BE AWARE OF LOCAL PROPERTIES

082

Frederico Rosa Borges de Holanda
Universidade de Brasilia

Abstract

Literature in space syntax theory has stressed that we must be aware of global properties of cities, for they reveal more clearly and deeply the social logic behind city space-form. Significant empirical research has demonstrated that this is basically correct. Still, the paper presents a case-study that does not conform to such findings. Sociospatial segregation in the Federal District in Brazil does not relate to global properties of city space-form, but rather to local properties of building and urban configurations. Building attributes are related to: whether buildings are individual houses or flats; size of plots; whether or not apartment buildings have pilotis, underground garages, lifts or high-tech facilities (e.g. cable TV, intra-net, internet); number of stories etc. Urban attributes are related to characteristics of streets and sidewalks, availability of parking lots, green areas and leisure facilities in the surroundings etc. In such properties we find the realization of the corner-stone of Space Syntax Theory - social order is embodied in architectural form - albeit at a very local level. Eight areas in the Federal District are discussed, from the richest to the poorest regions in the Brazilian Capital. Data from socioeconomic census sectors are used in order to classify family incomes in five layers. It is shown how income layers change dramatically according to building types and city local properties, quite independent of distances from the CBD and from the level of integration/segregation of lines of the Space Syntax axial map that cross the places. It is commented how such findings are used by students in designing new boroughs, in order to achieve a desired balance among income layers in these areas. It is hoped that findings may support urban design and housing policies of the local government in order to redirect the city's configuration, away from the perverse sociospatial segregation we find today.

Introduction

Many studies have revealed consistent relationships between city configuration, on the one hand, and movement of people in space, land use patterns, deployment of different income layers, and liveliness or desertification of places, on the other. In a seminal paper, Hillier et al. (1987) show how the intense pedestrian use of "urban" areas in the North of London (e.g. Barnsbury), contrasted with the deserted public space of housing estates, can be explained through morphological attributes of these places. Desyllas (1997, p. 04.1)

082-02

discusses how land use and land values shifted along time in Berlin (before the wall, during the wall, after the wall), in strong correlation with global integration measures of the city's axial maps of each period. He illustrates the point with a saying from estate agents: "three things are important in the property market: location, location and location". The displacement of concentration of commerce and services along time, accompanying the displacement of the integration core of the axial map is also exemplified by Rigatti (2005, pp. 229-242) in Porto Alegre, Brazil. As the city grew away from the historic centre, so the integration core also moved away from ancient centralities. The old centre has lost its role as a "heterogeneous field of social encounters and land use patterns" and became more socially homogenised towards lower income strata, with less intense use of public spaces. Conversion of historic buildings (e.g. into cultural centres) have had punctual and weak consequences concerning the use of space in the vicinity. In her detailed analysis of 19th century London, using segment analysis, Vaughan et al. (2005, pp. 379-394) show how "middle class explored the potentiality of more integrated axial lines to support their economic activity [while] localised clusters of very poor streets were cut off from the life of the city" in deeper street segments.

Brasilia, Brazil, in part supports these findings, in part contradicts them. On the one hand, studies on the predictability of traffic flows have shown that syntactic segment analysis performs better in modelling vehicular movement than traffic allocation models such as SATURN (Barros, 2006; Barros et al., 2006). On the other hand, the intensity of these flows does not corresponded to urban centralities. As we have shown elsewhere (HOLANDA *et al*., 2002), commerce and services are eccentric to the integration core of the metropolis: correlation between the number of jobs and the integration measure of the places in which they are located is nihil: R^2=0.07. Also, by empirically looking at the deployment of income layers in the city, we suspected that, over and above integration, there were more issues involved in explaining the patterns of such distribution, and that the issues were related to local properties of place.

