

Urban Decline and the New Social and Ethnic Divisions in the Core Cities of the Italian Industrial Triangle

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Summary. This paper examines the new social division of the city cores in the metropolitan areas of Milan, Turin and Genoa. The changing structure and location of social and ethnic groups are analysed using census data from 1981 and 1991. Special emphasis is given to the relationships between de-urbanisation and social polarisation; and between urban economic restructuring and new forms of distribution of social groups. Contrary to theories of population de-urbanisation which suggest an associated decrease in social polarisation, the analysis presented in this paper demonstrates increasing levels of social division of space.

1. Introduction

It is the contention of this paper that international division of labour, processes of de-urbanisation and de-industrialisation, and the wide expansion of the service sector establish a marked social division. This has as a consequence a new spatial organisation at the macro-, meso- and micro-scales. It is very important to study not only the new metropolitan realities and urban networks, but also the transformation of intra-urban space. This is because only at the intra-urban level are we able to uncover the complexity of forms of social polarisation and residential segregation, and more particularly their structure and spatial organisation.

A number of studies have focused on the highest ranks of the world urban hierarchy, namely the 'global cities' (Kantrowitz, 1973; Massey, 1990; Sassen, 1991; Fainstein *et al.*, 1992; Mollenkopf and Castells, 1991; Mar-

cuse, 1989, 1993; Esping-Anderson, 1993; Pahl, 1988). Less attention has been paid, however, to the middle ranks of the world urban hierarchy, and more particularly to the study of segregation within middle-sized cities. This paper aims to redress this balance by focusing on the social division of space in three Italian cities with populations of between 0.7 million and 1.3 million. Turin, Milan and Genoa are not only three of Italy's principal cities, they are also important centres within the European urban hierarchy.

Most studies of Italian cities have focused on urbanisation processes and urban networks (Dematteis, 1992; Costa and Toniolo, 1992; Conforti and Mela, 1995; Martinotti, 1993). While these studies comprise an important body of literature, they have largely ignored those processes affecting intra-urban space. There are, however, a

small number of exceptions, including: Curti, 1985; Bagnasco, 1986; Gibelli, 1986; Garzena and Petsimeris, 1987; and Diappi-Wegner and Petsimeris, 1987). These studies drew attention to the selectivity of urbanisation processes, and to increasing levels of social segregation. Their conclusions were therefore counter to the more widely accepted thesis that the post-industrial era is characterised by a decrease in both population and residential segregation.

In order to understand the social structuration of each of the three cities examined in this paper, it is necessary to try to answer a number of basic questions:

- (1) Is the decline in the population in the whole population, or only in particular social groups?
- (2) How are the different social groups distributed in intra-urban space?
- (3) Is the diminution of the population accompanied by a diminution in the social divisions of intra-urban space?
- (4) What is the social geography of the late industrial city?

Following a more detailed description of the study area, and the methodology for the measurement of segregation, the paper examines changes in the population and social groups in the core areas of the three cities. A cross-sectional and temporal analysis of the social division of space is then undertaken, followed by an examination of the ethnic division of space. The final part of the paper concludes on changes to the social geography of the three cities.

2. The Study Area

Turin, Milan and Genoa were chosen as the study areas because of the particularly interesting characteristics of their structure and growth (Gambi, 1973; Belgiojoso, 1960; Romano, 1960). The three areas form the vertices of what is commonly known as the 'industrial triangle' of Italy, which became the main destination of immigrants from the peripheral regions of Italy after the Second World War. The economic bases of each of

the cities are: mechanical engineering and car manufacturing in Turin; finance and manufacturing in Milan; and manufacturing and port-related activities in Genoa (Dalmaso, 1970). In addition to their being important regional and national centres (core areas of three prosperous regions), each of the cities plays an important role within the European urban hierarchy. Their development occurred mainly during the present century, with an extremely rapid phase of growth in the 1950s leading to the industrialisation of Italy. Turin has been affected by industrial growth and its social consequences in a far more dramatic way than any other city in Italy, mainly due to a single industrial sector—i.e. the metal working sector—and one firm within this sector—i.e. Fiat (Michelsons, 1985; Bagnasco, 1986; Dematteis and Petsimeris, 1987).

In the three cities, the intensity of industrialisation resulted in an unprecedented increase in migration, first of all to the city itself and then to the surrounding suburbs, by hundreds of thousands of workers from the more economically backward regions of Italy. This large and rapid influx of immigrants resulted in a pool of manpower, which increased or decreased in relation to the needs of the dominant firms. The urban landscape changed dramatically in the absence of any co-ordinated national and/or local policy of 'controlled growth'. The cities and their hinterlands became a large-scale service infrastructure for industrial production (Giovenale, 1960; Melotti, 1971; Secchi, 1984).

Since 1950, the core areas of these cities have experienced dramatic changes in both their economic bases and their socio-spatial structures. The 1951–71 period marked a sharp increase in employment, primarily due to the rapid expansion of manufacturing. Immigrants arriving during this time, mainly settled in the intra-urban working-class areas and in the new working-class suburbs. Generally, they had lower educational and professional qualifications, with the majority having moved from the extreme south of Italy.

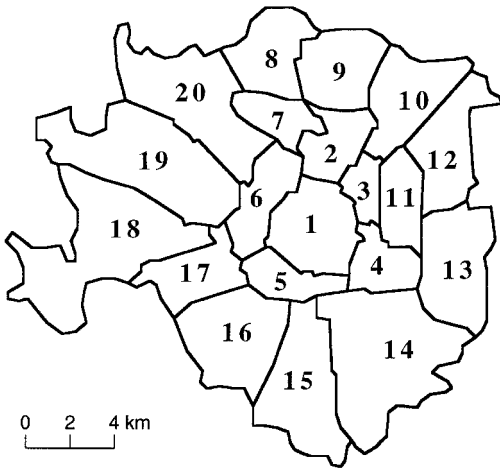


Figure 1. Milan: *zona di decentramento*. Zona di decentramento: 1. Centro Storico; 2. Centro Direzionale-Greco-Zara; 3. Venezia-Buenos Aires; 4. Vittoria-Romana-Molise; 5. Ticinese-Genova; 6. Magenta-Sempione; 7. Bovisa-Dergano; 8. Affori-Bruzzano-Comasina; 9. Niguarda-Cà Granda-Bicocca; 10. Monza-Padova; 11. Città Studi-Argonne; 12. Feltre-Carnia-Cimiano-Ortica-Lambrate; 13. Forlanini-Taliedo; 14. Corvetto-Rogoredo-Vigentina; 15. Chiesa Rossa-Gratosoglio; 16. Barona-Ronchetto sul Naviglio; 17. Lorenteggio-Inganni; 18. Baggio-Forze Armate; 19. San Siro-Q.T. 8-Gallaratese; 20. Vialba-Certosa-Quarto Oggiaro.

