

# Socio-spatial differentiation and residential segregation in Delhi: a question of scale?

Véronique Dupont \*

*Institut de Recherche pour le Développement & Centre for Indian and South Asian Studies, Paris, France*

Received 21 November 2001; received in revised form 28 December 2002

## Abstract

This paper focuses on the pattern of social-spatial differentiation and segmentation of the metropolitan area of Delhi. The main objective is to analyse the mechanisms of residential segregation and the factors that explain it both at the micro- and macro-level. In the context of the Indian society and its caste system traditionally associated with strong social and spatial segregation, we try to appraise the extent to which the metropolitanization process in Delhi engenders original forms of spatial segmentation or perpetuates and strengthens the traditional forms of socio-spatial divisions. At the level of the global spatial organization of the urban agglomeration, our objective is twofold: to analyse the factors that shaped the urban landscape and introduced spatial discontinuity, from physical barriers to the different historic periods and the impact of town planning; to analyse the residential pattern of different segments of the urban population, in order to detect whether certain economic and socio-cultural attributes generate a pattern of segregation. We then pursue a more detailed investigation at the level of a zone, based on the case study of Mayur Vihar–Trilokpuri in east Delhi. We analyse the residential practices developed by different socio-economic groups, their strategies as regards the occupation of the geographical and economic space, their tendency to residential clustering that leads to a pattern of social segregation at the level of the neighbourhood. In this perspective, the links between the urban policies at the macro-level and the individuals' residential practices at the micro-level are also examined.

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*Keywords:* Delhi; Urban development; Town planning; Residential segregation; Socio-spatial differentiation

## 1. Introduction

This article focuses on the pattern of socio-spatial differentiation and segmentation of the metropolitan area of Delhi. The main objective is to analyse the mechanisms of residential segregation and the factors that explain it both at the micro- and macro-level, including the impact of the residential strategies of the households as well as the role of the state through urban policy and planning. In the context of Indian society and its caste system traditionally associated with strong social and spatial segregation, we shall try to appraise the extent to which the metropolitanization process in Delhi engenders original forms of spatial segmentation or

perpetuates and strengthens the traditional forms of socio-spatial divisions.

At the level of the spatial organization of the urban agglomeration as a whole, our objective is twofold:

- to analyse the factors that shaped the urban landscape and introduced spatial discontinuity, from physical barriers to the different historic periods and the impact of town planning;
- to analyse the residential pattern of different segments of the urban population, in order to detect whether certain economic and socio-cultural attributes generate a pattern of segregation.

We shall then pursue a more detailed investigation at the level of a zone, based on the case study of Mayur Vihar and Trilokpuri in east Delhi. We shall analyse the residential practices developed by different socio-economic groups, their strategies as regards the occupation of the geographical and economic space, and

\* Address: Cultural Section of the Embassy of France, Centre de Sciences Humaines (CSH), 2 Aurangzeb Road, 110 011 New Delhi, India. Fax: +91-11-23-01-84-80.

E-mail address: [veronique.dupont@csh-delhi.com](mailto:veronique.dupont@csh-delhi.com) (V. Dupont).

their tendency to residential clustering that leads to a pattern of social segregation inside the neighbourhood.

In this study, the concept of segregation refers to its empirical form as: “spatial distinctions among the residential zones of population groups living in the same [urban] agglomeration” (Brun, 1994, p. 22). This socio-spatial division of the urban area may result from institutional principles of social organization, or may be the outcome of individual or collective actions, deliberate or not (Grafmeyer, 1994). This broad and neutral initial definition will allow us, however, to broach different conceptions of what is called ‘segregation’: segregation as a form of unequal spatial distribution of population groups in the space; segregation as a process relying on various mechanisms of residential and social clustering, filtering, selection and/or exclusion; segregation as a problem revealing social ostracism and/or discrimination, relegation, isolation of vulnerable and underprivileged groups; (Grafmeyer, 1994).

## 2. Pattern of organization and functional specialization of the urban space

Studies of Delhi usually stress the strong differentiation in the spatial organization of the capital. <sup>1</sup> At a city-wide level, Delhi appears, indeed, as a city without spatial continuity, a mosaic of very contrasted sectors. As it will be shown in this section, the pattern of organization of the urban space is marked by a series of factors, including geography and physical barriers, the different historic periods, from the Mughal rule to the British rule, the trauma of Partition and the Independence, and the impact of the independent Government, through its efforts of town planning and in asserting the status of Delhi as a capital city. All these factors not only contributed to shape the urban landscape, but have also influenced the socio-economic composition of the population residing in various localities. Endogenous forces are also to be taken into consideration, conforming to the laws of the real-estate market, or to the search for a better proximity between place of residence and place of work; furthermore these forces can work against the attempts by the Delhi Administration to regulate the development of the capital.

Among the physical barriers that introduce a first type of demarcation line between urban sectors, the most important one is the Yamuna river with its large bed of agricultural land. It flows through the metropolis from North to South, separating all the zones located to the east, mainly residential zones of very varied types of settlement, but including also an industrial zone. The

second significant barrier is formed by the Aravallis Hills (or the Delhi Ridge) with its—more or less protected—natural forest, crossing the capital from the south-west to the north (Map 1).

Delhi has a history of at least three thousand years (Narain, 1986), and its area has been “the site for a succession of cities, each of which served as the capital or citadel or centre of a vast domain” (Frykenberg, 1986, p. xxii). Historians distinguish 12–14 distinct cities in this area, “according to one’s idea of what constitutes a separated city” (Spear, 1986, p. 469; Frykenberg, 1986). In order to understand the present socio-spatial organization of the capital, it is necessary to go back at least to the construction of New Delhi at the beginning of the 20th century by the British, as an urban entity radically different and separate from the old city built at the 17th century by the Mughals.

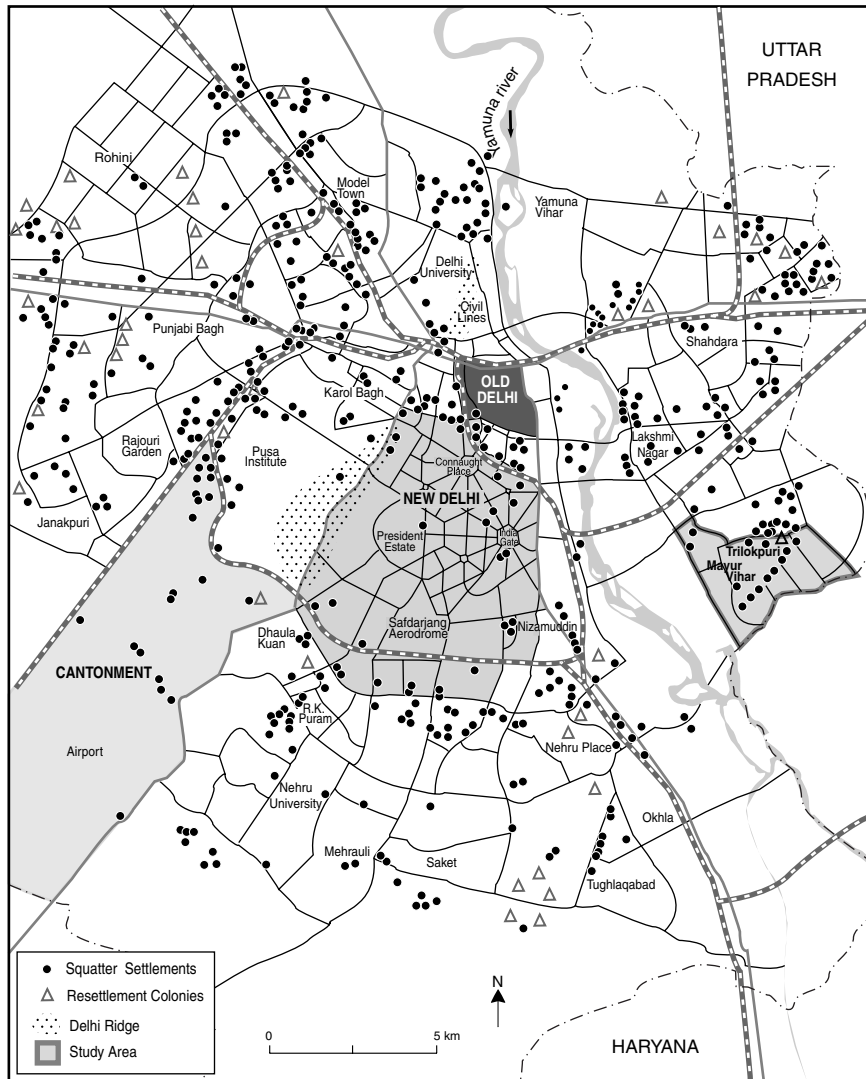
### 2.1. *The construction of New Delhi: a pattern of urbanization based on segregation*

The foundation of New Delhi by the British in the 1910s followed the decision in 1911 to transfer the capital of British India from Calcutta to Delhi. It was eventually decided to establish the new town south of the old city, in a zone where, at that time, only a few villages were settled (Metcalf, 1986; Gupta, 1998) (Map 1). The subsequent development of the capital city, especially in the post-independence era (i.e. after 1947) showed that this location choice allowed the urban area to spread and extend far beyond initial predictions. Hence, the population of the Delhi urban agglomeration increased from 200,000 in 1911 up to 700,000 in 1941, with an increasing growth rate. Today Delhi is a metropolis with about 13 million inhabitants (12.8 millions at the 2001 census). <sup>2</sup>

The construction of New Delhi introduced a radical discontinuity in the spatial organization of the entire city. The planning and building of the new town had been placed under the responsibility of two British architect-planners: Edwin Luytens and Herbert Baker. “The possibility of creating the new city to harmonize visually with the old was never seriously considered. New Delhi was conceived as a purely British settlement juxtaposed to the Indian city” (Evenson, 1989, p. 148). Rather than a mere juxtaposition, it was, in fact, a pattern of urbanization based on deliberate segregation between Old Delhi and New Delhi, designed by the British planners. Hence, on the one hand stands the compact indigenous town, the walled city of Shahjahanabad founded by the Mughal Emperor Shah Jahan in 1638, “with its intricate web of narrow streets and

<sup>1</sup> See for example: Mitra (1970), Sundaram (1978), Brush (1986), Nagpaul (1988), VHAI (1993), Kumaria (1998).

