

Understanding Neighbourhood Dynamics: A Review of the Contributions of William G. Grigsby

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Summary. This paper summarises William G. Grigsby's contribution to our understanding of neighbourhood change. We discuss seven contributions among Grigsby's most-lasting. First, he staked out the boundaries of the still-nascent field very early in his career. Secondly, he situated the subject within the broader framework of metropolitan housing market dynamics. Thirdly, he developed a theoretical framework for investigating the subject that featured the analysis of housing sub-markets, the market process of neighbourhood succession, and residential segregation. Fourthly, he identified the economic, social, institutional and demographic forces that create neighbourhood change. Fifthly, he linked neighbourhood decline and deterioration to the spatial concentration of poverty. Sixthly, he underscored the significance of this understanding for formulating public policies to deal with deteriorated neighbourhoods. And seventhly, he provided a remarkably complete and robust framework for analysing neighbourhood change. This last-mentioned contribution is the culmination of his lifetime work and will prove perhaps to be his most significant. It provides a road map to future research on neighbourhood dynamics that others may wish to follow. It is very important to note that Grigsby's contributions are so foundational to the modern field of housing economics and housing policy that many of the first-generation analysts like John Kain, John Quigley, William Wheaton, Richard Muth and Anthony Downs do not bother to cite his works. Grigsby's contributions have become ingrained in the core of housing policy. The paper concludes by noting that Grigsby did not let the state of technology or the availability of data limit his vision. As a result, his ideas about neighbourhood change remain fresh and will remain important for years to come.

1. Introduction

William G. Grigsby is both a pioneer in and chronicler of the study of neighbourhood change. As a pioneer, he staked out the still-nascent field early in his career especially in his 1963 book *Housing Markets and Public Policy*. As chronicler and synthesiser, he col-

laborated with three other authors in 1987 to produce *The Dynamics of Neighborhood Change and Decline*, one of the most incisive reviews and theoretical treatments of the subject to date (Grigsby *et al.*, 1987).

Professor Grigsby's own writings attest to

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the breadth and depth of the field of study that he helped to found. His work is foundational to the modern field of housing economics and urban housing policy. Although the first-generation analysts such as John Kain, John Quigley, William Wheaton, Richard Muth and Anthony Downs do not cite Grigsby's insights into housing markets and urban housing policy, they are very much ingrained in the literature. The purpose of this paper is to situate his work in the context of the research conducted on neighbourhood dynamics. Grigsby has been highly influential, and his insights remain fresh today. Grigsby exposed many veins of research that others would mine more intensively later. It is interesting to note that some of the directions taken by his research on neighbourhood change were not, however, foreshadowed in his early works. In fact, some are even at odds with his early formulation of the issues.

We limit ourselves here to a discussion of Grigsby's views on neighbourhood dynamics, only touching on related issues of public policy. Our treatment, therefore, only partially reflects his considerable contributions. Grigsby's contributions in the area of public policy were equally prodigious. We hope that this paper contributes to the subject that has been so close to his heart by tracing the literature on neighbourhood change to the present, and by exploring where one of its earliest pioneers stands in relation to his field.

2. Grigsby's Contribution

Grigsby first fully articulated his views on neighbourhood change in his seminal book entitled *Housing Markets and Housing Policy* (1963).¹ As the title suggests, Grigsby placed housing policy issues within the broader context of housing markets.

2.1 *Housing Markets and Neighbourhood Change*

At the time the book was written, an estimated 9m low-income families lived in sub-

standard housing. Unlike most observers, Grigsby did not view this situation as the inevitable outcome of the depreciation and natural physical decay of housing. Instead, he convincingly argued that in most cases the creation of sub-standard housing was an active process of disinvestment in the standing stock. He pointed out that it is possible to extend the physical life of the stock almost indefinitely through maintenance and improvement. The choice to maintain or improve is an economic one, he reasoned, and hence the deterioration of the existing stock is not an inevitable physical process. This simple insight, also arrived at by Lowry (1960) and Ratcliff (1949), had profound implications for how Grigsby framed the process of neighbourhood decline.

Grigsby's primary purpose for writing *Housing Market and Housing Policy* was to alert planners and public officials that an understanding of the operation of housing markets must precede policy prescriptions for housing problems. To that end, he provided a theoretical framework for analysing housing markets. The framework built on, but extended beyond, the earlier work of Fisher (1951), Maisel (1948), Rapkin *et al.* (1953) and Smith (1958).

2.1.1 Housing sub-markets. At the heart of Grigsby's initial conceptualisation of neighbourhoods was the notion of housing sub-markets that are dynamically shaped by shifts in supply and demand. Grigsby and Rapkin had earlier employed such a conceptualisation to evaluate demand for housing in a redevelopment area of Philadelphia (Rapkin and Grigsby, 1959a). But in his later work, Grigsby laid out his ideas in far greater detail.

Following Rapkin *et al.* (1953), Grigsby argued that distinct sub-markets exist within housing markets. These sub-markets are distinguishable because the homes within them are viewed as more or less perfect substitutes by the households demanding them. The distinct character of sub-markets makes some more sensitive than others to specific shifts in housing demand or supply. Though distinct,

Grigsby pointed out, sub-markets are linked together by an intricate web of connections driven by cross-elasticities in demand. Hence a change in any one sub-market has the potential to affect many others (though most powerfully in their own sub-market).

