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Recent immigration and the formation of visible minority neighbourhoods in Canada's large cities

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This paper represents the views of the author and does not necessarily reflect the opinions of Statistics Canada.



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ABSTRACT

This study examines the expansion of visible minority neighbourhoods in Canada's three largest metropolitan areas. Minority neighbourhoods, defined as census tracts with over 30% of their population from a single visible minority group, increased in number from 6 to 254 between 1981 and 2001. Most of these neighbourhoods were formed through a partial replacement of non-visible minority residents by visible minority group members. However, there was no evidence that the partial replacement would lead to an exclusive occupancy of some neighbourhoods by one visible minority group. The emergence of minority neighbourhoods was associated more with a large increase in minority groups' share of the city population from immigration than with an increase in their tendency to concentrate in particular neighbourhoods. Visible minority immigrants arriving in the 1980s and 1990s were more residentially concentrated than earlier arrivals, and their level of concentration remained stable with time living in Canada. Overall, large visible minority groups were not as concentrated as were Blacks in large U.S. cities or as some non-visible minority groups were in the earlier decades in Canada.

Keywords: recent immigrants, visible minorities, neighbourhoods, residential concentration

1. Introduction

Since the Second World War, Canadian immigration has become primarily an urban affair. The trend towards immigrant concentration in large urban areas has further strengthened as the major immigrant source regions shifted from Europe to Asia, Africa, the Caribbean and South America. In 1981, about 58% of immigrants who arrived during the previous ten years lived in the three largest census metropolitan areas: Toronto, Montréal, and Vancouver. By 2001, the number had increased to 73% (Statistics Canada 2003).

Within these large metropolitan areas, new immigrants are also more likely to concentrate in some neighbourhoods than are non-immigrants and established immigrants. Ethnic neighbourhoods—neighbourhoods with a significant presence of a minority group—in Canada’s large cities have long been a vivid reflection of the adjustment process experienced by successive waves of immigrants. The once up-and-coming neighbourhoods of some earlier European immigrant groups, such as “Little Italy”, “Little Portugal”, “Little Greece”, and the Jewish communities of many large North American cities, have been in gradual dispersion or at least stopped further growth as the result of immigration decline. Since recent immigrants are culturally different from earlier European immigrants, it is not clear whether rapidly expanding visible minority neighbourhoods in major Canadian cities will be transitional or enduring.

This study first updates earlier analyses (Hou and Milan 2003; Hou and Picot 2003) of the expansion of visible minority neighbourhoods in Canada’s three largest Census Metropolitan Areas to 2001 using the most recent Census data. It then examines the demographic processes that are associated with the expansion of visible minority neighbourhoods. In particular, this study asks two questions. First, at the metropolitan area level, is the rapid expansion of visible minority neighbourhoods primarily associated with the increase in visible minority populations due to immigration or with a rise in their overall level of residential concentration? Second, at the neighbourhood level, does the formation of visible minority neighbourhoods predominantly involve a process in which established non-visible minority residents move out in large number when a visible minority population moves into a neighbourhood?

Here are some highlights of the results:

- Visible minority neighbourhoods, defined as census tracts with over 30% of their population from a single visible minority group, increased in number from 6 to 254 between 1981 and 2001 in Canada’s three largest metropolitan areas.
- There was also a large increase in the tendency of visible minorities to live with own-group members in the same neighbourhood. For instance, in 2001, the Chinese in Toronto on average lived in neighbourhoods that were 26% Chinese. The number was 10% twenty years earlier.
- Both the number of minority neighbourhoods and the tendency to live with own-group neighbours among major visible minority groups in 2001 were still lower than the historical levels of some earlier European immigrant groups with a compatible population size.

- In most cases, the expansion of visible minority neighbourhoods and the rise in the tendency to live with own-group neighbours were primarily associated with a large population growth through immigration over the past two decades. Some visible minority groups' share of the city's population doubled or even tripled in this period.
- In some cases, a rise in residential concentration of visible minority groups in limited numbers of neighbourhoods also contributed substantially to the emergence of minority neighbourhoods. For South Asians in Montréal and Vancouver and the Chinese in Toronto, the rise in residential concentration accounted for more than 40% of the increased tendency to live with own-group neighbours.
- Visible minority immigrants arriving in the 1980s and 1990s were more concentrated residentially than their earlier arrivals. For a given cohort of visible minority immigrants, the residential concentration remained stable over time.
- Most of the newly formed minority neighbourhoods experienced a partial population exchange between non-visible minority residents and visible minorities. In these neighbourhoods, the non-visible minority population decreased at least 20% within twenty years.
- However, the partial population exchange occurs primarily in the initial stage of neighbourhood transition and is unlikely to lead to an exclusive occupancy of some neighbourhoods by one visible minority group. Co-residence of members from different groups is a common feature in visible minority neighbourhoods.

2. The Formation and Change of Ethnic Neighbourhoods: Previous Studies

Ethnic neighbourhoods are urban localities where a specific ethnic group has a strong, although not necessarily predominant, presence. Ethnic neighbourhoods may differ by their processes of formation, stability and socioeconomic conditions. For instance, Logan, Alba and Zhang (2002) distinguish among immigrant enclaves, ethnic communities, and minority ghettos. Immigrant enclaves are transitional neighbourhoods where recent immigrants with limited economic resources cluster together for affordable housing and mutual support. Once immigrants become economically successful and culturally assimilated, they tend to move away from these neighbourhoods. Ethnic communities, by comparison, refer to the residential concentration of ethnic group members who have adequate resources to choose their place of residence. These communities are primarily a result of preference, rather than economic necessity, and are usually characterized by higher quality of housing and a relatively high level of affluence. In contrast, minority ghettos, in particular Black ghettos in some U.S. metropolitan areas, reflect the historical outcome of discrimination and social exclusion. Minority ghettos, like immigrant enclaves, are characterised by undesirable housing environments, persistent poverty, and other poor social conditions.

These various forms of ethnic neighbourhoods reflect the many demographic, social, economic, and psychological forces that shape the residential patterns of minority group members. Mass international immigration has historically provided a demographic base for the emergence of ethnic neighbourhoods in North American cities. Kinship ties and community bonds associated

with immigration might be a magnet drawing together new immigrants of the same origin. New immigrants may also be restricted to poor neighbourhoods, since they often enter their host society at the bottom of the socio-economic ladder. For some European immigrant groups, initial residential concentration fell as they moved towards economic integration and cultural assimilation (Fong and Wilkes 1999; Massey and Denton 1985).

It is difficult to untangle the determinants of residential configuration for a particular minority group. Similarly, the “pure” types of ethnic neighbourhoods, discussed by Logan et al. (2002), are not easily identifiable in reality since a particular ethnic neighbourhood may bear some features of each type. It is particularly difficult to apply these “pure” types to ethnic neighbourhoods that are in the process of formation and are experiencing rapid transition, as is the case for most visible minority neighbourhoods in Canada’s large metropolitan areas. The final forms of these visible minority neighbourhoods have yet to be seen.

Despite the difficulties in labelling ethnic neighbourhoods and identifying their exact socio-economic determinants, we can evaluate the relative importance of residential concentration and population growth in the formation of minority neighbourhoods. Minority neighbourhoods could form through an ongoing process of residential “sifting and sorting”, i.e., a continuing rise in residential concentration. Without a significant change in residential concentration, minority neighbourhoods could still form when the inflows of immigrants are large enough.

At the neighbourhood level, population dynamics can reveal the forms of residential “sifting and sorting”. Minority neighbourhoods could form through three distinct demographic processes that may differ both in causes and outcomes. One possible process is relative concentration, where both the members of a visible minority group and other group members increase, but at different rates. Relative concentration is most likely to occur in neighbourhoods with predominantly new developments and owner-occupied housing. Immigrants arriving in a given period but from different source regions often have a different taste for homeownership (Balakrishnan and Wu, 1992; Skaburshis 1996). Members of a group that arrive in large numbers and tend to purchase houses could easily cluster together in neighbourhoods where housing supply is plentiful. In this case, a high demand for housing and the spatial concentration of the housing market drive the formation of minority neighbourhoods.

The second possible process is a gradual transition of the population mix. This process is a result of a neighbourhood aging, or the life cycle of the residents in the neighbourhoods. Partly due to neighbourhood aging and the homogeneity in housing structure, some families in a neighbourhood are also similar in their life stages (child birth, empty nest, retirement), and thus are likely to move away sequentially from the neighbourhood to meet their new housing needs. Their replacement could come disproportionately from new immigrant groups.

The third possible process is a partial replacement that involves the out-movement of established residents in large number when a visible minority population moves into a neighbourhood. This partial replacement of population groups often comes about in a short period of time.