<sup>2</sup> For an analysis of the spatial and demographic growth of Delhi, see Dupont (2000b).



Sources: *Census of India 1991, District Census Handbook, Delhi*, Directorate of Census Operation, Delhi.  
 Slum & Jhuggi Jhopri Department, Municipal Corporation of Delhi, 1990.  
 Sabir Ali, *Slums within Slums: a study of resettlement colonies in Delhi*, New Delhi: Council for Social Development, 1990.  
 Digitized map: UMR ESPACE, Montpellier.

Map 1. Delhi urban agglomeration: some elements of differentiation of the urban space—the old and the new city, squatter settlements and resettlement colonies (1990) (Ali, 1990).

densely packed buildings” (Evenson, 1989, p. 148).<sup>3</sup> On the other hand, separated from the former by a large

<sup>3</sup> On the original morphology of the Mughal city and its evolution till the mid-20th century, see: Navqi (1986), Blake (1986), Noe (1986) in Frykenberg (1986); Gupta (1998). It is worth noticing here that, before the Mutiny of 1857, “the British accepted the walled city, and did not segregate themselves in a ‘Civil Lines’. [...] It was this fact—that the British lived and built in ‘Indian territory’—that made Delhi before 1857 different from the Presidency towns, where there was racial segregation.” (Gupta, 1998, pp. 15–16). A Civil Lines for the exclusive residence of the European developed after 1857, in the northern suburbs, “once it was decided the European should live away from the ‘native city’. [...] it was separated from the city by the *cordon sanitaire* of the gardens” (Gupta, 1998, p. 58).

strip of land cleared and landscaped, lies the new colonial town, the spread garden city with its geometric plan, its large roads and vast dimensions. Furthermore, according to Gupta (1998, p. 181) it was “the combined fear of the old town encroaching on and spoiling the symmetry of the new, and of the ‘Indian town’ (the term used now for Delhi city, with a patently racist overtone) polluting the imperial one [that] led to the first serious attempt at long-term town planning for Delhi’s urban area”.

This opposition between Old Delhi and New Delhi lingered on after the Independence of the country in 1947. It remains till today as an evident element of differentiation in the urban landscape as well as the

socio-spatial organization of the capital. The figures of population densities illustrate clearly the contrast between the old and the new city: in 1991 (as per the census) the population density reached 616 inhabitants per hectare in the walled city (which covers an area of almost 600 ha); whereas in the area corresponding to the town of New Delhi planned by the British, the population density was only 70 inhabitants per hectare (for an average density of 135 in the entire urban agglomeration).

The opposition between the old and the new city is also a recurrent theme in publications about the Indian capital and its ecological pattern. Among others, Mitra concluded in 1970: “The problem of Delhi as a capital city today is a problem of integration” (1970: 48). More than twenty years later, this dual structure is still prominent, and directly inspired the title of a publication: “Delhi: the tale of two cities” (VHAI, 1993).

## 2.2. *Urban planning, types of settlement and discontinuity in the urban landscape*

The spatial organization of Delhi is not only marked by the city’s different historic periods, but also by post-independence urban planning as well as endogenous forces. Beyond the duality between Old and New Delhi, some authors emphasize a more complex internal structure, including “several contrasting cities or urban areas” (Pugh, 1990, p. 198; Sundaram, 1978). With reference to the various American ecological models of cities, Nagpaul, 1988, p. 187 identifies the pattern of multiple nuclei development as the most relevant model to explain the urban configuration of Delhi.

The various modes of production of the built up area, and at the outset the state intervention, are directly reflected in the urban landscape. Delhi is the Indian city where new ideas of town planning were launched after the Independence, and where the first Master Plan was elaborated and implemented since 1962 (Jain, 1990). Yet, although on the one hand urban land-use and land development was controlled by the administration, and new constructions submitted to numerous regulations, on the other hand, a large part of the urbanization process has taken place in an unplanned and informal way. Thus, the pattern of urban development and spatial organization is the outcome of the relationship between planning attempts made by the Delhi Development Authority (the central administration in charge of the implementation of the Master Plan and of land development) and private initiatives and responses.

The first housing programme launched in the Indian capital by the newly independent government aimed to face the urgency of thousands of emigrants from Pakistan who sought refuge in Delhi at the time of the partition of the country. Thus, in 1947 and just after, Delhi, whose population was about 900,000 at the time, had to

receive 495,000 refugees from western Punjab and Sindh, while 329,000 Muslims left the capital and migrated to Pakistan.<sup>4</sup> Many refugees’ rehabilitation colonies were subsequently constructed during the late 1940s and early 1950s (Rao and Desai, 1965; Datta, 1986).

Since the early 1950s, the government also built housing estates for its employees who represent a very significant share of the working population in a national capital city like Delhi. Many such residential estates (locally called ‘colonies’) were constructed in the southern part of the town; they have engendered a pattern of residential segregation, not only between the government employees and other workers, but also among the government employees themselves since they have been supplied with different categories of housing according to their official status and range of income. This specific feature of the urban landscape, and its consequences in terms of segregation along socio-economic lines, has been underlined already in studies on Delhi (Sundaram, 1978, p. 121; Nagpaul, 1988, p. 188, and even qualified as “salaried apartheid” by Mitra (1970, also quoted by Nagpaul, 1998, p. 188). This pattern of residential segregation could be interpreted as a reproduction of the residential pattern established by the British colonial administration in their planning of New Delhi, which “reflected the civil service hierarchy, with upper-level employees segregated from lower-level employees, and the British separated from the Indians” (Evenson, 1989, p. 150). The most significant element of this socio-spatial hierarchy was the distance between the place of residence and the seat of power (the Viceregal Palace, converted into the *Rashtrapati Bhawan*—the Presidential Palace—in the post-Independence capital). From another viewpoint, the spatial organisation of housing estates built for government employees after Independence can be read as a revival of the traditional pattern of spatial and residential segregation based on caste origin, and applied here to the rank and status in the administrative service.

The Delhi Development Authority has played a direct role in the urban development of the capital through its large-scale acquisition of agricultural land geared towards the implementation of various housing programmes:<sup>5</sup> the construction of flats for sale to private households of different income groups (locally known as ‘DDA flats’); the development of land and the allotment of plots on a 99 year lease-hold basis to private households and co-operative group housing societies; the servicing and allotment of land for the resettlement of

<sup>4</sup> Source of data: Ministry of Rehabilitation, *Annual Report on Evacuation, Relief and Rehabilitation of Refugees, 1954–1955* (quoted in Datta, 1986).

<sup>5</sup> For a recent and synthetic presentation of the typology of various housing estates in Delhi, see Misra et al. (1998).

slum dwellers and squatters evicted from central areas of the city. This last policy which resorts to coercive measures including the demolition of slum and squatter settlements was pursued most actively during the ‘Emergency’ (1975–1977) during which time about 152,300 families<sup>6</sup> were forcibly evicted and sent to ‘re-settlement colonies’, all located—at that time—on the urban outskirts (Map 1). As it will be illustrated with the case study of the Mayur Vihar–Trilokpuri zone, each of these types of housing estate not only presents distinct architectural and urbanistic features, but also tends to house specific socio-economic groups of the urban population.

The process of urban expansion entailed the annexation of agricultural land. More than one hundred original villages that were absorbed in the urban agglomeration can be identified,<sup>7</sup> and many of them still appear like enclaves within planned areas (Lewis and Lewis, 1997). There is a marked discontinuity in the urban fabric between these urbanized villages characterised by their vernacular architecture and their organic street pattern, and the planned housing estates that surround them. Furthermore, these two categories of urban space are submitted to different sets of regulations, hence exacerbating this contrast in development pattern.

Public housing policies have, however, failed to respond to the demand of large sections of the urban population, in particular the lower-middle classes and the poor who have had to resort to the informal housing sector. Hence, the proliferation of ‘unauthorized colonies’ in the urban–rural fringe on agricultural land not meant for urbanization, according to the stipulations of the Delhi Master Plan. These estates were developed by unscrupulous entrepreneurs who indulged in illegal subdivision and selling of unserviced land previously purchased from agriculturists. The attitude of the Delhi Development Authority oscillates from *laissez-faire* to a posteriori regularisation, without excluding selective demolition of unauthorised constructions. In addition to nearly 800 unauthorised colonies that were regularised in the sixties and seventies (Banerjee, 1994), another 1300 unauthorised colonies have come up in the following two decades (Government of National Capital Territory of Delhi, 1996, p. 11).<sup>8</sup> In 1998, the population of this new lot was roughly estimated at almost 3 millions,<sup>9</sup> which

would amount to one fourth of the total population of the capital city.