During the same period, Milan, Turin and Genoa were seen as cities with good development and employment opportunities relative to other parts of Italy. By the onset of the recession in the 1970s, the same cities were characterised by de-industrialisation and urban decline.

The 1980s brought each of the cities more closely in line with other former manufacturing cities throughout the world. From the mid 1980s to the mid 1990s, the three cities have attracted thousands of immigrants from the Third World, while at the same time weakening their position in the international division of labour. The immigration process has thereby taken on a greater role in the division of space. Between 1950 and 1985 the most important division of space was social, having more recently (post-1985) become ethnic.

In each of the cities four types of residential area can be clearly distinguished:

- (1) The historical centre—i.e. the central core—is characterised by a mosaic of historic architectural typologies and a high degree of social heterogeneity, with high-income groups in the prime housing and lower-income groups in the decaying housing stock. This area has undergone successive waves of immigra-

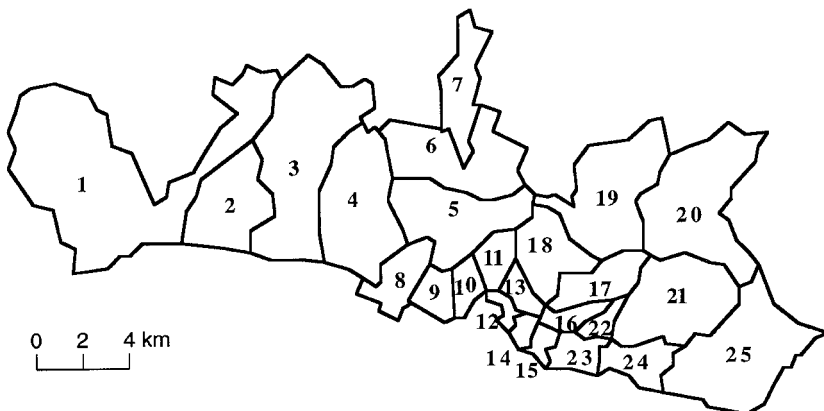


Figure 2. Genoa: *zona di decentramento*. Zona di decentramento: 1. Voltri; 2. Pra; 3. Pegli; 4. Sestri; 5. Rivarolo; 6. Bolzaneto; 7. Pontedecimo; 8. Cornigliano; 9. Sampierdarena; 10. S. Theodoro; 11. Oregina-Lagaccio; 12. Pre-Molo-Maddalena; 13. Castelletto; 14. Portoria; 15. Foce; 16. S. Fruttuoso; 17. Marassi; 18. Staglieno; 19. Molassana; 20. Struppa; 21. Valle Sturla; 22. S. Martino; 23. S. Francesco d'Albaro; 24. Sturla-Quarto; 25. Nervi-Quinto-S. Ilario.

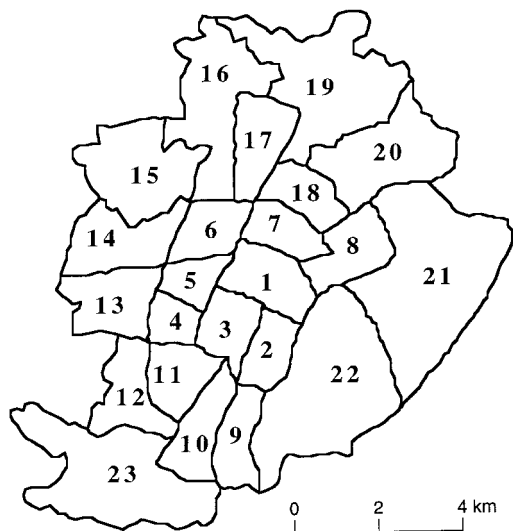


Figure 3. Turin: *Zona di decentramento*: 1. Centro; 2. San Salvario; 3. Crocetta; 4. San Paolo; 5. Cenisia; 6. San Donato; 7. Valdocco; 8. Vanchiglia; 9. Nizza; 10. Lingotto; 11. Santa Rita; 12. Mirafiori Nord; 13. Pozzo Strada; 14. Parella; 15. Le Vallette; 16. Madonna di Campagna; 17. Borgo Vittoria; 18. Barriera di Milano; 19. Rebaudego; 20. Regio Parco; 21. Madonna del Pilone; 22. Cavoretto; 23. Mirafiori Sud.

tion: filtering-down processes during the 1950–70 period; and filtering back-up after the 1980s.

- (2) A peri-central belt, which is more homogeneous in terms of architectural form, but which also contains very large areas of housing development for the middle and lower classes characterised by large blocks of flats. This area has recently been affected by tertiarisation processes, which have resulted in an increase in its locational attractiveness, and the gentrification of some of the more architecturally interesting 19th-century properties.
- (3) The upper-class areas, which are environmentally the most attractive. These contain low-density housing, mainly villas with large gardens, which continue to be occupied by the wealthiest sector of the population.
- (4) The outer city ('le periferie') which can be sub-divided into two areas: a predom-

inantly residential area with high-rise housing of differing standards inhabited by the middle and lower social classes; and a mixed residential and industrial area characterised by a fragmented urban form, high concentrations of the working class, poor provision of basic services and social deprivation.