There have been two quantitative analyses at the neighbourhood level to examine patterns of neighbourhood ethnic transition experienced by major visible minority groups in Canada's large cities. Based on the 1986 and 1991 census data, Fong and Gulia (2000) suggest a pathway of neighbourhood diversification in ethnic composition. Such pathways start when other European groups move into Charter-only (English or French) neighbourhoods. Asians often move into neighbourhoods that already have a large mix of non-Charter European groups. By comparison, most Blacks usually move into neighbourhoods where Asians have a strong presence. They further speculate that white groups (Charter groups in particular) are sensitive to sharing neighbourhoods with visible minorities and actively make efforts to maintain residential proximity with their own-group members. As such, changes in neighbourhood racial composition are primarily the efforts of visible minorities to live close to whites (Fong and Gulia 2000).

From their analysis of the 1986 and 1996 census data, however, Hou and Milan (2003) find that Chinese and South Asian groups are less likely to increase in neighbourhoods with a large initial percentage of whites, while the increase of Black population is not as sensitive to the initial percentage of whites. Furthermore, they show that Blacks tend both to live in, and move into, neighbourhoods with low socio-economic status (SES). South Asians also tend to live in neighbourhoods with low SES, but they do not become further concentrated in such neighbourhoods. In contrast, the Chinese population increases more rapidly in neighbourhoods with higher SES. Hou and Milan (2003) suggest that these divergent patterns primarily reflect the differences among visible minority groups in their tendency and ability to build ethnic communities.

The scattered and inclusive findings above indicate that further research is required to disentangle the patterns and trends in neighbourhood ethnic transition under the condition of mass immigration of visible minorities. In particular, neither Fong and Gulia (2002) nor Hou and Milan (2003) paid specific attention to the actual population changes occurring in neighbourhoods with a strong presence of visible minority groups. The formation of these neighbourhoods is the most telling revelation of the ongoing process in which visible minority establish neighbourhood co-residence with non-visible minorities.

The following analyses first examine the change in the overall level of residential concentration at the city level and its association with the emergence of visible minority neighbourhoods. Using a pseudo-cohort approach, this study shows that residential concentration remains stable for a given cohort of visible minority immigrants as time in Canada increases. However, the level of residential concentration increases for each successive cohort of immigrants. This cohort effect leads to an increase in the overall residential concentration of major visible minority groups between 1981 and 2001. The rising level of residential concentration plays a much smaller role in the emergence of visible minority neighbourhoods than does the large increase in the visible minority population due to immigration.

Next, the study examines the population exchanges occurring in visible minority neighbourhoods. The results show that most of the visible minority neighbourhoods in Canada's large metropolitan areas are formed through the exit of non-visible minority residents.

Meanwhile, the results also show that the population replacement tends to occur in the initial stage of neighbourhood transition, and rarely leads to a complete turn-over of population groups.

3. Data, Measures and Methods

This study uses micro-data from the 1981 to 2001 Canadian Census 20% sample files. The analysis focuses on the three largest visible minority groups¹ in each of the three largest metropolitan areas. Based on the 2001 census counts, the three largest groups, in the order of their population size, are the South Asians, Chinese, and Blacks in Toronto; Blacks, Arab/West Asians, and South Asians in Montréal; and the Chinese, South Asians, and Filipinos in Vancouver.

A neighbourhood in this study is defined as a census tract. Census tracts have carefully designed attributes, contain a wide range of demographic and socio-economic information, and allow for national and historical statistical comparisons (Statistics Canada 1992). In 2001, there were 922 census tracts with population of over 500 in Toronto, 842 in Montréal, and 384 in Vancouver. The population in census tracts ranges from 510 to 20,420 with a median of 4,840 in Toronto, from 570 to 11,280 with a median of 3,820 in Montréal, and from 730 to 11,690 with a median of 5,040 in Vancouver.

From one census to the next, some census tracts are divided into two or more tracts because the original tracts experience a large population increase. Some new tracts are also added due to the expansion of the census metropolitan boundaries. These changes in the total numbers of census tracts affect the comparison in the number of visible minority neighbourhoods and in the overall level of residential concentration over time. In analyses where comparability is preferable, split tracts are traced back to their original 1981 designations by using information from published conversion tables. After conversion, there are 598 longitudinally-matched tracts in Toronto, 623 in Montréal, and 242 in Vancouver. Analyses based on cross-sectional tracts (including new tracts due to city expansion) and longitudinally-matched ones reveal similar trends, although the absolute level may differ.

The first section of the analysis describes the increase in the number of visible minority neighbourhoods. A visible minority neighbourhood is defined as a neighbourhood with over 30% of its population from a single visible minority group. This definition ensures that a single group

¹ Visible minorities are defined by the Employment Equity Act as “persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in color”. The regulations that accompany the Act identify the following visible minority groups: Chinese, South Asians, Blacks, Arab/West Asians, Filipinos, Southeast Asians, Latin Americans, Japanese, Koreans, and others (Kelly 1995). Prior to the 1996 census, the visible minority status was derived from responses to questions on ethnic origin, mother tongue, place of birth, and religion. In the 1996 and 2001 Census, the visible minority status was based on respondents’ self-identification. If using the 1991 approach, the derived counts for 1996 would be 6% higher than the counts from the direct method for total visible minority population in Canada, 3.6% higher for Blacks, 1.6% for Chinese, 2.9% for South Asians, 61.9% higher for Arab/West Asians, and 3.4% lower for Filipinos. Thus, the 1996 counts for most groups are comparable with those derived from the earlier approach. The large discrepancy for Arab/West Asians is primarily due to the exclusion of most Arab/West Asian multiple responses to the question on visible minority status, and requires cautions in making cross-census comparison (Renaud and Costa 1999).

has a significant presence in its minority neighbourhood, but this group is not necessarily a majority in the neighbourhood.²

Although its sensitivity is tested,³ the 30% standard imposes a categorical distinction among neighbourhoods with different presence of a minority group. To get a more comprehensive picture of the changes in neighbourhood presence of visible minority group, this study also uses the within-group exposure index.⁴ This index is close to the notion of minority neighbourhoods since it measures the extent to which a neighbourhood consists of people from the same minority group. Rather than counting the number of neighbourhoods where a minority group exceeds a fixed degree of presence, this within-group exposure index calculates the average percentage⁵ of a minority group in neighbourhoods where at least one of its members lives.

The second section of the analysis examines population growth and change in residential concentration of major visible minority groups. These two factors can affect the increase in the number of minority neighbourhoods and within-group exposure. The dissimilarity index⁶ is used to measure residential concentration. This index ranges from 0 to 1, and is conventionally interpreted as the proportion of minority members that would have to change their area of residence to achieve an even distribution with the reference group.

The analysis goes on to evaluate the role of population growth and changes in residential concentration of visible minority groups in the increase in their within-group exposure. This is done by holding constant a group's initial distribution across neighbourhoods and assuming that

² In the literature, ethnic neighbourhoods are defined using as little as 10% to as high as 40% of the population from a single minority group (See Logan, Alba and Zhang 2002, p.304 for detailed review). In their study of large immigrant groups in New York and Los Angeles, Logan, Alba and Zhang (2002) use 40% so that the proportion of an ethnic group in its ethnic neighbourhood is at least 1.4 times its city average. By comparison, though a lower threshold, the 30% criterion in the present study is actually harder to achieve, since it requires that the proportion of a minority group in a neighbourhood to be at least 1.7 times its city average (in the case for the Chinese in Vancouver).

³ Results are also produced using 20%, 40%, 50% as the criterion. They show similar trends. Also see Appendix 1.

⁴ The within-group exposure index is calculated as $P_x = \sum (x_i/X)(x_i/t_i)$, where X is the total population of group x in a city, x_i is the population of group x in census tract i.

⁵ Weighted by the distribution of the group's population among neighbourhoods.

⁶ The dissimilarity index $D = \frac{1}{2} \sum |x_i/X - y_i/Y|$, where X and Y are the total population of group x and y in a city, x_i and y_i are the population of group x and y in census tract i. The maximum value of D is 1 when two groups do not share even a single tract. The minimum value is 0 when both groups have the same distribution among all the tracts as in the city as a whole. It has been demonstrated that the D index computed from a random distribution of majority and minority populations would not be a zero, but rather is a joint probability distribution of the population size of area unit i (t_i) and the minority proportion in the city (P). The random effect on D would be strong when the proportion of the minority population in the city's population and the population size of each area unit are both small. The approximate expected value of D for random distribution is $E(d) = \sum (\sqrt{t_i}) / (T \sqrt{2\pi P(1-P)})$ (Cortese, Falk and Cohen 1976). A simple way to adjust for random distribution is subtracting D from E(d). This approach has been in this study and all the reported dissimilarity indexes are adjusted accordingly.

only the group's share within a neighbourhood changes over time. The difference between the actual change in the index and the change assuming same cross-neighbourhood distribution represents the effect of population growth.⁷

The third section examines changes that occurred at the neighbourhood level. The focus is the population compositional changes between 1981 and 2001 among minority neighbourhoods that existed in 2001. Four types of compositional changes are classified: *relative concentration*, *partial replacement*, *gradual transition*, and *stable or in decline*. In the case of *relative concentration*, both non-visible minorities and a visible minority group increased in absolute number in a neighbourhood, but the latter group increased at a faster rate. *Relative concentration* occurs mostly in newly-developed neighbourhoods. In *partial replacement and gradual transition*, the non-visible minority population decreased in the absolute number. In the former, non-visible minorities decreased with a rate higher than the median rate among all tracts that experienced decreases in the non-visible minority population.⁸ In the latter, the rate was lower than or equal to the median rate. The median rate here was used as a crude measure of normal transition in the demographic composition due to neighbourhood life cycle. Finally, a minority neighbourhood was classified as *stable or in decline* if the percentage of the minority group did not increase between 1981 and 2001.

