

Uncovering the spatial patterns of Portland's gentrification

76

Kelly Howsley

Portland State University, USA

Abstract

Dominant theories of gentrification categorise it as both an economic and social process. The primary emphasis of both social and economic theory is the issue of displacement, and the fear is that gentrification will leave the city unaffordable to low-income households. Little consideration has been given to the possible relationship between gentrification and the urban grid structure. The methods and theory of space syntax were applied to show that natural gentrification is a process that develops according to urban grid conditions. It was intent of the research to help inform social and economic theories, and in doing this, alleviate fears of the negative effects of gentrification.

Keywords

gentrification,
urban, residential,
commercial

76.1

khowsley@aol.com

Introduction

Research concerning gentrification has concentrated its focus on the issue of displacement of the low-income population. It has been taken for granted that as a phenomenon of the city, gentrification might have strong correlation with the urban grid structure. The purpose of this paper was to examine gentrification according to grid conditions to determine whether or not recognizable spatial patterns could be demonstrated.

Portland, Oregon, currently experiencing gentrification throughout the inner-city, was chosen as the location for research. As the creation in the 1970's of the Urban Growth Boundary has limited urban sprawl, redevelopment and density has offered a solution. Prevalent in terms of regeneration are pockets of intense gentrification within the inner-city, some which have been developed with private and public cooperation and some that have developed naturally. The nature of these two types provides a pre-existing distinction between gentrified areas. However, it does not fully account for the reason why gentrification occurs in some areas of the city and not others. Research, then, sought to establish a framework that would describe the spatial nature of gentrified areas.

Portland is a city that maintains the typical “uniform grid structure” prevalent in American cities (Hillier, 2001: 5). Four main areas, NE, SE, NW and SW distinguish the inner city of Portland. The westside and eastside are separated by the Willamette River, which runs north to south. The north and south are divided along Burnside Blvd, which runs east to west through the city. The study analysed three primary areas that could represent different sections of the inner-city: The Pearl District, in NW Portland, the Broadway area in NE Portland, and the Hawthorne area, in SE Portland. The Pearl District was a collaborative project between the city and private investors to regenerate a vacant industrial district; for the purposes of this research, it was used as the model for planned gentrification. The Hawthorne and Broadway areas naturally gentrified over the course of more than a decade.

The hypothesis of the research was that natural gentrification would be influenced by factors that could be identified by configurational analysis of the urban grid structure. Planned gentrification, it was believed, would demonstrate no such factors. The second part of the hypothesis was that natural gentrification was adhering to spatial principles, which when compared with other naturally gentrified areas, would produce a recognisable spatial pattern between the areas. Factors felt to influence spatial patterns of gentrification included integration, movement and line inequalities. It was also an aim to establish, contrary to economic and social theory, that commercial and residential gentrification are not mutually exclusive.

Displacement, Density and Informal Economy

Gentrification is commonly understood as the process by which middle to upper income residents acquire housing in a traditionally low income neighbourhood, raising property values and displacing low income residents. Implicit in its definition is displacement. Gentrification in urban areas also diminishes core affordable neighbourhoods important not only for employment opportunities but to lessen commuting costs to low income households.

Within social theory there is little spatial implication to how and where the process is happening, other than being located in low-income communities. The only real spatial focus within social theory is the issue of displacement. Looking at the growth trends for Portland within the last ten to fifteen years, it seems evident that this may be cause for concern.

Between 1990 and 1995 Portland saw a population growth of 12.89%, putting it just behind large cities like Orlando (Mildner, 3). With the population growth, housing prices appreciated at a rate of 61.51% (Mildner, 3). Homeownership within the inner city of Portland has increased since 1990 to 67% (Oliver, 1). With this a

decrease in population was felt in many areas (Hammond, 1). This decrease in population is as a result of the trend to house fewer people per home (Hammond, A16). The typical household size of the 1970's in Portland was 2.75 people and since has decreased to 2.23 people per home (Hammond, A16). An influx of young, single persons are taking the place of larger households as a result of what Abbott calls "technoentrepreneurship" or a young, professional class employed by information technology industries (Abbott, 2001: 8). The shift from families to young, single couples or individuals, is by and large reflective of the shift in population, as well as accounting for increased incomes.

However, the decrease in population and the increase in homeownership are not consistent factors throughout Portland's inner city. While naturally gentrifying areas like Hawthorne are experiencing this phenomenon, other inner-city neighbourhoods maintained both a steady population and rate of homeownership (Hammond, A16). Issues of density and affordability are important outsets of gentrification, yet it is important to assert that it is not an all encompassing phenomenon for the whole of Portland.