Today, the agglomerations are undergoing a process of profound socioeconomic change, and—like practically all metropolitan areas and large cities which grew very rapidly during the boom—are now having to face the consequences of a stable and even a declining population. At the same time, there are internal changes occurring, such as the rising importance of the tertiary and advanced service sector (Camagni, 1986; Gibelli, 1986). The industrial sector is declining in importance in terms of employment, and no longer has such a strong influence as a locational attraction. These new conditions are modifying in different ways the various parts of the agglomeration in general, and particularly the core areas, generating changes in economic function and mobility.

3. The Measurement of Segregation

In order to measure the social division of space, synthetic indices or implicit spatiality (segregation and dissimilarity) and analytical indices (location quotients) have been used. These indices are widely used for the study of the relative concentration of social groups, which thereby allow comparisons to be drawn between a large number of studies. (See the Appendix for a more detailed description of the indices.)

The data were taken from the Census of Population for Italy, published by ISTAT. The broadest level of intra-urban disaggregation is the *zona di decentramento*, the population of which varies between 20 000 and 100 000 inhabitants. The next level is the *dipartimento di statistica* (Figures 1, 2 and 3). Data on the ethnic and social composition of the three cities are available at both levels.

Table 1. Changes in employment structure, 1981–91 (percentages)

	Genoa	Milan	Turin
Professional and business owners	51.7	55.9	46.8
Managers and clerical workers	1.1	– 9.7	– 6.0
Blue-collar workers	– 14.5	– 30.3	– 27.6
Self-employed	4.6	0.9	6.7
Total	– 3.3	– 11.1	– 12.7

Note: Because data for Genoa were only available for four employment groups in 1981, the 1991 data for six groups were condensed in order to enable a comparison between the two years. Professionals were added to the category of business owners, and managers to that of white-collar workers.

Source: ISTAT.

While comparable data on social groups are available for 1981 and 1991, data on ethnic groups are only available for 1991. The Italian Census of Population makes a distinction between six main social groups: *imprenditori* (business owners), *liberi professionisti* (professionals), *dirigenti* (managers), *impiegati* (white collar workers), *lavoratori dipendenti* (blue-collar workers) and *lavoratori in proprio* (the self-employed).

4. Empirical Analysis of the Socio-economic Division of Space

According to the model of the urban cycle (van den Berg *et al.*, 1982), Turin, Milan and Genoa passed from the phase of urbanisation (before 1960) to one or suburbanisation (1961–76), and then to a mature stage of suburbanisation characterised by the demographic decline of the core and suburbs (1976–81). The final phase of disurbanisation is characterised by the decline of both the core and the ring. In fact, between 1981 and 1991, the core areas of all three cities declined in terms of population and employment. The highest rate of population decrease occurred in Milan (– 14.6 per cent), followed by Turin (– 13.8 per cent) and Genoa (– 11 per cent). Milan also experienced the largest absolute decrease in population (– 235 000), followed by Turin (– 154 000) and Genoa (– 84 000). The three cities' relative rates of population decrease were not mirrored by employment decline. The

highest rate occurred in Turin (– 15.4 per cent) which was mainly due to employment decline in the automobile industry. In Milan, employment declined at a markedly lower rate (– 6.7 per cent), while in Genoa employment and population decreases were similar (10.7 per cent and 11 per cent respectively). Turin's higher rate of employment loss also resulted in a larger absolute decrease in population (– 67 000) relative to Milan (– 43 000) and Genoa (– 28 000).

Table 1 shows the changes in the employment structure of active population by social group in the inter-censal period 1981–91. From this table we can observe that there was a decrease in the active population in all three core areas (– 3.3 per cent for Genoa, – 11.1 per cent for Milan and – 12.7 per cent for Turin). This trend is the result of two parallel but contrasting phenomena: an increase in the number of managerial and professional workers, and a dramatic decrease in the number of blue-collar workers. This was evidenced by a substantial increase (around 50 per cent) in the number of persons in the groups at the top of the socioeconomic hierarchy, and a dramatic decrease in the number of persons in the working-class groups (around – 30 per cent).

In the case of Turin, each of the groups of business owners, professionals and the self-employed can be disaggregated into those with or without employees. Figure 4 shows that during the period 1981–91 the largest increases occurred in those groups without

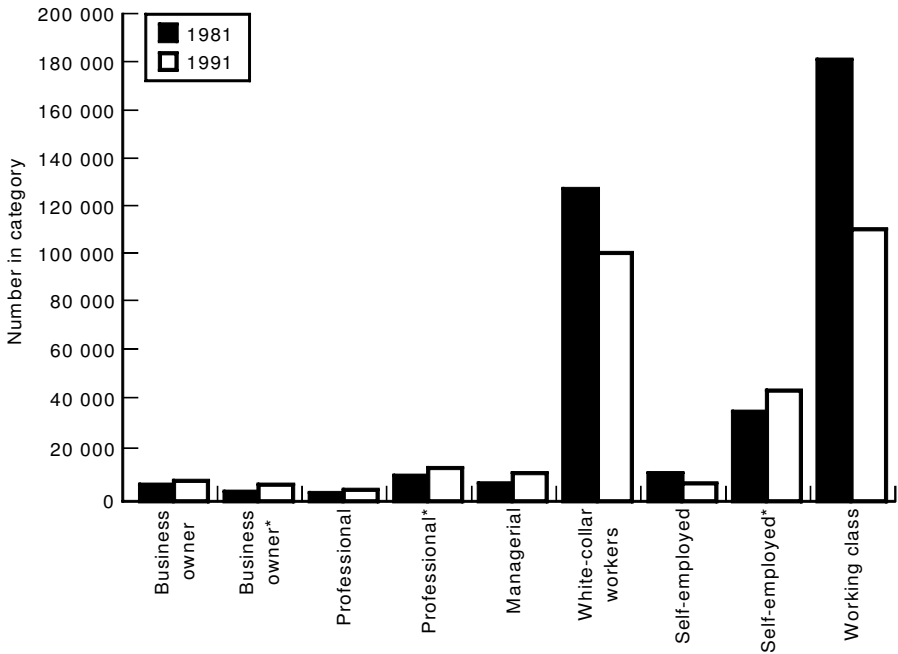


Figure 4. Turin: changes in employment structure, 1981 and 1991. (*denotes without other employees).

employees. This points to a weakness in the professionalisation hypothesis because the increase in professionals and business owners is more due to increasing numbers of self-employed rather than to the expansion of the number of professionals and business owners in medium and large-sized firms.

