

GENTRIFICATION, SOCIAL MIX, AND SOCIAL POLARIZATION: TESTING THE LINKAGES IN LARGE CANADIAN CITIES¹

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Abstract: Gentrification in the form of “neighborhood revitalization” is increasingly touted as one way of decreasing the social exclusion of residents of poor inner-city neighborhoods and of increasing levels of social mix and social interaction between different classes and ethnic groups. Yet the gentrification literature also suggests that the process may lead to increased social conflict, displacement of poorer residents to lower quality housing elsewhere, and, ultimately, social polarization. Much of this hinges on whether gentrifying neighborhoods can remain socially mixed, and whether neighborhood compositional changes result in more or less of a polarized class and ethnic structure. However, the impact of revitalization and gentrification on levels of social mix, income polarization, or ethnic diversity within neighborhoods remains unclear and under-explored. This study addresses this gap by examining the relationship between the timing of gentrification, changes in the income structure, and shifts in immigrant concentration and ethnic diversity, using census tract data for each decade from 1971 to 2001 in Toronto, Montreal, and Vancouver. This research demonstrates that gentrification is followed by declining, rather than improving, levels of social mix, ethnic diversity, and immigrant concentration within affected neighborhoods. At the same time, gentrification is implicated in the growth of neighborhood income polarization and inequality. [Key words: neighborhoods, income inequality, ethnic diversity, immigration, immigrant settlement, inner cities, Canada.]

Gentrification in the guise of neighborhood revitalization or urban regeneration is increasingly promoted as a “positive public policy tool” for attaining not only economic, but also social goals for the inner city (Cameron, 2003; Lees et al., 2007). Either through an infusion of market housing and/or upgrading of the existing stock, gentrification within poor neighborhoods is endorsed in the name of “improving” them, fostering

¹Funding for the larger study on which this report is based was provided by the Social Science and Humanities Research Council of Canada through a Community-University Research Alliance (CURA) grant. The authors would like to thank co-editor Elvin Wily and the five reviewers for their helpful suggestions. Thanks also to Tom Slater, Larry Bourne and Bob Murdie for offering comments and advice on an earlier draft of this manuscript.

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“social mix,” and restoring in them a “social balance” (Cole and Goodchild, 2001; Cameron, 2003; Smith, 2003; Blomley, 2004; Rose, 2004; Musterd and Andersson, 2005; Wyly and Hammel, 2005). The assumption behind government policies that promote social mix through middle-class resettlement (including “New” Labor’s urban agenda in the UK, but also much European, Canadian, and U.S. urban policy) is that a more mixed neighborhood will facilitate social inclusion, promote greater social interaction and inter-group understanding, raise local levels of social capital, and at the same time reduce social problems and other “neighborhood effects” stemming from concentrated poverty (Dansereau et al., 1997; Wyly and Hammel, 1999; Ostendorf et al., 2001; Rose, 2004; Lees, 2007; Lees et al., 2007). The assumption connecting gentrification to social mix would appear to be equally present within critical academia. For example, “increased social mix” is offered as one of the “positive” effects of gentrification listed by Atkinson and Bridge (2005, Table 1.1, p. 5).

There is also an economic rationale underlying the increasing association between gentrification and social mix in government circles. As cities compete with each other to attract mobile capital as well as the global gentrifier class, they are encouraged to market themselves as livable, cosmopolitan, tolerant, and harmonious places, and to score highly on rankings given over to such pursuits (Smith, 2002; McCann, 2004; Rose, 2004). Furthermore, the assumptions of the creative city literature, as espoused by Richard Florida and others, imply that for cities to attract “talent” they will need to enact policies that promote both gentrification and tolerance within the inner city (Peck, 2005). This provides policymakers with an incentive and rationale for shifting their focus away from servicing and protecting low-income neighborhoods and toward “managed but inclusive gentrification” (DeFilippis and North, 2004, p. 79; see also Slater, 2006, 2007). Thus “bringing the middle classes back to the central city” is now “motivated by, and indeed sold to us as, an attempt to reduce sociospatial segregation and strengthen the “social tissue” of deprived neighbourhoods” (Lees et al., 2007, p. 199).

As of yet, however, there is little systematic evidence that gentrification actually leads to greater levels of social mix at the neighborhood scale. Indeed, it is not even apparent that social mix can achieve the goals hoped for it (Ostendorf et al., 2001; Musterd and Andersson, 2005; Joseph, 2006; August, 2007). Moreover, it is not clear exactly what kind of “mix” is most desirable, or what sort of mix matters most in producing the expected positive outcomes (Andersson et al., 2007). Depending on the context, social mix is variously defined in terms of housing tenure, income, ethnic diversity, immigrant status, religious affiliation, level of government subsidy, occupation, household size, and/or age (Butler, 1997; Musterd and Andersson, 2005; Andersson et al., 2007; August, 2007; Gijsberts and Dagevos, 2007; Kearns and Mason, 2007).

Meanwhile, scholars suggest that gentrification (and the displacement that it produces) is a factor in the growing spatial polarization of contemporary metropolises (Ley, 1996; Smith, 1996; Walks, 2001; Smith, 2003). The U.S. literature demonstrates that gentrification results in heightened segregation and racial and class conflict, particularly when it involves competition for scarce housing resources in a tight rental market (Smith, 1996; Betancur, 2002; Wyly and Hammel, 2004). Robson and Butler’s work (2001; also Butler, 1997, 2003) has been fruitful in demonstrating how gentrification influences social networks, levels of social capital, and inter-group dynamics within inner-city neighborhoods. It would appear from this work in London, and from research by Slater in the

Toronto context (2004), that a social “tectonics” characterized by mistrust, superficial contact, and separate lifeworlds between resident and incoming groups, rather than integration, inclusion, or understanding, typify gentrifying neighborhoods. The relationship between growing social polarization and such a social tectonics is also evident in the transitions occurring within Vancouver’s downtown Eastside neighborhood, where municipal policy encourages social mix (Smith, 2003; Blomley, 2004).

Despite such advances, it has yet to be established whether gentrification results in greater or lesser social diversity over time, and/or whether it heightens or reduces levels of income polarization within the neighborhoods it affects (Atkinson and Bridge, 2005, p. 5). To be sure, contemporary urban policy, and much of the academic literature, expects gentrification to increase local levels of “social mix,” while simultaneously producing a more “heterogenous” class structure, with potential implications for levels of social conflict (Butler and Robson, 2001). On the other hand, the classic “stage models” of gentrification, and much of the literature on “urban revanchism,” share a view of gentrification as a process of neighborhood “cleansing” (or at least “rinsing”; Fujitsuka, 2005) that may culminate in “ghettos of the rich” or even “super-rich” (Lees, 2003). In such a scenario, it might be expected that levels of both social polarization and diversity will eventually decline. Indeed, as is argued below, there are reasons to expect stage-cycle effects, whereby polarization and diversity, and with them inter-group conflict, increase in earlier or intermediate stages as dominant local communities are watered down by diverse groups of initial in-migrants, potentially including ethnic, cultural, or other minorities. Later stages might be expected to show declines in both polarization and diversity if only the wealthiest can afford to stay. On the other hand, the U.S. literature suggests that poorer residents with security of tenure (mainly because they live in nonmarket housing that prevents their displacement) may remain in the neighborhood even after lower-middle and middle-income groups in the market stock are displaced, potentially leading to even greater levels of class polarization toward the latter stages of the process in such neighborhoods (Newman and Wyly, 2006).

Clearly, the impacts of gentrification remain dependent on local policies and contexts. Gentrification is a complex process, and does not evolve exactly the same way in each place (Rose, 1996; Wyly and Hammel, 1998). The question of whether any of these particular outcomes are present in a given place is an empirical and historical one. It should be expected that neighborhood trajectories will be highly influenced by local, regional, and national factors, among them the history of ethnic and racial settlement and conflict, the structure of housing and labor markets, local class structure, government policies and planning decisions at various scales, the location of amenities, jobs, and transportation infrastructure, and local architectural preferences. Comparative research is necessary to understand how context may influence wider trends occurring within gentrifying neighborhoods.

With that in mind, this article aims to ascertain whether gentrification as experienced in the three major Canadian central cities of Toronto, Montreal, and Vancouver is associated with growing or declining levels of income and ethnic mix *within* gentrifying neighborhoods. Furthermore, it seeks to examine whether gentrification is associated with any specific trajectory of social polarization or ethnic settlement relating to stage/lifecycles and/or the time since initial upgrading. To this end, it employs and tests a number of indices of income inequality, polarization, immigrant concentration, and ethnic diversity.

Our article begins by briefly reviewing the literature concerning the stages of gentrification and their potential relationships to shifting local levels of polarization, inequality, and segregation. It then details the methodology employed in this study and compares a number of measures of income inequality and polarization, which are distinct concepts requiring equally distinct indices. Examination of changes in levels of neighborhood income inequality and polarization, and ethnic diversity and immigrant concentration between 1971 and 2001, is then followed by a discussion of the implications of this research.

SOCIAL POLARIZATION AND THE STAGES OF GENTRIFICATION

The tenets of the “classic” stage model of gentrification, which developed out of the earlier empirical research in cities of the United States and the United Kingdom, are generally well known. Regardless of whether it is four or five stages that characterize its trajectory, gentrification is seen as progressing through a series of phases differentiated by the types of groups moving in and out of the neighborhood and by the forms of investment shaping it (Gale, 1984). A neighborhood enters the first stage in a state of disinvestment and even potential decay and abandonment, after owners and landlords make a series of incremental economically rational decisions to under-maintain their properties in response to the perception of greater economic return elsewhere in the economy, some of which may have to do with state stimulation of new housing construction in the suburbs (Smith, 1987, 1996). Because of this, the neighborhood is a locus of cheap rents, which helps to attract a first wave of “pioneers” who are usually assumed to be artists and/or counter-cultural types of various backgrounds who prefer to live in older, more “authentic” places (Ley, 1996, 2003). Because these pioneers usually have low levels of economic capital (though they may possess high levels of cultural capital), they do not tend to displace existing residents who, at least at the time of the initial research, were disproportionately members of the employed working class. However, these pioneer groups translated their cultural capital into economic capital by investing their own sweat equity into their living spaces. This had the dual result of increasing the potential value of the properties (often for the landlord) and of imbuing the neighborhood with a distinct aesthetic identity and cache.

The second stage of the gentrification cycle entails the in-migration of more risk-averse groups who have greater locational choice. Such groups might include students, gays and lesbians, childless couples, and marginal members of the professional classes, who also begin to renovate their living spaces, further increasing their value. At the same time, local commercial streets begin to attract new forms of retailing which reflect the changing demographic situation, and include coffee shops, pubs, used book, music, and clothing stores. The neighborhood becomes trendy, and begins to attract temporary visitors to its local street scene. Displacement of the original tenants and working-class residents and many of the artists (and, indirectly, of the low-income residents who potentially might have moved in) begins as the newcomers with higher incomes are able to outbid them for space.