The emphasis on displacement is prevalent in descriptions of residential gentrification. However, few definitions of gentrification include the aspect of commercial gentrification as an important component to the process. Without acknowledging residential and commercial gentrification as paired processes, it becomes unclear that gentrification typically affects a whole local area, making commercial and residential components mutually dependent. What is evident in many definitions, in addition, is the lack of distinction made between redeveloped or planned sites of gentrification and areas that gentrify of their own accord. Applying contemporary economic theory reveals that gentrification is often symptomatic of changing economic structures.

The perceived informalisation of economy can be said to account for aspects of the process of gentrification. Sassen uses the description of informal economy in an attempt to understand the economic process that results in this sort of regenerative growth. Informalisation occurs when the demand for a range of products becomes increasingly difficult to meet by large companies who maintain a high overhead in terms of rent and cost of production (Sassen, 163). Smaller companies then, capitalise on this phenomena, reducing expenditure and increasing profit (Sassen, 163). Communities at the onset of gentrification, or even prior, become ideal for small business as commercial space is more abundant and less expensive than in the central business district.

This creates a multiplier effect that is related not only to low overheads but also in terms of “proximity to a relatively cheap labour supply” which gives a “signal to other businesses of the existence of an informal ‘hiring hall’” (Sassen, 163). For Sassen, this is a crucial factor to commercial gentrification within the inner city. Within America, the “expansion of the high income workforce...has led to a process of high income gentrification that ultimately depends on the availability of a vast supply of low wage workers” (Sassen, 160). Because of the tendency for smaller, informal business, which within gentrifying areas are typically service industries and thus are “labour intensive” rather than “capital intensive”, the economy must have a ready, local supply of workers (Sassen, 160). Naturally, this requires a more compact, dense residential settlement. As evident in areas like Hawthorne, with its numerous coffee houses and boutiques, gentrification stimulates an economy which is “unsuitable for mass production or mass retailing” and instead is characterised by its specialization of the product being marketed (Sassen, 160).

While this definition separates residential gentrification from commercial gentrification, thus missing the interdependency of the two, it does provide a plausible description of what is occurring on the micro-economic scale. Because the economy of gentrification is small scale and labour intensive it is typically a dense and compact landscape. Contrary to an industrial economy, informal economy commercial uses do not require a large availability of land that is often separate from residential development. Also, as it is a service driven economic activity, gentrification is consumer based, and needs a certain level of purchasing power from the consumer. As a specialized, micro-economic activity, it also requires consumers (and workers) present within the immediate area. The nature of this type of economy suggests the interdependent relationship of residential and commercial gentrification.

Issues of displacement, density, service economy, transportation and land use illustrate that gentrification is a complicated phenomenon. In many ways, these ideas are suggesting, without direct address, that gentrification is a spatial issue. Most misplace spatiality in theory and therefore often miss key elements of the process, such as the interdependence of residential and commercial growth. As the paper demonstrates spatial patterns and key findings, it will become necessary to draw on some of the conclusions of economic and social theory, and compare and contrast the spatial logic or process with the economic and social logic or process.

Spatial Theory Applied to Gentrification

In the light of economic theory, a research objective was to identify how movement, according to the urban grid, might affect gentrification patterns. As Hillier argues, it's taken for granted that businesses desire a location where there is movement and

people (Hillier, 1996: 166). Hillier states that natural movement is “the proportion of movement on each line that is determined by the structure of the urban grid” (Hillier, 1996: 161). It is the dynamic between “the structure of the urban grid and movement densities along lines that can be called the principle of natural movement” (Hillier, 1996: 161). In general, when looking at urban grid structures, “movement along a particular line is influenced in the main by its position in the larger-scale urban grid” (Hillier, 1996: 161). This idea requires that analysis looks at areas according to both the local scale and global scale structure.

Because gentrification is a trend of the informal economy, it follows that a location that provides both local and visitor business would be crucial; the potential for ‘drive by’ business is as important as resident based business. For Hillier this is the process by which “some locations have more potential than others because they have more by-product”(Hillier, 1996: 169). The by-product is the idea that certain spaces are passed through because of their connection with other areas. Rather than being the primary destination for movement, these spaces generate movement according to their grid-based relationships.

This, in turn, creates a multiplier effect by attracting other new businesses to the area because of the advantage of association, increasing the density of businesses, and making it an all around attractive and prosperous area (Hillier, 1996: 169). The multiplier effect created by movement is similar to the multiplier effect of the socio-economic process. A crucial aspect of the multiplier effect is that it is a naturally generated process, rather than a process encouraged by attractors.