Supply and demand changes, Grigsby argued, are capable of being subjected to systematic analysis. Households frequently move to maximise the utility of their housing within an overall budget constraint. Neighbourhoods or properties can become obsolete when demand changes. Demand can change in response to changes in income, the demographic composition of households, income distribution and level, employment and population. Grigsby contended that movements of families through the supply

establish the linkages {among sub-markets}, cause values to shift, areas to improve or decay, and housing to become available or unavailable to lower-income groups. (Grigsby, 1963, p. 56)

This vision of urban housing markets has proven remarkably durable and has spawned an enormous body of research (Kain and Quigley, 1975; Rothenberg *et al.*, 1991). Grigsby helped to establish the notion that the best way to evaluate neighbourhoods is to analyse them as dynamically linked sub-markets—a view now taken for granted by most of those in the field today as the proper frame of reference.

2.1.2 *From filtering to re-use of the stock.*

Grigsby concluded that the availability of low-income housing depended on the housing consumption behaviour of higher-income groups. Unlike higher-income families who can afford newly built homes, low-income households, he reasoned, must accept whatever existing stock trickles down to them at prices they can afford. This was not a new idea. As Grigsby acknowledges, analysts of the ‘filtering’ process had held the same belief for some time (Ratcliff, 1949; Fisher and Winnick, 1961; Lowry, 1960). But the literature on filtering was confused because

filtering had taken on multiple meanings. Ratcliff, for example, had characterised it as a change in occupancy from a higher-income group to a lower one, while Fisher and Winnick defined it as a downward shift in the relative price (or rent) of a unit. Lowry then proposed a definition that linked filtering to general price changes and argued that homes failing to appreciate at the rate of general price inflation were filtering down.

What set Grigsby apart from the others was that he moved beyond debates over how to define filtering properly and instead recast the issue as a question of the changing use of existing stock within the broader conceptualisation of the housing market. This is why he characterised his study as “concerned primarily with the use, reuse, continual alteration and exchange of secondhand capital assets” (Grigsby, 1963, p. 21). Armed with this framework, he was able to conduct what he called “hypothetical cases” to illuminate how various market factors affect the rate and extent of change in the relative price, occupancy and condition of the existing stock. Although lacking the powerful statistical tools and data which are now available, Grigsby was nevertheless able to identify the basic drivers of stock changes.

2.1.3 *Ingredients of a theory of neighbourhood decline.*

It was not until several years later that Grigsby would advance a more formal theory of neighbourhood decline. Grigsby, in fact, took an important step toward making these connections when he defined in a footnote the new term “locational obsolescence” (Grigsby, 1963, p. 100). Grigsby defined locational obsolescence as the process by which shifts in demand for shared attributes of a neighbourhood (owing to location, housing and site characteristics) make obsolete entire neighbourhoods.

Grigsby pointed out the important influence of externalities on the direction and pace of neighbourhood change. Deficiencies in structures, the environment and public services or community facilities could “lead both landlord and owner-occupants to con-

clude that funds needed to repair and improve housing in a given area would yield higher returns elsewhere" (Grigsby, 1963, p. 234). Among other neighbourhood conditions that could lead to spatially concentrated disinvestment, he included that

fear by each owner that his expenditure would be worthless because neighbors would not follow suit...and the existence of one or two blighting influences which, while not serious in themselves, {could} cast a cloud over the area, thereby deterring investment and creating a chain reaction of further blight and decay. (Grigsby, 1963, p. 235)

Grigsby here echoed the application of game theory (the prisoner's dilemma) to predicting group disinvestment in residential upkeep and foreshadowed the theory of contagious spread of urban decay (Dear, 1976).

Grigsby concluded that a policy aimed at accelerating the flow of housing to lower-income groups by encouraging new construction would likely be an inadequate low-income housing policy. He perceptively argued that

This would seem to presume that the physical condition of a home is closely related to its age. Equally important, however, may be the proportion of income which owner-occupants and landlords are able and willing to allocate to maintenance, repair, and improvement of the marginal and substandard stock. (Grigsby, 1963, p. 129)

The meager incomes of the residents of blighted and slum districts, certainly are the chief underlying cause of inadequate maintenance in these areas. (Grigsby, 1963, p. 234)

Instead, he advocated a policy of supporting rising real incomes, increasing government expenditures to meet the housing needs of special groups, increasing housing and maintenance expenditures, and desegregating the housing market. Suffice it to say that virtually all the urban and housing policy

issues around which debate continues to rage are all in this early work, from demand-side versus supply-side housing subsidies, to deconcentration of the poor versus urban renewal, to displacement.²

2.1.4 Towards a theory of neighbourhood renewal. Grigsby's framework leaves open the possibility that shifts in demand, supply and economic activity can produce upward price pressures and encourage the upgrading of housing and income occupancy (gentrification). But he also acknowledged the fact that the dominant direction of change is downward. The best and newest housing is built for higher-income groups but eventually passes down to successively lower-income groups until it reaches groups so low that they can not afford to cover maintenance costs. Once a neighbourhood reaches this stage, Grigsby argued, public intervention is necessary either to restore the neighbourhood to health or to clear it for reinvestment in new structures. But, he cautioned, renewing one neighbourhood often can be accomplished only at the expense of another as direct additions to the low-income stock in excess of demand place greater downward pressure on the prices of the existing low-income stock. And he warned that unless rents or incomes are subsidised in a re-investment area, low-income households are likely to be forced into other marginal neighbourhoods.

2.2 Towards a Theory of Neighbourhood Succession

By the mid 1970s, some of Grigsby's views began to change while others came into sharper focus. The direction of his theoretical exposition shifted even more decisively from deterioration of housing to deterioration of neighbourhoods and paralleled the shift from sub-standard housing as the most significant policy issue to neighbourhood deterioration and the spatial concentration of poverty. In a 1975 book authored with Rosenberg, Grigsby mused on whether the

dynamics of neighbourhood decline were well enough understood to support popular policy prescriptions.