Thus, global properties will be referred to, but the focus will shift from the latter, as revealed by the axial map, to local attributes of built space-form. Our findings support "architecture as an independent variable" (one of the main tenets of space syntax theory) but at local, rather than global level. And when I mean local, I am not talking about integration in small radii (e.g. R_3, R_5, R_7), nor about local deformation of the grid (as in Hillier, 1999). I am talking about: plot size, number of built stories, whether domestic units are houses or flats, whether or not apartment buildings are over pilotis, have underground garages or lifts, whether or not flats have high-tec facilities (e.g. cable TV, intranet, internet), what is their style ("modernist", "post-modernist"); whether or not streets are cul-de-sac, allow cars going through and present parking spaces; how generous and well dimensioned are sidewalks and green areas etc. I will show that these local attributes have a strong say in the way various family income layers deploy themselves in the land, over and above their segregation / integration related to axial lines tangent to, or crossing the places (as in Vaughan).

The paper analyses eight residential areas, with different family income levels. I begin by offering an overall view of metropolitan structure, summarising the main traits of the city (more details in Holanda, 1999, 2000, 2006; Holanda et al., 2002; Ribeiro & Holanda, 2003). I comment on the "patchwork nature" of the city, more often than not ignored by the literature – a patchwork which implies an amazingly varied number of morphic types along the city's history.

I examine the residential building types and the residential urban spaces originally proposed, as a way into the central discussion of the paper: how the morphic types, originally designed or which developed despite the plan, have strongly determined the presence, or otherwise, of diverse family income layers in city space along time. A final discussion follows, which includes the implications of the findings concerning social housing policies.

The Metropolis as a Whole

To talk about Brasília demands an initial explanation. The Brazilian Capital is a metropolis with 2,051,146 inhabitants (IBGE, 2002) within the borders of the Brazilian Federal District (henceforth FD), plus almost a million more people in urban areas which sprawl beyond the borders of the FD into the neighbouring State of Goiás. (For lack of proper data, however, only the urban areas within the borders of the Federal District will be considered.)

The city is legally subdivided into 19 Administrative Regions. They are improperly called "cities". We should rather call them boroughs of the metropolis – this is what they actually are. The elements initially proposed by Lucio Costa's Plan constitute today only a small part of the whole city and are situated in three regions, officially called "Brasilia", "South Lake" and "North Lake", in which only circa 12% of the metropolitan population live. However, in this text, "Brasília" will be the metropolis. Along time it became common to use the denomination "Pilot Plan" (or simply "Plan") only for the residential "wings" and its immediate surroundings originally proposed by Lucio Costa. The dichotomy thus adopted – "Brasília" / "Pilot Plan" – is justified historically, is found in traffic signals and in people's imaginary: inhabitants of the "satellite cities" consider themselves inhabitants of "Brasilia" (Branco, 2006). This is a correct reading, for they live in parts of the metropolis and rightly capture the nature of the whole city and the complementarity of its various bits.

However, the history of the urban scape of the FD is more complex than the dichotomy Pilot Plan/Satellite Cities suggests. There were two urban nuclei which pre-existed the Capital, the configuration of which resembles Brazilian vernacular cities (e.g. Planaltina); slums were self-produced by workers who migrated to the FD during the initial stages of the building of the city (the last one, Old Paranóa, has been bulldozed by the local government in 1989); also in initial times, companies built camps in order to house architects, engineers, technicians and manual workers, the remains of which still exist; there are significant differences between the "classic modernism" of the Plan, the "peripheral modernism" of satellite cities and the "post-modernism" of more recent times; gated communities are the new pattern of urban expansion; in the early stages of the implementation of the Plan, new building types have been added to the ones originally proposed.

The Pilot Plan and the other elements of this varied panorama constitute the dispersed "morphic patchwork" of the metropolis. Fig. 1 compares Brasilia axial map with São Paulo's (Medeiros, 2006): within a radius of 30km, São Paulo has circa five times more people than Brasilia (Holanda, 2006). Both the Pilot Plan and the "patchwork" of the whole city make Brasilia such a fascinating place to investigate. We will now have a closer look at the elements of this Brazilian "urban quilt".