The third stage concerns the transformation of the social structure of the neighborhood, and with it the housing stock. With the previous stage ensuring the upcoming and increasingly safe and trendy nature of the neighborhood, risk-adverse members of the middle and

upper classes, including various professionals and managers (in health, teaching, high-order services, and others), begin to move in and/or invest in the neighborhood. The increasing and more stable property values encourage the de-conversion of the housing stock from rental tenure, and many if not most of the remaining tenants are displaced. This shift is accompanied by professional renovations to the existing properties, investment in new residential infrastructure (often owner-occupied condominiums), and displacement of the lower-order, counter-cultural, and/or down-market but trendy commercial establishments, and their replacement with more mainstream amenities, including higher-end restaurants, art galleries, new clothing stores, hotels, banks, and furniture stores.

The final stages witness the transformation of the neighborhood, and may even involve a process of “re-gentrification.” After virtually all the financial and social risk (in terms of crime, property values, and other qualities) is eliminated, the elite and the most risk-averse segments of the wealthy middle-classes (and who tend to gain the most in status from their employment of economic capital, such as financiers, highly paid health or business administrators, self-employed entrepreneurs, upper-level managers, and the independently wealthy) now move in, and their significant capital resources are put to work re-renovating local properties to their higher standards. At this point the neighborhood may even join the ranks of elite residences, attracting the globally mobile transnational class, and become unaffordable to many of the professional middle-class households who entered it during earlier stages. Evidence of such a re-gentrification in Brooklyn led Lees (2003) to ponder the existence of “super-gentrification.”

This story of gentrification has its roots in the empirical research conducted during the 1970s, much of it originating in the United States. It has been suggested that the causal factors producing gentrification have changed since this time, particularly after the early-1990s recession when corporate developers, who had previously considered the inner city too high of a risk, emerged to drive the process backed by active encouragement of the state (Hackworth and Smith, 2001; Hackworth, 2002). The role of women has been examined, with debate centered on the importance of women’s entry into the labor force and the growth of single-parent families as “marginal” gentrifiers whose presence reinforces the gentrification process (Rose, 1984). The effects of immigration and the role played by ethnic and racial minorities has also received attention, with members of visible minorities suffering the fact that the significant value-added work they perform in community building and in making their (initially marginal and higher-risk) neighborhoods safer is merely usurped by gentrifiers through the mechanisms of the housing market. The processes fueling gentrification and neighborhood change have only intensified under neoliberalism, which has put pressure on the state at various levels to relax tenant protections and to see gentrification as a solution to fiscal crises and local “development,” regardless of the views of residents (Hackworth, 2002; Slater, 2004; Wyly and Hammel, 2005).

As the processes propelling gentrification and neighborhood change become more complex, it becomes difficult to talk of a single-stage model of gentrification (Beauregard, 1986; Lees, 2000). Gentrification is articulated differently across contexts, so that it is dangerous to generalize across space (Van Criekingen and Decroly, 2003). Indeed, there may be just as many individual paths to gentrification as there are neighborhoods undergoing the process. Yet, even with these caveats, the implications for social polarization would appear similar across different gentrification trajectories. Regardless of the driving

factors, existing residents are confronted with potential displacement by incoming groups with progressively more economic, political, social, and cultural resources at their disposal—and with it the potential break-up of existing communities and devaluation of the fruits of their community building efforts, as well as the commodification and social usurping of local assets. Higher levels of income polarization and inequality—but also potentially social mix and diversity—are the hypothesized outcomes, at least in the initial stages, if concentrations of the poor, and of ethnic or racial minorities, are diluted by new arrivals of potentially “marginal” gentrifiers. On the other hand, if it is only the poorest local residents, or only members of particular ethnic or racial groups (i.e., Blacks and Hispanics in the United States) that are displaced, then even in its initial stages gentrification could mean a decline in either the level of local diversity or income polarization. The work of Butler (2003) and Butler and Robson (2001) suggests that differences in process and motivations between gentrifying neighborhoods may also result in different local cultures among gentrifiers, some of which may be more tolerant or nurturing in their attitudes toward the local community.

Despite the presence of alternate pathways, both the initial-stage models and the literature on urban revanchism (Smith, 1996), as well as the recent research documenting “super-gentrification” (Lees, 2003) based on the “financialization” and corporatization of the gentrification process (see also Hackworth, 2002), paint a picture in which most tenants are displaced and the neighborhood becomes affordable only by very wealthy professionals and/or capitalists, excepting only the presence and size of a residualized local social-housing sector (Newman and Wyly, 2006). The social and political praxis of gentrifiers in the third and subsequent stages also works to solidify the class character of the neighborhood, because incoming groups make political claims that protect their privileges and property values, and they erect barriers of entry to outsiders and to new development through historic designation, downzoning, and opposition to shelters, clinics, and other services and housing for low-income residents (Filion, 1991). Thus, as gentrification progresses, the neighborhood joins the club of elite residential areas, and as the class structure becomes more homogenous, levels of income polarization, inequality, and social diversity might be expected to eventually decline.

MEASURING GENTRIFICATION IN CANADA’S LARGEST CITIES

The study reported on herein seeks to uncover the relationship between gentrification, social mix, and social polarization in Canada’s three largest cities (Toronto, Montreal, and Vancouver).³ Gentrification has been evident in these cities since the late 1960s, and there has been significant commentary on both the processes fueling gentrification and the effects of gentrification on local communities (e.g., Filion, 1991; Caulfield, 1994; Ley, 1996; Slater, 2004). Toronto alone boasts a number of different forms of upgrading

³The central cities are defined as follows: The new City of Toronto post-amalgamation in 1998 (which corresponds to the former Municipality of Metropolitan Toronto), the City of Vancouver, and the City of Montreal after amalgamation in 2002 but before the “de-mergers” that occurred after the 2003 provincial election (this corresponds to the municipality of the Montreal Urban Community [MUC], the upper-tier municipal unit that encompasses the entirety of the Island of Montreal).

as well as neighborhoods in various stages of gentrification.⁴ Gentrification has also received significant attention in both Montreal and Vancouver (Ley, 1996; Germain and Rose, 2000).

The presence of gentrification and neighborhood upgrading is identified here for urban neighborhoods using data at the level of the census tract from the 1961, 1971, 1981, 1991, 1996, and 2001 censuses of Canada. Although it can be debated as to whether census tracts adequately capture the essence of sociospatial notions of neighborhood, they are nonetheless used here as proxies for neighborhoods in keeping with the statistical literature on gentrification, and out of necessity since only very limited data are available at local scales.⁵ A GIS-based areal interpolation technique was used to link each census through time (see Martin, 2002, for details on how this is done). A principal components analyses (PCA) was performed with data from 1971 through 2001 concerning the change in four main variables between each census that identify both the extent and timing of gentrification: (1) average personal income, (2) the percent of households that are tenants, (3) an index of social status derived from averaging the location quotients for the proportion of adults with a university degree and the proportion of employed persons with managerial or professional occupations, and (4) the percentage of the employed population who are artists.⁶ The components derived from the PCA scores allow for classification of

⁴These include widely studied examples of early gentrification (Sabourin, 1994), such as Yorkville and Cabbagetown/Don Vale, which despite humble beginnings have clearly joined the club of elite residences (both have incomes close to double the metropolitan average in the 2001 census of Canada, putting them in the top 8% of all Toronto neighborhoods). Toronto also contains examples of overspill gentrification (as in the Riverdale and Seaton Village neighborhoods, see Dantas, 1988), gentrification spurred by the location of amenities (High Park, The Beaches, Annex; Ley, 1986, 1992), gentrification induced through the marketing of neighborhood ethnic commerce (Little Italy, Greektown, and others; Hackworth and Rekers, 2005), and new-build gentrification in downtown and waterfront condominiums.

⁵Statistics Canada defines census tracts such that they contain a similar population demographic, and are typically bounded by the major roadways, railways, or waterways that give definition to sociological and geographic images of neighborhoods. However, census tracts are also limited by Statistics Canada's need to keep population sizes to a standard average (about 4,000 people) and within a narrow range (typically between 2,000 and 8,000 people). Thus, in some areas, census tracts may be too small or large to correspond to local notions of the neighborhood. Census tracts nonetheless remain the best unit available for neighborhood studies, as the next scale up (the municipality) is too large for neighborhood-level analysis, and very little current data, and even less historical data, is available for the smaller-scale dissemination areas (DAs) and enumeration areas (EAs).

⁶A second supplementary PCA analysis included two additional variables, for a total of six: (5) the average dwelling value, and (6) average monthly rent. These variables were chosen in order to get at potential transformations in both the housing stock and the social composition. Tenure is included since the gentrification literature sees de-conversion and displacement of tenants to be one of the main processes of social "cleansing." Dwelling values and rents indicate changes in land values and affordability but there are limitations. Importantly, average dwelling values are determined from the expected selling price self-reported by homeowners regardless of their intentions to move and they include relatively less expensive condominiums which are smaller and contain fewer bedrooms. Average monthly rent data also include rents for rent-geared-to-income (social) housing, which can veil the true effects of gentrification on market rents. The social status index has been employed in keeping with past studies measuring social upgrading (Ley, 1986, 1992, 1996), except that we have included artists as a separate category. Income is examined separately because, while not directly indicative of class, it is one of the main mechanisms through which the power to command resources (such as housing) is realized, and affordability gauged. The use of personal incomes here controls for shifts in household size that mask real changes in class-based power within the housing market, particularly since household sizes have dropped most significantly within the inner cities (due to fewer families with children). Artists were analyzed separately in order to examine how shifts in the concentration of artists interacts with the timing of gentrification, since much of the literature concerning stage effects has identified them as key pioneers in neighborhood transformation.

census tracts based on the timing of neighborhood upgrading. Three “waves” of gentrification are identified, conforming to the literature on the subject (Hackworth and Smith, 2001; Wyly and Hammel, 2001). The first wave originated in the late 1960s and continued through the late 1970s. A second wave occurred during the 1980s (mainly between the end of the recession in 1984 and the onset of the next recession in 1990). A third wave is discernible in the 1990s. Most of the latter changes occurred after the early 1990s recession, and very little change is seen for the 1991–1996 census period. Neighborhoods that began to gentrify in the earliest census period (1961–1970) are separated here from those that witnessed change later (1971–1980).⁷ (For a full explanation of the methodology employed here for detecting gentrification, including the rotated PCA component matrix, see Walks and Maaranen, 2008.)

In keeping with the literature (Bourne, 1993; Wyly and Hammel, 1998), gentrification is defined here as befitting only those areas that were previously working-class in character (in both the 1951 and 1961 census), but which subsequently experienced some form of upgrading as detected by the PCA analyses. Gentrification is thereby kept conceptually distinct from other forms of middle-class and elite upgrading (and from other trajectories of neighborhood transformation).⁸ Groups of gentrifying neighborhoods are thus compared

⁷Data from the 1951 and 1961 censuses were also examined, facilitating extension of the analysis back to before 1971. In particular this allowed the researchers to determine which tracts witnessed the onset of gentrification during the 1960s (no tracts were found to have experienced gentrification in the 1950s), and to distinguish between different forms of upgrading. Unfortunately, the variables for income, occupation and education in the 1951 and 1961 census are not strictly comparable to those found in later censuses, and data is missing completely for artists, and for dwelling values in many tracts in the 1951 and 1961 censuses. Thus changes in the 1960s were examined separately using slightly different variables built from the more limited data found in these earlier censuses: average employment income, a social status index defined slightly differently (includes artists and more aggregated occupational groups than in later periods, while education is expressed in years rather than the proportion with a university degree). Thankfully, much of the data in the 1971 census are comparable to both the earlier and later censuses, allowing us to trace neighborhood shifts back before 1971. We therefore built our analysis from the cleaner components resulting from a simpler PCA component structure produced by including only the strictly comparable census data for the first four variables each decade starting in 1971, and then expanded our analysis to include the 1961 data as available. For more detail on the methodology involved in detecting gentrification, see Walks and Maaranen (2008).