This study also examines whether group transition in Canadian urban neighbourhoods is a process that continues until there is a complete turnover of population groups. This is done through the examination of the correlation between initial percentage of a visible minority group and the rate of change in its percentage in neighbourhoods.

The association between initial status and change cannot be consistently estimated from observations at only two time points, as the measurement errors in the initial scores and the observed changes are often negatively correlated, which in turn leads to a spurious negative correlation between initial status and the rate of change (Blomqvist 1977). With multi-wave data, a consistent estimate of the true initial status and true change can be obtained through a linear growth curve model (Bryk and Raudenbush 1992). Using the census tract as the unit of analysis, a random-coefficient regression model is specified as follows:

$$\text{For individual tract } i, P_{it} = \pi_{0i} + \pi_{1i}a_{it} + e_{it},$$

where P_{it} is the proportion of a visible minority group in time i , a_{it} is years between time 1 and time t , π_{0i} is the estimated true initial percentage, and π_{1i} is the estimated true annual rate of

⁷ For neighbourhood i , the actual change in the within-group exposure index between time 1 (t_1) and time 2 (t_2) Δ_i equals $(x_{i,t_2}/X_{t_2})(x_{i,t_2}/T_{i,t_2}) - (x_{i,t_1}/X_{t_1})(x_{i,t_1}/T_{i,t_1})$. Assuming that no changes in distribution across neighbourhoods (i.e., holding $x_{i,t_1}/X_{t_1}$ constant), the changes in the index Δ_i^* equals $(x_{i,t_2}/X_{t_1})(x_{i,t_2}/T_{i,t_2}) - (x_{i,t_1}/X_{t_1})(x_{i,t_1}/T_{i,t_1})$. The value of $\Sigma(\Delta_i - \Delta_i^*) / \Sigma(\Delta_i)$ represents the contribution of changes in a group's share to the changes in the within-group exposure index.

⁸ Between 1981 and 2001, the non-visible minority population decreased in number in 76% of the total tracts in Toronto. The median rate of the decrease was 23.5%. In Montréal, the non-visible population decreased in number in 72% of the total tracts and the median rate of the decrease was 20.2%. In Vancouver, the non-visible minority population decreased in 57% of the tracts and the median rate of the decrease was 21.4%.

change in the percentage. The error term e_{it} is assumed to be independently and normally distributed with a mean of zero and a constant variance.

The above specification assumes that π_{0i} and π_{1i} vary across census tracts:

$$\pi_{0i} = \beta_{00} + \gamma_{0i};$$

$$\pi_{1i} = \beta_{10} + \gamma_{1i}.$$

β_{00} is the estimated mean initial percentage and β_{10} is the estimated mean change rate. γ_{0i} and γ_{1i} are random effects with a mean of zero and are assumed to be multivariate normal (Bryk and Raudenbush 1992).

I use both the proportion and its logit transformation ($\text{logit}(p) = \ln [p/(1-p)]$) in the analysis. This transformation spreads out the distribution of proportion from negative infinity to positive infinity for the purpose of preventing the predicted values of the dependent variable from being out of range. Results with and without the transformation are rather similar, so only the results with the raw proportion are presented here since the interpretation is more straightforward.

The association between initial status and the rate of change is often affected by the timing of the initial status (Rogosa 1995). I first estimate π_{0i} and π_{1i} with the 1981 proportion of a visible minority group as the initial status and all five observations from five censuses (1981, 1986, 1991, 1996, and 2001) for each longitudinally-matched census tract. I then estimate the two parameters with the 1991 proportion as the initial status and only three observations from the last three censuses. The results show that the choice of the initial status results in different strength in the association between the initial status and rate of change, but the use of 1981 and 1991 proportion as the initial status comes to the same conclusion about the level beyond which the proportion of a visible minority group stops further increase.

4. Results

4.1 A rapid increase in the number of visible minority neighbourhoods and exposure to own-group neighbours

The number of visible minority neighbourhoods, defined as census tracts with over 30% of their population from a single visible minority group, increased dramatically between 1981 and 2001 in Canada's three largest metropolitan areas (Table 1). Based on current tract boundaries, the number of visible minority neighbourhoods increased from 6 in 1981 to 77 in 1991, and further to 254 in 2001. More than 60% of these minority neighbourhoods were Chinese (157 out of 254), and were primarily in Vancouver and Toronto. About one third were South Asian (83), distributed also primarily in Toronto and Vancouver. There were relatively few Black neighbourhoods: 13 in 2001. Montréal only had a few visible minority neighbourhoods (8 in 2001) compared to Toronto (135) and Vancouver (111).

Table 1. Numbers of census tracts where a visible minority group makes up over 30% of the population, Toronto, Montréal, and Vancouver

	Current census tracts			Longitudinally-matched tracts		
	1981	1991	2001	1981	1991	2001
Toronto						
South Asian	0	4	53	0	2	26
Chinese	3	28	72	3	11	35
Black	0	2	10	0	1	6
Total	3	34	135	3	14	67
As % of all tracts	1%	4%	15%	1%	2%	11%
Montréal						
Black	0	1	3	0	0	3
Arab/West Asians	0	4	1	0	2	1
South Asians	0	0	3	0	0	3
Chinese	0	1	1	0	1	1
Total	0	6	8	0	3	8
As % of all tracts	0%	1%	1%	0%	0%	1%
Vancouver						
Chinese	3	32	84	3	26	56
South Asian	0	5	27	0	2	12
Total	3	37	111	3	28	68
As % of all tracts	1%	12%	29%	1%	12%	28%

Source: the 20% sample micro-data files from the 1981, 1991, and 2001 Census of Canada

When the number of visible minority neighbourhoods is expressed as a percentage of total census tracts, using cross sectional tracts or longitudinal-matched tracts reveals a similar trend. In 2001, minority neighbourhoods accounted for close to 30% of the total census tracts (both longitudinal and current) in Vancouver, between 11% (longitudinal) to 15 % (current) in Toronto, and only 1% in Montréal (both longitudinal and current).

There was little overlap in the minority neighbourhoods of different groups. Among the 135 minority neighbourhoods in Toronto, only in three did both the Chinese and South Asians have over a 30% share of the total population. Only in one tract did South Asians and Blacks both have over a 30% share of the population.

In Toronto, most of the Chinese neighbourhoods were located in the mature suburbs of Scarborough and the new edge suburbs of Markham and Richmond Hill. Less than 10% of Chinese neighbourhoods were located in the old Chinatowns in the west and east of the downtown core. South Asian neighbourhoods were more scattered over the inner area of East York, North York, Scarborough, and newer suburbs of Mississauga and Brampton. Black neighbourhoods were concentrated in the mature suburbs of Etobicoke and North York. In Montréal, the few minority neighbourhoods were scattered around the downtown area. In Vancouver, Chinese neighbourhoods were primarily located in the inner city (mostly South of

Vancouver) and the suburbs of Richmond, while most of South Asian neighbourhoods were distributed in the suburbs of Surrey.

While the number of minority neighbourhoods increased, visible minority group members were also much more likely to live as neighbours in 2001 than in 1981. As measured by the within-group exposure index, the tendency to live with own-group neighbours rose for all the groups in this study (Table 2). The largest increases and highest levels of the within-group exposure index were observed among South Asians and the Chinese.

Between 1981 and 2001, the within-group exposure index more than tripled for South Asians in the three CMAs. In 2001, South Asians in Toronto lived in neighbourhoods where on average 20.2% of the population were South Asians; the number was 24.7% in Vancouver.

The exposure index also more than tripled for the Chinese in Toronto between 1981 and 2001. The Chinese in Toronto, on average, lived in neighbourhoods that were 25.5% Chinese in 2001. The rate of increase in the exposure index for the Chinese in Vancouver was not as large as it was in Toronto, but the level was high in both 1981 and 2001. In Vancouver, the Chinese lived in neighbourhoods where on average 33.4% of the population were Chinese in 2001. Thus, the average Chinese person in Vancouver lived in a neighbourhood that qualified as a visible minority neighbourhood.