082-04
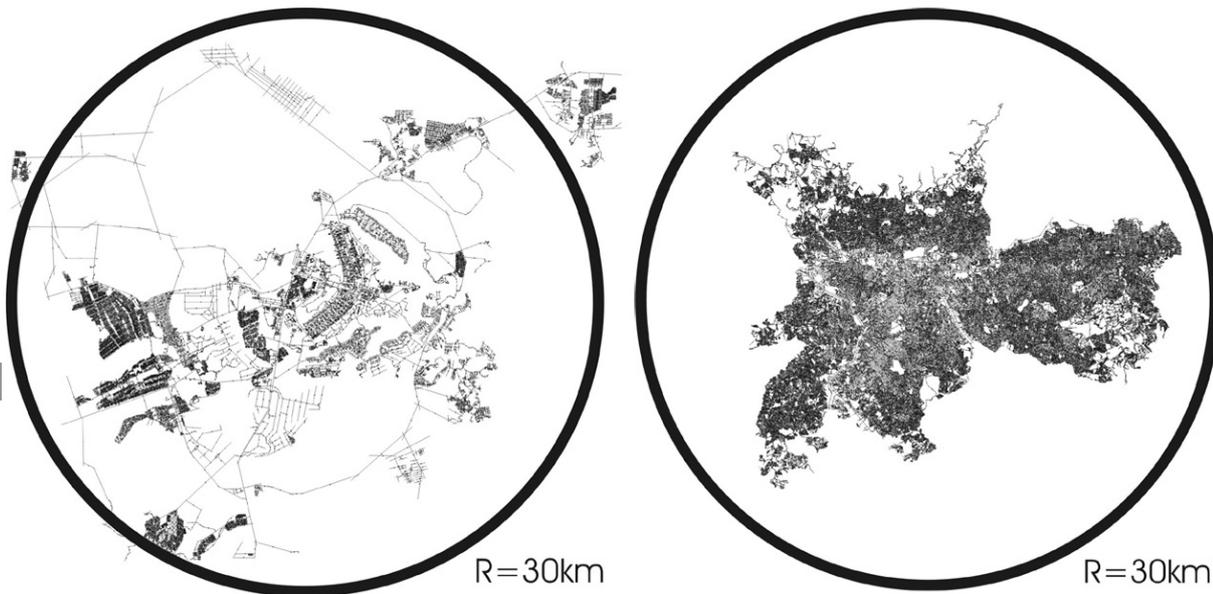
Figure 1:

(a) In the areas covered by these axial maps, in the same scale (30km radius as indicated), in 2005, Brasília had 2,333,108 people and São Paulo (b) had 10,927,985 (IBGE, 2005)

Sociospatial Segregation

The development of the city has made Costa regret the high social costs involved, that he has criticised: the uniform pattern of apartments did not respond to "the three economic layers in which, in the capitalist world, people who work in the public administration and in the private enterprise are divided" (Costa, 1995, p. 319). It was "as if present society was already a classless one" (id., p. 302). To ignore his proposal of varied flats for diverse income layers would have resulted from "vices of a centuries-old social-economic reality, by which the bourgeois, despite the familiarity with which they deal with servants, have always kept them at a distance" (id., p. 315). However, he adds, "this would not have solved the problem, since the great majority of the working people are even less than poor" (id., ibid.). Implicitly he acknowledges that many people would not have access to the building types of the Pilot Plan, but he does not revaluate the spatial patterns he has proposed. He prefers to keep the "original physiognomy of Brasilia and a certain urbanistic concept":

> It would have been more than foolish – a crime – to plan the city in the measure of the underdeveloped present reality; (...) as, in capitalism or socialism, the universal trend – despite overt and romantic denials – is for everybody to become, at least, middle class, the so-called Pilot Plan can be considered an *antecipation*. Thus, in the future, when we reach it, all will indistinctly feel fit at the ancient and dignified cosiness of the old Capital (Costa, 1995, p. 320).

In more recent proposals for social housing, he proposed the construction of buildings up to four stories high, over pilotis, without lifts or underground garages. Still, although the building type implies access to housing by lower income people, it by no means satisfies the broad spectrum of income layers. To a good measure, sociospatial stratification has its origin in the project. Let us see how our inquiry allows is to characterise today.