Another important concept is what creates a hierarchy between lines. It is what Hillier calls “line inequalities” that provide visitors “with easy to read routes from edge to centre and out again” and what lends the system “local and global intelligibility and synergy” (Hillier, 2001: 20). This is demonstrated by integration patterns, as “the distribution of colours in axial maps will foreshadow densities of moving people”(Hillier, 1996: 161). In essence, a balance of integration where all areas don’t share the same integration level and there is a distribution of integration throughout the area, establishes a structured visitor/inhabitant relationship. Integration, it can be understood, is generating a frequency of co-presence (Hillier, 1996: 174). Line inequalities, then, become an important aspect to understanding movement within the grid. An area with more variation of integration levels will have a stronger hierarchy for co-presence and encounters.

Along with the notion of line inequalities, there is also what Hillier describes as the “dual” processes “that generate settlement forms” (Hillier, 2001: 8). The dual processes, Hillier states, “suggests a natural explanation...of the variants and invariants in urban grids” (Hillier, 2001: 8). One aspect of the dual production is residential, “driven by socio-cultural forces” which affect local spaces “by specifying its geometry and...a distinctive pattern of local differences” as the culture is “spatially specific” (Hillier, 2001: 8). The other aspect, public or commercial space, is a process “driven by micro-economic activity” which “generates a globalising pattern of space” as “micro-economic activity is a spatial universal” (Hillier, 2001: 8). So while residential and commercial, or public, spaces are driven by different forces, their relationship in terms of grid production is dual. Hillier proposes that micro-economics and space is a global relation, while culture and space is a local relation and that these two patterns “affect each other as a settlement grows” (Hillier, 2001: 8). Dual production supports regenerative growth, as in the case of natural gentrification.

Overall, the integration patterns in relation to both the local scale and global scale grid is a possible framework for understanding analysis of the spatial aspects of gentrification in terms of the research questions. Gentrification, it is argued, is an economic and social phenomenon. Yet to be identified is whether the economic and social processes of the phenomena are interacting with grid conditions and line integration patterns. Central to determining spatial patterns of gentrification, it would seem, is determining how patterns of natural movement, as represented by line integration, affect the spatial location of gentrification. In order to identify patterns or distinctions within natural and planned gentrification sites, both integration with the urban grid structure, and the presence or absence of line inequalities become the crucial factors in the analysis

Analysis Overview

The case study analysed three primary local areas, Hawthorne in SE, Broadway in NE and the Pearl District in NW. Integration patterns, derived from axial analysis, provided an understanding of movement and the multiplier effect, and how that might influence gentrification. The global map provided initial visual and syntactic clues about the urban grid structure, which began to suggest the importance of integration patterns and line inequalities on the spatial patterns of natural gentrification. It also demonstrated the first distinctions of how natural and planned gentrification were different. From this point, it was evident that isolated areas must be taken separately from the global grid to clearly represent any patterns or inconsistencies. In order to make a proper comparison, the global scale map was reduced into the four local parts of the inner city (NW, SW, and NE) (Figures 3-5).

The axial analysis of these sections where gentrification is evident was subsequently transformed into scattergrams which demonstrated the correlations between integration at radius= n (global) and radius=3 (local) (Figures 6-8). Scattergrams were used to identify the level of intelligibility in a system. These scattergrams supported the visual and syntactic results provided by the axial maps.



76.7

Figure 1. Global Axial Analysis of Portland's Inner-city, Rad=3

Case Studies and Analysis

The first area to be looked at is the Pearl District. Located in NW Portland, it is the historic industrial port area and is characterised by its large warehouse blocks. Still in the process of redeveloping the area, buildings are primarily renovated for mixed use. Overall, there is not an established pattern between residential and commercial land use. The Pearl District is maintained by boundaries: to the south the most integrated street in Portland, Burnside Blvd., which clearly marks the fringe of the district; to the west a below street level freeway, which breaks up the grid structure with an infrequency of overpasses; east a long series of park blocks; and to the north a distinct break created by the river and train yards. There is no main commercial artery through the development. Instead, commercial and retail sites are distributed throughout the whole area.

Hawthorne Blvd. existed along a former streetcar route. The area, a historic residential neighbourhood, is in late the stages of gentrification. The residential areas are dominated by restored Victorian homes and a few apartment buildings

ranging in origin. The majority of apartment buildings are concentrated to the north of Hawthorne, while the more expensive, single family homes are concentrated to the south. Commercial use exists on the main artery of Hawthorne in primarily one-story buildings with street access.