As for the poorer sections of the urban population, they are relegated to squatter settlements and precarious housing (locally known as *jhuggi-jhonpri*), which have also continued to proliferate despite ‘slum clearance’ and resettlement programmes. In 1999, it was estimated that about 600,000 families lived in a thousand or so ‘*jhuggi-jhonpri* clusters’ which varied in size from a dozen dwelling units to 12,000.<sup>10</sup> This figure corresponds to about 3 million persons or 25% of the total population of Delhi. The population density in the big clusters may be very high owing to the cramming together of families in one-room huts, the frequent addition of one floor on the reinforced structures, and very narrow lanes. Although the largest clusters are generally located in the suburban areas, squatter settlements are found in all sections of the capital, occupying not only vacant land on the urban fringe (at the time of their emergence), but also all the interstices of the urban fabric wherever there is vacant land and where surveillance by the legal authorities is limited (Map 1).<sup>11</sup>

### 2.3. Functional specialization of the urban space

A mixed land-use pattern, with a combination of residential use and economic activities, is generally acknowledged as a typical feature of traditional Indian cities that has partly persisted in the post-independence period (Brush, 1962). Mixed land-use was equally found in Shahjahanabad during the Mughal period (1638–1803) (Navqi, 1986; Blake, 1986). This pattern is still prevailing in the Old City of Delhi, which combines extremely high population densities and a remarkable concentration of commercial and small-scale industrial activities (Mehra, 1979). The association of residential use with commercial and small-scale manufacturing activities is also observed in the urbanized villages, and in informal types of settlements: in the unauthorized colonies of the urban periphery, as well as—to some extent—in the squatter settlements.

The construction of New Delhi introduced a marked functional division of the urban space. The main function assigned to New Delhi was administrative and political, including residential quarters for government employees, whereas industrial function was not envisaged for the new town. Today, the Indian capital city is a polynuclear metropolis, with several district business centres and commercial complexes, in addition to Connaught Place, the Central Business District inherited

<sup>6</sup> Source of data: Delhi Development Authority (see Jain, 1990, p. 173).

<sup>7</sup> In 1990, the Delhi Development Authority identified 106 urban villages (DDA, 1990, p. 7). For a longitudinal perspective over the 20th century, see Diwakar and Quresh (1993).

<sup>8</sup> This figure is quoted for the year 1995; it includes 1071 colonies considered for regularisation under the current proposed policy.

<sup>9</sup> Estimation provided by *Common Cause*, a citizens’ association that took the matter of unauthorised colonies to the Delhi High Court, against their regularisation.

<sup>10</sup> Source of data: Slum & Jhuggi Jhonpri Department, Municipal Corporation of Delhi.

<sup>11</sup> The numerous evictions of squatter settlements in 2000–2001 are however likely to have partly altered this spatial pattern.

from the British colonial period, and which was built at the junction of New Delhi and the old city. The administrative functions remain dominant in New Delhi. The southern sector (beyond New Delhi and excluding the south-eastern fringe) accommodates mainly residential areas, but also several flourishing commercial complexes and a major business district (Nehru Place) as well as an institutional area. The main industrial zones are, on the other hand, located in the western and north-western sectors, with in addition an important planned industrial estate in the south-east (Okhla) and another notable industrial zone in the north-east (Shadhara). However, an important point to underline is that, in contemporary Delhi, the economic activities remain scattered all over the urban area, including industrial production. These industrial activities take place not only in large planned industrial estates, but also in small-scale units found in the old urban core as well as in the urbanized villages or in the many unauthorized colonies in the urban periphery.

As shown in another article examining the present spatial organization of Delhi (Dupont and Mitra, 1995, based on the 1991 census data), the three main economic functions of the capital (administrative, commercial and industrial) have generated a contrasting pattern of residential distribution for the workers employed in corresponding economic sectors, with a clear division between the south and north of the urban agglomeration. Workers employed in the community, social and personal services tend to be concentrated in New Delhi and the southern urban extensions, where most of the government employees' housing estates have been built. Conversely, workers engaged in trade and commerce are strongly over-represented in the northern half; some major residential concentration of traders and businessmen correspond to the location of rehabilitation camps for refugees from Pakistan. As for workers employed in manufacturing industries, they tend to reside near the main industrial areas, with important concentrations in the northern part of the city but also in the south-east.

This North/South opposition was already instituted by the British rulers when they established themselves south of the old Indian city. Within the colonial New Delhi, the class separation also followed a North/South hierarchy, "with the most prestigious lots south of the great monumental axis and the low- and middle-income groups mostly housed on the north, or 'wrong side of Rajpath'" (Evenson, 1989, p. 189). As this author further underlined: "After Independence, the south continued as a magnet for middle- and upper-class residence, as well as providing sites for prestigious governmental and educational institutions. District commercial centres containing offices, shops, theatres, and luxury hotels also came to characterize the southern edge of the city" (1989, p. 189). The urban development that took

place in the last decade has not counterbalanced this trend.

### 3. Pattern of social and residential segregation at the city level

#### 3.1. *The traditional socio-spatial pattern and its evolution*

According to the traditional pattern proposed by Sjørberg (1960) for pre-modern Asian towns, the urban morphology reflected a model of socially stratified societies, with the high status people concentrated in the centre of the town where most economic activities (arts and trade, commerce) as well as the seat of political power were also located, and with the low status people confined to the urban periphery—or even outside the city walls (Naqvi, 1968, p. 89). "On the fringes of the walled city were those separate territories, assigned to poverty", describes Gupta (1998, p. 54) for the 19th century's Shahjahanabad. As pointed out by Brush (1977), various empirical studies show how this type of urban structure has survived in many Indian cities till the 1960s. However, this author, among others (Rao, 1983; Schenk, 1986), also underlined that this pre-industrial urban pattern cannot apply strictly to the recent urban development in India, which proves to be more complex. In particular, the development of "industrializing and tertiarizing belts or strips along transport axes" (Rao, 1983, p. 174) and the emergence of new housing colonies in the peripheral sectors have disturbed the traditional indigenous pattern as well as the dual structure inherited from the colonial British rule.

Over the last decades, the historical urban core, Old Delhi, has undergone a process of transformation of its urban morphology associated with the social recomposition of the residing population. The overuse of the physical space and building infrastructure in the walled city—both in terms of residential and economic use—has contributed to the degradation of its housing stock. The better off sections of the population have tended to move out of the old city, in search of better housing conditions in less congested residential areas, leaving behind mainly people from low-income groups, in particular tenants who benefit from very low rents due to the rent control policy, and would not be able to afford alternative accommodation elsewhere in the urban agglomeration (TCPO, 1975). Besides, the proliferation of commercial and manufacturing activities, along with the related services which provide a large number of informal job opportunities, have attracted a floating population of male migrant workers whose residential integration remains extremely precarious (Mehra, 1979, p. 46). Thus, at night many of them are found sleeping under the verandas in bazaars, on pavements and other

open grounds, or in night shelters run by the municipality for homeless people.<sup>12</sup>

The residential pattern of the upper-class population was summarised as follows by Brush (1986), on the basis of a factor analysis of the 1971 census data:

In Delhi there is a three-way separation of the upper-class population. The traditional urban population of merchants, bankers and educated people with high social status in Old Delhi is contrasted, on the one hand, with the new upper and middle-class of merchants and other entrepreneurs of largely Punjabi refugee origin in Karol Bagh and West Delhi and, on the other hand, with the more diverse elite of New Delhi and South Delhi associated with the functions of India's national government (p. 148).

Our own analysis of the 1991 census data and functional specialisation of the urban space (see above and Dupont and Mitra, 1995) confirms the persistence of this residential pattern. The urban elite's residential preferences for New Delhi and the southern sector is evidenced by the morphology of the housing estates and in accordance with the land-use characteristics as described above; it is further corroborated by higher literacy rates (Dupont and Mitra, 1995). There is also a recent tendency of the upper-classes to move to the outskirts of the metropolis, in farmhouses and posh residential complexes that have developed south of the Delhi Territory and attracted well-off families in search of a better living environment (Dupont, 2001).

As for the lower-class people, Brush's study demonstrated that in 1971 they were "confined either to congested areas of the Delhi urban core and its immediate vicinity or in lesser numbers to the peripheral sectors and rural fringes" (1986, p. 148). Two decades later, this location pattern is still relevant, as shown by the particularly high percentages of illiterate population in census divisions located either in Old Delhi and its extension, or in peripheral urban areas with stretches corresponding to industrial zones (Dupont and Mitra, 1995). However, the demographic balance between the lower-class population living in the urban core and that living in the peripheries is changing as the less congested peripheral zones offer more affordable housing possibilities, or more accessible sites for squatting. The proliferation of unauthorised colonies in the urban-rural fringes and the development of the largest squatter settlements in the suburban areas (as expounded above) reflect this trend.