The traditional discourse on Brasilia states that the rich live in, or near to, the Pilot Plan, whereas the poor live in the satellite nuclei. We suspected that this was not quite so. We have started from a double hypothesis: 1) income variation had little to do with global aspects of the city's configuration, as measure by integration Rn; 2) local properties had a strong say in the deployment of income layers in the land. In order to verify this, the areas under study were selected

according to a combination of three sorts of criteria: they should cover strong variations in 1) income layers, 2) global properties and 3) local properties of built form-space. Variation of income was initially based on available data per Administrative Region and the sample was built so that we had wide differences, from the richest, through a medium range, to the poorest region of the FD [i]. This sort of information was only a starting point that should be refined in the inquiry because we intuited that the data masked important variation within regions. This was confirmed, when we fine-tuned relationships between income layers and place by means of data information from census sectors, which are geo-referenced (Ibge, 2002). We have studied eight areas of the FD (Fig. 2).

Figure 2:

Axial map of the metropolis of Brasília and areas referred to in the text (integration in grey scale)

082-05
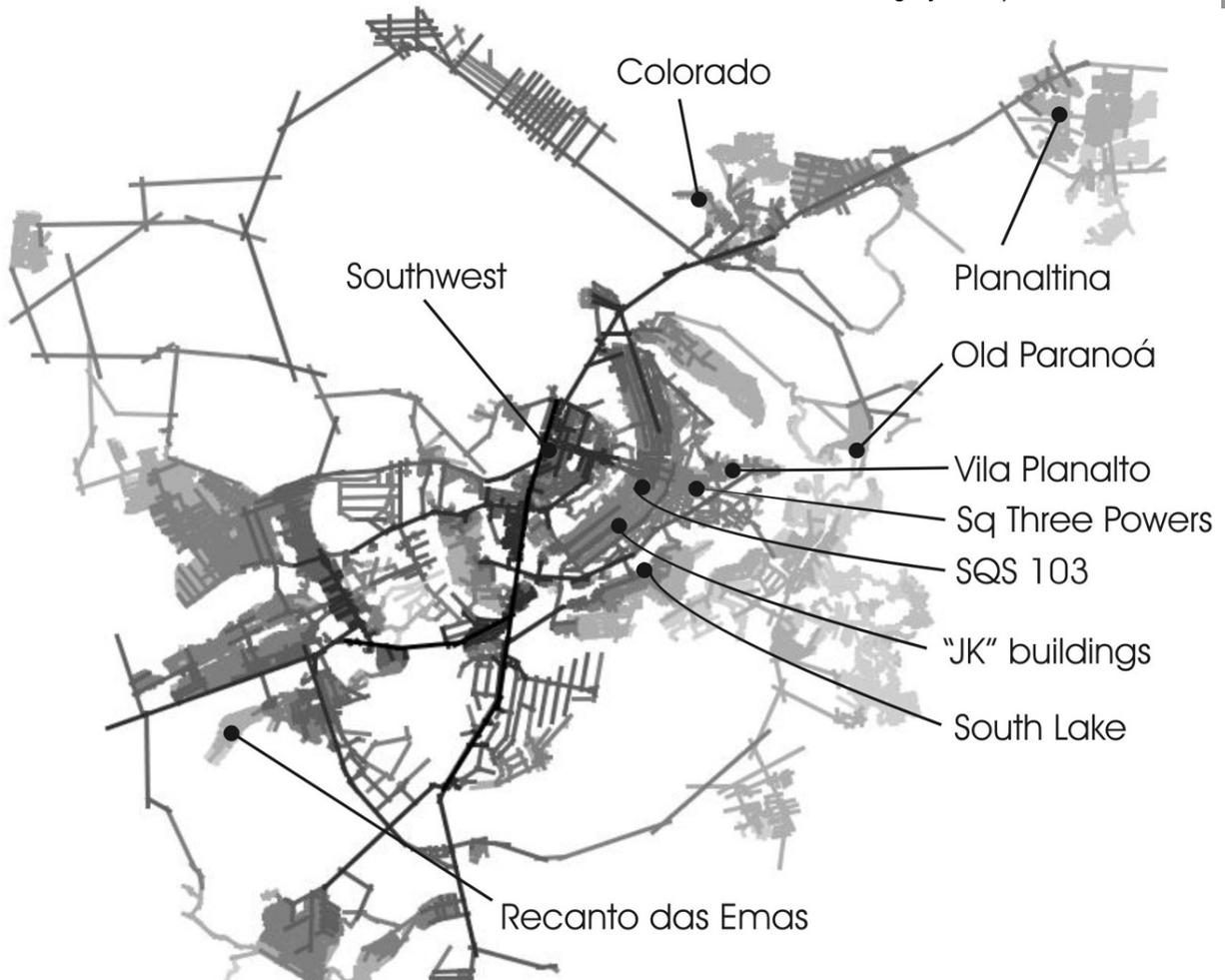
Let us first consider the metropolitan reality. It was possible to calculate "area average integration Rn" by means of a geo-processing software (Arcview): axial lines tangent to, or crossing the polygons of the census sectors were selected and their average Rn calculated (more details in Ribeiro & Holanda, 2006). In Brasilia as a whole, correlation between integration of census sectors and income layers is practically nihil: $R^2=0.04$. At the level of the whole metropolis, then, factors other than integration Rn explain the deployment of income layers in space. When we have a closer look at the areas selected for detailed study, correlations go up but are still low. Average income does fall together with integration, but correlation is only $R^2=0.27$. If we consider only the poor, correlation goes up to $R^2=0.31$ (i.e., the localisation of the poor vary more closely with area integration) but when we consider only the rich, correlation falls to $R^2=0.20$ (i.e., the rich contradict more area integration then the poor). By considering