⁸Upgrading is also discernible (indeed, highly pronounced) in a number of tracts that have always maintained above-average social status and high incomes, and which did not witness decline. Such neighborhoods include the prestigious addresses of Rosedale, Forest Hills, Lawrence Park, Bridle Path, York Mills, Baby Point, Kingsway, and Swansea in Toronto; Westmount, Outremont, and Mont Royal in Montreal; and Shaughnessy Heights, Dunbar-Southlands, and West Point Grey in Vancouver. Such areas are separated out in our analysis, and termed “middle-class upgrading and elite consolidation.” The opposite of upgrading—continual downgrading (decline) as indicated by negative PCA scores on the gentrification components for each different period—was also detected. This decline group includes only those census tracts which experienced the multivariate inverse of upgrading consistently across the 1971–2001 period and does not include all of the census tracts which reveal lower relative income levels over the period. Finally, another category of upgrading identified tracts that still contained middle-class populations in 1951 and 1961 (detected via analysis of income and social status), but which subsequently downgraded for two census periods before being “recaptured” (above-average income and social status in 2001) or demonstrating upgrading suggesting incomplete or potential recapture in the future. This classification system thus provides conceptual clarity to the distinction between gentrification and upgrading. Of course, if we were able to go back far enough (say, to the turn of the century), we would likely find most of the neighborhoods that gentrified in the postwar period were originally built for the middle-class, and therefore would constitute “middle-class recapture” over this longer time frame. Yet, they will still have spent 40 years or more as working-class neighborhoods before seeing the onset of gentrification, which we feel justifies our description of them as “traditionally” working class. These are neighborhoods whose function during the Fordist period was largely that of working-class communities.

to the rest of the central city in which they are located. Note that we argue that areas of “new-build” gentrification constitute a form of gentrification, particularly if they occur on land contiguous to gentrifying residential neighborhoods. Whereas some of this new construction occurs on brownfield or waterfront sites, much of it involves demolition of older working-class housing to make room for upscale housing (the census cannot distinguish between these). (For more detail on our position concerning new-build gentrification, please see Walks and Maaranen, 2008.)

Census tracts were classified according to the wave of initial upgrading. For instance, if a tract scored high on both the 1980s and 1990s components, it is classified here as belonging to the 1980s wave. Tracts were further delineated based on whether their personal incomes shifted from below to above the average for the Census Metropolitan Area (CMA) over the entire period. Those tracts witnessing upgrading that did not see their incomes rise above the CMA average are classified as “incomplete” (indicating either that the gentrification process stalled at some point, or that it continued apace but at too slow a rate to push incomes above the metropolitan average), while those who ended the period with above-average incomes are seen to have fully gentrified. Finally, a separate component identified the presence of potential future gentrification (marked by initial increases in artists and social status, but not income or owner-occupied tenures, in the most recent census period—1996 to 2001). We suggest it is these areas that are most likely to see gentrification in the future. The resulting timing and patterning of gentrification was then field tested and confirmed by those with expertise in each of the three metropolitan areas. Our methodology thus builds from the contributions provided by Hammel and Wyly (1996), Wyly and Hammel (1998), Meligrana and Skaburskis (2005), and Heidkamp and Lucas (2006) for detecting gentrification. The different trajectories of neighborhood gentrification and upgrading are presented in Table 1.

MEASURING GENTRIFICATION’S EFFECT ON MIX, POLARIZATION, AND ETHNIC DIVERSITY WITHIN NEIGHBORHOODS

Our study is concerned with examining the relationship between gentrification and both local levels of social polarization and social mix within inner-city neighborhoods. Much of the current policy literature supports “tenure dilution” via gentrification and the infusion of market-rate housing in low-income areas, in the hope that this will produce more socially diverse and “balanced” neighborhoods (Kearns and Mason, 2007). It is therefore appropriate to ask how such a policy might impact the income structure and level of ethnic diversity in such neighborhoods. Does gentrification actually lead to greater levels of social mix and/or social polarization? Gentrification has been present in Canada’s cities for over 40 years, providing a natural laboratory for answering such a question. We examine the intra-neighborhood impacts of gentrification using a number of indices related to income inequality, polarization, and ethnic diversity.

It should be noted that when rigorously applied to the study of income distributions, the concepts of inequality and polarization are distinct. As Esteban and Ray (1994) have cogently argued, when understood in terms of attributes like income, problems such as social conflict, antagonism, and alienation are more likely to occur under a situation of polarization than inequality. In the former, lines become drawn between two distinct main groups, with little within-group heterogeneity but extreme between-group

TABLE 1. GENTRIFICATION AND UPGRADING NEIGHBORHOOD GROUPS, FOR MONTREAL, TORONTO, AND VANCOUVER CENSUS TRACTS, 1961 TO 2001

Name	Montreal		Toronto		Vancouver	
	# CTs ^a	% of city	# CTs	% of city	# CTs	% of city
Gentrification—complete and incomplete	105	20.8%	85	16.4%	18	17.1%
1960s gentrification	5	1.0%	16	3.1%	0	0.0%
1970s gentrification	14	2.8%	13	2.5%	7	6.7%
1980s gentrification	8	1.6%	7	1.4%	4	3.8%
1990s gentrification	2	0.4%	4	0.8%	1	1.0%
1970s incomplete gentrification	16	3.2%	12	2.3%	0	0.0%
1980s incomplete gentrification	35	6.9%	20	3.9%	2	1.9%
1990s incomplete gentrification	25	4.9%	13	2.5%	4	3.8%
Potential future gentrification	35	6.9%	15	2.9%	3	2.9%
Other forms of upgrading ^b	60	15.3%	74	17.1%	26	26.8%
Mixed trends/stability/or decline	306	60.5%	345	66.4%	58	55.3%
Central city totals (2001)	506	100.0%	519	100.0%	105	100.0%

^aNumbers of census tracts relate to the 2001 census tract divisions.

^bOther forms of upgrading include areas of middle-class and elite consolidation, as well as middle-class recapture.

Source: Calculated by the authors from Census of Canada (1961, 1971, 1981, 1991, 1996, 2001).

differentiation. The income distribution in such cases takes on an hour-glass shape, and reflects a distillation of the social structure into two well-defined classes. Understood as a process, polarization then refers to a situation or income distribution that is moving in such a direction, if not already there. A polarized social structure best fits the situation described as a “social tectonics,” in which distinct classes share a neighborhood but little else; they pass in the street but otherwise do not interact (Robson and Butler, 2001; Butler, 2003; Smith, 2003; Slater, 2004).

Inequality, on the other hand, typically increases when the spread between individual incomes widens and smaller segments of the population control ever greater shares of the total (as in the pyramid shape). The social structure is not defined in terms of two distinct classes, but instead by a number of subgroups with unequal access to resources but whose boundaries remain fuzzy. In this scenario, there is less likelihood of conflict, struggle, or antagonism sharpening between two distinct internally coherent groups, but instead perhaps a more general feeling of disconnectedness or unfairness that may or may not be directed at the wealthy few occupying the top rung. Accordingly, polarization and inequality might be expected to have different implications, psychologically and sociologically, which provides complementary information about the social structure or income distribution within a given place.

The foremost difference between the measurement of inequality and polarization concerns the way transfers among individuals are handled. At the core of the theory of

inequality lies the “Pigou-Dalton axiom” whereby inequality must always increase if, all else remaining the same, income is transferred from a poorer person to a richer person, no matter how poor or rich these individuals are (that is, no matter where within the income distribution these individuals are found, as long as the poorer individual has a lower income). In such cases, transfers between individuals near the center of the distribution usually have as much weight as transfers at or between the extremes of the distribution.⁹

Polarization, on the other hand, is determined by two major conditions that need to be satisfied. These are often termed the “spread” and “bipolarity” axioms. Under the spread axiom, polarization must increase if the population mass is shifted away from the middle of the distribution toward the extremes, and/or rich groups see their incomes increase and/or poor groups see their incomes decline. This axiom is quite intuitive and is usually, though not always, also associated with increases in measured inequality. The bipolarity axiom states that if transfers of income produce a situation in which the population is drawn toward two distinct population densities (poles), this must also increase measured levels of polarization even if the average distance between the population masses (poles) does not change. Furthermore, increasing population concentration at the center must reduce, or at least not increase, polarization (Esteban and Ray, 1994; Duclos et al., 2004). This latter axiom (or set of axioms) typically produces opposite results to those from established inequality measures, which indicate a *drop* in inequality under such circumstances. Thus it is possible for inequality and polarization indices to indicate opposing trajectories over time.

Our concern is with how processes of gentrification may be related to shifts in the income structure within neighborhoods located in Toronto, Montreal, and Vancouver. Census tracts are used as proxies for neighborhoods, with levels of income mix, inequality, and polarization measured between households, which are the most appropriate unit of study since households can (and typically do) pool their resources to pay for goods such as housing. A number of indices have recently been introduced in the literature for the purposes of measuring polarization, including those by Esteban and Ray (ER; 1994), Wolfson (1997), and Wang and Tsui (WT; 2000). Each of these indices satisfies the spread and bipolarity axioms outlined above, as well as three of the four main principles established for judging inequality measures (the population principle, the normalization principle, and the continuity principle—the polarization measures, of course, do *not* satisfy the Pigou-Dalton axiom).¹⁰ Unfortunately, data limitations related to the aggregation

⁹The exception to this involves the generalized entropy (GE) indices derived from the work of Theil, in which the distance between the transferer and transferee determines the impact of the transfer on the level of inequality (Shorrocks and Foster, 1987; Cowell, 1995).