Yet, this pattern of socio-spatial differentiation needs to be qualified by a more detailed analysis conducted at a finer scale. The residential location of the scheduled caste population, the most underprivileged social group identified for specific public benefits and corresponding to the ex-untouchable castes, allows us to illustrate this point.

### 3.2. *Social ostracism and residential pattern of the ex-untouchable castes*

The Hindu socio-religious hierarchy underpinning the traditional caste system also implies a segmentation and hierarchy of space, and Sanskrit treatises on architecture recommended spatial separation of castes (Begde, 1978). At the lowest rank of the social ladder, the residential segregation of the untouchables was the most flagrant and enduring example of this observance: they were and still are systematically relegated to hamlets outside the central village (Deliège, 1995). In the towns, the untouchables, specialising in "unclean" occupations, were similarly kept apart, relegated to the neighbourhoods located on the periphery. This principle also applied to the Mughal cities, as explained by Hambly (1982, p. 451): controlling "the segregation of the butchers, sweepers and washers of the dead" was part of the miscellaneous duties of the *kotwal* (prefect of police).

Clearly, contemporary social dynamics, industrialisation and urbanisation have profoundly changed segmentation and spatial organisation in Indian society. The growth of cities tends to encapsulate and engulf initially segregated neighbourhoods as well as surrounding villages. As built-up areas become extended, groups that were initially relegated to the fringes find themselves inside the agglomeration. Notwithstanding, a review of studies dealing with socio-spatial organisation in contemporary Indian cities confirms the significance of caste as a factor of residential clustering.<sup>13</sup> The *Harijan*<sup>14</sup> *bastis* especially—the quarters where the ex-untouchables live—are still an urban reality that testifies the persistence of social ostracism manifested in terms of residential segregation. A scrutiny of the index of the *Eicher City Map* of Delhi (1996) reveals 13 such localities that are clearly identified by their names: *Harijan basti*/colony, sweeper colony, Balmiki (a caste of sweepers) *basti*/colony, Dr. Ambedkar (the historical leader for the emancipation of untouchables) Colony/*Nagar*. Many other smaller ex-untouchable quarters are not marked in this city map, especially those located in

<sup>12</sup> For a detailed study of the residential and economic practices of the houseless migrants in Old Delhi, see Dupont (2000a).

<sup>13</sup> Noble and Dutt (1977), Gandhi (1983), Schenk (1986), Racine (1986), Trivedi (1996), Vaguet (1997), Auclair (1998), Saglio-Yatsimirsky (2002).

<sup>14</sup> The term *Harijan* was coined by Gandhi to refer to untouchables; it literally means the people or children of Hari, the god Vishnu.

urbanised villages, as we could check ourselves in the zones where we have conducted field surveys.

The analysis of the residential distribution of the scheduled caste population at the level of the census division, on the basis of the 1991 census data,<sup>15</sup> provides further evidences (Map 2). The percentage of scheduled castes in the total population of Delhi Union Territory in 1991 was 19%, with considerable variations within the urban area: from less than 5% in certain divisions up to a maximum of 56%. Furthermore, half the scheduled caste population is concentrated in 40 census divisions whose corresponding share in the total urban population is only 27%. The pockets showing high percentages of scheduled castes are not however concentrated in the same geographical sector of the urban agglomeration; they are rather scattered, some being located in the central area, including certain divisions of Old Delhi as well as New Delhi, and others in the peripheral zones. Such a spatial pattern of local concentration *cum* global dispersion also applies to the location of squatter settlements: as seen above, the ‘*jhuggi-jhonpri* clusters’ (slums pockets) were found in all sections of the capital, occupying not only vacant land in the urban fringe, but also all the interstices of the urban fabric (Map 1).

Our 1995 survey on population mobility and residential practices in the Delhi Metropolitan Area (see Section 4) shows that the percentage of scheduled caste population is generally significantly higher in the squatter settlements than in the surrounding residential neighbourhoods, and than in the population of Delhi as a whole (19% as per the 1991 census). For example, this percentage reached:<sup>16</sup>

- 39% in Rajiv Gandhi Camp (a big slum pocket adjoining the Nehru Stadium, in New Delhi) as against 7% in the nearby government blocks of flats;
- 36% in the slums of the Badli-Rohini zone (in the west-northern periphery) as against 10% in the planned housing sectors;
- 64% in Tigri *jhuggi-jhonpri* Camp (in the southern periphery) as against 25% in the adjoining unauthorised colony and the DDA flats for weakly economic sections (the corresponding census division on Map 2 for 1991 does exhibit one of the highest percentages of scheduled castes);

- 39% in the slum pockets of Noida (a new industrial township in the eastern suburb) as against 2% in the planned sectors.

These evidences substantiate the link between the spatial residential pattern of the scheduled castes and the scattered distribution of the squatter settlements in Delhi.

Thus, two factors that contribute to the present residential clustering of the scheduled caste population and their spatial distribution within the urban agglomeration were identified: the survival of *harijan bastis* for ex-untouchable populations who had been socially ostracised and segregated for generations in separated urban quarters or rural hamlets now absorbed in the urban spread; and the contemporary concentration of poor scheduled caste migrants in squatter settlements,<sup>17</sup> the only dwelling option they can afford in the city.

### 3.3. Residential proximity and relationships between social classes

Since these attributes (ex-untouchability, living in a squatter settlement) help to identify the lower socio-economic strata, their residential spatial pattern could be related to another observation made by Nagpaul (1988, p. 189): “a striking feature of Delhi is that even planned localities, posh or middle-class, contain a large number of temporary structures established haphazardly where domestic and lower-class workers live”. It can be also interpreted as a manifestation of what Schenk (1986, p. 183) has identified as the “two seemingly contradictory societal forces upon the socio-spatial structure of urban residence: (a) the aim to reside in socially homogeneous areas, and (b) the aim and the need to maintain relations of dependency”. The first principle would explain the existence of residential clusters based on a common socio-economic background or geographical origin in case of migrants—‘being among own people’ (as it will be illustrated in the next section). Whereas the principle of patronage would account (to some extent) for the proximity between some lower-class clusters and certain upper- and middle-class residential areas, the inhabitants of the former providing services to those of the latter.

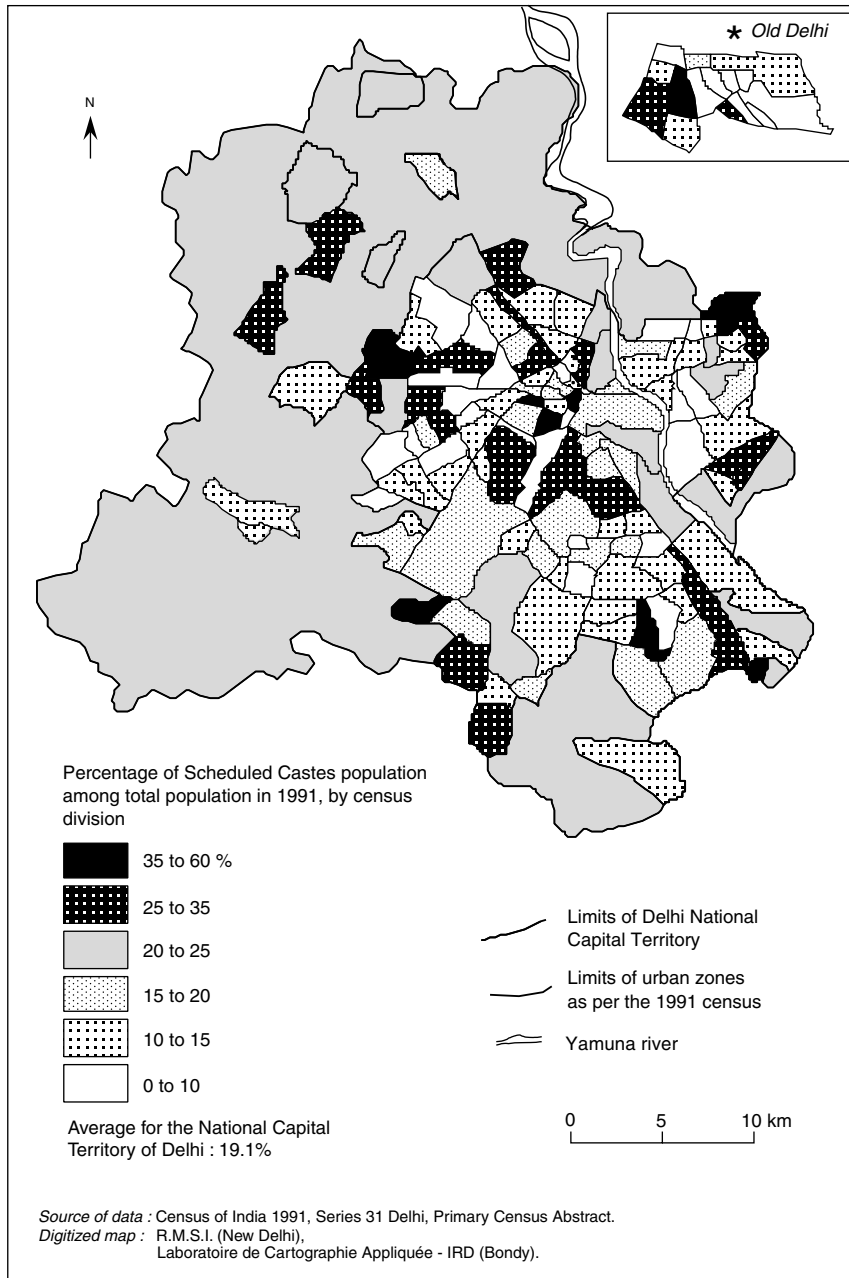
In Delhi the residential proximity between social classes is frequently associated with the development of economic relationships between the various segments of the urban population: in fact it is often a residential and economic strategy developed by the more underprivi-

<sup>15</sup> Following the abolition of untouchability by the Constitution of India (1950, Article 17) and the special provision for the advancement of the scheduled castes through the reservation of a certain quota of posts in the services under the State (Articles 15 & 16), one can presume that the identification of the scheduled castes by the Census is reasonably reliable.