It is not only important to know which socioeconomic group is increasing or decreasing, it is also important to know in which areas of the city this occurs. In Milan, there was a general decrease in the numbers of working class. In the historical centre and

peri-central areas (Magenta, Ticinese and Venezia) the decline was more than 40 per cent; while in the rest of the sub-areas, the decline ranged between 20 per cent and 40 per cent. The number of clerical workers fell in all sub-areas with the exception of two working-class areas (Barona and Baggio). The main losses from this group were recorded in the historical centre, and in Venezia, Forlanini and Lorentegio. Managers, professionals and business owners increased in all sub-areas; in absolute terms in the central and peri-central areas, and in relative terms in the peripheral areas where their initial presence was very weak. Similar trends were also found in Turin and Genoa.

Tables 2, 3 and 4 show the indices of segregation by employment group in each of the three cities between 1981 and 1991. In each year, the most segregated groups were those situated at top of the socioeconomic hierarchy, namely professionals in Milan and Turin, and professionals and business owners in Genoa, while the least segregated group in all cities was that of the self-employed.

Table 2. City of Milan (20 sub-areas): segregation indices by employment group.

Group	1981	1991
Managers	19.02	15.35
Business owners	20.86	17.43
Professionals	24.94	24.26
White-collar workers	6.93	7.13
Self-employed	5.25	3.31
Blue-collar workers	14.26	15.51

Table 3. City of Genoa (25 sub-areas): segregation indices by employment group

Group	1981	1991
Professionals and business owners	28.4	31.2
Managers and white-collar workers	10.7	10.1
Self-employed	5.1	5.4
Blue-collar workers	12.9	14.1

Note: Because data for Genoa were only available for four employment groups in 1981, the 1991 data for six groups were condensed to enable a comparison between the two years. Professionals were added to the class of business owners, and managers to that of white-collar workers.

In Milan, only two groups showed an increase in segregation over the period, namely white- and blue-collar workers. All other groups recorded a decline in segregation which was most pronounced in managers and business owners. By contrast, in Genoa there was an increase in segregation in all groups with the exception of managers and white-collar workers. The highest increases were recorded for professionals and business owners followed by the working class. Likewise, in Turin all groups were either stable or showed an increase in segregation which was most extreme in the case of managers.

The analysis of dissimilarity for Turin showed that the highest degrees of differentiation occurred between blue-collar workers and each of the groups situated at the top of the socioeconomic hierarchy (Table 5). This pattern of dissimilarity—i.e. with the largest degrees of differentiation occurring between groups at opposite ends of the social scale—

Table 4. City of Turin (23 sub-areas): segregation indices by employment group

Group	1981	1991
Managers	21.1	25.4
Business owners	18.5	19.4
Professionals	25.9	25.9
White-collar workers	8.2	9.1
Self-employed	4.4	5.4
Blue-collar workers	18.0	18.2

was also found to occur in Milan and Genoa (Tables 6 and 7). The lowest degrees of dissimilarity occurred between white-collar workers and the self-employed, and between each of professionals, business owners and managers.

The foregoing analysis has used synthetic indices to examine the socioeconomic divisions of space. However, it is also important to use location quotients in order to uncover the spatiality of these divisions. In Milan, the socioeconomic categories of professionals, business owners and managers were found to be mainly concentrated in the historical centre with LQs above 2. These groups were also relatively concentrated in the peri-central neighbourhoods of Magenta, Venezia and Città Studi (Figure 5). White-collar workers and the self-employed were less concentrated, with LQs marginally above or below 1. Ten of the sub-areas in the northern and southern peripheries showed relative concentrations of working-class groups.

The 1981–91 analysis of location quotients showed an increase in the concentrations of both professionals and business owners in the centre of the city, and of the working-class at the periphery. There was also found to be an extension of the concentrations of the upper classes outwards from the historical centre towards the peri-central areas. This was accompanied by the processes of tertiarisation and gentrification.

The socioeconomic division of space in Genoa showed a strong contrast between the

Table 5. City of Turin (23 sub-areas): dissimilarity indices, by employment group, 1991

	Professionals	Business owners	Managers	White-collar workers	Self-employed	Blue-collar workers
Professionals	—	14.2	6.7	26.1	25.8	37.2
Business owners		—	14.22	20.0	19.9	30.3
Managers			—	23.6	25.2	35.9
White-collar workers				—	9.6	17.3
Self-employed					—	13.2
Blue-collar workers						—

Table 6. City of Milan (20 sub-areas): dissimilarity indices by employment group, 1991

	Professionals	Business owners	Managers	White-collar workers	Self-employed	Blue-collar workers
Professionals	—	6.6	10.8	27.2	13.5	34.1
Business owners		—	6.3	21.0	16.1	28.0
Managers			—	17.4	13.5	25.2
White-collar workers				—	5.6	8.9
Self-employed					—	12.7
Blue-collar workers						—

Table 7. City of Genoa (25 sub-areas): dissimilar indices by employment group, 1991

	Professional and business owners	Managers and white-collar workers	Self-employed	Blue-collar workers
Professional and business owners	—	23.7	28.5	43.7
Managers and white-collar workers		—	9.1	24.1
Self-employed			—	17.1
Blue-collar workers				—

central and eastern (*levante*) part of the city, and the western (*ponente*) and northern part (Figure 6). The middle and upper classes were mainly located at Portoria, Foce and San Fruttuoso with LQs above 2, and San Francesco d'Albano, Quarto and Nervi with LQs between 1.5 and 2. The working classes were concentrated mainly in the area of Ponente and in the northern part of the city built-up on the steeply sloping mountainside.