Table 2. The within-group exposure index for the three largest visible minority groups in Toronto, Montréal, and Vancouver, 1981 to 2001

Toronto		South Asian	Chinese	Black
	1981	5.8%	9.6%	7.6%
	1991	11.6%	17.4%	10.7%
	2001	20.2%	25.5%	12.8%
Montréal		Black	Arab/West Asian	South Asian
	1981	4.7%	6.4%	2.5%
	1991	7.7%	11.2%	4.2%
	2001	10.2%	7.2%	11.8%
Vancouver		Chinese	South Asian	Filipino
	1981	18.1%	6.8%	2.1%
	1991	24.2%	13.8%	3.1%
	2001	33.4%	24.7%	5.4%

Source: the 20% sample micro-data files from the 1981, 1991, and 2001 Census of Canada

Note: based on longitudinally-matched census tracts. Results based on current tracts are available upon request. Using current tracts tends to produce higher exposure indexes in 1991 and 2001 than using longitudinal tracts.

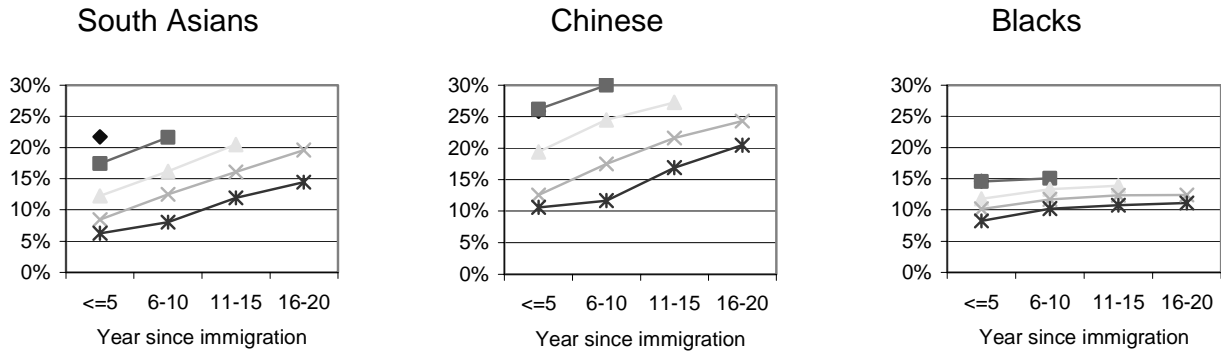
Figure 1 presents the within-group exposure index for visible minority immigrants by arrival cohort and years in Canada. For South Asians in the three cities and the Chinese in Toronto and Vancouver, exposure indexes show a strong cohort effect and a clear increase in their exposure to own-group neighbours as a given cohort of immigrants stayed longer in Canada. For instance, among the 1981-85 cohort of Chinese immigrants to Toronto, upon arrival they lived in neighbourhoods that were on average 13% Chinese. When this cohort stayed 16-20 years in Toronto, 24% of the people in their neighbourhoods were Chinese. Other groups also had the tendency, although to a lesser extent,⁹ to increasingly live with own-group neighbours as they stayed longer in the country.

How do visible minorities compare with earlier European immigrants in the tendency to live with own-group neighbours? Although it is difficult to trace the historical development of minority neighbourhoods for earlier European immigrants, a simple comparison of Italians in 1981 and visible minority groups in 2001 shows little difference. In 1981 when very few immigrants came from Italy in the previous ten years, Italians' share (10.0%) of Toronto's population was similar to the level of South Asians (10.6%) and the Chinese (9.2%) in 2001. There were 8.7% (52 out of 597) of census tracts that could be classified as Italian neighbourhoods and Italians' within-group exposure index was 26.7% in 1981. By comparison, in 2001, only about 7.8% of all tracts were Chinese neighbourhoods and 5.7% of all tracts were South Asian neighbourhoods. The within-group exposure indexes of the Chinese and South Asians in 2001 were also lower than Italians' level in 1981.

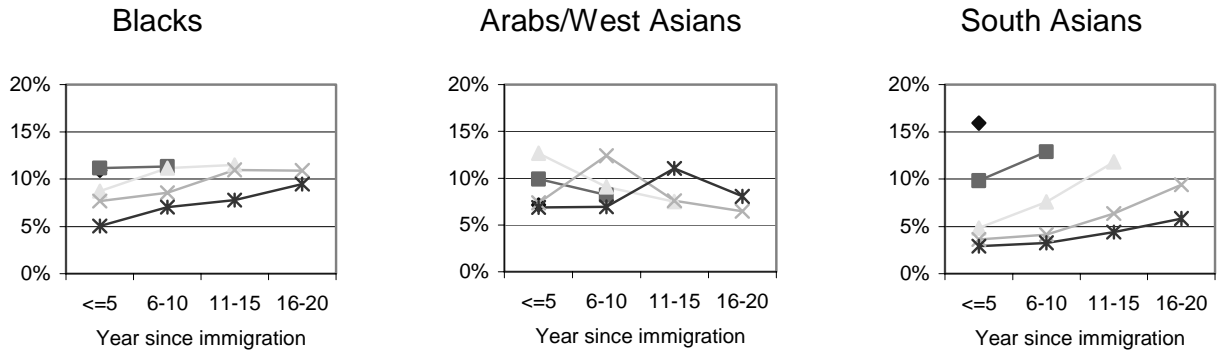
⁹ The pattern for Arabs/West Asians in Montréal was not as clear. See footnote 1 for explanation.

Figure 1. The within-group exposure index for the selected groups by immigrant cohort and year since immigration

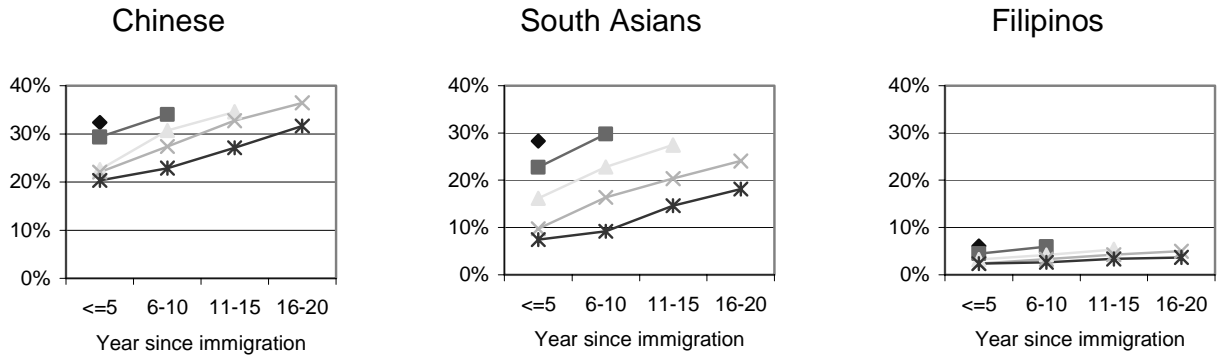
Toronto



Montréal



Vancouver



Legend

- ◆ 1996-01
- 1991-95
- ▲ 1986-90
- × 1981-85
- * 1976-80

4.2 The increase in minority neighbourhoods was not primarily associated with a rise in residential concentration

The rapid increase in the number of minority neighbourhood could result from population growth of a visible minority group through immigration and/or increased residential concentration in a few neighbourhoods. In terms of population growth, there were two clear trends (Table 3). First, all the selected visible minority groups had a much larger share of the city's total population in 2001 than in 1981.¹⁰ The increase was particularly large among South Asians, whose share of the city's population almost tripled in Montréal and Vancouver and quadrupled in Toronto in 20 years. Blacks in Toronto had the smallest increase (1.7 times). Second, long-term immigrants (living in Canada more than 20 years) and the Canadian-born visible minorities increased their share within each group, with the exception of the Chinese in Vancouver and Arabs/West Asians in Montréal. On average, Blacks had been in the Canada longer than the other selected groups. Close to two thirds of Blacks in Toronto and Montréal in 2001 were either long-term immigrants or were born in Canada.

In terms of the change in residential concentration, the pattern varies across groups and metropolitan areas. As in Table 4, South Asians, the Chinese and Blacks in Toronto and South Asians in Montréal and Vancouver experienced a large increase¹¹ (15% to 43%) in residential concentration, as indicated by the dissimilarity index. The increase in concentration was widespread within each of these groups by length of stay in Canada; that is, immigrants who were in Canada for a comparable period of time had a higher level of concentration in 2001 than they did in 1981. By comparison, Blacks in Montréal and the Chinese in Vancouver both experienced a small increase (less than 5%) in their residential concentration. Only Arabs/West Asians in Montréal and Filipinos in Vancouver experienced a slight decrease in their level of residential concentration.

¹⁰ The exception is Arabs\West Asians in Montréal. This group had a larger share of the city population in 1991 than in 2001. This is mostly likely due to changes in defining the Arab/West Asian group. See footnote 1 for details.

¹¹ Although conventional tests of statistical significance are not performed, a change of 0.01 in the dissimilarity index can be considered as substantially large. In the literature one percent of the range of the index across groups and cities is often designated as a substantially noteworthy difference. In this study, the range of the index is less than 0.3. Thus, even a difference of .003 (one percent of 0.3) is substantially noteworthy. In 2000, the range of the dissimilarity indexes across major metropolitan areas in the U.S. was less than 0.3 for Asians and less than 0.6 for Blacks and Hispanics (Iceland, et al. 2002). One percent of these U.S. index ranges is also less than 0.01.