¹⁰The population principle states that the index should not be sensitive to the overall size of the population. Thus, if the population doubles but the distribution of income remains the same, the index should not change. The normalization principle states that the index should not be sensitive to the overall level of income. Thus, if everyone were to double their existing incomes, the index should not change (since the relative income distances between individuals will not have changed). The continuity principle states that the index coefficients should be continuous (i.e., it should not jump abruptly due to small shifts in income, or leave out whole regions of values). There are also a number of indices that mimic the effects of such polarization indices (and which are largely interpreted as measures of polarization) but which strictly are not polarization measures, as they do not adhere to each of these axioms. These include the skewness ratio (ratio of mean to median income), and the ratio of income held by the bottom and top ends of the distribution (i.e., the ratio of the share of income held by the richest 20% to the poorest 80%, and others).

of income at the census tract level prevent us from calculating the ER or Wolfson indices at this scale. Thus the measure of polarization that is adopted for our examination of it at the census tract level is the WT index, which is a generalized version of the Wolfson index (Wang and Tsui, 2000). The inequality measures that we estimate for comparison are the exponential measure (EXP), the Gini concentration ratio (Gini CR)—which measures the true area under the Lorenz curve (MacLachlan and Sawada, 1997)—and the coefficient of variation squared (CV2). Wolfson (1997) argues for the simultaneous examination of the EXP, Gini, and CV2 as complementary measures, since this triad is disproportionately sensitive to changes at the bottom, middle, and upper ends of the income distribution, respectively.¹¹

In order to estimate accurate indices of inequality and polarization over time, custom data were specially ordered from Statistics Canada at the level of the census tract, detailing the number and average incomes of households within a set of 12 equivalent income ranges, adjusted for inflation across census years dating back to 1971. This was necessary because the household income data contained in each published census is distributed across ranges whose limits were not comparable over time. The number of

¹¹The formulas for calculating each of the inequality and polarization measures are as follows:

$$\text{Gini Concentration Ratio (GINI CR)} = \sum_{i=1}^{n-1} |x_i y_{i+1} - x_{i+1} y_i|$$

Where x is the cumulative proportion of households in income range i , y is the cumulative proportion of total income in range i , and n is the number of income ranges.

$$\text{Exponent (Exp)} = \sum_{i=1}^N \exp(-x_i/\mu)^2 \cdot y_i$$

Where x is the mean income of households in income range i , μ is the mean income of all households in the census tract, y is the proportion of households in income range i , and N is the number of income ranges.

$$\text{Coefficient of Variation (CV2)} = (\sqrt{\sigma})/\mu \text{ and } \sigma = \sum_{i=1}^N (x_i - \mu)^2 \cdot y_i$$

Where x is the mean income of households in income range i , μ is the mean income of all households in the census tract, y is the proportion of households in income range i , and N is the number of income ranges.

$$\text{Wang-Tsui (WT)} = \sum_{i=1}^N \left| \frac{x_i - m}{m} \right| \cdot y_i \quad (0 < r < 1, \text{ usually } r = .5)$$

Where x is the mean income of households in income range i , m is the median income of all households in the census tract, y is the proportion of households in income range i , N is the number of income ranges, and r is factor that allows the index to be generalized. Typically, it is set at $r = .5$ (Wang and Tsui, 2000).

ranges varies between published censuses, and the average incomes of those households within each range are not published. Thus, custom data were necessary to compute the inequality and polarization indices. The customized dataset thus allowed us to calculate each of the indices of interest related to inequality and polarization (for details on how this was accomplished using the data aggregated into income ranges, see Cowell, 1995, pp. 101–122). The average levels of inequality and polarization within each group of tracts as outlined above (i.e., for each wave of gentrification, complete vs. incomplete, and the others) were then calculated and compared to those for the rest of their central cities.¹²

We are also interested in how gentrification relates to changes in levels of ethnic mix, immigrant concentration, and racial diversity within neighborhoods. It is often assumed, based on research conducted in the U.S. or Latin American context, that gentrification is articulated in the “whitening” of the neighborhood, the exclusion of visible minorities and new immigrants, and increasing segregation between neighborhoods.¹³ Each of the three cities in our study experienced significant growth in the numbers and proportion of immigrants that arrived from Asia (particularly China and the Indian subcontinent), Africa, Latin America, and the Caribbean. Whereas many of these groups have become less segregated over time, visible minorities as a whole have become more concentrated in poorer neighborhoods where affordable housing is located (Walks and Bourne, 2006). Under a null hypothesis, gentrified neighborhoods should continue to concentrate at the same rate such immigrant groups in the same inner-city neighborhoods that functioned as immigrant reception areas in the past. Yet, gentrification reduces the stock of affordable housing available to lower-income newcomers in highly accessible locations, and as rental housing is de-converted to owner-occupant tenure, affected neighborhoods may cease to function as immigrant entries. However, it might also be noted that immigrants to Canada exhibit a diversity of origins and income levels. Indeed, many immigrants are solidly middle-class, and aspire to the same living environments as native middle-class Canadians (Myles and Hou, 2004). It is thus an open question whether gentrifying neighborhoods continue to act as immigrant entry areas, and whether they have maintained their disproportionate levels of ethnic and racial diversity over time.¹⁴

Changes in immigrant concentration and relative ethnic diversity during the study period are detected via three indices. First, the proportion and location quotients for the foreign-born (immigrant) population are compared for each neighborhood group over

¹²Unfortunately, Statistics Canada cannot calculate equivalent custom-tabulated income data for 1961.

¹³Swanson (2007) demonstrates how urban policies supporting gentrification in the historic center of Quito, Ecuador are tied to a transparent project of “whitening” (*blanqueamiento*), both in their displacing effects on the local indigenous population and in their discursive re-production of the city center as a “clean” and “beautiful” space for White tourists.

¹⁴It is not known how many immigrants are indirectly excluded from gentrified neighborhoods because they cannot afford the housing given their levels of income (what Marcuse calls “exclusionary displacement”; Marcuse, 1986), and how many new immigrants deliberately choose to live in more distant suburban neighborhoods because of negative perceptions of the inner city and positive perceptions of life in the suburbs. There is evidence that British and other Europeans in Toronto, for example, live in neighborhoods with the most desirable social qualities whereas Blacks and South Asians in particular are ending up in the most disadvantaged and lowest cost neighborhoods (Fong and Gulia, 1999; Myles and Hou, 2004).

time. Second, we trace the proportions and location quotients of the main visible minority groups. Unfortunately, visible minority status is not available in the census before 1996, so we used as a proxy the proportion of the population falling into three broad ethnic groups: (1) Chinese, (2) South Asians, and (3) Blacks (these are the only three that can be consistently traced back in time).¹⁵ In 2001, these groups represented about 60% of the total visible minority population in the three cities.¹⁶ And third, the Simpson index of ethnic diversity is calculated via shifts in the proportionate mix of five distinct groups within tracts over time, those whose ethnic origin is in one of the above three categories, as well as (4) French or British (to get at the dominant, White “host” community), and (5) those of other ethnic origin (predominantly European, Filipino, other East Asian, and Arab/West Asian).¹⁷ The Simpson Index varies between the extremes of zero (indicating the absence of diversity) and 1.0 (indicating the greatest possible diversity) but is often multiplied by 100 for ease of interpretation.

¹⁵The Census has been inconsistent since 1971 in defining recent immigrants by period of arrival, complicating cohort comparisons of this subset of the immigrant population across multiple census years. As such, for this article we have analyzed the variable representing the entire foreign-born population rather than merely recent immigrants. Location quotients indicate the degree to which immigrants or particular ethnic groups are disproportionately concentrated relative to other geographic units. It is possible for the location quotient to decline at the same time that the proportion of immigrants or visible minorities in a tract increases. This may happen if the proportion is increasing at a faster rate elsewhere in the urban region. In urban regions with fast-growing immigrant populations, such as Canada’s largest cities, location quotients are helpful in revealing disproportionate changes in levels of concentration.

¹⁶In Toronto, Montreal, and Vancouver the self-reported, visible-minority population represented 42.7%, 21.1%, and 36.9% of the population, respectively. The proportion with Chinese, South Asian, and/or Black origins in each place is 25.7%, 7.4%, and 26.7%, respectively. The latter proxy thus captures 60.2%, 45.0%, and 72.6% of the total visible minority population in 2001, for an average of 59.1%.

¹⁷This is obviously a limited set of categories that does not represent the full diversity of ethnicities, but it is the only option available for comparative research over the 30-year study period. Note that South Asians are unfortunately not present as a separate variable in the 1971 census. There is also the complication added by slightly differing forms of these variables appearing between earlier and later censuses. In the earlier censuses, ethnic origin is recorded as an either/or response, with limited options for choosing single or multiple origins. The 2001 Census however, encouraged this option. Unfortunately, the use of multiple responses double-counts those who list more than one origin, which is a particularly acute problem for those of British origin (i.e., if someone lists their origin as both “Scottish” and “English,” they get counted as two British origins). Thus, while the use of single-response data undercounts the population (totals do not add up to 100%), the multiple-response data overcounts the population (many instances where totals add up to over 100%). This is obviously a problem we cannot fully resolve here. What we have done in order to compensate is to (1) use the data for self-identified visible minority status in the case of Chinese, Black/African/Caribbean, and South Asian origins in 2001, and (2) in the case of those of British origin, average the 2001 indices for single responses and multiple responses.

The formula for calculating the Simpson Diversity Index (D) can be written as:

$$(D) = 1 - \left(\sum_{i=1}^x (n/N)^2 \right)$$

Where n is the number of members of an ethnic group, and N is the total population, within a given place, for x number of different ethnic groups.

NEIGHBORHOOD TRENDS IN INCOME MIX, INEQUALITY,
AND POLARIZATION

How has gentrification affected the income structure of inner-city neighborhoods? It is instructive to note how the income mix has changed between 1971 and 2001 across each city and within gentrifying neighborhoods. Table 2 displays how the proportion of households in each of four consistently defined income bands has changed over time (the bands are inflation-adjusted back to 1971). Whereas Vancouver exhibited a general tendency toward more affluent households, Toronto and Montreal revealed an overall shift toward polarization, with fewer households in the middle-income categories, and greater proportions of households in the lowest and highest ranges. Gentrification was clearly associated with greater affluence. Neighborhoods that experienced gentrification witnessed a significant reduction in the proportion of households with incomes in both the lowest category (less than Cdn \$20,000 in 2001 constant dollars) and the next (lower-middle) income category (between Cdn \$20,000 and \$50,000). The proportionate loss of such households was particularly acute in those areas that fully gentrified over the period, which went from having an average of 77% of all households in these two categories in 1971, to only 49.5% in 2001 (compared to an average of 55% for the rest of each central city, which not only included areas that did not gentrify but also many wealthy suburbs and elite enclaves). Meanwhile, most areas that fully gentrified ended the period with larger proportions of the highest-income households than found elsewhere in the city, a pattern particularly true of those areas that began gentrifying early on and thus suggestive of stage effects. Neighborhoods that gentrified early in Montreal and Vancouver, and *all* of the areas in Toronto that fully gentrified (regardless of when this began), revealed a shift to an income mix less “balanced” and more oriented toward the upper end of the spectrum than found elsewhere in the city or at the beginning of the period. The degree of mix remaining in more recently gentrified areas would thus appear transitory. The trajectories of those areas now long gentrified suggests such this transitory level of mix is likely to pass within a decade or so.

On the other hand, declining levels of social mix were not necessarily true for those areas witnessing only incomplete forms of gentrification, most of whom remained with disproportionately higher (though declining) concentrations of low-income households, and who saw only modest growth in the highest-income category. However, the trends demonstrated by those areas that have by now fully gentrified suggest that if areas of incomplete gentrification continue to gentrify, this will likely be accompanied by the erosion of their relative levels of income diversity and a shift further away from the ideals of income mix and balance.