During the period 1981–91, there was an increase in the relative concentrations of the middle and upper socioeconomic groups in the predominantly residential areas of

Genoa. At the same time, there was a dramatic decrease—in absolute and relative terms—in the working class in the central and peri-central areas (San Theodoro, Oregina, Lagaccio). By the end of the period, the working class was found to be most concentrated in the industrial areas, having undergone an overall decline throughout the city as a whole.

In Turin, blue-collar workers were located mainly in the northern and southern peripheries (Figure 7). Professionals, business owners and managers were concentrated in the more desirable parts or the historical centre, Crocetta and on the hills in the eastern part



Figure 5. Milan: location quotients, by employment category, at *zona di decentramento* level, 1991.

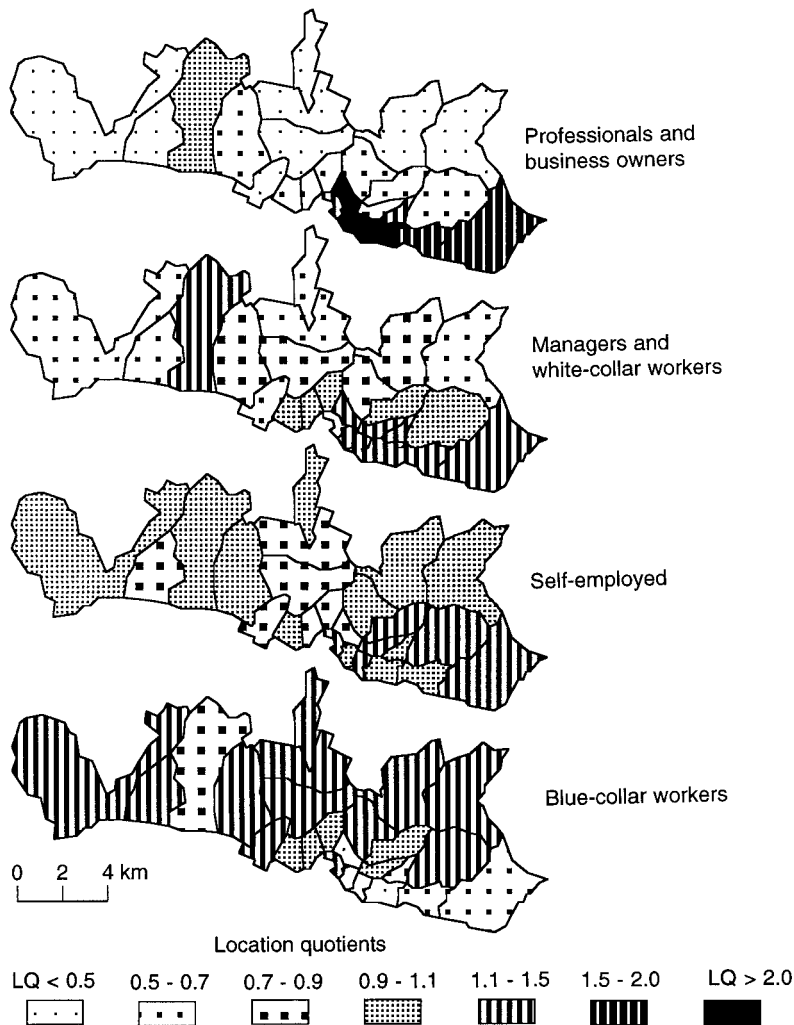


Figure 6. Genoa: location quotients, by employment category, at *zona di decentramento* level, 1991.

of the city (Cavoretto). White-collar workers and the self-employed were generally more diffused.

Each of the groups at the top of the socio-economic hierarchy has been shown to be important in terms of its degree of segregation in all three cities. In the case of Turin, Figure 8 provides a more detailed representation of the evolution over time of location quotients for professionals at a lower scale of analysis. In 1981, the degree of relative concentration was found to exceed 4 in a number of areas. By 1991, the number of areas with a location quotient over 4 had increased,

while the relative concentrations of professionals within these areas had also risen. Not only have these trends been observed for managers and business owners in Turin, they also apply for all three groups in Milan and Genoa.

5. Ethnic and Socioeconomic Division of Space

Data from Istat make the distinction between Italians and foreigners (*stranieri*). The latter category aggregates all non-Italians. This group is further sub-divided into residents



Figure 7. Turin: location quotients, by employment category, at *zona di decentramento* level, 1991.