the areas in detail I will suggest what "factors other than integration" may be responsible for this. But before this, it is important to consider another aspect of the city as a whole.

As commented before, Brasilia's CBD is morphologically eccentric (it is not located in the integration core). Then, it was interesting to check whether there was a strong correlation between average income and metric distance of census sectors from the CBD. For the city as a whole, we found R^2=0.44, not very high, but quite different from the R^2=0.04 found between Rn integration and income. In other words, metric distance to CBD explains income variation more than Rn integration does, but it still does not explain very much (Table 1). These low correlations have then confirmed the first hypothesis, i.e. there is little relation between income and global insertion of the areas in the city, depicted either by the measure of integration Rn or the distance to the CBD. Let us then look at the local properties of the places.

082-06

Table 1:

Areas studied, income, integration and distance to CBD

Areas Studied	Average Income (US$)	Average Integration	Distance to CBD (m.)
South Lake	3189,23	0,7282	7.000
"Noble" Southwest	2897,77	0,8427	5.500
103 South Superblock	2662,81	0,6243	2.200
Colorado	2508,78	0,5338	18.300
"Economic" Southwest	2259,80	0,7517	6.500
"JK" Buildings	1719,49	0,7055	4.480
Vila Planalto	897,61	0,6673	3.900
Recanto das Emas	290,98	0,5136	28.800

South Lake (Fig. 3) presents a suburban type of occupation: exclusively residential use, isolated shopping malls, semi-express roads with generous green areas along traffic lanes, tree-like street schemes with many cul-de-sacs that are presently tending to be enclosed and thus privatised, single family house plots (minimum 800m^2). With the incorporation of otherwise public green areas to the private plots (the government pretends it does not know), the plots may reach the unbelievable size of up to 10,000m^2. Empty plots may cost up to US$ 2,000,000, quite high for Brazilian standards. This is the richest region in the FD, with an average income of US$ 3,189.23. The rich amount to 80% of the population, and the medium-medium and lower strata do not reach 10%. This was a first surprise: even in an area like this, there are "non-conforming families" who live in the interstices of the dominant order.

Southwest Borough is rather recent (1990s). There are two different bits to it, which differ in configuration and income layers; they are popularly called "noble" Southwest and "economic" Southwest. The "noble" bit (Fig. 3) has apartment buildings six stories high, pilotis, lifts, underground garages; there are high-tech facilities (internet plug-ins, intranet, internal security circuits, cable TV etc.) and the fashionable post-modernist cosmetics – lots of crystal façades, aluminium or stainless steel, supposedly Greek or Roman columns, arches, pediments… The price per built square metre amounts to US$ 2,000.00 or more. Average income is US$ 2,897.77. The rich fall to 65%, there is a clear increase in the middle-superior strata (now almost 25%), but the medium-medium and lower strata (11%) differs little when compared to the South Lake.

Older apartment buildings of the South Wing of the Pilot Plan, six stories high with lifts (e.g., the 103 South Superblock, Fig. 3) do not

present the characteristics of more recent buildings in the Southwest commented above. Comparatively, the built square metre costs half as much. Average income is US$ 2,662.81. The rich fall to 56% and medium-medium and lower strata almost double: 20%.