2.2.1 Delinking filtering from a priori decline. In 1977 Grigsby and his colleagues developed the theoretical formulation of housing markets. They tied together sub-markets, filtering and neighbourhood change more explicitly and wrote that “the forces that cause the separation of socioeconomic and ethnic groups cause filtering to affect entire neighborhoods not scattered structures” (Grigsby *et al.*, 1977, p. 31). They chose to use (rather than reject) the term filtering, but defined it unambiguously as the “process by which dwellings descend over time from higher to lower income households” (Grigsby *et al.*, 1977).³ To avoid confusion, Grigsby would later use the term ‘neighbourhood succession’ to refer to this process and argued that the term filtering had been redefined too many times to serve a useful purpose (Grigsby *et al.*, 1987).

By characterising neighbourhood change in terms of occupants rather than in terms of the condition of the stock, Grigsby and his colleagues were able to make the theoretically important point that such transition from higher- to lower-income occupants need not be accompanied by an *a priori* deterioration in housing quality or a reduction in prices in a neighbourhood. Instead, only under certain specific circumstances is it reasonable to expect succession to a lower-income population to move hand-in-hand with physical deterioration.

They argued that filtering resulted from both ‘macro’ forces and ‘micro’ neighbourhood forces. The macro forces are population change, income change, obsolescence and public actions. The micro forces include redlining, physical deterioration and social deterioration. Decline in population can lead to filtering as a fall in demand causes prices to decline and makes homes once occupied by higher-income families available to lower-income families. The result of an increase in population is less certain because it depends on the response of suppliers and the

renovation decisions by owners. New supply is built to satisfy the demand of upper-income groups seeking better homes and creates openings in the existing stock for lower-income occupants. Obsolescence, defined as a decline in demand for a product independent of a change in the product itself, is fuelled by income growth as rising expectations reduce demand for particular home types and neighbourhoods among upper-income groups. Obsolescence can also be caused by changing demographics, shifting patterns of employment, and changes to neighbourhood quality. As occupants who are financially able to move out of obsolete housing relocate, their housing filters to lower-income groups (even if the price of housing does not fall). Public actions that contribute to filtering include production of subsidised housing (creation of an oversupply of low-income housing), road construction and opening up markets that previously excluded low-income residents.

2.2.2 Deterioration and abandonment. Grigsby and his fellow authors argued that deterioration resulting from low-income occupancy alone is inevitable only when housing reaches families that are so poor that they cannot cover the costs of operating and maintaining a housing unit at its current quality. Eventually owners of such properties are forced to defer maintenance and let buildings run down. Given that the operation of housing markets tends to concentrate spatially those on the lowest rung, much neighbourhood deterioration can be explained as the outcome of filtering.

Taking this conclusion as self-evident, Grigsby turned to cases where deterioration spreads even in the absence of a growing low-income population. In areas where the low-income population is declining, he reasoned, owners recognise that they can no longer expect to realise an adequate return due to growing vacancies and falling property values. In response to reality, they begin to defer maintenance and lead a process of deterioration that is accelerated by growing negative neighbourhood externalities. In

areas where the low-income population is stable, deterioration begins to spread to other neighbourhoods after it ravages one area. When owners allow properties in a neighbourhood to deteriorate to such an extent that occupants are compelled to leave, the process repeats itself elsewhere. In areas with no low-income population, Grigsby and the others argued, a host of factors other than the ability to pay can nevertheless result in deterioration. Some families may fail to maintain their homes because they do not value maintained homes and some may be unaware that maintenance is needed. But for a neighbourhood rather than individual structures to deteriorate, a broader set of residents must reach the common conclusion that 'something bad' is about to happen to the neighbourhood that makes investment in maintenance a poor economic decision:

This 'something' could be a proposed highway, possible intrusion of a blighting use, expected invasion of low-income or minority households, or just an intuitive feeling that the neighborhood does not have a bright future. (Grigsby *et al.*, 1977, p. 44)

To close the circle and summarise their arguments, Grigsby and his fellow authors argued that deterioration ends in abandonment when change produces permanent vacancies. In summary,

Population decline, subsidized new construction, shifts in living patterns or employment locations, or rising or falling incomes should make their effect felt through the filtering process in such a way as to concentrate abandonment at the lowest quality level. (Grigsby *et al.*, 1977, p. 46)

Even though Grigsby acknowledged that filtering does not lead to decline in all low-income neighbourhoods, he did view the link between filtering and abandonment in at least some neighbourhoods as ineluctable. He and his colleagues concluded that "programs aimed at halting deterioration...sometimes must arrest the filtering process itself, a per-

haps impossible task given the lack of centralized public control over the housing market". And they warned that "unless attention is given to the way in which metropolitan population and employment trends are likely to affect different parts of the community...neighborhood strategies run the danger of being individually inappropriate and collectively contradictory" (Grigsby *et al.*, 1977, p. 49). This was one of Grigsby's strengths: realism in understanding what policies can really do as opposed to what we wish they could do.

2.3 *An Integrated Theory of Neighbourhood Succession*

Grigsby's arguments took greatest shape in *The Dynamics of Neighbourhood Change and Decline* (Grigsby *et al.*, 1987). This work presents a detailed theory of neighbourhood succession. He broadens the definition of his subject to include any significant change in the characteristics of neighbourhood residents over time. Although Grigsby once again focused on changing income composition, he argued that the same processes that give rise to this change also give rise to other changes in neighbourhood demographics, including race, age, social class and family composition.