Have neighborhoods experiencing gentrification become more unequal over time, and if so, has this occurred to a greater extent in these areas than in the rest of the city? Table 3 presents the coefficients of the three inequality indices for each neighborhood type for the decades since 1971. Regardless of whether they are more sensitive to the upper (CV squared), middle (Gini CR), or lower (EXP) reaches of the income spectrum, all three inequality measures revealed a similar pattern, whereby neighborhoods displaying some level of gentrification mostly begin and end the period with higher levels of income inequality than the rest of the central city. In Toronto, inequality levels were higher the

TABLE 2. CHANGE IN THE PROPORTION OF HOUSEHOLDS IN EACH INCOME BAND (EXPRESSED IN 2001 CONSTANT DOLLARS)

	1971 (% households)				2001 (% households)				Change 1971–2001			
	\$20k–		\$50k–		\$20k–		\$50k–		\$20k–		\$50k–	
	<\$20k	\$20k–\$50k	\$50k–\$100k	>\$100k	<\$20k	\$20k–\$50k	\$50k–\$100k	>\$100k	<\$20k	\$20k–\$50k	\$50k–\$100k	>\$100k
Toronto	15.0	38.9	36.7	9.3	17.1	31.2	32.2	19.5	2.1	-7.7	-4.5	10.2
1960s gentrification	23.2	41.7	25.7	9.3	15.2	25.8	30.0	29.1	-8.0	-15.9	4.3	19.8
1970s gentrification	22.1	44.4	28.2	5.3	13.4	25.7	31.2	29.6	-8.7	-18.7	3.0	24.3
1980s gentrification	21.4	43.4	29.2	6.0	14.0	24.7	36.3	25.0	-7.4	-18.7	7.1	19.0
1990s gentrification	19.5	47.2	28.4	4.9	12.6	23.6	25.5	38.3	-6.9	-23.6	-2.9	33.4
1970s incomplete gentrification	33.1	41.2	21.9	3.9	26.1	34.7	27.1	12.1	-7.0	-6.5	5.2	8.2
1980s incomplete gentrification	20.7	46.0	28.3	5.0	18.0	33.0	32.0	17.1	-2.7	-13.0	3.7	12.1
1990s incomplete gentrification	25.0	44.2	25.7	5.1	22.9	33.4	30.4	13.3	-2.1	-10.8	4.7	8.2
Potential future gentrification	18.9	46.8	29.8	4.6	23.1	36.6	30.4	9.9	4.2	-10.2	0.6	5.3
Mixed trends/rest of the city	11.0	35.9	42.8	10.3	16.7	31.4	32.4	19.5	5.7	-4.5	-10.4	9.2
Montreal	23.8	45.7	24.7	5.8	27.7	37.3	24.5	10.3	3.9	-8.4	-0.2	4.5
1960s gentrification	27.5	40.8	19.9	11.8	12.9	21.7	26.5	38.9	-14.6	-19.1	6.6	27.1
1970s gentrification	37.5	45.3	15.5	1.7	25.2	34.2	27.0	13.6	-12.3	-11.1	11.5	11.9
1980s gentrification	36.2	48.0	14.5	1.3	21.9	33.8	31.0	13.3	-14.3	-14.2	16.5	12.0
1990s gentrification	45.9	42.4	11.8	0.8	45.8	23.8	13.0	17.4	-0.1	-18.6	1.2	16.6
1970s incomplete gentrification	37.2	47.0	13.7	2.0	32.9	42.0	20.2	4.8	-4.3	-5.0	6.5	2.8
1980s incomplete gentrification	42.8	44.7	11.5	1.0	34.9	40.5	20.1	4.5	-7.9	-4.2	8.6	3.5
1990s incomplete gentrification	33.7	48.6	16.1	1.6	39.0	41.7	15.7	3.6	5.3	-6.9	-0.4	2.0
Potential future gentrification	28.2	51.7	18.4	1.7	37.8	41.3	18.8	2.1	9.6	-10.4	0.4	0.4
Mixed trends/rest of the city	16.2	43.8	32.2	7.7	25.3	36.4	26.1	12.2	9.1	-7.4	-6.1	4.5
Vancouver	25.8	41.6	26.4	6.2	22.5	32.7	29.6	15.1	-3.3	-8.9	3.2	8.9
1970s gentrification	43.3	42.3	12.4	2.1	20.3	33.0	32.2	14.6	-23.0	-9.3	19.8	12.5
1980s gentrification	50.2	36.3	11.3	2.3	20.0	28.2	33.7	18.2	-30.2	-8.1	22.4	15.9
1990s gentrification	39.0	43.9	16.2	0.9	21.6	41.8	25.5	11.1	-17.4	-2.1	9.3	10.2
1980s incomplete gentrification	54.1	35.1	9.3	1.5	61.0	28.0	8.4	2.6	6.9	-7.1	-0.9	1.1
1990s incomplete gentrification	44.1	42.8	11.9	1.2	34.8	37.6	21.9	5.6	-9.3	-5.2	10.0	4.4
Potential future gentrification	33.5	47.1	17.9	1.4	48.6	30.6	16.6	4.2	15.1	-16.5	-1.3	2.8
Mixed trends/rest of the city	22.0	41.9	29.9	6.1	21.2	32.9	30.5	15.5	-0.9	-9.0	0.6	9.4

Source: Calculated by the authors from custom-tabulated data from the Census of Canada contained in Statistics Canada (2006).

TABLE 3. MEAN LEVELS OF WITHIN NEIGHBORHOOD INCOME INEQUALITY, BY NEIGHBORHOOD TYPE, THREE LARGEST CITIES, 1971-2001

	Exponent (EXP)						GINI CR						CV ²					
	1971	1981	1991	2001	1971	1981	1991	2001	1971	1981	1991	2001	1971	1981	1991	2001		
	Toronto	0.427	0.437	0.446	0.459	0.412	0.419	0.426	0.445	0.596	0.647	0.696	0.770	0.647	0.696	0.770	0.770	
1960s gentrification	0.461	0.473	0.466	0.491	0.457	0.479	0.456	0.508	0.770	0.889	0.869	1.025	0.889	0.869	1.025	1.025		
1970s gentrification	0.442	0.453	0.456	0.476	0.432	0.447	0.442	0.463	0.662	0.698	0.787	0.909	0.698	0.787	0.909	0.909		
1980s gentrification	0.446	0.446	0.465	0.471	0.441	0.415	0.487	0.459	0.719	0.687	0.817	0.896	0.687	0.817	0.896	0.896		
1990s gentrification	0.433	0.433	0.455	0.449	0.427	0.451	0.444	0.427	0.618	0.636	0.741	0.952	0.636	0.741	0.952	0.952		
1970s incomplete gentrification	0.457	0.455	0.475	0.479	0.466	0.444	0.449	0.498	0.736	0.727	0.823	0.821	0.727	0.823	0.821	0.821		
1980s incomplete gentrification	0.436	0.443	0.450	0.456	0.436	0.448	0.448	0.449	0.631	0.645	0.693	0.739	0.645	0.693	0.739	0.739		
1990s incomplete gentrification	0.452	0.456	0.457	0.463	0.431	0.457	0.434	0.459	0.676	0.706	0.724	0.763	0.706	0.724	0.763	0.763		
Potential future gentrification	0.433	0.444	0.450	0.455	0.420	0.429	0.444	0.464	0.602	0.646	0.658	0.730	0.646	0.658	0.730	0.730		
Mixed trends/rest of the city	0.419	0.430	0.439	0.451	0.400	0.409	0.415	0.432	0.552	0.605	0.653	0.722	0.605	0.653	0.722	0.722		
Montreal	0.437	0.451	0.455	0.462	0.410	0.431	0.440	0.443	0.630	0.667	0.702	0.747	0.667	0.702	0.747	0.747		
1960s gentrification	0.487	0.470	0.456	0.457	0.530	0.517	0.464	0.462	0.907	0.842	0.859	0.870	0.842	0.859	0.870	0.870		
1970s gentrification	0.463	0.491	0.467	0.472	0.414	0.393	0.427	0.454	0.690	0.682	0.721	0.795	0.682	0.721	0.795	0.795		
1980s gentrification	0.455	0.484	0.453	0.463	0.429	0.434	0.392	0.428	0.672	0.669	0.629	0.678	0.669	0.629	0.678	0.678		
1990s gentrification	0.480	0.483	0.515	0.552	0.523	0.344	0.312	0.409	0.704	0.655	0.539	0.746	0.655	0.539	0.746	0.746		
1970s incomplete gentrification	0.458	0.474	0.471	0.474	0.411	0.406	0.461	0.460	0.709	0.675	0.746	0.813	0.675	0.746	0.813	0.813		
1980s incomplete gentrification	0.465	0.485	0.473	0.475	0.416	0.387	0.441	0.426	0.694	0.646	0.715	0.718	0.646	0.715	0.718	0.718		
1990s incomplete gentrification	0.452	0.469	0.469	0.482	0.426	0.418	0.427	0.425	0.672	0.667	0.689	0.734	0.667	0.689	0.734	0.734		
Potential future gentrification	0.439	0.458	0.462	0.461	0.419	0.461	0.428	0.449	0.646	0.707	0.692	0.697	0.707	0.692	0.697	0.697		
Mixed trends/rest of the city	0.428	0.441	0.449	0.457	0.401	0.432	0.443	0.442	0.595	0.647	0.688	0.739	0.647	0.688	0.739	0.739		
Vancouver	0.446	0.455	0.455	0.466	0.442	0.442	0.437	0.460	0.693	0.739	0.748	0.827	0.739	0.748	0.827	0.827		
1970s gentrification	0.468	0.470	0.459	0.466	0.435	0.469	0.463	0.480	0.758	0.811	0.817	0.863	0.811	0.817	0.863	0.863		
1980s gentrification	0.483	0.515	0.479	0.472	0.429	0.385	0.391	0.484	0.718	0.607	0.800	0.888	0.607	0.800	0.888	0.888		
1990s gentrification	0.454	0.456	0.463	0.481	0.470	0.453	0.446	0.493	0.748	0.729	0.758	1.144	0.729	0.758	1.144	1.144		
1980s incomplete gentrification	0.487	0.540	0.481	0.495	0.444	0.319	0.426	0.535	0.749	0.675	0.839	1.005	0.675	0.839	1.005	1.005		
1990s incomplete gentrification	0.461	0.458	0.461	0.467	0.454	0.464	0.492	0.472	0.779	0.736	0.796	0.824	0.736	0.796	0.824	0.824		
Potential future gentrification	0.446	0.461	0.447	0.470	0.452	0.416	0.383	0.424	0.693	0.683	0.688	0.839	0.683	0.688	0.839	0.839		
Mixed trends/rest of the city	0.438	0.446	0.451	0.458	0.439	0.444	0.435	0.444	0.660	0.726	0.710	0.753	0.726	0.710	0.753	0.753		

Source: Calculated by the authors from custom-tabulated data from the Census of Canada contained in Statistics Canada (2006).

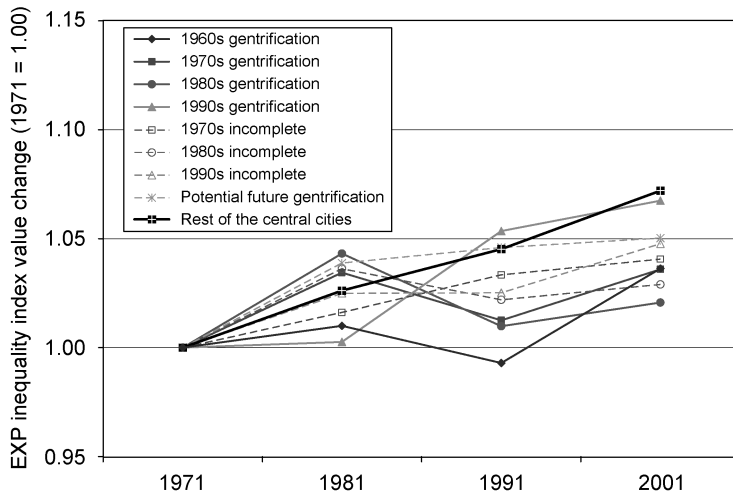


Fig. 1. Proportionate change in neighborhood income inequality (EXP Index), all three central cities, 1971–2001. *Source:* Calculated by the authors from custom-tabulated data from the Census of Canada contained in Statistics Canada (2006).

earlier the onset of gentrification, with neighborhoods in the first wave (1960s and 1970s) showing greater inequality than those in the second and third waves (1980s and 1990s). An almost opposite trend, however, was evident in Montreal and Vancouver, where generally it was the later waves that revealed the higher degrees of inequality. Only in Montreal did we find any decline in inequality levels for any of the neighborhood categories, and then only among some of the fully gentrified groups; this suggested that the stages of gentrification had differential effects on the local social structure in different contexts.¹⁸ In Toronto and Vancouver, gentrified and gentrifying areas revealed increases in inequality across the board, regardless of the measure employed.