Table 3. The population of a visible minority group as a percent of the city population and their within-group distribution by length of stay in Canada

		% distribution within group by length of stay in Canada					
		As a % of the total population	5 years or less	6 to 10 years	11 to 15 years	16 to 20 years	Long-term immigrants & Canadian-born
Toronto							
South Asian	1981	2.7	24.7	40.2	13.5	2.1	19.6
	1991	6.0	28.9	11.4	11.0	17.0	31.8
	2001	10.6	25.7	18.6	11.4	4.8	39.5
Chinese	1981	3.1	29.6	26.4	13.8	3.1	27.0
	1991	6.4	32.6	13.1	13.3	10.5	30.4
	2001	9.2	20.7	20.0	14.2	6.5	38.6
Black	1981	4.1	19.4	34.1	22.3	4.7	19.5
	1991	6.2	17.8	7.9	10.5	16.9	46.9
	2001	6.9	10.0	12.5	9.4	4.5	63.6
Montréal							
Black	1981	1.8	28.7	32.2	16.1	4.4	18.7
	1991	3.2	15.9	10.9	12.7	13.5	47.1
	2001	4.2	11.5	10.7	8.0	6.3	63.5
Arab/ West Asian	1981	1.2	24.3	14.3	21.0	11.0	29.4
	1991	3.0	37.8	8.1	9.4	6.2	38.5
	2001	2.4	28.4	20.0	15.9	4.6	31.1
South Asian	1981	0.6	22.1	34.5	15.9	5.0	22.5
	1991	1.0	28.2	7.9	11.4	14.6	37.9
	2001	1.7	24.7	19.6	9.2	4.1	42.3
Vancouver							
Chinese	1981	6.8	22.9	21.8	13.6	3.6	38.0
	1991	10.9	30.1	10.6	11.0	10.5	37.8
	2001	17.4	22.5	23.4	11.3	4.7	38.2
South Asian	1981	3.0	21.3	33.3	12.3	2.6	30.5
	1991	5.4	15.6	10.5	12.2	19.4	42.3
	2001	8.4	13.6	13.7	8.9	6.0	57.8
Filipino	1981	0.9	33.1	37.4	9.8	1.8	17.9
	1991	1.6	26.7	11.6	14.0	17.9	29.8
	2001	2.9	25.1	18.5	10.1	4.7	41.6

Source: The 20% sample micro-data files from the 1981, 1991, and 2001 Census of Canada

Note: Based on longitudinally-matched census tracts. New tracts due to city expansion are excluded.

Table 4. The dissimilarity index of residential concentration by immigration status for the three largest visible minority groups in Toronto, Montréal, and Vancouver, 1981 to 2001

		By length of stay in Canada					
		Total	5 years or less	6 to 10 years	11 to 15 years	16 to 20 years	Long-term immigrants & Canadian-born
Toronto							
South Asian	1981	0.39	0.45	0.39	0.38	0.43	0.38
	1991	0.42	0.48	0.46	0.43	0.40	0.39
	2001	0.48	0.55	0.55	0.50	0.46	0.43
Chinese	1981	0.43	0.49	0.45	0.44	0.48	0.40
	1991	0.48	0.56	0.51	0.49	0.47	0.42
	2001	0.53	0.59	0.61	0.57	0.52	0.46
Black	1981	0.38	0.43	0.42	0.36	0.34	0.31
	1991	0.38	0.44	0.42	0.40	0.39	0.35
	2001	0.43	0.50	0.51	0.47	0.44	0.41
Montréal							
Black	1981	0.43	0.49	0.46	0.44	0.47	0.39
	1991	0.42	0.51	0.50	0.44	0.43	0.39
	2001	0.45	0.55	0.54	0.52	0.49	0.42
Arab/ West Asian	1981	0.49	0.55	0.51	0.52	0.56	0.45
	1991	0.49	0.55	0.54	0.49	0.50	0.46
	2001	0.48	0.55	0.53	0.52	0.49	0.46
South Asian	1981	0.52	0.55	0.56	0.53	0.51	0.51
	1991	0.57	0.63	0.57	0.58	0.57	0.54
	2001	0.62	0.71	0.66	0.63	0.56	0.58
Vancouver							
Chinese	1981	0.50	0.53	0.51	0.49	0.49	0.47
	1991	0.51	0.51	0.57	0.54	0.52	0.47
	2001	0.52	0.52	0.54	0.54	0.57	0.50
South Asian	1981	0.37	0.44	0.38	0.40	0.40	0.35
	1991	0.45	0.53	0.52	0.47	0.40	0.43
	2001	0.54	0.58	0.61	0.57	0.52	0.50
Filipino	1981	0.44	0.50	0.48	0.43	0.44	0.42
	1991	0.40	0.46	0.47	0.46	0.42	0.39
	2001	0.43	0.50	0.47	0.45	0.43	0.40

Source: The 20% sample micro-data files from the 1981, 1991, and 2001 Census of Canada.

Note: based on longitudinally-matched census tracts. Results based on current tracts are available upon request. Using current tracts tends to produce higher dissimilarity indexes in 1991 and 2001 than using longitudinal tracts.

The group differences discussed above to a large extent reflect various combinations of cohort and assimilation effects. Figure 2 shows that, for the three selected groups in Toronto, and South Asians in Montréal and Vancouver, immigrants who arrived in the 1990s had a higher level of residential concentration upon arrival than those who arrived in the late 1970s to 1980s.

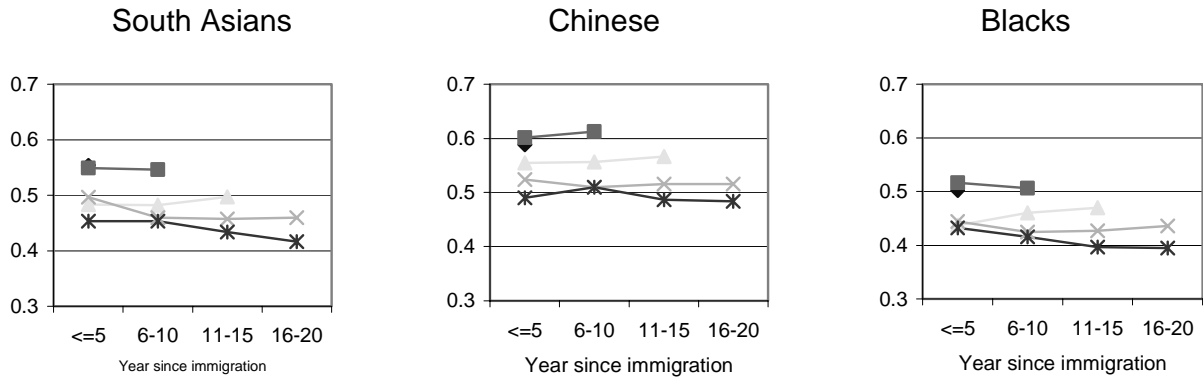
More importantly, once each cohort of these immigrants settled in, their residential concentration remained remarkably stable over time. In most cases, the concentration index changed little over time among the 1981-85, 1986-90, 1991-95 cohorts of immigrants (Figure 2). Even after visible minority immigrants were in the country for 20 years, their residential concentration levels did not decrease as the spatial assimilation model would predict (Massey and Denton 1985).

Note that cross-sectional data in a given single census year in Table 4 did show that recent immigrants tended to have higher levels of residential concentration than longer term immigrants. However, this cross-sectional difference reflects cohort rather than assimilation effects. Using cross-sectional data alone, one would mistakenly conclude that spatial concentration falls as time passes, and that spatial assimilation indeed takes place among these groups. A longitudinal perspective provides a very different picture.

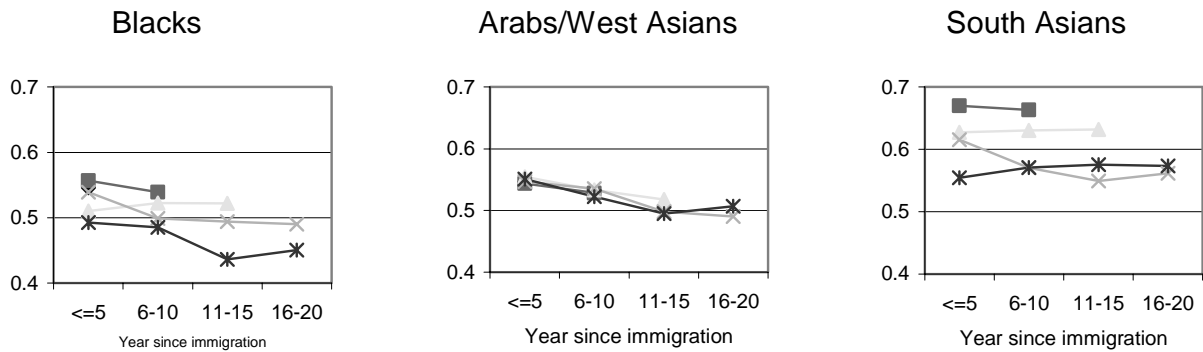
In Vancouver, spatial assimilation also did not occur among Chinese immigrants who arrived after the mid-1980s. The concentration levels actually rose with time spent in Canada among those who arrived after the mid-1980s (Figure 2). However, Chinese immigrants in Vancouver who came after the mid-1980s had a lower level of concentration shortly after arrival than those who came before mid-1980s. Thus, while the lack of residential assimilation tended to push up their overall concentration level, the cohort effect tended to reduce it. The net effect was a small increase in overall concentration.