2.3.1 *Residential differentiation and neighbourhood change.*

Grigsby and his colleagues began their treatment of the subject by noting that the spatial separation of demographics groups along certain measurable dimensions, especially income, is a pre-condition for the succession process. Unlike his earlier treatments of the subject, Grigsby noted that

It is extremely important...that the social and economic forces which produce separation be understood...because it is these same forces which are creating geographical isolation of lower income groups, the companion phenomenon of succession and decline. (Grigsby *et al.*, 1987, p. 10)

After reviewing the extant explanations of

residential segregation, the authors concluded that “various social, governmental, economic, and market forces working in combination seem to make it part of the ‘natural’ order of things” (Grigsby *et al.*, 1987, p. 18). Grigsby rejected the idea that any single theory explains residential segregation. Instead, he had come to believe that the process is overdetermined and difficult to derail even if policy-makers wish to do so.

2.3.2 A general framework for analysing neighbourhood change. After traversing what was by then a well-worn path of explaining the concept of housing sub-markets, Grigsby and his colleagues presented what they called “a framework for analyzing neighborhood succession”. In a mere four pages, they described a framework that is deceptively simple (see Figure 1).

Changes in social and economic variables (1) cause households acting directly or through a system of housing suppliers and market intermediaries (2) to make different decisions regarding level of maintenance, upgrading, conversion, whether to move, new construction, boarding-up, and demolition (3), producing changes in dwelling and neighborhood characteristics (4). (Grigsby *et al.*, 1987, p. 33)

Boiled down to its barest essentials, here is the core of a theory of neighbourhood change that had been hinted at in Grigsby’s earlier works and latent in the works of a generation of urban researchers. The full potential to model the causal chain traced in this framework from social and economic change to the spatial pattern and pace of neighbourhood change has not yet been fully tapped.

2.3.3 Variations in the extent of low-income area decline. Grigsby once again devoted special attention to the circumstances under which succession leads to neighbourhood decline (here used synonymously with neighbourhood physical and social deterioration). This time, however, Grigsby was more cautious in his treatment of the role that inadequate income plays in explaining how

succession leads to decline. He and his colleagues concluded that “although no one would deny that inadequate incomes is an extremely important force in neighborhood decline, the low-income explanations do not go far enough” (Grigsby *et al.*, 1987, p. 49). They were driven to this conclusion by instances where the extent of neighbourhood decline was more (or less) than income or wealth alone would suggest.

Grigsby warned against concluding that behavioural problems are associated with low income, but at the same time acknowledged that chronic isolation and concentration could contribute to them. On the supply side, Grigsby and his colleagues explained that market intermediaries and housing investors can speed up the process of decline by overreacting to early symptoms of decay. They reviewed the evidence on the processes of ‘milking’ (deliberate under-maintenance to maximise short-term profits) and ‘redlining’ (withdrawing mortgage funds from an entire neighbourhood based on expectations of falling property values). They concluded that there is little evidence for milking but that redlining may occur. However, they underscore the difficulty in assessing whether redlining causes falling values or is a legitimate response to them. In any event, they acknowledge the possibility and suggest that decline may be an insurable and hence manageable risk. They also returned to Grigsby’s earlier ideas about negative externalities, including physical and social deterioration.

2.3.4 Public policy and neighbourhood decline. With respect to the role of public policy in neighbourhood change, Grigsby and his colleagues singled out rent controls, excessive code enforcement, real property taxes, federal income tax, policies that encourage decentralisation and lax FHA underwriting practices. The authors rejected the notion that rent control, by capping rents, somehow inevitably leads to undermaintenance. They also concluded that code enforcement leads to decline only when the cost of the repairs needed to bring a property