<sup>16</sup> The study of the Mayur Vihar–Trilokpuri zone is detailed in the next section. As for the last two zones covered in our 1995 survey, their samples did not include squatter settlements.

<sup>17</sup> Several studies on squatter settlements in Delhi have shown that most of the households in this type of settlement are migrants. See for example Suri (1994, 130). This is also confirmed by our 1995 survey in Delhi: in the squatter settlements of the sample, the percentage of household heads who were born outside the Delhi Territory varied from 85% to 100%.





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Map 2. Residential location of scheduled castes population in Delhi National Capital Territory (1991).

leged groups. Economic relationships do not exclude tensions between classes, however, or cases of violence engendered by residential proximity and glaring inequalities in living conditions between the better-off and the underprivileged. Some incidents arise from the lack of proper sanitary infrastructure in the squatter settlements, leading therefore to the use of parks in nearby residential quarters to defecate (VHAI, 1993, p. 56).<sup>18</sup>

<sup>18</sup> In a dramatic instance, the rage of the residents in a block of flats impelled them to fire at some young from the squatter settlement defecating in their park (*Times of India*, October 1994).

Other incidents, reported by residents interviewed in affluent colonies of South Delhi (Defence Colony, DLF Qutab Enclave), pertain to accusations against the adjoining slum or urban village dwellers in the event of burglaries. In wealthy localities, like Defence Colony, where an open drain crosses the residential quarters and connects those to the nearby squatter settlements, the residents' suspicion about the slum dwellers caused the erection of fences all along the drain and on its bridges, to prevent any intrusion into the colony by this way. This illustrates the growing security phobia of Delhi's well-to-do citizens and their fear of the poor, and thus

their attempts to enclose themselves in protected housing quarters.

#### 4. Case study of the Mayur Vihar–Trilokpuri zone in East Delhi: social heterogeneity and micro-level segregation

The various types of settlement and their spatial arrangement are the outcome of the interactions between institutional and non-institutional actors: the planning efforts and urban policies of the Delhi Administration (and their limitations) on the one hand, and the responses and residential strategies of the households on the other. The case study of the Mayur Vihar–Trilokpuri zone in East Delhi provides a good illustration of the variety of situations found in Delhi in this respect. The socio-economic diversity of the residents in this zone will allow us to show how residential strategies and mobility (resulting from choices and/or more or less stringent constraints) of different social groups may lead to a pattern of social and residential segregation at a local or even micro-local scale. We shall also attempt to highlight the different factors explaining residential clustering and socio-spatial division.

##### Methodology and Data Sources

This study is part of a larger research programme on spatial mobility and residential practices of Delhi's population, and its effect on the dynamics of the metropolis (Dupont and Prakash, 1999). The methodology combined quantitative and qualitative approaches and different sources of information to integrate the following:

- an analysis of secondary data and information available on Delhi and its metropolitan area;
- a statistical survey of population samples from seven zones in the metropolitan area covering about 1700 individuals (among which 696 in the Nehru Stadium zone, 847 in Badli-Rohini, 867 in Tigri, and 2013 in Noida—to quote only the zones referred to in the previous section);
- in-depth interviews of sub-samples of individuals in some of the surveyed zones;
- the formation of a data base of background information on each zone studied, by the compilation of data and existing documents, direct observation and interviews with relevant informants (Sidhu, 1995).

Mayur Vihar–Trilokpuri was one of the selected zones, located in the eastern periphery of Delhi (Map 1). The statistical survey conducted in March 1995 in this zone covered a representative sample of 342 households, corresponding to 1798 individuals. In-depth interviews focussing on the various factors influencing the choice of residence were conducted in 1996 and 1997 with about 40 residents (Sidhu, 1996, 1997). These were completed with

a few additional interviews with secretaries of residents' associations and real estate agents in April 1999. Field work and data collection were conducted under the direction of the author, and most of the in-depth interviews used for this contribution were realised by Mriga Sidhu.

##### 4.1. *A mosaic of settlements*

Mayur Vihar and Trilokpuri form a widespread zone located in the eastern periphery of Delhi. This zone is characterised by average to very high residential densities, and rapid population growth during the last 20 years (during the 1981–1991 decade: 5–13.8% per year as against 3.9% for the entire urban agglomeration). Various modes of urbanization are found that exemplify urban expansion in the peripheries of the capital. The original villages are nowadays hemmed in by the new residential neighbourhoods that gradually developed from 1970–1975:

- unauthorized (and a posteriori regularized) colonies;
- a large resettlement colony (Trilokpuri) set up during the emergency state (1975–1977) to relocate the slum dwellers evicted from squatter settlements in the inner city;
- many blocks of flats of three to four storeys built by the Delhi Development Authority in the late 1970s and early 1980s for the middle- and low-income groups, clustered into five large 'pockets' (the 'DDA flats');
- many other blocks of flats built since 1985 by co-operative group housing societies;
- and, in the interstices of the urban fabric, slum pockets, or more precisely squatter settlement clusters with very precarious housing, sometimes just adjoining upper-class apartment blocks.

These different types of settlement correspond to very distinct segments of the housing stock in terms of housing standards and equipment (Table 1). Hence the DDA and co-operative group housing societies' apartments blocks are the only ones to provide systematically a permanent building structure and modern standards of comfort with running water, toilet, bathroom and a separate room for the kitchen. Not surprisingly, the worst housing conditions are found in squatter settlements: in most of the cases none of these facilities are available in the dwelling, while adequate civic amenities and urban services are also lacking. The over-crowding of dwellings is moreover especially acute in squatters settlements (78% of the dwellings have only one living room) but also in unauthorized colonies (66% of the dwellings have only one living room) when the average household size is 5.2 persons in the first case and 4.5 in the second.

Table 1  
The Mayur Vihar–Trilokpuri zone in East Delhi: characteristics of the dwelling by type of settlement

Characteristics of the dwelling	Type of settlement						
	Resettlement Colony	DDA flats	Cooperative group housing societies	Urban villages	Unauthorized and regularized colonies	Squatter settlements	All types
No. of years since built	<i>Percentage distribution for each type of settlement</i>						
<5	1.5	–	28.2	2.2	33.9	–	10.2
5–9	7.5	–	71.8	11.1	32.3	4.8	18.7
10–19	91.0	100	–	11.1	27.4	85.7	59.4
≥ 20	–	–	–	75.5	6.5	9.5	11.7
% of precarious or semi-precarious structure	9.0	0	0	11.6	18.3	91.3	13.8
% of dwellings including economic use	4.4	14.3	5.1	45.6	32.3	15.8	16.7
No. of living rooms	<i>Percentage distribution for each type of settlement</i>						
1	35.3	–	–	37.2	66.1	78.3	35.7
2	50.4	–	17.9	30.3	19.4	13.0	29.8
3	7.5	85.7	41.1	11.6	9.7	8.7	21.9
≥ 4	6.8	14.3	41.0	20.9	4.8	–	12.6
% of dwellings without separate kitchen	78.9	–	–	46.5	56.5	96.0	53.2
% of dwellings without bathroom	80.4	–	–	32.6	35.5	96.0	48.2
% of dwellings without toilet	85.0	–	–	32.6	20.2	96.0	47.1
% of dwellings without drinking water	12.0	–	–	–	13.3	82.6	12.6
Status of occupancy	<i>Percentage distribution for each type of settlement</i>						
Owned (legally)	92.5	80.9	51.2	62.2	58.3	–	70.4
Rented	6.8	16.7	48.8	26.7	36.7	–	20.5
Other	0.7	2.4	–	6.7	5.0	100 (squatted)	9.1
Total no. of dwellings	133	42	41	43	60*	23	342
Row percentage	38.9	12.3	12.0	12.6	17.5	6.7	100.0

Source of data: ORSTOM-IEG household survey—1995.

\* Out of 60 dwellings, 47 are in unauthorized colonies (=76%), and 13 in regularized colonies (=21%).