76.8

Figure 2. Land Use Survey Map



The fringe is not necessarily indicated by strong natural boundaries, as in the case of the Pearl District. The area of gentrification runs on Hawthorne from about 34th to 39th street. 39th Street is a major north to south route within southeast Portland, and marks the east fringe of the Hawthorne area (although the fringe is less distinct as it is in the Pearl District, but more a gradient of decreasing density and economic growth/activity). The north area is distinguished by Belmont Blvd, the south by Division St, both major arteries. At 20th and Hawthorne a small diversion of traffic takes westbound traffic up several blocks from oncoming eastbound traffic. Shortly after this small diversion, the two-lane system returns. This minor inconsistency in the flow of traffic, when compared with a similar traffic diversion on Broadway, helps to affect a strong sense of the local community.

Broadway is located in NE Portland, and like Hawthorne is historic a streetcar route, with a namesake bridge connection across the river to the west. It is, too, an area of natural gentrification, with slight differences in terms of the local area and historic land use. The southwest corner of the area is defined by the existence of a large mall, and along the south the presence of a main freeway which is below street level. Broadway, from two blocks east of the bridge until 23rd street is split by traffic direction into two streets, Broadway and Weidler. Eastbound traffic flows along Weidler while westbound traffic flows along Broadway. After 23rd, the traffic rejoins into a two-way road. Between Broadway and Weidler there are individual island blocks. These blocks hold a concentration of commercial/retail uses that are street facing along a linear pattern.

Like Hawthorne, a concentration of apartment buildings is located to the north of Broadway. North of the apartment buildings, above Broadway, the area shifts into Historic Irvington, one of the oldest and now wealthiest neighbourhoods in Portland. Fringe in terms of land use is also almost identical to Hawthorne, in that it is a gradual process of shifting from informal economy to large, more corporate business. The local area is also emphasised by the combining of traffic flows around 23rd, which creates a funnelling effect, slowing down traffic. The commercial gentrification of Broadway/Weidler can be expressed as a linear process, which is enveloped by parallel and bisecting blocks of mixed residential units.

The basic characteristics of each area where gentrification was present both residentially and commercially began to establish a clear distinction already between natural and planned gentrification. The main finding was that commercial use throughout the naturally gentrified area was occurring on a main, linear route. The planned gentrification site had no recognisable pattern for commercial use. While it is related to historic land use and growth trends, it still suggested an interesting question for further spatial analysis. Specifically, was there a logical spatial reason for naturally gentrified areas to maintain a strong linear commercial route where mixed residential gentrification was occurring on either side. It was also necessary to account for the fringe of all areas, and to determine if there were reasons within the urban grid why the process was, in naturally gentrifying areas, maintaining a gradual shift from an informal economy to more corporate businesses.

The first discovery is that the global grid structure has a strong system of both north to south and east to west integrators (Figure 1). The east/west integrators, it should be pointed out, are primarily streets connected to bridges. Burnside Blvd., is the strongest integrated line in the whole system, which, it can be speculated, is due to its centrality. Hawthorne and Broadway are also key integrators for the eastside of the river, Broadway being the primary line for the northeast and Hawthorne the primary line in the southeast. While all three of the areas studied lie on main integrators, the differences are how they relate to this integrator and is the difference between natural and planned gentrification.

Examining the Pearl District it is evident how it differs from either the Broadway or Hawthorne areas. Burnside Blvd. marks the fringe of Pearl District, rather than being a central, core artery. Hawthorne and Broadway, by contrast, make up the core or central line for the areas of gentrification. While Burnside Blvd. is a commercial street it is not associated with the Pearl District development. Throughout the Pearl District, as the global axial analysis demonstrates, there are no primary integrators, and no real presence of line inequalities. The integration of all

lines in the Pearl District development is uniform. Throughout the Pearl District, there is no real distinction between residential and commercial, an obvious result of mixed use buildings. The local axial analysis, taken separately from the global urban structure, reveals an almost identical pattern of integration. The scattergrams of both the Pearl District in global context and its immediate local grid, reveal little correlation between radius=3 and radius=n, revealing that the area is less intelligible as a system of lines.