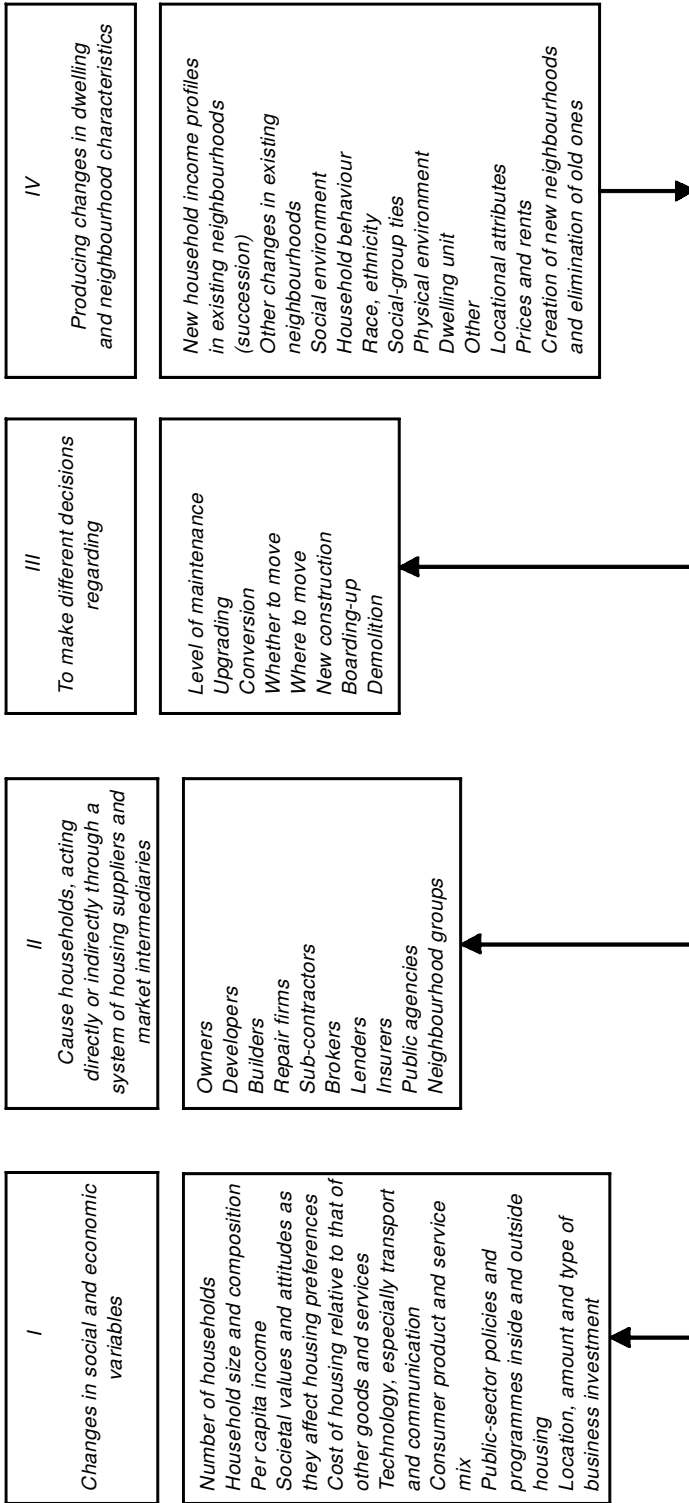


Figure 1. Framework for analysing neighbourhood change. Source: Grigsby et al. (1987, p. 31).

up to code is less than the discounted net expected revenue over the life of the repairs. They rejected the idea that an *ad valorem* tax creates problems, but noted that assessments tend not to fall fast enough when prices are dropping in a neighbourhood to avert onerous tax burdens that aggravate the problem. They rejected too the idea that accelerated depreciation of rental property encourages shoddy workmanship and leads to accelerated physical deterioration. They also viewed dimly the argument that the federal government was behind the deconcentration of urban areas. The authors viewed more favourably the argument that FHA insurance, in cases where it was granted too liberally, contributed to decline by way of accelerated loan defaults. Their view of the role of subsidised new construction was mixed. On the one hand, they pointed out that new construction can create excess supply, drive down prices and speed abandonment. On the other hand, they pointed to evidence suggesting that this effect was exaggerated because of strong substitution effects of subsidised construction for unsubsidised construction (Murray, 1979; Swann, 1973).

On balance, however, Grigsby and his co-authors placed the blame for neighbourhood decline primarily on concentrations of poverty.

Given the existence of needy households who are spatially concentrated, physically deteriorated neighborhoods are inevitable. It is the role of other factors in accelerating the spread of decay outward from these areas into sound neighborhoods that demands explanation. Unfortunately, the magnitude of their individual and collective impact seems impossible to detect. All that can be firmly concluded is that since succession is the constant companion of urban growth and change, so too will the decline of at least some neighborhoods until society has solved the low-income problem. (Grigsby *et al.*, 1987, p. 58)

3. Grigsby's Contributions in Context

Having laid out the broad outlines of Grigsby's contribution to the understanding of neigh-

bourhood change, we now place that contribution in the context of the broader literature on the subject.

3.1 Concepts of Residential Neighbourhoods

The obvious place to begin is with the definition of neighbourhood. Many researchers have advanced definitions (Coleman, 1978; Lachman and Downs, 1978; Rodwin and Hollister, 1984; Galster, 1987). Broadly speaking, they can be grouped into explanations that describe residential neighbourhoods as

- (1) homogeneous areas sharing demographic or housing characteristics;
- (2) areas that may have diverse characteristics, but whose residents share some cohesive sense of identity, political organisation or social organisation;
- (3) housing sub-markets in which homes are considered close substitutes; and
- (4) small areal units that do not necessarily have any of the above characteristics.

Each definition serves a different research purpose and focuses on different aspects of the areal differentiation of residential spaces. The four descriptions also are not necessarily mutually exclusive. Housing sub-markets, for example, are often co-terminous with neighbourhoods characterised by housing or demographic characteristics. It is the unique site, situation and building characteristics in a neighbourhood that often make homes in that neighbourhood close substitutes. These factors also make neighbourhoods desirable as well as affordable to only certain demographic groups.

Over the years, Grigsby mostly used the homogeneous area and housing sub-market definitions of neighbourhood to discuss neighbourhood change. As noted above, he was one of the first and most influential urban analysts to focus on the role of sub-markets as a means of conceptualising and analysing neighbourhood dynamics. He also made explicit the connection between housing sub-markets and the production of areas with shared demographic and housing characteristics.

Although he addressed certain definitional issues (Grigsby *et al.*, 1987), Grigsby left others largely untouched. For example, he did not contribute much to the debate over the appropriate scale for defining neighbourhoods and bounding them according to shared characteristics. Rather, he used more convenient census boundary definitions in his empirical work. This is hardly surprising in that the researcher's capacity to free himself from the constraints imposed by census geography did not fully emerge until the late 1980s with advances in spatial analysis, geographical information systems and the explosion of address-level information in digital format. These advances spawned a rich literature on the spatial aggregation issues associated with defining housing sub-markets and other neighbourhood boundaries.