Figure 2. The dissimilarity index of residential concentration for the selected groups by immigrant cohort and year since immigration

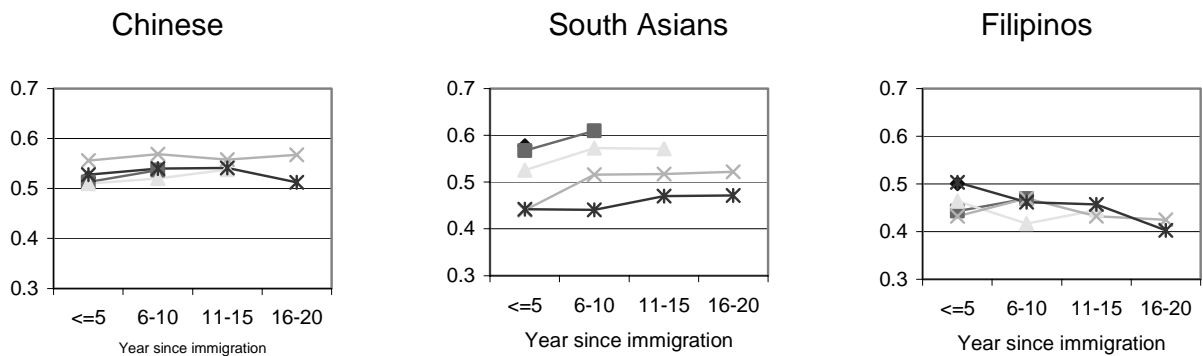
Toronto



Montreal



Vancouver



Legend

- ◆ 1996-01
- 1991-95
- ▲ 1986-90
- × 1981-85
- * 1976-80

By comparison, spatial assimilation occurred more or less among Blacks and Arabs/West Asians in Montréal and among Filipinos in Vancouver. While dispersion tended to reduce the overall concentration of Blacks in Montréal, newer cohorts of Black immigrants had higher entry-level concentration and thus tended to push up the overall concentration. The net result is a slight increase in overall concentration. This is partly because recent immigrants had a smaller share and thus played a much smaller role in affecting the overall concentration level of Blacks in Montréal in 2001 than in 1981. There was no clear cohort effect among Arabs/West Asians in Montréal and Filipinos in Vancouver. The spatial assimilation effect and the increase in the share of their long-term immigrants and the Canadian-born in their population resulted in a slight decrease in their overall concentration.

To what extent did the increase in visible minority populations and the change in their residential concentration level contribute to the emergence of visible minority neighbourhoods? It is not possible to answer this question directly, since both changes in the population and concentration occurred in the metropolitan area as a whole, and did not just affect minority neighbourhoods. However, an estimate of the answer to this question can be obtained by examining the effect of changes in the population share on the changes in the within-group exposure index (see footnote 7 for details). This index measures the average percentage of neighbourhood population that is from the same visible minority group (weighted across all neighbourhoods with at least one member of that group).

The results in Table 5 suggest that in most cases the rapid expansion of visible minority neighbourhoods was primarily the result of a large population increase through immigration over the past two decades. For the Chinese in Vancouver, all of the increase in their exposure index was associated with an increase in their population share. For Toronto's South Asians and Blacks, Montréal's Blacks and Vancouver's Filipinos, between 70 to 84 percent of the rise in the exposure index of these groups was associated with an increase in population share.

Only among South Asians in Vancouver and Montréal did an increase in population share contribute to less than half of the rise in the exposure index. In both cases, large increases in residential concentration were associated with more than 60% of the rise in the exposure index. With the exception of the Chinese in Vancouver, about 20 to 50% of the rise in exposure indexes was associated with residential concentration¹² for other groups.

¹² The residential concentration used in the calculation of the within-group exposure index refers to the distribution of a minority group population across neighbourhoods. It is different from the dissimilarity index which compares the distribution of a minority group population across neighbourhoods with that of non-visible minorities, although the two measures are highly correlated. Thus, changes in cross-neighbourhood distribution could contribute to the rise in the within-group exposure index even when the dissimilarity index decreased slightly.

Table 5. The percentage of the rise in the within-group exposure index that was due to the increase in a group's share in the city population, 1981-2001

	By length of stay in Canada					Long-term immigrants & Canadian- born
	Total	5 years or less	6 to 10 years	11 to 15 years	16 to 20 years	
Toronto						
South Asian	72.4	73.9	67.2	58.1	48.7	79.3
Chinese	57.7	60.5	47.8	55.9	53.8	60.3
Black	72.3	57.7	62.4	52.4	44.7	65.5
Montreal						
Black	84.0	84.6	79.7	48.1	51.8	81.5
Arab/West Asian*	-	-	-	-	-	-
South Asian	31.6	30.8	31.0	17.1	15.9	41.1
Vancouver						
Chinese	104.8	116.0	108.1	104.9	92.5	99.2
South Asian	38.9	37.5	28.4	29.8	29.5	46.3
Filipino	80.0	70.5	71.5	78.7	60.9	87.3

Data sources: the 20% sample micro-data files from the 1981, 1991, and 2001 census of Canada

Note: * Results are not reliable due to changes in defining the Arab/West Asian group in different censuses. See footnote 1 for details.

4.3 Most visible minority neighbourhoods formed through a partial replacement process

Most of the newly formed minority neighbourhoods experienced a partial population exchange between non-visible minority residents and visible minorities (Table 6). In Toronto, 23 out of 26 newly-formed South Asian neighbourhoods, 24 out of 32 newly-formed Chinese neighbourhoods, and 5 out of 6 newly-formed Black neighbourhoods were created through partial replacement in which non-visible minority residents moved out in large numbers while visible minority group members moved in. In Montréal, all three Black and three South Asian neighbourhoods experienced partial replacement. In Vancouver, 48 out of 55 newly-formed Chinese neighbourhoods and 5 out of 12 South Asian neighbourhoods experienced partial replacement.

Table 6. Types of visible minority neighbourhoods, Toronto, Montreal, Vancouver, 2001

	No. of tracts	% of group's population in the city	No. of tracts	% of group's population in the city	No. of tracts	% of group's population in the city
Toronto						
	South Asian		Chinese		Black	
Stable or in decline			3	1.3		
Relative concentration	1	2.8	5	16.0		
Gradual transition	2	1.9	3	2.5	1	0.2
Partial replacement	23	16.8	24	24.6	5	4.6
Total	26	21.5	35	44.4	6	4.8
Montreal						
	Black		Arab/West Asian		South Asian	
Stable or in decline						
Relative concentration		0.7				
Gradual transition			1	5.2		
Partial replacement	3	2.5			3	11.7
Total	3	3.3	1	5.2	3	11.7
Vancouver						
	Chinese		South Asian		Filipino	
Stable or in decline	1	1.3				
Relative concentration	2	4.0	4	20.6		
Gradual transition	5	5.9	3	7.0		
Partial replacement	48	44.3	5	8.2		
Total	56	55.5	12	35.7	0	

Notes: minority neighbourhoods here are defined as census tracts in which over 30% of the residents belong to a visible minority group in 2001, based on the 1981 tract boundaries.

1. In minority neighbourhoods that are stable or in decline, the percentage of the visible minority group did not increase between 1981 and 2001.
2. In minority neighbourhoods formed through relative concentration, both non-visible minorities and the visible minority group increased in absolute numbers, but the latter increased faster.
3. In minority neighbourhoods formed through gradual transition, the decrease in non-visible minorities slower than or equals to the median rate among all tracts experiencing decreases in non-visible minorities.
4. In minority neighbourhoods formed through partial replacement, the decrease in non-visible minorities is higher than the median rate among all tracts experiencing decreases in non-visible minorities.

Figure 3 is an example of the partial replacement in the formation of a Black neighbourhood in Toronto. A census tract (tract code 248.02) evolved from a predominantly non-visible minority neighbourhood to a Black neighbourhood in about 10 years. In 1981, there were 4,200 non-visible minority residents in the tract, comprising 74% of the tract population. By 1991, non-visible minority residents had decreased to 2,200, or 41% of the tract population. By 2001, there were only 1,300, or 21%, non-visible minority residents in the tract. By comparison, Black residents increased from 800 (13%) in 1981 to 1,600 (30%) in 1991, and to 2,400 (40%) in 2001.