#### 4.2. A 'segregated mixture' of different socio-economic and income groups

The variety in types of settlement and housing reflects directly the composition of the population that shows a mixture or rather a juxtaposition of different socio-economic groups. As expected, the various types of settlement house distinct income groups, with their specific occupational and employment structures (Table 2). The residents of the co-operative group housing societies' apartments clearly emerge as a distinctive group with a higher economic status: they have the highest percentage of female working participation rate (21% as against 8% for the zone average), and among their working population they record the highest percentage of employed persons engaged in professional and technical occupa-

tions (41% as against 15% on the average) as well as administrative, executive and managerial functions (29% as against 7% on the average), and the highest percentage of employers—as par with the DDA flats' residents (17% as against 7% on the average). Finally, their income distribution places them in the highest income group with 46% of the employed persons earning 7500 Rs. or more per month (as against 11% on the average). According to these indicators, the DDA flats' residents rank second on the economic scale (with 30% of the employed persons earning 7500 Rs. or more per month). At the lower rank of the income scale, one finds—not surprisingly—the slum dwellers: 84% of the working members earn less than 2000 Rs. per month (as against 45% for the zone average); in addition only 57% of them have regular work, while the corresponding proportion reaches

Table 2  
The Mayur Vihar–Trilokpuri zone in East Delhi: economic characteristics of the residents by type of settlement

Workers' characteristics	Type of settlement						
	Resettlement Colony	DDA flats	Cooperative group housing societies	Urban villages	Unauthorized and regularized colonies	Squatter settlements	All types
% of workers in total population	27.3	32.9	38.3	32.2	33.7	31.3	31.1
	Pearson Chi-square test—significance = 0.0%						
% of workers in female population	3.7	13.4	20.9	7.7	8.4	8.7	8.3
	Pearson Chi-square test—significance = 0.2%						
Total population (no.)	736	240	183	258	282	99	1798
<i>Working population</i>							
Main occupation	<i>Percentage distribution for each type of settlement</i>						
Professional, technical	4.0	36.7	41.4	4.8	13.7	–	14.8
Administrative, executive, managerial	0.5	17.7	28.6	1.2	4.2	–	7.2
Clerical workers	7.5	20.3	8.6	7.2	7.4	–	8.9
Sales workers	13.9	6.3	11.4	13.3	16.8	22.6	13.4
Service workers	13.9	3.8	4.3	16.9	13.7	12.9	11.6
Farmers and related workers	0.5	1.3	–	21.7	–	–	3.6
Production workers	40.3	13.9	2.9	22.9	35.8	38.7	28.4
Construction workers	12.4	–	1.4	9.6	3.2	16.1	7.5
Transport workers	7.0	–	1.4	2.4	5.3	9.7	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Pearson Chi-square test—significance = 0.0%						
Employment status	<i>Percentage distribution for each type of settlement</i>						
Employer	3.0	16.7	17.4	3.6	4.2	6.5	7.1
Own account worker	17.1	12.5	8.7	20.5	16.0	38.7	17.0
Employee—private	25.6	43.0	23.2	22.9	23.4	6.5	25.7
Employee—public	51.2	25.0	46.4	39.8	56.4	45.2	46.0
Unpaid helper	3.0	2.8	4.3	13.3	–	3.2	4.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Pearson Chi-square test—significance = 0.0%						
Nature of work	<i>Percentage distribution for each type of settlement</i>						
Permanent, regular	72.4	95.9	97.1	90.4	85.1	56.7	82.6
Temporary, seasonal	18.1	1.4	2.9	6.0	9.6	33.3	11.5
Casual	9.5	2.7	–	3.6	5.3	10.0	5.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Pearson Chi-square test—significance = 0.0%						
Monthly income (Rs.)	<i>Percentage distribution for each type of settlement</i>						
<1000	15.2	3.0	4.5	24.1	6.8	35.5	13.9
1000–1999	42.1	1.5	6.0	39.8	37.5	48.4	31.7
2000–2999	20.8	9.0	1.5	19.3	28.4	6.5	17.1
3000–4999	17.3	25.4	13.4	9.6	14.6	6.5	15.6
5000–7499	3.6	31.3	28.3	4.8	6.7	3.2	10.9
≥ 7500	1.0	29.8	46.3	2.4	5.7	–	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Pearson Chi-square test—significance = 0.0%						
Total workers (no.)	201	79	70	83	95	31	559

Source of data: ORSTOM-IEG household survey—1995.

96–97% among the employed persons living in DDA and co-operative group housing societies' flats. To sum up, the differential analysis of the economic characteristics of the inhabitants by type of settlement demonstrates the significance of occupational category and income level in the phenomenon of residential clustering and segregation.

The most striking features in terms of socio-cultural *cum* residential segregation regard the differential com-

position of the population by caste and religion.<sup>19</sup> Thus, while Muslims represent 11% of the total popu-

<sup>19</sup> The Chi-square test of independence between the variables 'type of settlement' and 'religion' in the sample population shows an association significant at the 0.00% level, and that between the variables 'type of settlement' and 'caste category' an association also significant at the 0.00% level.

lation of the zone, their proportion reaches 43% in the squatter settlements, and, on the other hand, becomes marginal in DDA flats, unauthorized colonies, and even virtually nil in the co-operative group housing societies (Fig. 1). Appraised in terms of population concentration, in the Mayur Vihar–Trilokpuri zone 85% of the Muslim population live in squatter settlements and re-settlement colonies, while these two types of settlement house only 46% of the total population.

The scheduled castes and other backward classes<sup>20</sup> have also a marginal presence in DDA flats and co-operative group housing societies' apartments (4% of their residents), while they account for half of the inhabitants of the entire Mayur Vihar–Trilokpuri zone (Fig. 2). The preferential residential choice of the upper castes can be highlighted in terms of population concentration: in the zone under study, 44% of the upper caste population reside in DDA flats and co-operative group housing societies' apartments, while these two types of housing account for only 23% of the population of the zone. The high percentages of scheduled castes and other backward classes in urban villages (respectively 41% and 42% of their population) correspond to the caste composition of the original rural settlers of this area, with two major groups, the Gujjars (classified among the backward classes) and the Jatav (belonging to the scheduled castes). The scheduled castes are also statistically over-represented in the Trilokpuri resettlement colony (37% as against 27% in the population of the entire zone). Since this colony was established for squatters evicted from their previous settlement sites, this is another illustration of the cumulative causation between low social and economic status, and lack of access to proper housing (as already underlined in the previous section).

The sharp differences in the educational level of the various groups of residents complete this contrasted socio-cultural portrait.<sup>21</sup> According to this criterion, the slum dwellers are the most underprivileged group, with 42% of illiterate (among the population aged 5 and above) and a negligible proportion who had reached the level of college. By contrast, the best educated groups are found in DDA flats and co-operative group housing societies' apartments: respectively 53% and 62% of their residents (aged 5 and above) have studied up to the college or beyond, while the illiterates account for only 10%.

The analysis of the residential location of the scheduled caste population and the illiterates at the level of the whole urban agglomeration has already highlighted a pattern of high concentration of these underprivileged groups in certain census divisions and their marginal presence in others. A similar pattern of residential clustering along religion and caste lines, or educational level is again evidenced within the Mayur Vihar–Trilokpuri zone. A more detailed analysis of each urban village would reveal a phenomenon of micro-level segregation, with distinct *mohallas* (neighbourhoods or quarters) inside the village for each major caste group. Furthermore, among the scheduled caste population, there is also a social hierarchy directly reflected in the space: hence, the Balmiki, traditionally a caste of sweepers with a very low status, always occupy a separate *mohalla* in the village.

The persistence of social and residential segregation, not only in the original villages, but also between the different types of settlements associated with the recent process of urbanization in the peripheral zones of the capital, raises several questions. The observed socio-spatial pattern can be interpreted as the result of a selective access to the various segments of the housing stock. Yet, does this selective access reflect only the differentials in purchasing power and renting capacity of the various groups of residents? Can we also interpret this as the manifestation of a process of exclusion and discrimination, or ostracism against the most vulnerable social and economic groups? To what extent is the tendency to residential clustering the result of the individuals' deliberate choices, or that of constraints imposed on them?

One could argue in particular that the concentration of low castes and minority communities in the inferior (illegal or/and under-equipped) segments of the housing stock is the consequence of a multiple-layers of deprivation: low social status, low level of education and access to jobs at the lower rung of the hierarchy, and thus limited resources that bar these groups from entering into the upper segments of the housing stock.<sup>22</sup> This is certainly true, but not sufficient to explain other processes of segregation. For example the relegation of some ex-untouchable castes in distinct quarters of the urbanised villages is a clear manifestation of the persistence of social ostracism. The geographical origin of the residents in the different types of settlements will further show that income differentials cannot account for certain phenomena of residential clustering. Lastly, a closer look at the procedure of access to apartments in

<sup>20</sup> Besides a list of the scheduled castes (the ex-untouchable castes), the state governments have also identified a list of other backward classes (OBC), corresponding to other castes and communities of low social and economic status.

<sup>21</sup> The Chi-square test of independence between the variables 'type of settlement' and 'educational level' in the sample population shows an association significant at the 0.00% level.

<sup>22</sup> To investigate further this point, one could envisage finer cross-tabulations of social attributes (like caste category and religion) by type of settlement, controlled by the income level: unfortunately the size of our sample in the zone under study limits the possibility of differential statistical analysis.