3.1.2 The underlying structure of residential differentiation. Grigsby's attention to housing sub-markets and demographically homogeneous areas had antecedents. An awareness of the fact that populations are not randomly distributed across metropolitan landscapes informed sociological research at least as far back as the 1920s. Burgess and Park (1925) are generally credited with focusing the attention of urban sociologists on the areal differentiation and pattern of residential space along demographic lines. At the time of their original work, available data and methods did not permit detailed empirical investigation of these patterns. Although casual observation revealed the strong tendency for groups of different socio-economic status, race, class and ethnicity to occupy distinct and largely separate neighbourhoods, the most important factors in the differentiation of residential space were not evaluated statistically until the 1950s (Shevsky and Bell, 1955). The advent of factor analysis enabled sociologists to return to and test the spatial organisation theories of differentiated neighbourhoods as advanced by Burgess and Park as well as by Hoyt (1939) and Harris and Ullman (1945). Although the application of the technique for urban soci-

ology (which came to be called factorial ecology) led to questions about the validity of the theories, it unquestionably provided ample evidence of strong residential differentiation along socio-economic, class and racial/ethnic lines (Timms, 1971).

Factorial ecology was designed to uncover the underlying demographic structure of residential differentiation. Factor analysis was used to collapse multiple demographic variables into a smaller set of basic factors to distinguish among residential areas. Despite its power to treat dozens of variables, it misses some key dimensions of residential differentiation. Although the obvious factors such as income, occupation, ethnicity, race, age and family composition were included, others were not. Notably, factor analysis included little information of the occupation or social status of wives. An awakening to that fact and the potential to investigate the spatial production of gender-differentiated labour markets has sparked new research on this important and distinguishing feature of neighbourhoods (Pratt and Hanson, 1988; McClafferty and Preston, 1992).

3.2 Causes of Residential Segregation

Residential segregation is the outcome of multiple processes. Theorists have generally opted to stress one of the following:

- (1) household preferences (Alonso, 1964; Muth, 1969; Clark, 1988, 1989, 1991);
- (2) exclusionary zoning (Downs, 1973; Danielson, 1976)
- (3) discrimination (Wienk *et al.*, 1979; Turner *et al.*, 1991; Galster, 1992).

Grigsby concluded that different perspectives on the causes of residential segregation should be more properly viewed as complementary and reinforcing rather than as competitive (Grigsby *et al.*, 1987). He pointed out that suppliers also play a central role in the creation of segregated spaces because they are unwilling to intersperse less-affordable homes with more expensive ones. In

this, he echoed an earlier formulation by Kain and Quigley (1975) in which they contended that segregation is caused by the interaction of the collective action of consumers through local governments, the locational decisions of individuals and the investment decisions of suppliers. Grigsby was unwilling to conclude that the process is “primarily a product of imperfect market processes or of public design” (Grigsby *et al.*, 1987, p. 18). He instead concluded that the process was mostly rooted in consumer preferences refracted through social, government, economic and market forces. He characterised segregation as the “natural order of things”, a conclusion that he might moderate today in light of growing evidence of the multiple and more malevolent forces that actively perpetuate segregation.

3.3 Concepts of Neighbourhood Change

In his later work, Grigsby decided that it was best to think about neighbourhood change as a shift in the characteristics of neighbourhood occupants (Grigsby *et al.*, 1987, p. 27). Although he focused on change in the mean income characteristics of neighbourhood occupants, he allowed for and at various points in his career investigated changes in race, social class and ethnicity as well. His decision to reduce the definition of neighbourhood change to occupancy appears to have been motivated by his desire to cast that change as fundamental to others that may follow in a neighbourhood, such as change in the relative or absolute price of housing, the condition of the stock, the re-use of the stock and social and political institutions and services.

Grigsby’s preferred definition of neighbourhood change could be viewed by some as overly restrictive because of its focus on the process of change in contrast to relying on comparative statics as a proxy for change. For example, Downs (1981) relying on the notions of comparative statics identified and analysed five broad characteristics of neighbourhood change: population, physical,

economic, public service and psychological/opinions and expectations. And he tracked multiple variables to measure each characteristic. But Grigsby’s definition was functional and enabled him to trace more readily the causal chain of events leading to many other changes in neighbourhood character. From Grigsby’s perspective, it was change in the income mix of a neighbourhood from upper income to lower income that created the objective conditions required to create the potential for physical deterioration of the stock, changing expectations about the fortunes of the neighbourhood, economic deterioration of housing markets, social deterioration and the withdrawal of quality public services. In fact, Grigsby chose not to define neighbourhood change in terms of these conditions.

Perhaps a more serious gap in Grigsby’s work is the lack of a well-specified, market-based model of neighbourhood succession from lower-income groups back to upper-income groups. Although Grigsby acknowledged that change can move in any direction, he was largely silent on the subject of gentrification involving minimal or no government intervention. Just as market forces can cause neighbourhoods to obsolesce and grow more marginal to upper-income demand, others have shown that market forces can also cause neighbourhoods to become attractive investments for higher-income groups (Gale, 1984; Palen and London, 1984). Some have devoted more attention to the circumstances that give rise to the encroachment of upper-income groups in lower-income neighbourhoods and the process of succession from one to the other. Pressures placed on prices in low-income neighbourhoods by such upgrading have become a concern among many community activists.

3.4 Causes of Neighbourhood Change

Grigsby held that neighbourhood change is caused by the natural operation of housing markets under conditions of residential segregation and socio-economic change. Socio-economic stratification, diverse age and

household types, and cultural diversity give rise to differences in housing preferences and ability to pay for housing. These differences are crystallised in space through a process of residential segregation that is rooted in the preferences of consumers, but may be abetted by discrimination in housing and mortgage markets. Clearly, certain demographic groups share similar preferences and effective demand. Neighbourhoods change from higher- to lower-income groups when higher-income groups depart for other neighbourhoods that better meet their demands.

