, when Rex and Moore (1967) proposed it. It requires, however, better adaptation to the housing typology and to the way of access to housing in each country. Differences in patrimony become more important when measuring economic inequalities in South Europe, because of the dominance of home ownership, which increases differences between tenants and homeowners and also between owners of houses that are paid for and owners that still pay mortgages. This situation implies a handicap generally befalling on younger households.

5. CONCLUSION

Between 1980 and 1992 Madrid has experienced a considerable decrease of spatial inequalities in terms of the distribution of socio-professional categories and household income and a slight increase of inequalities in the spatial distribution of education levels and housing prices. However, the trend changed in recent years and differences in the spatial distribution of income increased as well as differences in housing prices. There is still no evidence of change in the spatial distribution of socio-professional categories, but it seems that the inflow of immigrants contributes to increase disparities between residential areas in terms of social profile.

Segregation in cities is the result of several processes; to understand it we must take in account variables as profession, education level and skills, income as well as the value of patrimony, and especially housing prices. Some of these variables are dependent on economic policy and on policies for the development of public services like education, health, and public housing. Since inequalities in patrimony have increased, the social distribution of patrimony may be regarded as even more important than the distribution of income, especially in a risk society where the insecurity in the labour market is increasing.

The social and economic transformation of space value is related to the

growing proportion of professionals and the declining size of the working class. The segregation process in recent years is mainly induced by the higher income groups which upgrade new boroughs and municipalities in the process of their expansion, as Preteceille (1995) has shown for Paris, and not by the expansion of poor and excluded areas.

But the principal conclusion of this paper is that segregation and spatial social changes more generally are heavily dependent on welfare policies. Even though Spanish cities started from a low level of services and benefits, the decrease in socio-spatial differentiation between 1980 and 1992 should be attributed to the increase in public spending for pensions and unemployment, while the stagnation thereafter of public intervention contributed to increasing social differences.

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