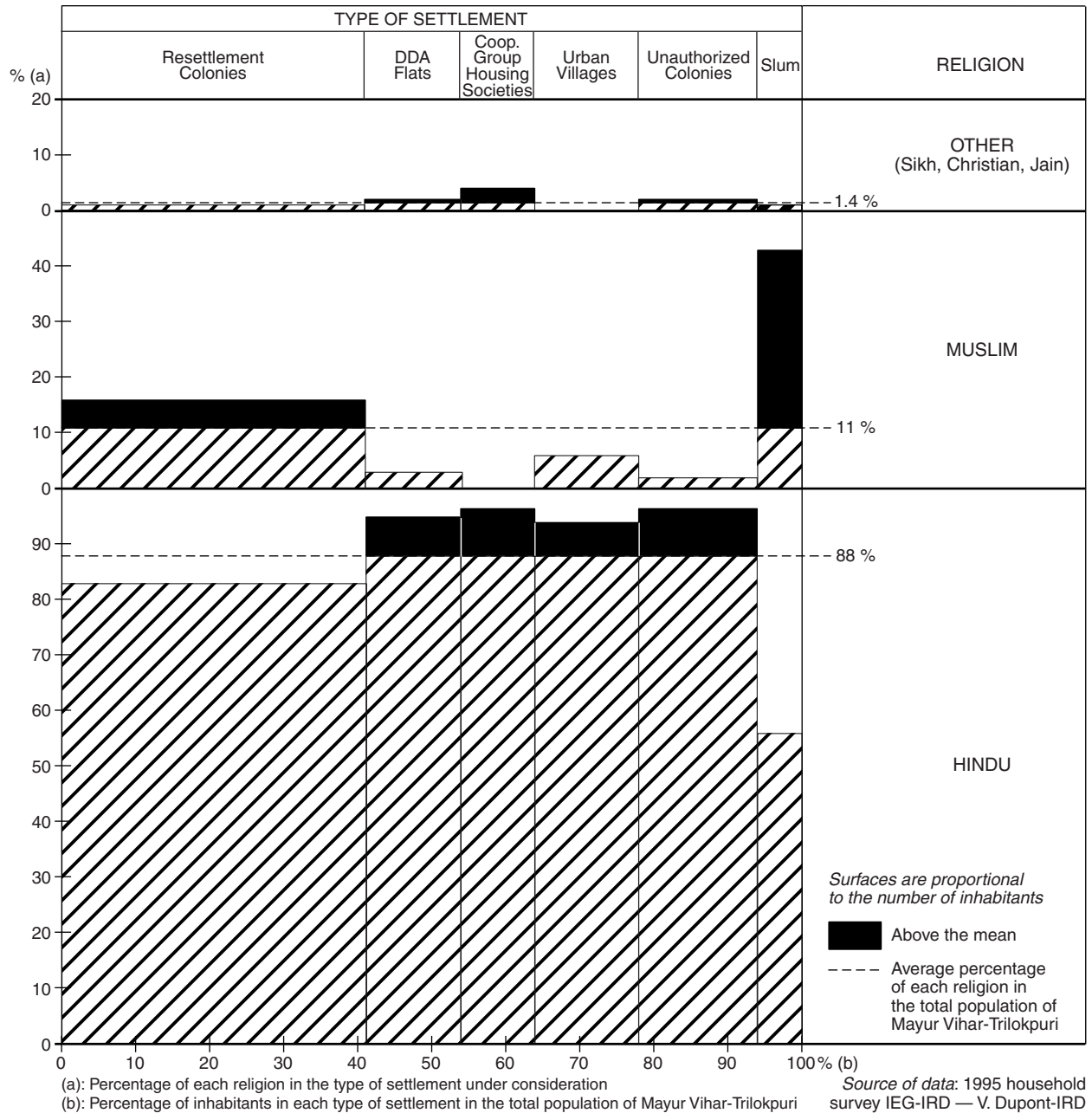


Fig. 1. Religion of the residents by type of settlement. Mayur Vihar–Trilokpuri (East Delhi).

co-operative group housing societies or to DDA flats will also reveal specific selection and filtering processes.

4.3. Migration and choice of place of residence

The population dynamics of the Mayur Vihar–Trilokpuri zone relies mostly on migrant households: in the sample surveyed, 83% of the household heads were born outside Delhi. The variations of the proportion of migrants from one type of settlement to the other reflect partly the history of their foundation (Table 3). However, Mayur Vihar–Trilokpuri appears more as a

zone of relocation or resettlement within the Delhi urban agglomeration, than as a zone of initial reception for new migrants: 78% of the household heads have occupied another dwelling in Delhi before settling in the present one. Not surprisingly, this proportion is particularly high in the resettlement colony (89%), but also in the DDA flats (85%), and it reaches its maximum (97%) in the co-operative group housing societies' apartments.

The new entrants to an area tend to cluster in neighbourhoods where they can find members of their kin, caste or community, of their regional or linguistic

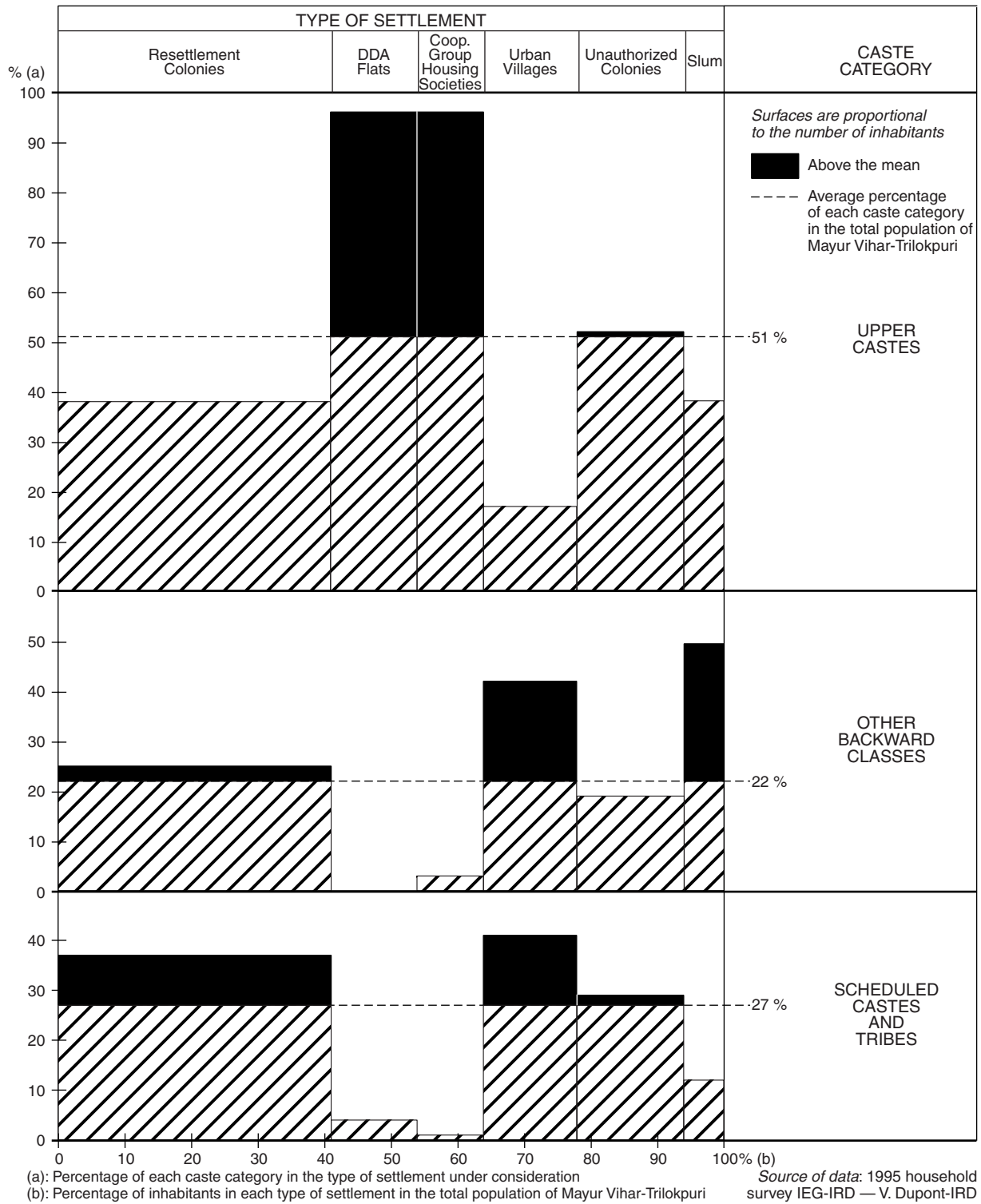


Fig. 2. Caste group of the residents by type of settlement. Mayur Vihar–Trilokpuri (East Delhi).

group. As confirmed by the in-depth interviews, familial and social networks play a significant role in the process of in-migration and urban insertion, including the choice of the place of residence—upon arrival in the city

especially, but also for a change of dwelling within the urban agglomeration.