Figure 3:

Income layers of the first four areas and respective building types

South Lake

082-07

"Noble" Southwest

South 103
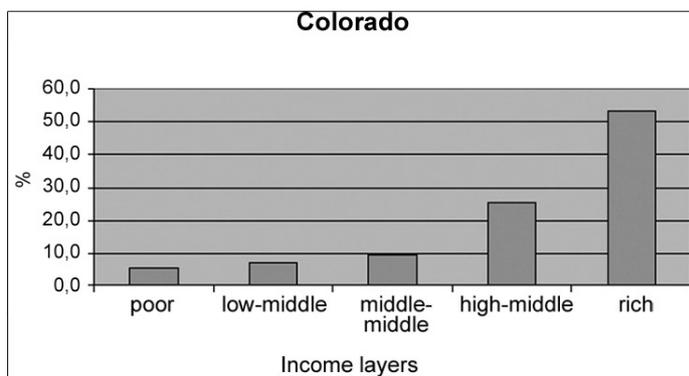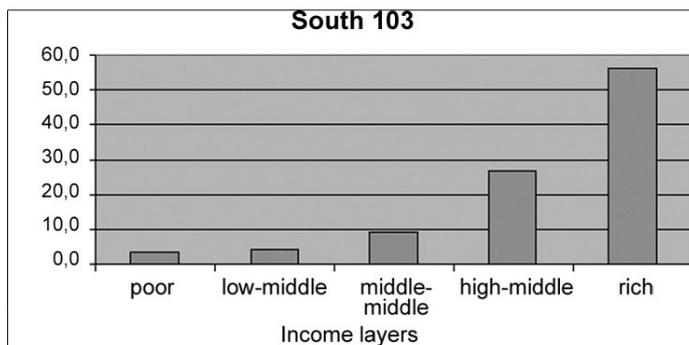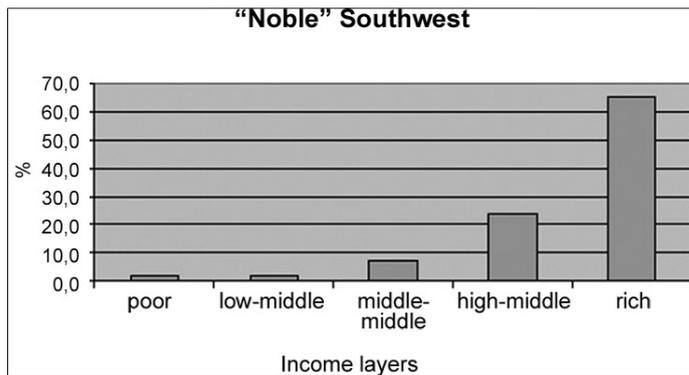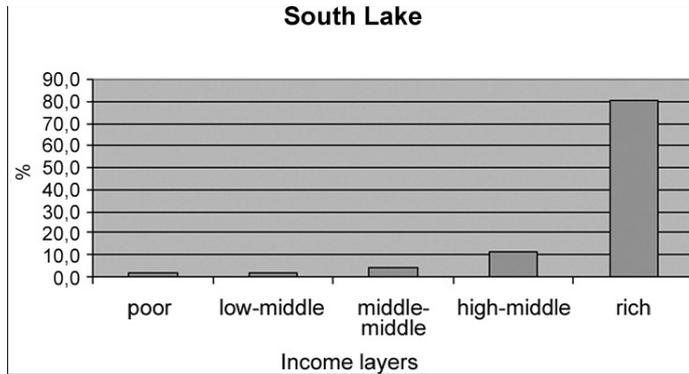
Colorado

Gated communities of the Colorado Borough (Fig. 3), 26km northwest of the Pilot Plan in the satellite city of Sobradinho, are constituted by single family houses. They are typical examples of the migration of medium strata away from the Pilot Plan, intensified in the last 10 years. Large plots (1,200m^2) provide space for generous orchards and swimming pools (the latter is a very common sign of high social status – although here they happen in less numbers as compared to the