**Figure 3. The formation of a black neighbourhood
(tract code 248.02), Toronto CMA**

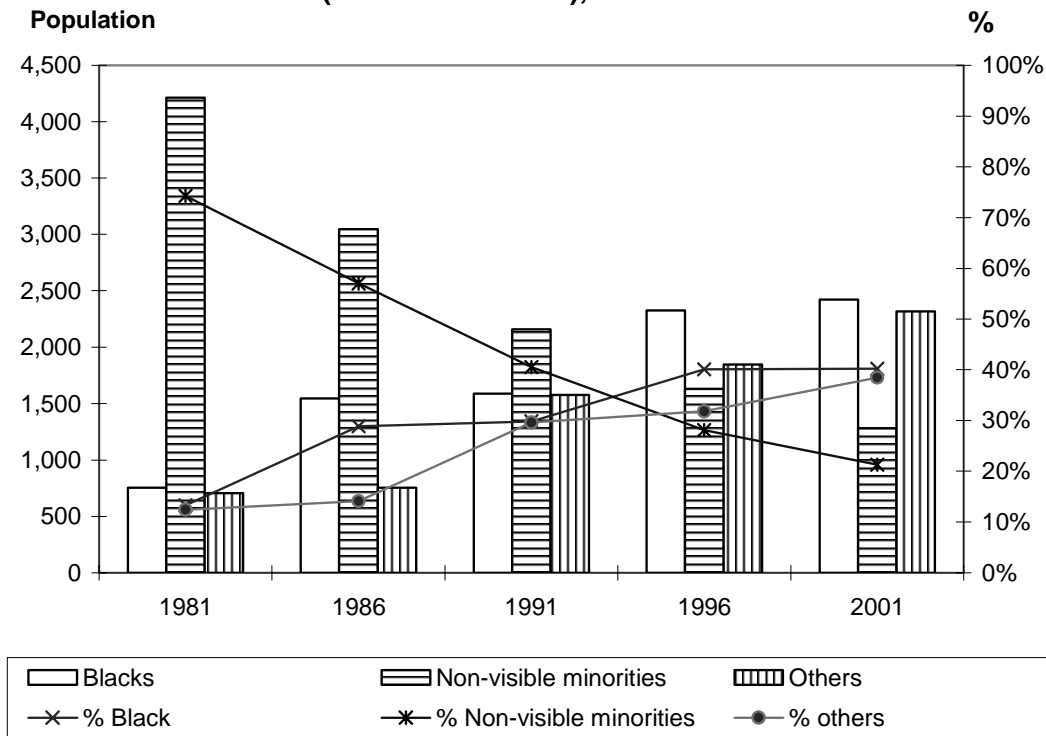
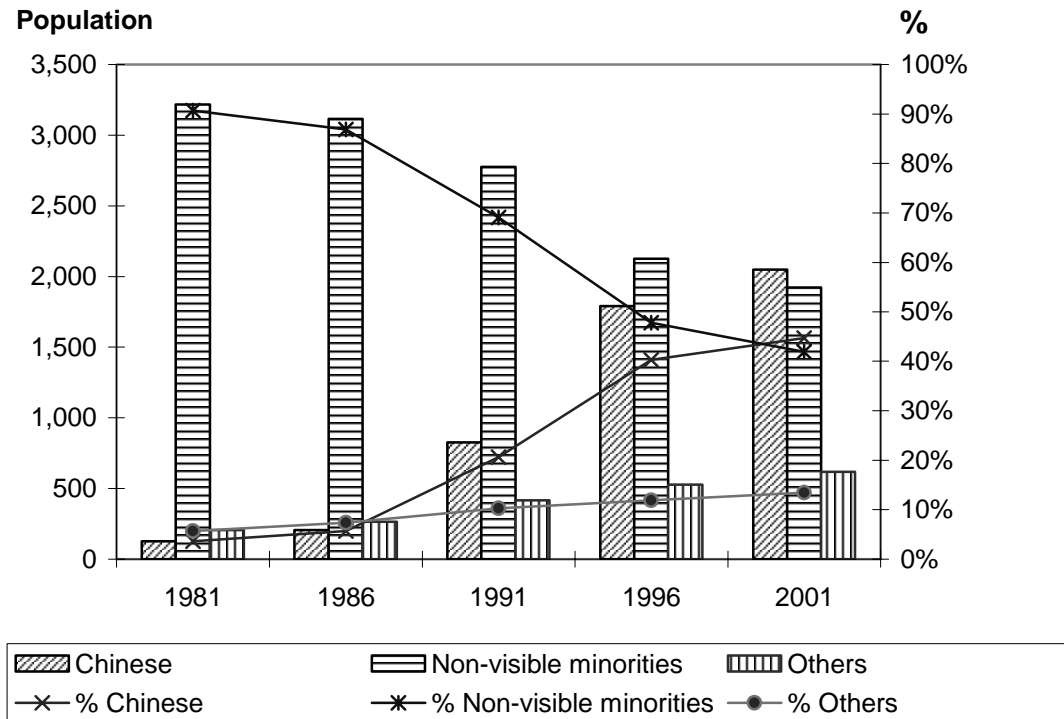


Figure 4 gives an example of partial replacement in the formation of a Chinese neighbourhood in Vancouver. In this example tract (tract code 143.03), the non-visible minority residents decreased from 3,200 (91%) to 1,900 (42%) between 1981 and 2001, while the Chinese residents increased from 100 (4%) to 2,100 (45%).

Does the finding that most minority neighbourhoods are formed through partial replacement of non-visible minority residents by minority group members contradict the earlier result that the rapid emergence of minority neighbourhoods is not primarily associated with a rise in the city-level residential concentration? The answer is no. This is because the majority of visible minority group members did not reside in their minority neighbourhoods. Even for the Chinese who had the highest concentration level in Vancouver and Toronto among the selected groups, only about half of its population lived in their minority neighbourhoods (Table 6). Less than 5% of Blacks in Toronto and Montréal lived in their minority neighbourhoods.

**Figure 4. The formation of a Chinese neighbourhood,
(tract code 143.03), Vancouver CMA**



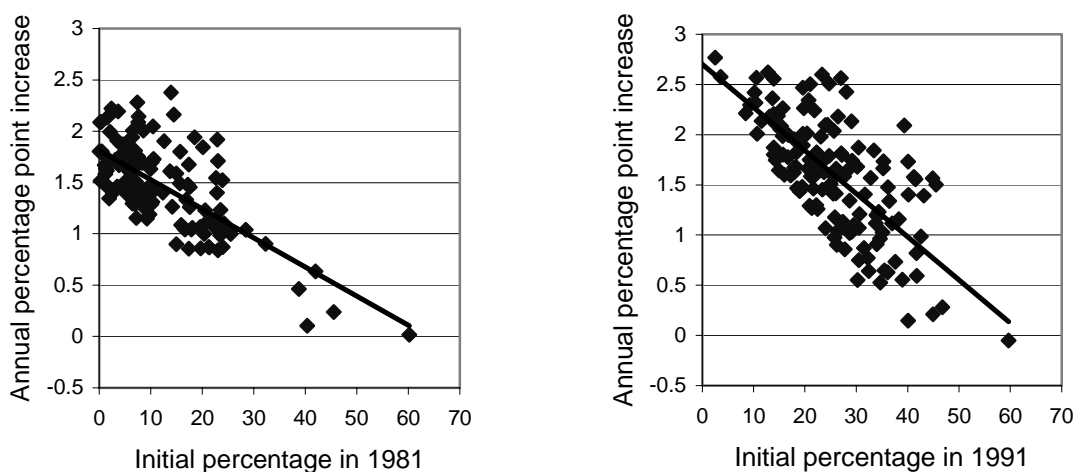
While the partial replacement of the non-visible minority population in minority neighbourhoods may tend to increase the city-level residential concentration of a visible minority group, the increase of a minority group population in neighbourhoods where they previously had no or minor presence tends to bring down its city-level concentration. For instance, in Toronto, tracts with no Chinese presence decreased from 9% in 1981 to 2% in 2001. Tracts with a minor presence of Chinese (0-10% of the population) decreased from 85% to 75%. Similarly, tracts with no presence of Blacks in Toronto decreased from 5% to 2%, and tracts with a minor presence of Blacks decreased from 89% to 78%. During the same period, tracts where non-visible minorities accounted for 90% or more of the population decreased from 48% to 16% in Toronto, from 83% to 53% in Montréal, and from 50% to 10% in Vancouver.

The large decline in the number of tracts with no or minor presence of visible minority group members indicates that minority neighbourhoods are not the only or even the major choices of residential location. More importantly, co-residence of members from different groups is an important feature, even in visible minority neighbourhoods. Among the 143 longitudinally-matched tracts that met the definition of minority neighbourhoods, only in 19 did a visible minority group (15 Chinese and 4 South Asian) account for more than half of the tract population in 2001 (the highest is 64%).