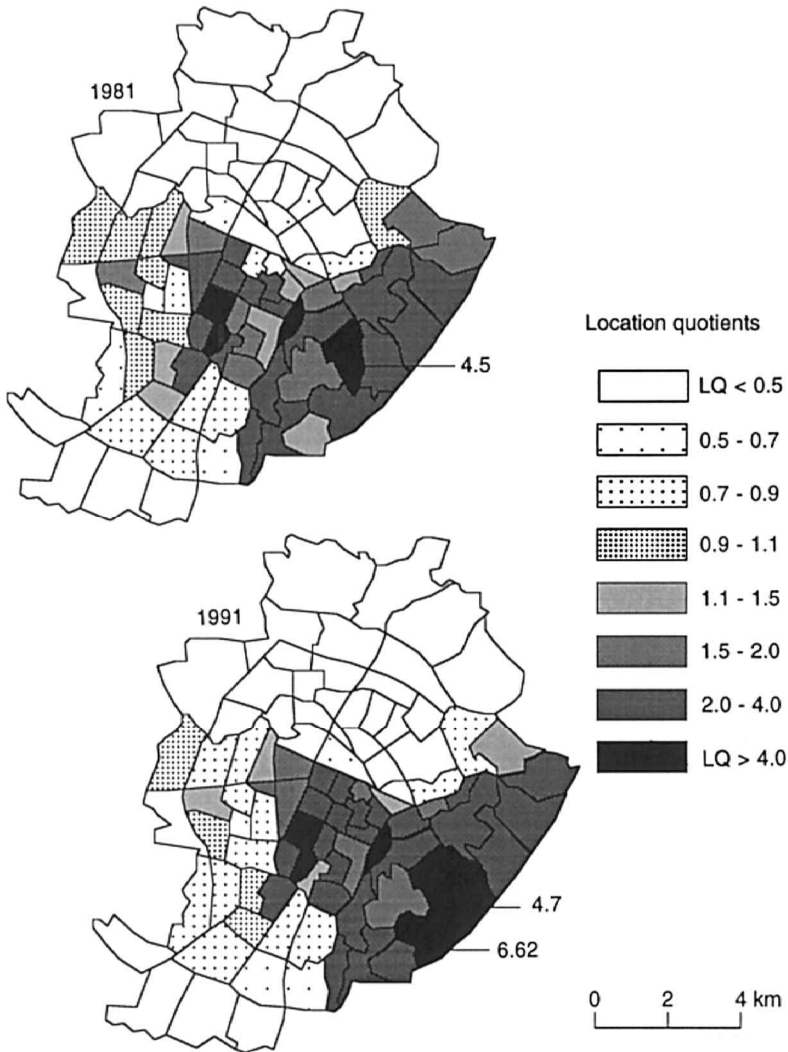


Figure 8. Turin: location quotients for professional category, at *zona statistica* level, 1981 and 1991.

and non-residents. Residents are persons who are registered at both the police office (and hold a permit to stay) and the city registry office (*anagrafe*). While non-residents may hold a permit to stay, they are not registered at the city registry office. The category 'foreigner' is composed of a large number of different ethnic groups originating from a range of countries: European Union, other European countries, Asia, Africa, North America, South America, etc. While it is therefore a crude measure of 'ethnicity' it nevertheless allows broad trends to be

identified concerning the relative spatial distributions of the immigrant and of the domestic population.

Tables 8 and 9 allow a comparison to be made between the two broad groups of non-Italians (residents and non-residents). The relative degree of segregation of each of these groups was higher than that found between the socioeconomic groups. There was also found to be a direct relationship between the number of sub-areas and the degree of segregation, while non-residents were shown to be more segregated than residents. The

Table 8. Indices of segregation and dissimilarity of non-Italians at *zona statistica* level, 1991

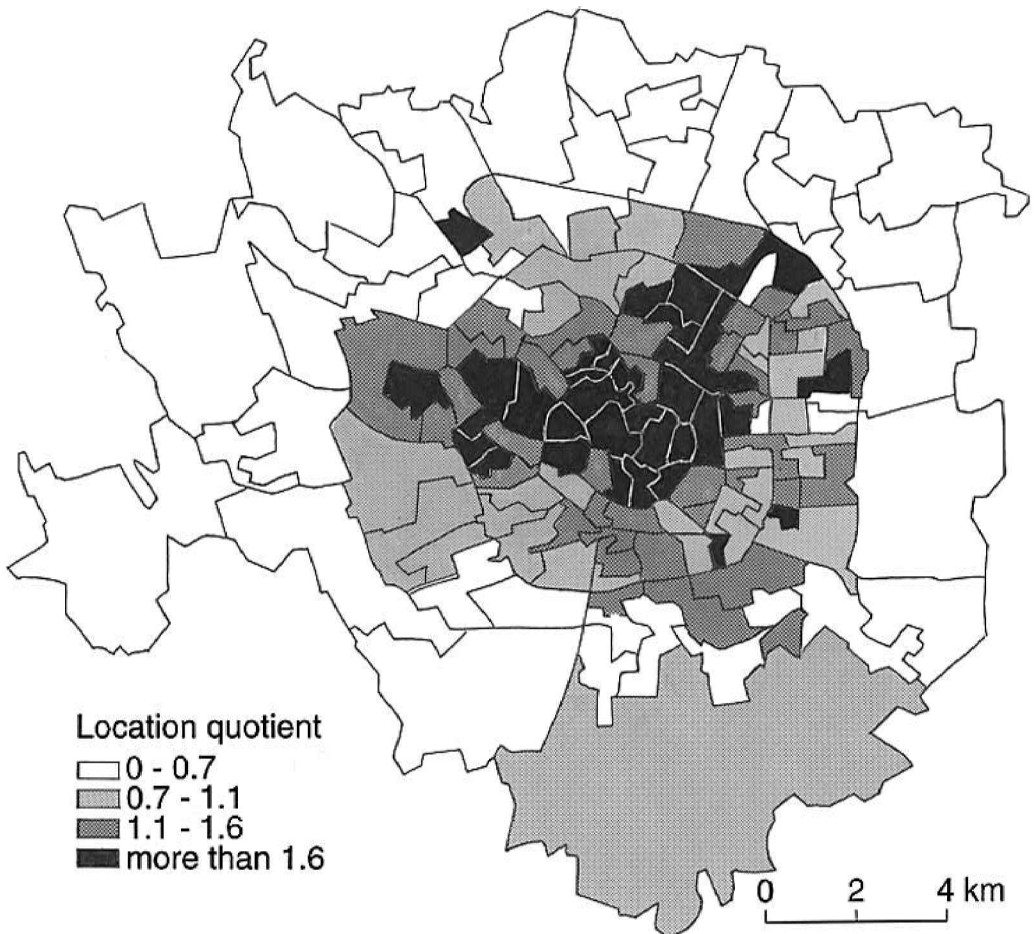
Segregation index	Turin (92)	Milan (144)	Genoa (76)
Non-Italian resident	32.3	20.2	36.4
Non-Italian non-resident	42.1	40.6	67.6
Dissimilarity	26.4	40.1	37.7

Source: CID unpublished data and ISTAT (1994a, b, c).

Table 9. Indices of segregation and dissimilarity of non-Italians at *zona di decentramento* level, 1991

Segregation index	Turin (23)	Milan (20)	Genoa (25)
Non-Italian resident	24.8	14.8	34.4
Non-Italian non-resident	33.9	28.0	67.0
Dissimilarity	16.2	24.2	38.5

Source: CID unpublished data and ISTAT (1994a, b, c).

**Figure 9.** Milan: location quotients for non-Italians, at *zona statistica* level, 1991.

Source: ISTAT, 1994a.