Grigsby identified most of the factors that we now consider as causes of neighbourhood change. The factors can be grouped into those that are exogenous and those that are endogenous to the neighbourhood (see Table 1). Grigsby considered obsolescence a 'macro' or exogenous variable. He viewed the forces that render a particular neighbourhood's building, site or locational characteristics obsolete as linked to broader demographic, economic and political changes and actions. It is worth noting that exogenous forces affect neighbourhoods in different ways depending on the specific character of the neighbourhood. Therefore, exogenous factors interact with the specific properties of a neighbourhood to determine the fate of that neighbourhood. Endogenous factors can reinforce the direction of change generated by the operation of exogenous forces as they work on existing neighbourhoods, but they seldom initiate that change.

3.5 *Models of Neighbourhood Change*

The literature is replete with models of neighbourhood change, including McKenzie's (1925) now-famous ecological model of invasion and succession, Hoover and Vernon's (1959) life-cycle model, Bradbury *et al.*'s (1982) staged model, Leven *et al.*'s (1976) arbitrage model, and Fainstein and Fainstein's (1982) urban restructuring model. Standing apart from these partial models of neighbourhood change, Grigsby's integrated theory fully captures the social and economic variables that drive the process, the actions

and decisions of the full host of agents in light of those changing variables, and the changes they bring about in dwelling and neighbourhood characteristics. Unlike others who oversimplified or focused on single aspects of change, Grigsby did not back away from the complexity of neighbourhood change. Instead, he embraced it. In so doing, he revealed its true nature and exposed the difficulty in predicting the specific locational outcomes of the neighbourhood change.

Although Grigsby's housing sub-market-based framework provides guidance for those who would seek to formalise it, it also presents daunting challenges. Some have begun to tackle those challenges directly and are demonstrating that it is growing increasingly possible for a complete housing sub-market model to be fitted (Rothenberg *et al.*, 1991; Vandell, 1995). The most vexing problem is how to create a model that traces the interactions among many distinct sub-markets and explanatory variables in a multi-period simulation framework.

3.6 *Locational Aspects of Neighbourhood Change*

Social scientists have also examined the locational pattern of neighbourhood change as opposed to demographic and economic patterns. Burgess posited his concentric ring pattern of neighbourhood change based on invasion and succession (Burgess and Park, 1925), and Hoyt (1939) posited his axial model based on filtering. Grigsby subscribed to Hoyt's basic concepts of filtering and obsolescence in explaining the location of neighbourhood change. He also agreed that, except in cases where older stock has enjoyed continued upper-income demand due to some special attribute, decline is most likely to occur in the oldest, most outmoded stock. But he was less concerned than Hoyt and others with explaining the specific location of neighbourhood change. His comparative lack of interest is not surprising given his own concept of neighbourhood change. He viewed it as a process that characterises

Table 1. Causes of neighbourhood change identified by Grigsby *et al.*

<i>Exogenous factors</i>
<i>Demographic changes</i>
Changing consumer expectations
Changes in the number of households
Changes in age, size and family composition of households
<i>Economic changes</i>
Changes in real incomes
Changes in the relative cost of housing
Changes in the location, amount and type of business investment
<i>Governmental interventions that affect housing supply and demand</i>
Land-use regulations
Tax policies
Public service delivery
Siting of public facilities
Production of subsidised housing
Federal transport policies
Federal housing insurance policies
<i>Other changes</i>
Rates of new construction
Changes in transport and communications technologies
<i>Obsolescence</i>
Building
Site
Locational
<i>Endogenous factors</i>
<i>Negative externalities^a</i>
Crime
Physical deterioration and abandoned housing
Social deterioration
<i>Changing expectations about future house-price appreciation</i>
Redlining
Disinvestment by property owners

^a Grigsby also noted that changing racial composition can be viewed by white families as a negative externality. Changing racial composition can therefore accelerate the transition of a neighbourhood from higher-income white families to lower-income minorities and whites.

most neighbourhoods, even though it is only most visible in declining areas.

3.7 Consequences and Implications of Change

Grigsby saw the results of neighbourhood change as positive for the majority of Americans, but a bane for the poor.

3.7.1 The rising tide. Grigsby argued that the turnover of the stock from higher- to middle-

to lower-income groups was an effective mechanism for upgrading the housing conditions of most people. Rising incomes enable higher-income groups to purchase new housing that exceeds current standards. The movement of upper-income groups to new housing frees-up better quality housing for successively lower-income groups. As a result, all but the poorest who cannot afford rents that allow for adequate upkeep end up with better-quality housing. He argued against the view that the expansion of the

suburbs was choking off growth in the inner cities with little positive social benefit. Grigsby believed that suburban development was a natural and appropriate market response to growing populations and that it would not have been viewed negatively had the growth been accommodated within the undeveloped boundaries of central cities (Grigsby *et al.*, 1987, p. 57). The real culprit, he argued, was not the process of neighbourhood change, but rather the concentration and persistence of poverty. In other words, it was (and is) poverty and lack of political will to address it—not the process of neighbourhood change—that keeps the rising tide from lifting all the boats. On the other hand, Grigsby was sensitive to the role of the housing market in concentrating poverty and hence to its role in creating neighbourhood rather than scattered-site decline.

3.7.2 Decline and abandonment. Grigsby defined decline as an absolute negative change in an area's physical or social quality (residents or organisations) (Grigsby *et al.*, 1987, p. 41). He held that decline is caused by succession and not vice versa. He argued that, except under exceptional circumstances, the breakdown of social institutions, downturns in measures of social quality and physical decay are preceded by succession to very low-income groups. Grigsby further argued that market intermediaries can fuel the process of decline and abandonment once it begins to occur within a low-income neighbourhood. He also acknowledged that negative externalities can play a central role in bringing about rapid changes once filtering has set up the necessary conditions for neighbourhood decline. Although he felt that behavioural factors play a more limited role, he did acknowledge that the concentration of poverty may contribute to social pathologies and deterioration. He also concluded that deterioration tends to spread outward even where the low-income population is stable or declining because that population moves into marginal areas when core areas become uninhabitable.