Furthermore, there was no sign of the development of exclusive visible minority neighbourhoods. That is, the proportion of a visible minority group in their neighbourhoods

would not increase continuously until no members of other groups left. The growth-curve analysis, as explained in the Data, Measures and Methods section and showed in Figure 5, indicated that the percentage of a visible minority group in the neighbourhood tended to stop further increase once it reached about 60%. However, this threshold may not hold if visible minority populations continue to increase rapidly in the major metropolitan areas.

Figure 5. The correlation between initial percentage and the annual increase in percentage points of a visible minority group in a neighbourhood



5. Discussion and Conclusion

This study first outlined the expansion of visible minority neighbourhoods in Canada’s large metropolitan areas between 1981 and 2001. These minority neighbourhoods, defined as census tracts with over 30% of the population from a single visible minority group, were primarily concentrated among the Chinese and South Asians in Toronto and Vancouver. Most of these minority neighbourhoods were formed through a partial replacement of non-visible minority residents by visible minority group members. The emergence of minority neighbourhoods was associated more with the increase in a group’s share in the city population than with an increase in its overall residential concentration, although both phenomena are occurring.

The three largest visible minority groups in Canada—the Chinese, South Asians and Blacks—experienced an increase in their residential concentration over the 1980s and 1990s. This is consistent with the observations of earlier studies, most of which are based on different non-visible minority groups, that Canada’s urban ethnic concentration level has gradually increased since the early 1960s (Balakrishnan and Hou 1999; Davies and Murdie 1993; Hiebert 2000). Thus, the trend towards an increased level of residential concentration of visible minority groups is the continuation of a strong multicultural dimension in the spatial structure of urban Canada. An ethnocultural mosaic emerged in Canada’s large cities many years ago (Oslon and Kobayashi 1993). The mass immigration of visible minorities has made the mosaic more diverse and visible.

Although residential concentration of visible minority groups is on the rise, the absolute level is still low relative to the Black-white segregation in many American cities, and not particularly high relative to the residential concentration among some non-visible minority groups in Canada. For instance, the average Black-white dissimilarity index in U.S. large metropolitan areas with populations more than 1 million was 0.78 in 1980 and 0.69 in 2000 (Iceland, et al., 2002). The dissimilarity index of residential concentration between Jewish and British ethnic groups ranged from 0.45 to 0.97 in Canada's three largest cities in 1991. Between Italian and British groups, the index ranged from 0.48 to 0.59 in 1991 among large Canadian cities (Balakrishnan and Hou 1999). By comparison, in 2001 the dissimilarity index for the Chinese was 0.53 in Toronto and 0.52 in Vancouver, the index for South Asians ranged from 0.48 in Toronto to 0.62 in Vancouver, the index for Blacks ranged from 0.43 to 0.45.

The rise in visible minority groups' residential concentration mostly reflects an increased level of concentration for each successive cohort of immigrants at time of entry. In most cases, the concentration of visible minority immigrants did not decrease even after being in Canada for 10 to 20 years. This finding is at odds with the predictions of the traditional spatial assimilation model. According to that model, as immigrants become economically successful and culturally assimilated, they will move away from ethnic neighbourhoods to neighbourhoods with better socio-economic conditions and occupied primarily by majority group members. Many earlier European immigrant groups followed this spatial assimilation model, but with important exceptions. For instance, Jews in Toronto have been among the most concentrated groups for over a century. The high level of concentration among Italians started to decline gradually only after Italian immigration to Canada almost stopped (Balakrishnan and Hou 1999). Therefore, the high stability of residential concentration among immigrants is not unique to visible minority groups.

Visible minority immigrants, regardless of how long they have lived in Canada, have increasingly found themselves living in neighbourhoods with larger numbers of people from their own ethnic group. Among recent visible minority immigrants, neighbourhood "exposure" to own-group members at time of entry rose dramatically through the 1980s and 1990s. Furthermore, as years in Canada increased for these immigrants, so too did the neighbourhood exposure to own-group members. The potential exposure to the non-visible minority population has decreased as newer cohorts of visible minority immigrants settle in the cities. The large inflow of visible minority immigrants was also the primary reason for the large increase in the number of visible minority neighbourhoods.

It is important to note that being a visible minority neighbourhood does not mean that the majority of the population is from a single visible minority group. Co-residence of members from different groups is a common feature in minority neighbourhoods. The growth-curve analysis further shows that the observed partial replacement will unlikely lead to a complete turnover of population or the domination of some neighbourhoods by one visible minority group. Indeed, on average visible minority group members live in neighbourhoods where the non-visible minority population is the dominant group (See top panel of Appendix 2). Moreover, although visible minority groups' exposure to own-group neighbours has been rising, the non-visible minority

population's exposure to visible minority neighbours has also been increasing (see bottom panel of Appendix 2).

There is no consensus regarding an optimal residential integration in a multicultural society (Hiebert 2000). Although neighbourhoods with a large concentration of visible minorities tend to have relatively low economic status, in terms of high unemployment rates and low-income rates, this is most likely because most visible minorities are recent immigrants. Little evidence in Canada suggests that living in minority neighbourhoods significantly hinders the economic performance of minority group members in the mainstream labour market (Hou and Picot 2003).

Appendix 1. Distribution of census tracts by the presence of the three largest visible minority groups in Toronto, Montreal, and Vancouver, 1981, 1991, and 2001

	1981		1991		2001		1981		1991		2001		1981		1991		2001	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Toronto	South Asians						Chinese						Blacks					
No presence	55	9	53	7	23	2	53	9	48	6	19	2	27	5	13	2	19	2
Minor presence	529	89	619	77	617	67	510	85	621	78	688	75	531	89	659	82	718	78
Moderate presence	13	2	124	16	229	25	31	5	103	13	143	16	39	7	126	16	175	19
Strong presence			4	1	47	5	3	1	26	3	53	6			2	0	10	1
Dominant presence					6	1			2	0	19	2						
Montreal	Blacks						Arab/West Asians						South Asians					
No presence	107	17	51	7	58	7	175	27	62	9	168	20	323	50	309	43	320	38
Minor presence	532	82	624	86	703	83	465	72	621	85	652	77	324	50	413	57	500	59
Moderate presence	9	1	51	7	78	9	8	1	40	6	21	2	1	0	5	1	19	2
Strong presence			1	0	3	0			4	1	1	0					3	0
Dominant presence																		
Vancouver	Chinese						South Asians						Filipinos					
No presence	10	4	5	2	1	0	12	5	9	3	5	1	72	30	26	9	18	5
Minor presence	183	75	183	62	206	54	222	91	246	83	288	75	171	70	271	91	353	92
Moderate presence	47	19	77	26	93	24	9	4	37	12	64	17					13	3
Strong presence	1	0	31	10	62	16			5	2	17	4						
Dominant presence	2	1	1	0	22	6					10	3						

Note: no presence — without any member of the visible minority group in the tract;
 minor presence — with > 0 to 10% of the visible minority group population;
 moderate presence — >10 to 30%; strong presence — >30 to 50%; dominant presence — over 50%.

Appendix 2. The between-group exposure indexes for non-visible minorities and large visible minority groups in Toronto, Montreal, and Vancouver, 1981 to 2001

Average % of non-visible minorities in neighbourhoods where members of a minority group live					
		All visible minority groups	South Asian	Chinese	Black
Toronto	1981	78.4	77.7	76.9	78.8
	1991	63.4	62.3	59.5	64.3
	2001	48.5	45.9	44.9	49.7
Average % of visible minorities in neighbourhoods where non-visible minorities live					
		All visible minority groups	Black	Arab/West Asian	South Asian
Montreal	1981	88.3	89.3	86.8	87.8
	1991	78.6	80.9	77.5	76.0
	2001	71.8	74.0	74.4	62.3
Average % of non-visible minorities in neighbourhoods where members of a minority group live					
		All visible minority groups	Chinese	South Asian	Filipino
Vancouver	1981	74.6	70.5	77.4	76.2
	1991	63.4	59.2	64.6	64.6
	2001	48.7	45.5	47.8	49.7
Average % of visible minorities in neighbourhoods where non-visible minorities live					
		All visible minority groups	South Asian	Chinese	Black
Toronto	1981	12.4	2.4	2.7	3.8
	1991	20.7	4.7	4.8	5.1
	2001	28.1	7.4	6.3	5.2
Average % of visible minorities in neighbourhoods where non-visible minorities live					
		All visible minority groups	Black	Arab/West Asian	South Asian
Montreal	1981	4.9	1.7	1.1	0.5
	1991	9.3	2.8	2.6	0.8
	2001	11.2	3.5	2.0	1.2
Average % of non-visible minorities in neighbourhoods where members of a minority group live					
		All visible minority groups	Chinese	South Asian	Filipino
Vancouver	1981	12.1	5.6	2.8	0.8
	1991	19.4	8.5	4.6	1.3
	2001	28.6	12.8	6.5	2.3

Data sources: the 1981, 1991, and 2001 census 20% sample microdata files

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