The geographical origin of the migrants proves to be a differential factor of the population composition

Table 3

The Mayur Vihar–Trilokpuri zone in East Delhi: geographical origin of the residents by type of settlement

Geographical origin	Type of settlement						
	Resettlement colony	DDA flats	Cooperative group housing societies	Urban villages	Unauthorized and regularized colonies	Squatter settlements	All types
% of residents born outside Delhi (total no. of residents)	38.9 (736)	45.4 (240)	50.9 (183)	34.5 (258)	53.2 (282)	43.4 (99)	42.8 (1798)
Pearson Chi-square test—significance = 0.0%							
<i>Birth place<sup>a</sup></i>	<i>Percentage distribution of migrants for each type of settlement</i>						
North India	96.5	69.7	44.1	94.4	88.2	90.7	84.2
West India	2.4	2.8	9.7	3.4	5.9	2.3	4.1
South India	0.4	10.1	18.3	2.2	1.3	–	4.3
East India	0.7	4.6	12.9	–	2.6	7.0	3.4
Outside India	–	12.8	15.0	–	2.0	–	4.0
Total migrants (no. of migrants)	100.0 (287)	100.0 (109)	100.0 (93)	100.0 (89)	100.0 (152)	100.0 (43)	100.0 (773)
Pearson Chi-square test—significance = 0.0%							

Source of data: ORSTOM-IEG household survey—1995.

<sup>a</sup> Classification of birth place: North India = Uttar Pradesh (mainly), Bihar, Haryana, Himachal Pradesh, Punjab, Chandigarh, Rajasthan; West India = Madhya Pradesh, Maharashtra; South India = Andhra Pradesh, Karnataka, Kerala, Tamil Nadu; East India = Orissa, West Bengal; Outside India = Pakistan (mostly), Bangladesh, Nepal. This classification includes only States and Union Territories from where some migrants had come.

across different types of settlement (Table 3). While, at the level of the entire zone, 84% of the migrants hail from North India,<sup>23</sup> the population living in the cooperative group housing societies' apartments appear to be much more diversified in terms of regional origin: in particular, it includes significant communities of residents from South India (18% of the migrants) and East India (15%), as well as from foreign countries—mainly refugees from Pakistan—(13%). To a lesser extent, migrants from South India and refugees from Pakistan form also notable groups in the DDA flats. These findings, corroborated by interviews, suggest that social networks based on geographical origin constitute a potential factor of residential clustering.

#### 4.4. Clustering and filtering processes in the upper segments of the housing stock

A good illustration of clustering process is found in the apartment blocks built and managed by co-operative group housing societies. The constitution of the co-operative societies is from the beginning based on an association of prospective flats' buyers who belong to similar social or professional networks, and usually share some common attributes. Very frequently the association is formed on the basis of a common professional affiliation: lawyers of the Supreme Court,

employees from the same press group, or the same institute, officers from the police, high rank government officers, or teachers from the same university, for instance. The founding group is then in a position to exert control on the selection of new buyers, while the owners renting out their flats apply a screening process on the prospective tenants.<sup>24</sup> This system of co-optation and selection ensure a social and professional homogeneity of the residents of the same complex of apartment blocks. The above findings suggest that the selection (and therefore exclusion) process includes also criteria of religion and caste group.<sup>25</sup> Furthermore, a filtering procedure applies to visitors as fences or walls enclose residential complexes, with gates and watchmen controlling all people entering. This concern for security and protection from 'outsiders' (also observed in other zones of Delhi, as illustrated in the previous section) recalls the gated communities of North America, the townhouses of South African cities (Benit, 2000), or similarly closed and protected residential complexes in Latin American cities (Dureau, 2000; Paquette, 2000).

<sup>24</sup> Almost half of the households surveyed in the co-operative group housing societies' flats of Mayur Vihar were tenants.

<sup>25</sup> Auclair (1998, Chapter 6) highlights similar processes in her study of the private housing sector in Chennai. She shows how the Brahmans control the new multi-family residential complexes in three neighbourhoods under redevelopment. As initial landowners and/or future flat owners in the buildings, the Brahmans prod the builders in filtering the customers in order to ensure a socially and culturally homogeneous, familiar living environment. As for the tenants, the implicit condition to access these higher-caste residential buildings is to be vegetarian, and the caste appears as an important criterion of selection.

<sup>23</sup> This is also one characteristic of the migration flows to the Delhi National Capital Territory as a whole: according to the census, 79% of the migrants residing in Delhi in 1991 hailed from the States of Uttar Pradesh, Bihar, Haryana, Punjab and Rajasthan. (For an analysis of the main migration flows to Delhi, see Dupont, 2000b).



One could have expected more social and professional mixing in the DDA flats, since the procedure of flat allocation is based on a lottery system. In some pockets of Mayur Vihar the three and four storied apartments blocks were even built with a concern for economic mixing, that is to provide accommodation for middle-income groups (flats located on the ground floor and first floor) as well as low-income groups (flats located on the upper floors). As shown by the above differential analysis however, the socio-economic profile of the residents of the DDA flats is twisted in favour of higher income groups and higher social status groups. In Mayur Vihar like in other public housing programmes, the quota of flats for lower-income groups tends eventually to benefit better-off sections (Dupont, 2003). The socio-economic composition of the initial allottees is later altered by the resale of flats under power of attorney,<sup>26</sup> as well as by the renting out of flats.<sup>27</sup>

Renting of apartments and houses, in DDA buildings as well as in other types of housing estates, always involves a screening process of the prospective tenants by the owner. This selection procedure is based not only on economic considerations, but also on subjective criteria, and gives way to possible discrimination; the owners are often inclined to give preference to tenants who share with them similar social and cultural attributes.

The findings from the Mayur Vihar–Trilokpuri case study suggest that the composition of the population residing in different types of settlement cannot be explained merely by income differentials. Social networks based on caste, religion, professional occupation and geographical origin also play their role in favouring residential clustering in a more or less exclusive manner—and hence in generating segregation.

## 5. Concluding remarks

Notwithstanding an urban-based socio-economic and functional division of the capital between the northern and southern halves, the large sectors of Delhi prove to be relatively heterogeneous in terms of types of settlements and socio-economic groups of residents. It would be, however, misleading to conclude that residential segregation in Delhi is a mild phenomenon: homogeneity and heterogeneity are notions that depend on the scale of observation. In fact, residential segregation in

Delhi takes place at a finer scale. Hence a wide socio-economic variety of settlements and residents at the level of a zone (the Mayur Vihar–Trilokpuri one, for instance) may be associated with phenomena of marked segregation at the level of much more limited spaces (a residential colony, a group of buildings, some blocks of flats, a slum pocket, an urban village quarter). The socio-spatial organization of Delhi could be characterized by a combination of residential and social segregation at a micro, neighbourhood-level and relative dispersion at the macro, urban level—a dispersion that is also observed for economic activities. Physical proximity among different social groups does not imply, however, social proximity and harmonious relationships.

From the British town planners to the post-Independence Delhi Development Authority, institutional actors have had a major role in shaping the urban landscape of the Indian capital city and the spatial arrangement of its different types of settlement, and therefore in influencing the spatial distribution of various socio-economic groups. Yet, the process of socio-spatial differentiation of the urban area reflects the limitations of town planning and housing policy as much as their actual achievements, and private initiatives and responses as much as state intervention. Households' residential aspirations prove to be a significant factor contributing to residential clustering and segregation, although the choices of large sections of the urban population are limited by more or less stringent financial constraints. Hence, the resulting lines of segregation are the combined effect of income differentials, socio-economic status and professional group, caste and religious affiliation, geographical origin. The enclave or ghetto phenomenon is found both among the privileged and underprivileged population groups, as shown by the examples of rich families' co-operative group housing societies and poor migrants' hutment clusters.

Several forms of residential segregation observed in contemporary Delhi are the outcome of differential residential mobility combined with processes of social selection, as shown in the case of Chicago by pioneer urban ecological studies in the 1920s (Burgess, 1925). The emerging pattern of socio-spatial differentiation may be the consequence of active or passive filtering mechanisms, or a combination of both. For instance, the social re-composition of the historical core of the city, Old Delhi, results from the better-off sections of the population moving out of the central zone of the city in search of new buildings, more modern and comfortable housing conditions, while low-income groups stay back on the same site for lack of alternative viable options and remain in deteriorating housing stock. In the urban peripheries, the establishment of many co-operative group housing societies' blocks of flats illustrates a deliberate filtering process of the residents, while the original villages are de facto transformed into traditional

<sup>26</sup> The system of 99 year lease-hold that applies to the flats sold by the DDA prohibits resale for the first 10 years; then it requires the payment of 50% the appreciation in value upon resale. Hence unofficial reselling of flats takes place under power of attorney, a system that allows a land/house owner to legally pass on the use rights of his property to others without actually transferring its ownership.

<sup>27</sup> In the Mayur Vihar sample, 19% of the DDA flats were occupied by tenants.

settlement enclaves by the expansion of the urban agglomeration. Thus, the social mosaic that composes the metropolitan fabric appears as an ever-evolving socio-spatial arrangement with multiple causal factors.

### Acknowledgements

This study is part of a larger research programme on spatial mobility and residential practices of Delhi's population. The programme was financed by the *Institut de Recherche pour le Développement (ex-ORSTOM)* with additional funding from the CNRS within the framework of *Action Concertée en Sciences Sociales (Concerted Action in the Social Sciences)* ORSTOM-CNRS and of *PIR-Villes*. In India, our programme was conducted with the collaboration and support of the *Centre de Sciences Humaines* based in Delhi (French Ministry of External Affairs) and the Institute of Economic Growth (Delhi).

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