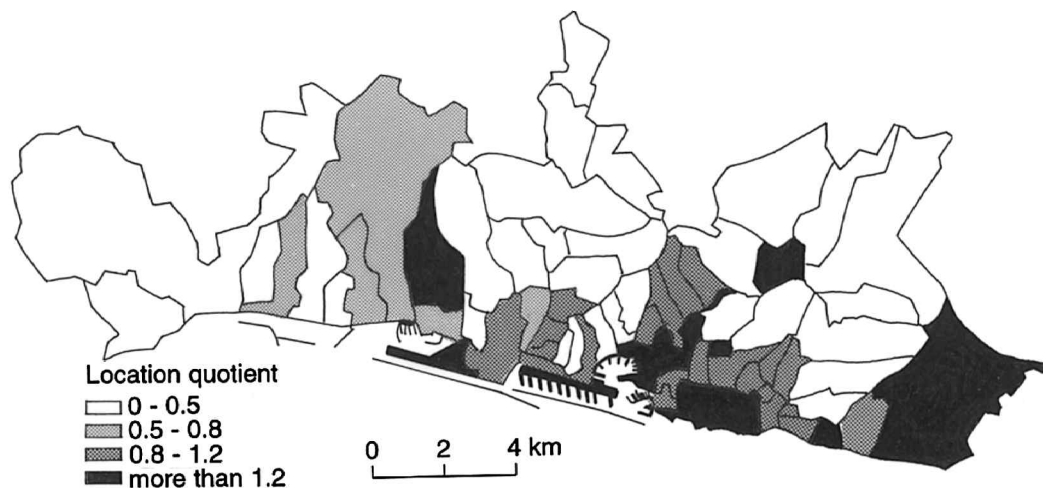


Figure 10. Genoa: location quotients for non-Italians, at *zona statistica* level, 1991.
Source: ISTAT, 1994b.

highest degrees of segregation were found in Genoa and the lowest in Milan.

Figures 9, 10 and 11 indicate that in the case of Milan and Genoa the non-Italian population was mainly concentrated in the central and peri-central areas, while in Turin it was also located in the northern working-class periphery.

The shortage of data does not allow a more detailed analysis of ethnicity in the three cities (Allievi, 1993; CARIPLO, 1996; Carvelli, 1992). However, earlier work by the present author (Petsimeris, 1993) has provided a closer examination of ethnicity by country of origin and social class in the case of Turin. This study found an increase in segregation for all ethnic groups between 1981 and 1991. By the end of the period, the most segregated groups were Africans (IS = 42) and Asians (40), followed by Europeans, while northern Italians were the least segregated (7.14). The analysis of the largest socioeconomic group, namely the working class, showed that during the 1960s and the 1970s there was a strong differentiation between those originating from the north and south of Italy, with dissimilarity indices ranging between 30 and 40. This degree of differentiation has since decreased to 16.2 in 1981, and 14.3 in 1991. The former pattern of intra-ethnic segregation has

now been replaced by higher degrees of segregation occurring between northern Italians and Asians (ID = 49.8), and northern Italians and Africans (ID = 41.5).

The areas in which the ethnic segments of the working class were found to be relatively concentrated were not the traditional working-class neighbourhoods, but the historical centre and the peri-central sub-areas of San Salvario and Cenisia. The largest concentrations were recorded in decaying housing in the north of the historical centre and Valdocco where Porta Palazzo is located—the largest retail market of the city. There were notable concentrations of Asians in the upper middle-class areas. This was mainly due to gender division, as female Asians were employed as live-in domestics by households in these areas. Europeans were located in the east and north-east of the city: Regio Parco, Madonna del Pilone and Cavoretto.

7. Conclusions

Despite the difference in size and economic base of the three cities, the foregoing analysis has identified a number of common trends:

- (1) All three cities were undergoing de-urbanisation, with the highest degrees of