The global grid structure of Hawthorne, by contrast, offers evidence of emerging, strong spatial patterns. The commercial gentrification is located on the most integrated line of the local system, which would indicate a preference for permeability and accessibility. The more segregated lines, or where a distinct hierarchy of spaces can be identified, are where there is a concentration of gentrified homes. Apartment buildings show the tendency to be located where there is a density of more integrated lines. Scattergrams that depict the correlations further support these ideas. Strong integrators running on the north to south axis, mark the east to west boundary for the gentrified area. Comparison with the Broadway site reveals similar patterns.

76.10

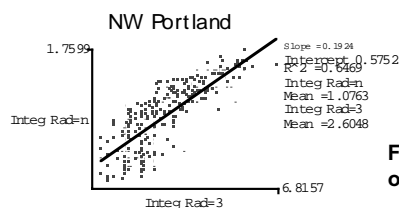


Figure 6. Scattergram of NW Portland

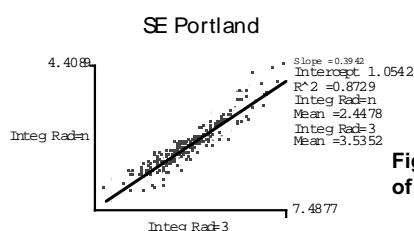


Figure 7. Scattergram of SE Portland

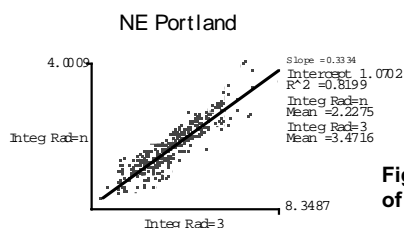


Figure 8. Scattergram of NE Portland

Analysing both Hawthorne and Broadway locations according to their broader local area (NE and SE Portland), patterns identified in the global system became evident. This indicates the importance of the larger scale urban grid structure to the phenomena of gentrification. Scattergrams which, using both the local within the global and the local as a separate system, correlated radius=3 and radius=n, generally represented that both areas had high levels of intelligibility, indicating a successful distribution of integration and providing a clear hierarchy for movement. Hawthorne produced a stronger correlation value than the Broadway area, due to more line inequalities within its system. This is perhaps the reason for Hawthorne's relatively greater success as a gentrified area.

To uncover reasons for why particular sites gentrified, it was necessary to examine the grid structure within close proximity. It has already been suggested that the funnelling effect, or diversions of traffic, create the effect of establishing a distinct local community while the phenomenon relies on a primary global integrator. Hawthorne and Broadway are connected to the west with bridges, they establish a clear accessible route to the core of Portland. The integration and permeability created by the bridges seems to account in part for natural gentrification patterns, in relationship to other areas within the global system.

The main areas of gentrification on the eastside, including Hawthorne Blvd and Broadway/Weidler all maintain direct connection to the west via bridges. However, the key is that the gentrification is not occurring at the core of the connection, but is rather removed from the main integrators running north to south, MLK Jr. Blvd. and Grand Avenue in particular. So while permeability and accessibility seems to be a primary source for stimulating gentrification, it also relates to a local stronghold that is developed away from too much integration. It occurs, as demonstrated by the axial map, in between major north and south integrators. These findings correlate with land use patterns which illustrate how a funnelling effect on traffic helps define a strong local community.

76.11

In comparison with other areas, and with each other, Hawthorne and Broadway point to an emergent spatial pattern. Gentrification seems to be indicated by several factors: it is defined by a main integrated street, which is commercially developed; related to a global connection, such as a bridge; off set from a highly integrated road which runs in the opposite direction from the integrated artery; encased by street facing mixed residential units, typically layered off from the commercial street from multi-family housing to single family residence; defined by smaller scale buildings, and dense aggregation of buildings on a whole. In addition, both areas displayed a good distribution of integration or line inequalities, which would develop a clear visitor and inhabitant relationship.

Because the patterns were observable in both examples of the naturally gentrified areas, it seemed clear that these were positive indicators of natural gentrification. These patterns also further the distinction made between natural and planned gentrified areas. In addition, what the patterns were revealing was a reflection of Hillier's idea of the duality of production of growth. Commercial, or public, space in the naturally gentrifying areas seemed driven on a linear path by movement, which suggests a micro-economic influence over the developing pattern. In addition, it could be demonstrated that the linear pattern had a strong relationship with the global urban grid structure. On the other hand, residential growth patterns seemed

by and large determined by more localised spatial patterns. Overall, it was evident that the commercial and residential processes, while different, had a strong relationship with each other. This duality of processes seemed a positive indicator of the phenomenon of natural gentrification.