When changes in inequality were compared relative to their starting positions in 1971, however, a slightly different picture emerged. Figure 1 shows shifts in the EXP index (sensitive to the lower end of the income spectrum), which suggest it was areas that did not experience any form of past or potential future gentrification that witnessed the greatest increase in inequality over the study period. Such areas are mostly located outside the prewar inner city (and thus in the older inner suburbs), although some of these tracts were found in poorer areas of the inner city. Increases in inequality were therefore not confined to the inner cities or to gentrifying areas, but was virtually universal throughout large Canadian cities. It is interesting to note that over the decade of the 1980s inequality declined within many neighborhoods that had begun gentrifying during

¹⁸But note here that a different story is told by the gini concentration ratio (Gini CR), the index most sensitive to shifts in the middle vs. the other two indices. The former suggests gentrified tracts in Montreal are becoming more equal, while those more sensitive to the extremes largely show the opposite. Thus gentrified tracts in Montreal may be seeing both increasing concentration in the middle of the spectrum, but wider income disparity at the edges.

or before this time, whereas the neighborhoods in the third wave experienced increasing inequality. The 1980s would thus appear to be the decade when gentrified neighborhoods consolidated their position, and this may have been the decade in which much displacement occurred, although a lack of data on displacement prevents firm conclusions. The 1980s was also the decade during which much urban policy became re-oriented away from the reformist goals of protecting low-income neighborhoods (including policies against “white-painting”), and away from a commitment to the expansion of affordable housing, instead allowing greater reign to the market in allocating space to urban populations (see also Hackworth and Smith, 2001; Slater, 2004). Trends for the Gini CR index followed fairly closely those for the EXP, while the CV measure showed even higher levels of inequality and greater shifts over time, suggesting that a disproportionate amount of the growth in inequality has been driven by changes at the upper end of the income spectrum.

Polarization is conceptually distinct from inequality, and thus warrants separate treatment here. Table 4 shows the index values for the Wang-Tsui (WT) polarization index, which is more sensitive to shifts at the extreme ends of the income distribution. To an even greater extent than for inequality, income polarization increased in virtually all neighborhood groups across the study period. By the end of the period in 2001, polarization levels were generally highest in the fully gentrified neighborhoods, followed by those neighborhoods exhibiting “incomplete” gentrification, with the rest of the central city revealing the lowest levels. Polarization was also generally highest in those neighborhoods that gentrified first, and lowest in those that gentrified more recently. This indicates period effects, whereby the longer a neighborhood has been gentrified/gentrifying, the more polarized the social structure has become.

Calculating rates of change in the WT index for each neighborhood type revealed a similar temporal pattern to that for inequality (Fig. 2). Areas of gentrification, which were all found within the inner city, began the period with above-average levels of income polarization and continued to further polarize over the time period. However, it is neighborhoods in the rest of the central city (areas that do not fall under the category of gentrification), and areas that our analysis suggested might gentrify in the future (but otherwise remain low-income neighborhoods), that witnessed the largest increases in WT scores between 1971 and 2001. Period effects were clearly evident among those neighborhoods that fully gentrified, with those witnessing the onset of gentrification in the 1960s seeing the greatest increase in polarization, followed in lockstep by those that gentrified during the 1970s, then 1980s and then 1990s. As might be expected with an index that is most sensitive to changes at the extreme ends of the income spectrum, those areas in which either poverty was growing fastest (including both the potential future gentrification category, as well as aging neighborhoods in the inner suburban portions of the metropolis), or which saw the greatest expansion of affluence (*viz.* those neighborhoods that experienced gentrification the earliest, and thus were furthest along toward becoming elite neighborhoods), were the ones for which polarization levels jumped most dramatically. Areas of incomplete gentrification, on the other hand, experienced slower increases in their (already above-average) polarization levels.

Thus income inequality and polarization increased overall in gentrifying areas over the study period, while income structure became less mixed and more skewed toward the high end of the spectrum. Both the timing and degree of transformation would appear

TABLE 4. MEAN LEVELS OF WITHIN NEIGHBORHOOD INCOME POLARIZATION (WT INDEX), BY NEIGHBORHOOD TYPE, THREE CENTRAL CITIES, 1971–2001

	WT Index ^a			
	1971	1981	1991	2001
Toronto	0.628	0.671	0.712	0.754
1960s gentrification	0.720	0.792	0.786	0.867
1970s gentrification	0.684	0.724	0.748	0.803
1980s gentrification	0.698	0.699	0.765	0.767
1990s gentrification	0.665	0.667	0.748	0.746
1970s incomplete gentrification	0.732	0.738	0.784	0.773
1980s incomplete gentrification	0.661	0.690	0.725	0.753
1990s incomplete gentrification	0.700	0.730	0.745	0.752
Potential future gentrification	0.650	0.688	0.720	0.749
Mixed trends/rest of the city	0.599	0.643	0.687	0.724
Montreal	0.652	0.703	0.725	0.744
1960s gentrification	0.777	0.810	0.809	0.852
1970s gentrification	0.710	0.739	0.751	0.754
1980s gentrification	0.688	0.727	0.686	0.716
1990s gentrification	0.745	0.729	0.648	0.681
1970s incomplete gentrification	0.708	0.731	0.748	0.750
1980s incomplete gentrification	0.730	0.726	0.737	0.732
1990s incomplete gentrification	0.690	0.732	0.738	0.742
Potential future gentrification	0.661	0.738	0.740	0.733
Mixed trends/rest of the city	0.625	0.684	0.714	0.737
Vancouver	0.685	0.712	0.731	0.762
1970s gentrification	0.734	0.733	0.733	0.761
1980s gentrification	0.709	0.676	0.743	0.776
1990s gentrification	0.717	0.757	0.785	0.778
1980s incomplete gentrification	0.740	0.726	0.767	0.844
1990s incomplete gentrification	0.747	0.754	0.775	0.770
Potential future gentrification	0.715	0.661	0.693	0.769
Mixed trends/rest of the city	0.665	0.701	0.721	0.741

^aHigher values indicate increased levels of income polarization.

Source: Calculated by the authors from custom-tabulated data from the Census of Canada contained in Statistics Canada (2006).

important for determining the extent to which gentrifying areas became more polarized and less mixed in their income structure. Of course, polarization also increased throughout the remainder of the central city in areas that did not gentrify. Canadian cities today are in a state of increasing inequality and polarization at the societal level, and this would appear to be having an effect across all neighborhoods, whether or not they are experiencing some form of gentrification. At a broader level, gentrification contributes to polarization by spatially concentrating wealthy households and forcing low-income households

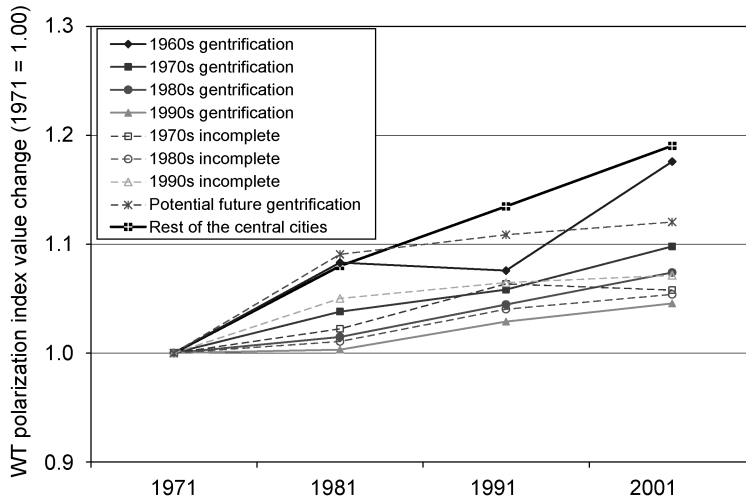


Fig. 2. Proportionate change in neighborhood income polarization (WT Index), all three central cities, by neighborhood type, 1971–2001. *Source:* Calculated by the authors from custom-tabulated data from the Census of Canada contained in Statistics Canada (2006).

into poorer neighborhoods elsewhere. At the neighborhood scale, there is support for period effects wherein those neighborhoods that gentrified earlier saw polarization levels increase the most; and the longer a neighborhood has been gentrifying, the more polarized its socioeconomic structure. It is likely that this results both from the greater scope for displacement over time, and the increasing desirability of the neighborhood for high-income households, as gentrification moves through successive stages. Thus gentrification appears to interact with broader processes of social polarization occurring throughout the city, both reflecting and crystallizing broader social trends. However, areas of incomplete gentrification saw polarization levels grow more slowly, reflecting the slower transitions occurring there. Such areas also retained greater relative levels of income mix. These results suggest that if gentrification can be slowed, if not halted, it may be possible to maintain mixed-income communities in the inner city and, at the same time, to prevent rapid increases in social polarization that have been associated with heightened levels of inter-group antagonism and disaffiliation, which follow from a socially “tectonic” structure (Esteban and Ray, 1994; Slater, 2004). However, the trends for those areas that fully gentrified clearly indicate that if such areas continued to gentrify, that would speed up the rate of increase in their levels of neighborhood inequality and polarization, hampering efforts to maintain inclusive communities in the inner city.

NEIGHBORHOOD TRENDS IN ETHNIC MIX, DIVERSITY AND IMMIGRANT CONCENTRATION

What might be the effect of gentrification on the traditional function of inner-city neighborhoods as immigrant-reception areas, and how might this affect relative levels of ethnic and racial diversity? Newer immigrants typically benefit from locating in the inner

city, where accessibility is high and affordable rental housing was traditionally available. Stage models suggest that over time the loss of affordable rental housing should impact the ability of newcomers, many of whom are members of visible minorities, to live in such accessible locations. Yet it should also be noted that many immigrants to Canada evince high incomes and a middle-class lifestyle, and thus have substantial “locational choice” (Myles and Hou, 2004). Although gentrification has been found to lead to a loss of racial diversity in the U.S. context (Wyly and Hammel, 2004), it is not clear that this is the case in Canada. If gentrification is found to increasingly segregate the White middle class in the most accessible locations, this could lead to increasing levels of social resentment and distrust at wider levels, and perhaps even between neighborhoods.