082-08

South Lake). The distance to the Plan is rewarded by the price of the plot (circa US$ 38,000.00) and by the possibility of building a house of good standard for US$ 360.00/m^2 of built area, against US$ 2,000.00/m^2 of the new flats of the Plan or the Southwest – more than five times for the same amount of space. Average income is US$ 2,508.78. Compared to 103 superblock (previous example), the rich fall slightly (from 56% to 53%), medium-medium and middle-lower strata together increase from 14% to 16%, and the poor increase from 3.7% to 5.5%. It is usual to build the house in various phases, with the family moving in from the very first phase, a typical process among families with lower economic resources. This certainly explains the increase in the bottom income layers.

"Economic" Southwest (Fig. 4) is constituted by apartment buildings three stories high over pilotis, rarely with lifts and underground garages. It usually does not have the high-tech facilities of the "noble" bit (case 2, above). Average income is US$ 2,259.80. The decrease among the rich and the increase among the medium-superior layers are clear: both are now 38% of the total. Flats are much cheaper than those of the "noble" Southwest.

"JK" buildings of the "400" row of superblocks at the Pilot Plan South Wing (Fig. 4) did not exist in the original conception of the project. They are three stories high but without pilotis nor lifts nor garages. Flats are small and green open spaces around them are more modest than in other superblocks. Average income is US$ 1,719.49. Despite the privileged location concerning jobs and services in the best parts of the Pilot Plan, the rich fall to 22% and the medium-medium strata and below are 43%; within the latter, the poor amount to 6.4%.

The study of the Vila Planalto (Fig. 5), only 1,500m away from the Square of the Three Powers – the heart of the city (and of the Republic!...) – has offered the most rewarding results. The Vila dates from the beginnings of the construction of the city. It had its origins in a building firm camp that provided housing for the company employees of all layers – architects, engineers, technicians, manual workers. It was quite varied concerning plots, houses, blocks, streets, alleys, sidewalks etc., according to the respective social categories therein. Today (2006), 46 years after the inauguration of the city, such variation is still clearly printed in its configuration. The average plot is very small (143m^2) and 46% of all plots have less than 100m^2 of area. Some streets are so narrow that they almost forbid cars from passing through. And yet the Vila presents an income stratification that is very close to the stratification of the FD as a whole – it is almost, as it were, a microcosm of the entire metropolis: there is a bit more of rich people in the FD (10.4% in the Vila, 11.9% in the FD), medium strata are also larger in the FD (49.8% in the Vila, 57% in the FD), and there are circa 7% more poor families in the Vila than in the FD (39.7% in the Vila, 32.5% in the FD) (Fig. 4). Average income is US$ 897.61. There has been some gentrification. The picturesque character of the Vila, as well as its privileged location, has attracted middle class intellectuals, some of them teachers at the University of Brasilia. The best houses are suitable to adaptations that correspond to middle class expectations and are situated in streets which allow generous parking space. But such houses are a clear minority. The larger part of the Vila's architecture and townscape is not fashionable to medium strata, let alone the rich. Thus, gentrification seems to be reaching a limit, imposed by architecture of the place and by the impossibility, enforced by law, to change some of its fundamental characteristics. More than four decades after the Federal Government moved to the Central Plateau of Brazil, market forces were not powerful enough to expel low income families from the place. When Brasilia was decreed World Cultural Heritage by UNESCO (1989), the Vila was included in the

perimeter of the area thus considered. Henceforth it was no longer possible to make transformations which implied changes in the fundamental traits of plots, houses, blocks, streets, squares. This has further contributed to slow down market pressures upon the building stock of the Vila and implied the permanence of the lower income families. Architecture has spoken louder as an independent variable.