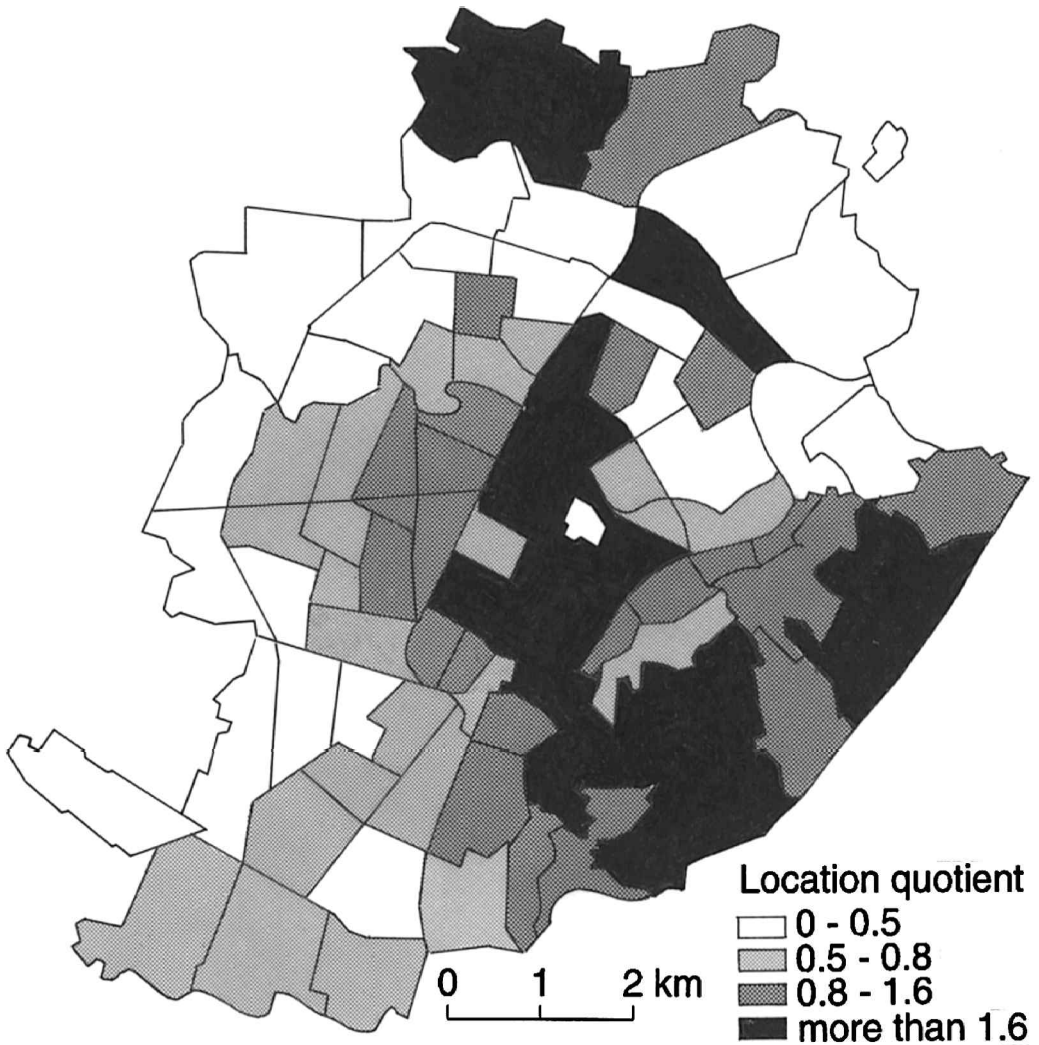


Figure 11. Turin: location quotients for non-Italians, at *zona statistica* level, 1991.

Source: ISTAT, 1994c and CID unpublished data.

decline occurring amongst the working class (deproletarianisation).

- (2) Despite the tertiarisation of the economy and the de-industrialisation of the three cities, there was a stagnation or decline in the middle-lower socioeconomic groups (white-collar workers) which was not compensated for by significant increases in the numbers of professionals, managers and business owners.
- (3) The analysis of segregation showed that the most segregated groups were professionals, managers and business owners.

White-collar workers and the self-employed were the least segregated groups, while blue-collar workers were intermediate in terms of their degree of segregation. This pattern was found to apply in the three cities in both the Fordist and the post-Fordist eras.

- (4) Ethnic groups were found to be of increasing importance, which has qualitatively changed the social structure and geography of each of the cities.

The analysis has shown that there are two

important and parallel processes: deproletarianisation and 'embourgeoisement' (increasing relative concentrations of the wealthy). These processes are occurring in all three cities. Deproletarianisation is evidenced by a dramatic diminution, in absolute and relative terms, of the working class in all parts of the city which is most marked in the central and peri-central areas. The parallel process of 'embourgeoisement' is evidenced by the increase in professional and business owners in all areas of the city. While, in absolute terms, this is largely insignificant in the working-class areas, it is very important in the traditional upper-class residential areas, and in the peri-central neighbourhoods which are undergoing gentrification. This is leading to an increase in the social exclusivity of these areas. At the same time, in the working-class areas, the principal process is the replacement of blue-collar workers by clerical workers. In this way, the proletariat of the Fordist era are being replaced by the 'tertiary proletariat' of the post-Fordist era.

These trends highlight that the socio-economic structure of the post-Fordist city is indeed complex. The hypothesis of professionalisation (Hamnett, 1994) has oversimplified this complexity in at least one important respect. The 1981-91 analysis of socioeconomic groups, which made a distinction between those who were employed and the self-employed, found that the increase in professional and business owners was mainly due to the increase of self-employed workers in both of these groups. Self-employed professionals and business owners in Italy do not generally control large organisations, rather they are more likely to be the sole employee of their own company.

A second way in which the complexity of intra-urban space has been oversimplified is in the thesis of social polarisation as a process of absolute increase at the two extremes of the social hierarchy (Sassen, 1991). The analysis of the three cities has shown, first, that the working class is declining in both absolute and relative terms, while the middle classes still constitute an important element of the social hierarchy. And, secondly, that

although ethnic groups now comprise one of the elements of the social structure of the city, their relative importance is small in the total population and with each social group.

The conclusions to this article are based on the analysis of three Italian cities. They should not therefore be treated as general conclusions which apply in equal force to cities of different scale and economic base. More work needs to be done on individual cities, drawing on a wide range of social, ethnic and economic variables, before it is possible to identify the relationship between the degree of the social division of space and the rank of a city within the urban hierarchy. Hopefully, this work will help to reduce the degree of overgeneralisation within existing theories of the social division of intra-urban space. In the case of the three Italian cities, further work needs to be done on linking the dynamics of the social division of space, and in particular the social and ethnic segmentation of inter- and intra-urban flows.

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Appendix

Index of Segregation

The index of segregation (IS) gives a measure of the differentiation of one social group in relation to the total of other social groups:

$$IS = 1/2 \sum_{i=1}^n [x_i - y_i] 100 \quad (1)$$

where, x_i represents the percentage of the x social group in the i -th area; y_i the percentage of all the other social groups in the i -th area; and n is the number of areas considered.

The values of the index of segregation range from 0 to 100, which respectively represent perfect distribution (social mix) and maximum segregation of the social groups analysed.

Index of Dissimilarity

The index of dissimilarity (ID) gives a measure of the compatibility or incompatibility of two social

groups' residential location. The values of the index range from 0 to 100, which respectively represent perfect similarity and extreme dissimilarity.

$$ID = 1/2 \sum_{i=1}^n [x_i - z_i] 100 \quad (2)$$

where, x_i represents the percentage of the x social group in the i -th area; z_i the percentage of the z social groups in the i -th area; and n is the number of areas considered.

Analytical Indices

The analytical indices are the ones which measure the relative concentration of a social or ethnic group in urban sub-units. In the following analysis Location Quotients (LQ) have been used:

$$LQ = x_i/x_j \quad (3)$$

where, LQ represents the relative concentration of a social group x in an area; x_i is the percentage of a social group within the i -th area; and x_j is the percentage of the same group within the wider metropolitan area.

The values of LQs are all positive. An LQ of < 1 represents relative underrepresentation of the social group in a zone. If $LQ = 1$, the representation of a social group in a zone is equal to the overall average. If LQ is > 1 , there is relative overrepresentation of a social group in a zone.