Canada’s largest cities have sustained high rates of immigration during the postwar period, and this has had a significant effect on levels of ethnic diversity and immigrant concentration. Indeed, all three of our study cities have depended on immigrants for much of their population growth, not only during the past 40 years but since their founding. According to the Census of Canada, in 1971 approximately 35% of the populations in both Metro Toronto and the City of Vancouver were foreign-born, and this increased to 50.8% and 48.0%, respectively, by 2001. At the same time, the source countries of immigrants have changed, so that most new immigrants are also members of visible minorities. This has led to a drastic shift in the “face” of urban Canada. By the 2001 census, visible minorities made up almost 37% of the population in both the Toronto and Vancouver CMAs, and 13.6% of the Montreal CMA. Although significant proportions of both new immigrants and visible minorities drew middle-class incomes, polarization is nonetheless evident among different immigrant groups, with the poorer members increasingly concentrated in that dwindling portion of the rental stock that remains affordable (Walks and Bourne, 2006).

Does gentrification impact the ability of inner-city neighborhoods to act as immigrant reception areas? To answer this question, the percent of the population that is foreign-born was compared between gentrifying tracts and the rest of the central cities across the study period (Table 5). Whereas immigrants increased substantially in each of the central cities, the degree to which they became more or less concentrated in neighborhoods witnessing gentrification differs across contexts. Namely, gentrified tracts in Toronto and Vancouver are losing their function as immigrant entry areas, while the results are more mixed in Montreal. In 1971, immigrants were disproportionately concentrated in each and every gentrification area in both Toronto and Vancouver, but by 2001 this had reversed and none of those areas witnessing gentrification had greater shares of immigrants than the rest of the central city. Many gentrified and gentrifying neighborhoods saw absolute declines in immigrant proportions, even while the overall level continued to climb in the rest of the metropolis. In Montreal, on the other hand, there would appear to be a minimal relationship between immigrant settlement and gentrification, with some gentrified neighborhoods still drawing greater shares of immigrants than the rest of the urban region. This is likely the result of the greater concentration of allophones and Anglophones among immigrants in Montreal, who tend to seek out neighborhoods where English is more widely spoken and accepted. Gentrified neighborhoods in Montreal contained the highest concentrations of English speakers outside of the West Island (Germain and Rose, 2000).

TABLE 5. MEAN NEIGHBORHOOD PROPORTIONS FOR FOREIGN-BORN AND THE THREE LARGEST VISIBLE MINORITY GROUPS (CHINESE, SOUTH ASIAN, AND BLACK/AFRICAN) BY NEIGHBORHOOD TYPE, THREE LARGEST CITIES, 1971–2001

	Foreign-born (%)				Chinese, South Asians, and Blacks (%)			
	1971	1981	1991	2001	1971 ^a	1981	1991	2001
Toronto	35.2	41.3	45.6	50.1	2.3	6.9	14.2	27.2
1960s gentrification	42.4	40.1	39.5	40.9	4.8	6.4	10.4	14.6
1970s gentrification	43.6	38.9	35.6	32.6	3.8	7.7	9.0	10.3
1980s gentrification	55.2	56.6	41.2	38.6	3.1	5.5	9.2	15.2
1990s gentrification	39.0	55.8	55.6	34.6	2.2	4.3	6.9	11.3
1970s incomplete gentrification	37.4	38.3	43.6	45.4	8.8	11.9	17.2	27.1
1980s incomplete gentrification	51.4	54.0	49.6	45.9	4.2	9.2	15.3	21.7
1990s incomplete gentrification	57.0	56.3	54.7	48.4	7.5	14.3	19.4	28.5
Potential future gentrification	42.4	47.0	51.3	51.5	3.2	6.8	12.1	22.7
Mixed trends/rest of the city	32.8	41.5	48.2	55.2	1.7	7.0	16.1	27.8
Montreal	16.9	21.5	25.7	29.0	0.9	1.8	3.9	10.1
1960s gentrification	27.6	29.1	26.2	30.6	1.9	3.5	4.9	8.1
1970s gentrification	19.3	20.3	21.8	23.2	2.3	2.7	3.4	5.2
1980s gentrification	4.8	9.0	16.9	17.1	0.3	0.9	1.8	4.4
1990s gentrification	17.9	29.1	29.8	35.2	0.5	4.1	3.4	6.0
1970s incomplete gentrification	22.5	25.6	27.7	29.6	2.5	3.7	4.3	8.9
1980s incomplete gentrification	15.7	22.6	26.0	27.4	1.8	2.2	3.7	8.1
1990s incomplete gentrification	9.0	13.3	19.2	21.0	0.5	0.5	2.0	5.6
Potential future gentrification	10.1	13.4	17.8	21.1	0.3	1.3	2.9	7.1
Mixed trends/rest of the city	17.8	22.6	27.0	31.0	0.8	1.7	4.5	10.2
Vancouver	34.6	39.8	43.6	48.0	7.5	17.6	25.1	34.8
1970s gentrification	36.1	32.1	31.8	34.1	5.2	5.3	7.2	12.4
1980s gentrification	38.7	36.5	32.0	46.5	9.3	10.3	12.3	20.2
1990s gentrification	36.3	39.0	29.0	27.4	4.5	6.0	4.1	7.7
1980s incomplete gentrification	41.6	38.3	31.4	28.9	15.3	17.8	12.7	18.0
1990s incomplete gentrification	44.8	49.0	47.5	47.9	21.0	26.6	24.8	26.2
Potential future gentrification	36.1	32.1	31.8	34.1	21.9	26.1	19.6	20.8
Mixed trends/rest of the city	34.0	42.1	48.6	54.0	7.1	22.0	32.5	40.7

^aSouth Asian not included in 1971.

Source: Calculated by the authors from Census of Canada (1971, 1981, 1991, 2001).

A clearer picture of the effects of gentrification on the role of inner-city neighborhoods as immigrant-reception areas is gained when these simple proportions are converted to location quotients (LQs). This is done in Figure 3, which aggregates the trends across all three central cities. In 1971, all of those neighborhoods that subsequently experienced gentrification had LQs showing higher concentrations than the rest of the city. By 2001,

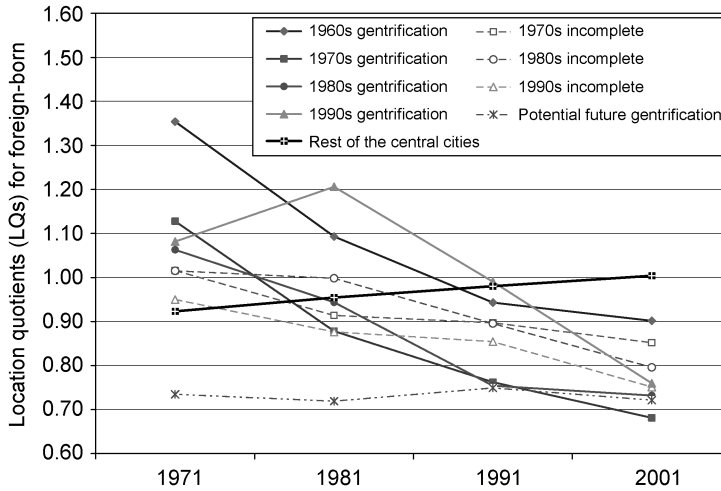


Fig. 3. Location quotients (LQ) for foreign born by neighborhood type, all three central cities, 1971–2001. *Source:* Calculated by the authors from Census of Canada (1971, 1981, 1991, 2001).

however, this had reversed, and LQs in virtually all of the gentrified neighborhoods were the lowest of the groups analyzed here, while the rest of the city showed the highest LQs. The same pattern does not apply to those areas that experienced incomplete gentrification, however, where immigrants increased as a proportion of the total population, and for whom LQs declined at a much slower rate than for the fully gentrified neighborhoods. There are stage effects present among gentrified neighborhoods, whereby the most rapid drops in LQ values generally occurred at the onset of gentrification. It is clear from these findings that gentrification has significantly altered the function of many inner-city neighborhoods as immigrant reception areas. These trends suggest that if those few areas left in the inner city that still attract immigrants, including those areas of incomplete gentrification, are allowed to continue gentrifying, this function may be effectively removed. However, if gentrification could be slowed or halted in such neighborhoods, it is still possible that this function might be salvaged.

Has gentrification led to the “whitening” of inner-city neighborhoods? Table 5 contains information on the proportions of the three main visible minority groups available for tracking over time via the census (those with Chinese, South Asian, and Black origins). As is clear, virtually all neighborhood groups in the central cities witnessed increased visible-minority concentration, many by magnitudes of five or more (the lone, slight exception is the potential future gentrification group in Vancouver). However, when the *relative* level of visible minorities is being measured, an opposite pattern is discernible among gentrifying neighborhoods. Once again, the degree to which gentrification has superseded below-average increases in the share of visible minorities by 2001 depends on the city in question. In Toronto, there is a clear divide between fully gentrified neighborhoods and all others (including those of incomplete gentrification). The former have visible-minority proportions up to 15% lower (and are thus roughly 15% “whiter”) than those found elsewhere. In Vancouver, it is both the gentrified and incomplete/gentrifying neighborhoods

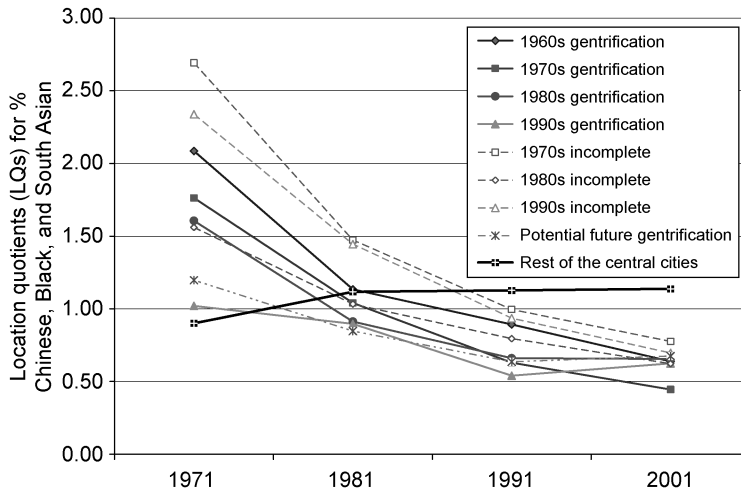


Fig. 4. Location quotients (LQ) for residents with Chinese, South Asian, or Black/African origins, by neighborhood type, all three central cities, 1971–2001. *Source:* Calculated by the authors from Census of Canada (1971, 1981, 1991, 2001).

that evince disproportionately lower levels of minorities (between 14% and 33% lower). In Montreal, on the other hand, gentrification appears to be associated with only minor differences in the population shares of visible minorities. The latter result is once again very likely related to the greater affinity of allophone immigrants for English-speaking neighborhoods in Montreal, thus tempering the “whitening” effects of gentrification there.

The dramatic change in the roles of gentrifying neighborhoods is revealed when these proportions are aggregated and converted to LQs (Fig. 4). In 1971, each of the gentrification groups showed above-average proportions of visible minorities, but this changed dramatically over the study period. By 1991, both those neighborhoods that were fully gentrified and those still gentrifying had LQs below 1.0 (below that for the rest of the central cities). By 2001, gentrified neighborhoods revealed the lowest LQs of all the neighborhoods under study, whereas areas of incomplete gentrification occupied a middle ground between them and the rest of the city. There are few stage effects present here—gentrification is consistently and almost linearly associated with declining relative concentrations of minorities, although the relative change in the White population does seem particularly concentrated in neighborhoods that gentrified at particular times (especially the 1970s), some of which were always somewhat “whiter” than other parts of the inner city. These findings provide evidence for the proposition that gentrification represents a relative whitening of the neighborhood, and that it leads to the relative segregation of the White population in the inner zone of the Canadian central city. This is all the more striking when one considers that many visible minorities and immigrants in Canada are members of the middle class and possess the income to afford to live in such areas.