3.7.3 Price effects. Neighbourhood change can affect the rate and direction of change in house prices. Grigsby argued that filtering often leads to real or even absolute price declines—as when filtering lowers effective demand in a neighbourhood and suppliers accept lower prices to rent or sell their units. However, Grigsby also recognised that filtering can sometimes result in price increases if groups locked out of a market bid up prices on a limited stock freed-up by higher-income movers. Similarly, filtering can result in no change in price if lower income occupants are willing to boost their expenditures on housing to move into the better units vacated by higher-income movers. Most studies of the price effects of neighbourhood change, however, have been aimed at examining the effect of racial, not income, succession on house prices (Hoyt, 1939; Laurenti, 1960; Bailey, 1966; Galster, 1977, 1992).

3.7.4 Concentration of poverty and the underclass. Grigsby has unambiguously stated that the concentration of poverty is a principal contributor to neighbourhood decline. It is, he has consistently argued, the fact of persistent poverty and the multiple forces that cause poor households to concentrate that turn filtering in the stock into broad swatches of neighbourhood decline. Despite this, Grigsby has devoted little attention to exploring the impact of this concentration on the populations subjected to it. Nor has he addressed the question of whether and why poverty concentrations have been increasing in many cities since the 1970s. This stands in contrast to the growing number of scholars who have devoted considerable effort to charting the path of poverty concentration and understanding its causes and consequences (Wilson, 1987; Jargowsky and Bane, 1991; Jargowsky, 1993; Kasarda, 1993; Galster and Mincy, 1993).

4. Grigsby and the Future of Research on Neighbourhood Dynamics

Grigsby's legacy to the study of neighbour-

hood dynamics is significant. At least seven contributions can be counted among Grigsby's most notable advances in the field. First, he staked out the boundaries of the then-nascent field as early as 1960. Secondly, he situated the subject within the broader framework of metropolitan housing market dynamics. Thirdly, he developed a theoretical framework for investigating the subject that featured the analysis of housing sub-markets, the market process of neighbourhood succession and residential segregation. Fourthly, he identified the economic, social, institutional and demographic forces that create neighbourhood change. Fifthly, he linked neighbourhood decline and deterioration to the spatial concentration of poverty. Sixthly, he underscored the significance of this understanding for formulating public policies to deal with deteriorated neighbourhoods. And seventhly, he provided a remarkably complete and robust framework for analysing neighbourhood change. This last contribution is the culmination of the others and will prove perhaps Grigsby's most significant. It provides a road map for future research on neighbourhood dynamics that others may wish to follow.

What makes Grigsby's work still so fresh today is that he never let the state of empirical data and methods stand in the way of a frank exposition of the complexity of the process of neighbourhood change. Many other analysts have restricted themselves to the available data and methods. But Grigsby developed a framework that draws together all the pieces of the neighbourhood-change puzzle. Until recently, it seemed impossible to formalise the framework in an empirically specifiable model. Now it seems increasingly possible that we will soon be able to fit explanatory models. The day may not be far off when we can develop reasonably informative multi-period policy simulation models to capture the probable near-term course of neighbourhood occupancy and housing changes. In many respects, the data, methods and economic theory are finally catching up to Grigsby. Such a compliment cannot be paid to many social scientists.

That we are fast approaching a time when we will be able to formalise Grigsby's framework is illustrated by the work of Vandell (1995) and Rothenberg *et al.* (1991). Formal modelling, computing technology and the availability of necessary data in digital format are bringing us closer to estimating housing market behaviour through a system of simultaneous equations. Advances in geographical information systems (GIS) technology will pave the way to delineating more meaningful sub-market boundaries than are achievable through more arbitrary census-tract geography. Goodman (1989) has identified several deficiencies in the current treatment of neighbourhood dynamics that GIS and spatial analysis will help to resolve—including failure to specify coefficient structures over space and time, failure to measure neighbourhood quality properly, failure to deal effectively with spatial autocorrelation, and lack of explicit characterisation of neighbourhood effects.

It has taken nearly 40 years to arrive at the threshold where the advanced theory of urban housing markets can be joined with empirical evidence and spatial analysis to revolutionise our understanding and modelling of neighbourhood change. Grigsby's early formulation has helped to lead the way to that threshold. Although it will be for others to cross it, future scholars will be indebted to Grigsby for his prescient ideas about neighbourhood dynamics and for his passionate commitment to bringing housing economic theory to bear on public policy.

Notes

1. The germs of Grigsby's views were already present in his 1959 works with Chester Rapkin (Rapkin and Grigsby, 1959a and 1959b). Grigsby and Chester Rapkin examined the demand for housing in a racially mixed neighbourhood. Though the work appeared to be largely descriptive, it contained a lot of pioneering concepts including the development of the notion of a "tipping point" in racially changing neighbourhoods; it described the conditions for and barriers to stable inter-racial neighbourhoods; and it conceptually undermined all of the empirical

- studies of changing prices in racially changing neighbourhoods which were in vogue at that time, thus providing for a stronger conceptual and theoretical model of neighbourhood change than the boundary line model.
2. Although not highlighted in his work, the role racial discrimination plays in neighbourhood change is clearly an issue for "The abandonment of low-quality housing is intimately tied to the problem of race...the housing dilemma of Negroes is a double problem, for it relates...not only to income but also to market segregation" (Grigsby, 1963, p. 320).
 3. He was quick to add that the process can also work in the reverse direction.

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