76.12

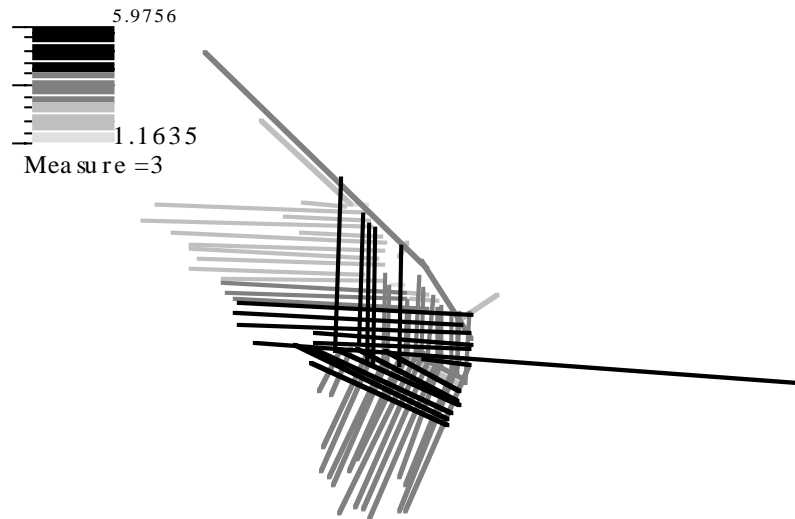


Figure 3. Local Axial Analysis of Pearl District, Rad=3

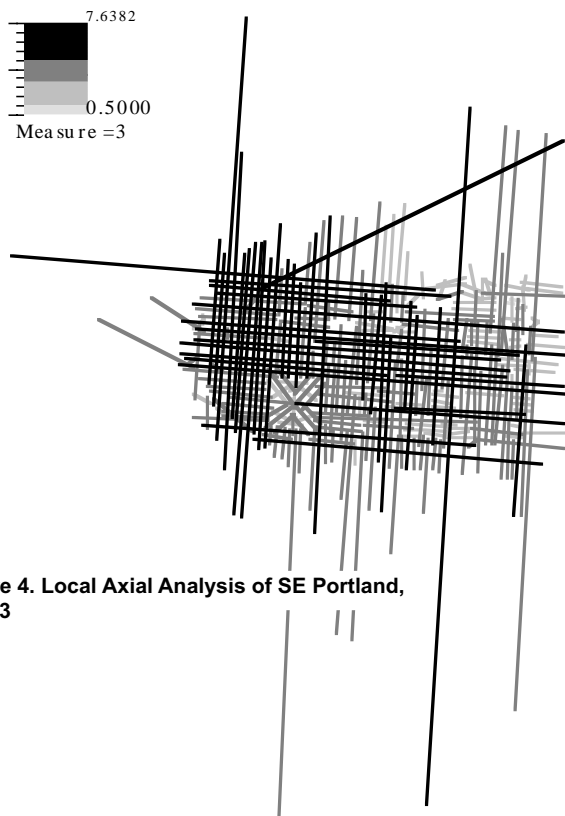


Figure 4. Local Axial Analysis of SE Portland, Rad=3

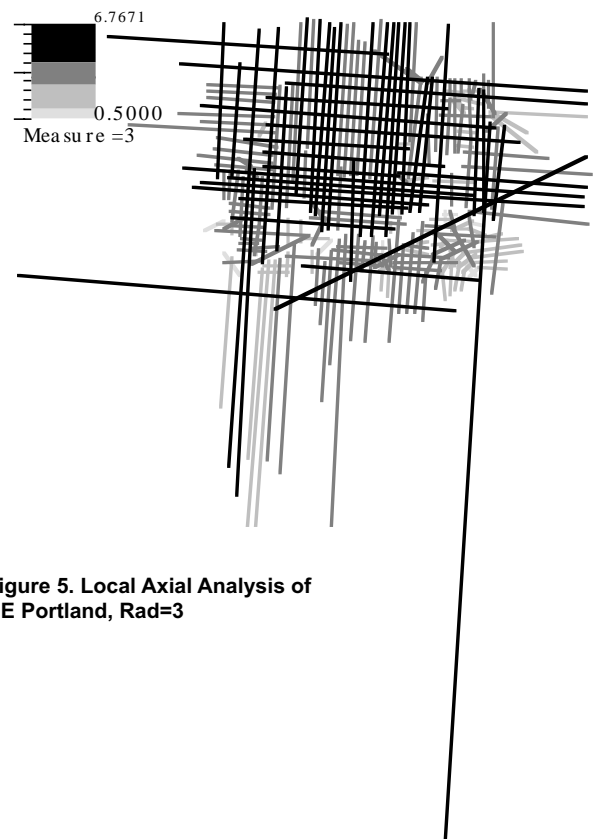


Figure 5. Local Axial Analysis of NE Portland, Rad=3

Key Findings

What becomes crucial, and evident in the case study analysis, is that gentrifying areas rely on a balance of the inhabitant and visitor interface. The informal market is not one of critical mass, according to observation, thus necessitating both local and visitor patronage. As discovered through the analysis, gentrified areas like Hawthorne and Broadway, while main integrators throughout the urban grid, also exist offset from other intersecting integrators and often share the characteristic diversion of heavy flows of traffic. The ideal condition is a street consistently populated by through traffic, yet still enveloped enough to be an actively used pedestrian community. The beauty of the linear arrangement is that businesses are densely populated, but that they also are constantly advertised to slower flowing traffic, constituted and thus naturally surveyed.

The presence of line inequalities within naturally gentrified areas also represents the necessity for residential areas not to be over-integrated. The aggregation of residential units encasing these linear commercial spokes provides a 'few step' logic that residential units are buffered from heavy transportation routes, yet are still only steps away from a variety of shops and eateries. Historic development along streetcar routes is being reflected in the restructured metropolis in that high premium is placed on being a few steps away from the main, gentrified commercial artery. Furthermore, the resurgent interest in restoring Victorian homes is popularised by the aesthetic of the Victorian porch, where inhabitants can survey and host, maintaining visibility both of visitors and by visitors. Therefore, an active but controlled relationship to the main commercial street is established by the urban grid structure (and thus to visitors of the area).

The Pearl District has little through traffic, as it is on the edge of the main integrator in the urban grid. The automobile has been replaced within the Pearl District by mass transit, including new trolley lines. This distinguishes such development from naturally gentrifying areas that depend on both local and global movement. Because of the lack of substantial global connection, it could be argued that the District's streetcar is catering to a very specific class. However, it further illustrates the idea that modern economic growth patterns within the inner city rely on movement, both local and global.

The differences between the Pearl District and naturally gentrifying areas like Hawthorne then are not necessarily based on general movement. The conflict seems to be the difference between artificially generated movement and natural movement, which as it has been demonstrated, is determined by the multiplier effect of the urban grid structure. This can be seen as strengthening the economic multiplier effect.