Finally, we test whether gentrification has deleterious effects on the level of ethnic mix, and whether it leads to reduced levels of social diversity. This is accomplished via the Simpson index of ethnic diversity, one of the most common and easily understood

**TABLE 6. SIMPSON DIVERSITY INDEX, BY NEIGHBORHOOD TYPE,
THREE LARGEST CITIES, 1971–2001^a**

	1971	1981	1991	2001
Toronto				
1960s gentrification	49.0	53.0	48.3	51.9
1970s gentrification	42.7	50.9	46.6	42.5
1980s gentrification	41.2	41.4	42.2	49.5
1990s gentrification	45.0	36.4	41.0	46.4
1970s incomplete gentrification	48.2	53.8	58.7	58.4
1980s incomplete gentrification	44.2	47.1	52.9	54.1
1990s incomplete gentrification	43.3	49.0	52.0	57.2
Potential future gentrification	47.5	48.6	51.5	56.4
Mixed trends/rest of the city	43.5	52.1	56.9	58.2
Montreal				
1960s gentrification	37.5	39.6	47.3	41.0
1970s gentrification	28.4	33.8	44.7	47.3
1980s gentrification	9.4	18.3	38.9	45.7
1990s gentrification	21.3	37.6	44.3	49.9
1970s incomplete gentrification	27.4	35.5	45.7	48.2
1980s incomplete gentrification	23.6	27.7	45.7	46.5
1990s incomplete gentrification	18.6	23.2	41.4	43.4
Potential future gentrification	17.2	21.6	37.8	45.5
Mixed trends/rest of the city	29.4	35.8	43.0	44.7
Vancouver				
1970s gentrification	52.2	53.9	48.1	42.1
1980s gentrification	54.4	57.5	59.3	59.6
1990s gentrification	52.8	55.6	43.3	37.7
1980s incomplete gentrification	59.9	62.5	57.1	53.9
1990s incomplete gentrification	58.2	60.3	55.9	51.4
Potential future gentrification	61.7	65.9	61.1	57.7
Mixed trends/rest of the city	52.4	63.2	65.6	63.9

^aValues range between 0 and 100. High values indicate a high level of diversity (each of the five broad ethnic groups are equally represented).

Source: Calculated by the authors from Census of Canada (1971, 1981, 1991, 2001).

indices for examining diversity within spatial units. Table 6 displays the index values for each neighborhood group in each city. Diversity levels increased rapidly over the entire period in absolute terms. However, in relative terms, there was a clear relationship between gentrification and lower levels of diversity in Toronto and Vancouver, while Montreal revealed variable results. Many gentrified neighborhoods even witnessed absolute declines in diversity during later periods. This was particularly true in Toronto and Vancouver, whereas in Montreal levels of diversity increased in each of the neighborhood

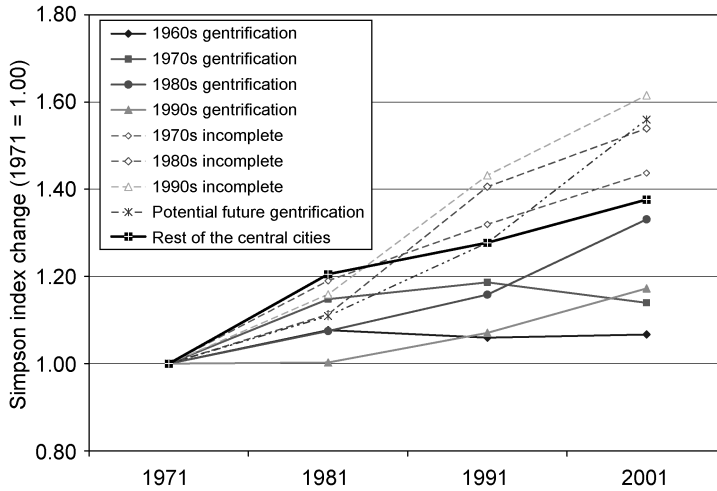


Fig. 5. Proportionate change in the Simpson Diversity Index, by neighborhood type, for all three central cities, 1971–2001. *Source:* Calculated by the authors from Census of Canada (1971, 1981, 1991, 2001).

groups, confirming again the importance of context for determining the eventual outcomes of gentrification.

Figure 5 shows how the Simpson index has changed since 1971 for each group aggregated across all three cities. Gentrified neighborhoods showed the lowest overall increases (and in the 1990s, even decreases) in diversity. Such shifts would appear a function of the timing and length of time spent in a given stage of gentrification. By 2001, those neighborhoods that had begun gentrifying in the 1960s had the lowest levels of neighborhood ethnic diversity, followed in order by areas that had gentrified during the 1970s, 1990s, and then the 1980s. On the other hand, all of those areas that experienced incomplete gentrification still revealed a great deal of ethnic diversity, with Simpson values that surpassed even those for the rest of the central city. Halting or slowing the pace of gentrification may thus work to temper the process of “whitening” and maintain a more ethnically and racially balanced community in the inner city, although the direction of causation here, of course, cannot be proven. Nonetheless, allowing the gentrification process to continue would appear to be associated with eventual reductions in ethnic diversity, a decline in social mix, and the elimination of affected inner-city neighborhoods as potential immigrant-reception areas.

CONCLUSION

This article has examined the relationships between neighborhood gentrification, social mix, and social polarization within Canada’s three largest cities. Contrary to the assumptions of the current orthodoxy, gentrification was not found to lead to greater levels of social mix, whether defined by income or race and ethnicity. Indeed, the opposite is largely true: the more that gentrification had progressed in a neighborhood, the greater the reduction in levels of social mix, and the less “mixed” the local social structure in

2001. Alternatively, areas that did not gentrify, or that only witnessed marginal or slow gentrification retained a greater mix over the study period. Gentrification also had a deleterious impact on the immigrant-reception function of inner-city neighborhoods. Although ethnic diversity increased in absolute terms across most central-city neighborhoods due to the rapid increase in immigration rates and concomitant changes in the face of urban Canada, in relative terms there is a clear pattern by which neighborhoods experiencing gentrification reduced their share of both immigrants and visible minorities. This relationship was sharpest in those neighborhoods that experienced the full thrust of gentrification, many of which saw not only relative but also absolute declines in their levels of ethnic diversity and immigrant concentration. Such areas no longer function as immigrant reception areas, and are instead disproportionately concentrating whiter and wealthier populations. Clearly, the gentrification of the inner city portends a situation in which the old inner city, once abandoned to cheap working-class housing, increasingly houses Whites and wealthier households, while visible minorities and low-income households are increasingly displaced to older aging suburbs. Such processes, however, advanced more slowly in those neighborhoods in which gentrification either halted or expanded only slowly (remaining incomplete), and the latter neighborhoods continued to see their relative levels of ethnic diversity increase.

This research has clear implications for policy. Contrary to the assumptions linking gentrification to social mix, our results suggest that if allowed to run its course, gentrification is likely to *reduce* neighborhood levels of social mix and ethnic diversity, and with it the ability of a neighborhood to integrate future waves of immigrants (even though the direction of causation has not yet been proven). However, if gentrification can be slowed or halted altogether, there would appear to exist the potential for maintaining inclusive, ethnically diverse, and more socially mixed communities in the inner city. This, of course, remains a big “if.” Regardless, the lesson for policymakers is that if they want to intervene to ensure proportionate levels of social mix and retain a more balanced social structure, they should be aiming to *limit*, rather than promote, gentrification.

This research also provides evidence tying gentrification to elevated levels of urban social polarization. Gentrified areas exhibit the highest levels of intra-neighborhood income polarization and inequality, and the longer the process has been occurring, the more polarized the local class structure—reflecting the greater scope for processes of displacement and replacement that this affords. It should be noted, however, that whereas gentrified and gentrifying neighborhoods revealed the highest levels of income polarization and inequality in 2001, this was also true at the beginning of the study period. Furthermore, growing income polarization is not confined to gentrifying neighborhoods. Gentrification is but one aspect of larger processes of social and spatial polarization occurring at broader scales, such that it crystallizes and reflects tendencies toward polarization, but does not necessarily cause them. Indeed, the main effects of gentrification on social polarization are likely indirect, resulting from the removal of affordable housing for low-income tenants, including new immigrants and visible minorities, and their displacement (both direct and exclusionary) to aging and declining neighborhoods elsewhere. Thus gentrification may actually shift some polarizing tendencies to other neighborhoods, as the latter begin to concentrate poor and disadvantaged populations that previously had been housed in the inner city. Social polarization is occurring at a number of different scales, and it is not yet clear that the neighborhood scale is the one that

matters most for producing polarization, or for articulating its effects. Nonetheless, the findings presented here place gentrification at the leading edge of processes of neighborhood transformation, including movements toward social polarization.

To be sure, statements based on aggregates and averages mask a great deal of diversity in the trajectories and outcomes at the neighborhood level. Clearly, the relationships uncovered here are complex and highly contingent on processes, policies, and histories of neighborhood change specific to the metropolitan areas in which they are located. As Canada's largest city, it might not be a surprise that in Toronto, which revealed the greatest degree of neighborhood transformation over the postwar period, there is a clear relationship between the timing and extent of gentrification and both heightened levels of income polarization and reduced levels (both relative and absolute) of social diversity and social mix within gentrifying neighborhoods. Similar but milder trends are found in Vancouver, where most gentrifying neighborhoods to the west of Main Street did not experience the same degree of disinvestment, and where the inner city has traditionally held onto a significant middle class (and where areas east of Main have been more able to resist gentrification; Ley and Dobson, 2007). In Montreal, where the inner city experienced even greater disinvestment than Toronto in the early postwar period, the majority of gentrifying tracts exhibited only incomplete forms of gentrification, and the results regarding shifts in polarization and diversity are more muted, related in part to the geography and politics of language that intersect with strategies and patterns of immigrant settlement, class, and gentrification on Montreal Island.

The implications for levels of social conflict, integration, and interaction within neighborhoods are therefore contingent on how gentrification plays out in each place over time, a process that is clearly ongoing. In the future, it may be that as visible minority immigrants continue to assimilate, their members who rank in the professional and middle classes may begin to mimic the residential strategies and careers of the Whites and native-born who are currently disproportionately concentrating in gentrifying neighborhoods. It may be that new shifts in attitudes will once again reduce the cultural status of inner-city neighborhoods and put an end to the process of gentrification. However, these possibilities are not borne out by the trends to date. If we extrapolate our findings from the last 30 years into the future, the picture is one of an urban landscape increasingly segregated by class and race, in which affordable rental housing slowly disappears, and the most accessible locations are increasingly occupied by Whites and elites for their benefit. However, those who would attain the greatest marginal utility from an accessible and affordable inner-city location—from which many jobs even in the suburbs are still accessible by public transit, though this is now declining in Canada—are either found in the most environmentally degraded, inaccessible, and least desirable places in the older suburbs, or if they remain in the inner city, suffer negatively from “tectonic” forms of social interaction and exclusion produced by growing levels of social polarization and distrust.

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