On a global scale, each naturally gentrified area is occurring in what can be seen as a movement focused grid structure. This is represented by the core of both Broadway and Hawthorne being more ringy than the peripheral grid structure. The identification of the global gridiness of gentrifying areas also accounts for the gradual shift into fringe.

However, overemphasising the importance of an intensified grid in terms of movement is perhaps what lead to the creation of the Pearl District. An oversimplified grid or block of development without the main linear integrator seems problematic in attracting through movement within the settlement. Because the nature of residential areas within the naturally gentrified areas are more segregated and thus distinguished from the main integrator, it functions to signal or direct visitors to where they should be and be going. The lack of line inequalities within the Pearl District gives no such hierarchy of spaces.

Hillier characterises the typical early U.S. city as a “regular orthogonal grid...in which the local cultural process is in the spatial image of the global economic process” (Hillier, 2000: 18). In this way, it can be further suggested that gentrification is showing trends of linearity as it is in response to the micro-economic activity of the informal economy. In other words, the regeneration of areas within the global grid structure preferences a form of limited interaccessibility. If, in relation to the rest of the grid, these areas were to be characterised as smaller grids then it is only due the support of residential blocks which encase the commercial route, and the limited number of steps they can be away with still maintaining a practical closeness to the main integrator. While the commercial aspect of gentrification can be examined independent of the residential units, the residential patterns are completely dependent on the commercial artery. Because the linearity of the commercial route, it has been demonstrated, is limited by other grid factors, it would be accurate to say that linearity can be seen as a small scale grid condition.

While economic and social theory accurately describe certain aspects of gentrification, they fail at making distinctions that spatially describe the process or what grid conditions may factor in. The emergent spatial pattern of gentrification that favours areas with natural movement suggests that the economic process is reliant on a pre-existing global grid structure, while the residential favours local grid structure. The combination of the two indicates a mutually dependent relationship founded on the intelligibility between both the local and global intelligibility, or how these two aspects of the grid structure relate to each other. The failure to recognise the importance of spatial factors on the process of natural gentrification is what has resulted in developments like the Pearl District, which are more reminiscent of gated communities than naturally gentrified communities.

The Spatial Dimensions of Gentrification: Research Review

The research has attempted to develop a distinction between natural and planned areas of gentrification. The key difference evident was that natural gentrification was occurring in a more linear pattern than that of the “clump” or box like development of the Pearl District. Beyond this distinction, the primary aim was to show strong spatial patterns of naturally gentrifying areas. The purpose of this was to argue that a phenomenon like gentrification relies on more than social processes or causes, and actually also relies on or relates to the urban grid structure. Within this goal was the desire to demonstrate how movement patterns and issues of co-presence have an influence on the natural growth of an area and how the duplication of these principles, without due examination of the urban structure, can result in almost opposite results.

Analysis conducted displayed common characteristics of naturally gentrified areas: commercial/retail presence on the main integrator; residential encasing on the periphery and on more segregated lines; the area being offset from major intersecting integrators; high levels of intelligibility; greater connection and permeability through the whole global system; and being distinguished by diversions or shifts in traffic/movement patterns. On the whole, the Pearl District bore few of these characteristics common to Hawthorne and Broadway.

Neil Smith argues that the “social meaning of gentrification is increasingly constructed through the vocabulary of the frontier myth” and others have argued that the basis of gentrification is purely economic (Sorkin, 69). Rather than being as reductive to suggest that gentrification is the pure desire of the white, middle class to capitalise on and colonise a new frontier, it is more important to understand what is attracting the explosive growth. Class and race issues have long been a part of urban growth and development. Not examining the spatial conditions but merely focusing on the social conditions of the city is problematic. While the social causes for gentrification are important to examine and grasp, it is clear that tools like spatial analysis can offer new insight. To better understand the phenomena’s relationship with the urban grid, it would be beneficial to use more examples for case study. This would highlight any inconsistencies that might be interpreted in a new light. It would also be interesting to look at areas that naturally gentrified and then failed after a short time.

The research conducted has attempted to support the hypothesis that first there was a difference between natural and planned gentrification, and second that natural gentrification is a process developed according to urban grid conditions. Specifically, the process was one that was dependent on a good distribution of line

inequalities, as well as a prime integrator that produced high volumes of movement to support the informal economy. The purpose of the paper was to demonstrate that gentrification, while in addition to being an economic and social phenomena, also has clear spatial patterns that indicate it is also a spatial phenomena. It was the intent to identify key patterns that would reveal why natural gentrification might be developing in some areas and not others. Analysis conducted demonstrated that there is a clear relationship between natural gentrification and the urban grid structure, which both supports and contradicts economic and social theory.

References

- Abbott, C., 1983, *Portland: Planning, Politics, and Growth in a Twentieth Century City*, Lincoln, University of Nebraska Press
- Abbott, C., 2001, *Greater Portland: Urban Life and Landscape in the Pacific Northwest*, Philadelphia, University of Pennsylvania Press
- Jacobs, J., 1984, *The Wealth of Nations: Principals of Economic Life*, New York, Random House
- Hammond, B., 2001, "Homeownership Rates Decrease", *Oregonian*, March 16, pp. 1 and A1
- Hillier, B., and Hanson, J., 1984, *The Social Logic of Space*, Cambridge, Cambridge University Press
- Hillier, B., 1996, *Space is the Machine*, Cambridge, Cambridge University Press
- Hillier, B., 2000, "The Theory of the City As Object: or How Spatial Laws Mediate the Social Construction of Urban Space", *Proceedings of the Third International Symposium on Space Syntax*, Atlanta
- Oliver, G., and Suo, S., 2001, "Population Changes", *Oregonian*, June 18, pp. 1 and A5
- MacColl, E. K., 1979, *The Growth of a City: Power and Politics in Portland, Oregon 1915 to 1950*, Portland, Georgian Press Company
- Mildner, G., 1998, "Growth Management in the Portland Region and the Housing Boom of the 1990's", www.urbanfutures.org/wpgrowth.html, Urban Futures Working Paper no. 98-1
- Sassen, S., 1998, *Globalization and Its Discontents: Essays on the New Mobility of People and Money*, New York, New Press
- Sorkin, M. (ed.), 1992, *Variations on a Theme Park: The New American City and the End of Public Space*, New York, Hill and Wang
- Wozniak, O., 2000, "Is Sustainable Urban Development Politically Sustainable", www.linacre.ox.ac.uk/Studentpages/Ecu/documents/essays/wozniak2.htm, pp. 1-9, April 25

76.16