Figure 4:

Income layers of the second four areas with respective building types

082-09

"Economic" Southwest

"JK" buildings

Vila Planalto
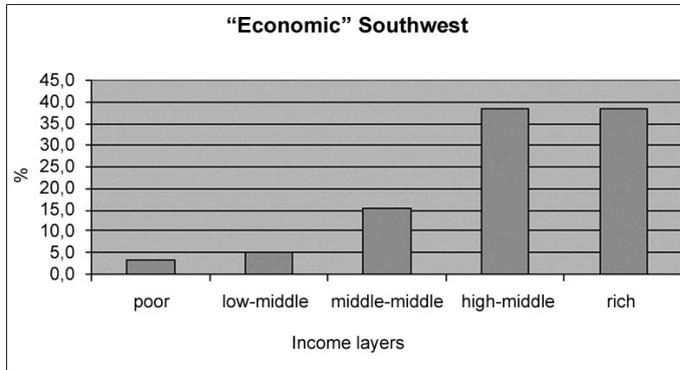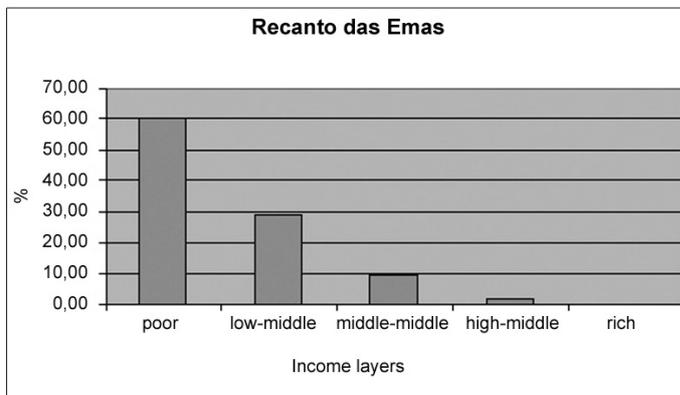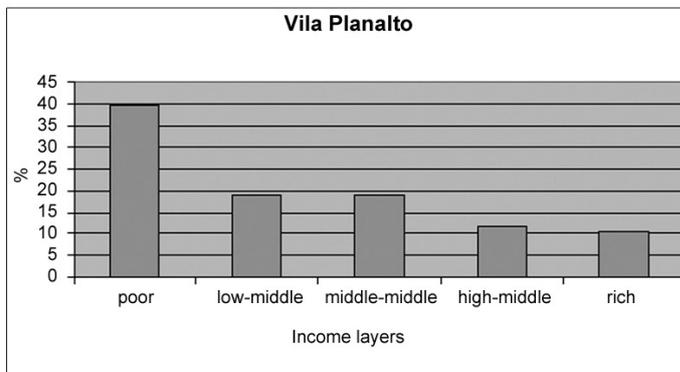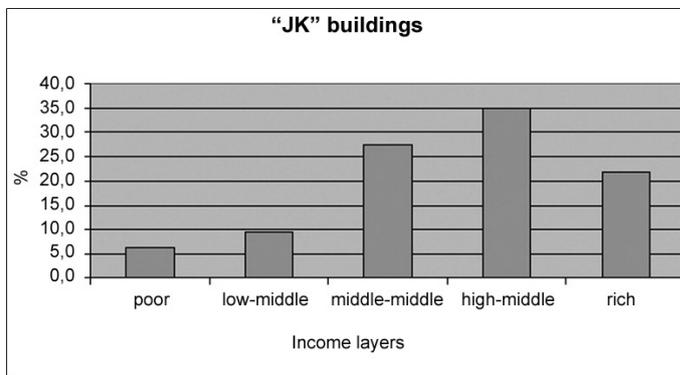
Recanto das Emas

Recanto das Emas (Fig. 4), 26km away from the Pilot Plan, is the poorest administrative region of the FD. The plots have been given for free to the poor families by the local government and the houses have

Figure 5:

Vila Planalto: (a) "Poor" street. (b) "Poor" house. (c) "Rich" street. (d) "Rich" house

082-10

been self produced. Average income is US$ 290.98. Poor and medium-low strata amount to 89%. Recanto das Emas is the only case in the sample which supports the common assumption I have been challenging in the paper, i.e., physical segregation, as indicated by syntactic axial maps, comes together with poverty.

Discussion

In other Brazilian cities, there are many cases of poor families living in highly integrated areas. But this is normally related to risky situations: swamps in Recife, the bottom of valleys in Salvador, steep hills in Rio etc. Slums in Copacabana mountains (Rio) are in close vicinity to one of the busiest and most fashionable areas in the city. Further comparative studies are necessary to talk about these cities more rigorously, in this aspect. But at first sight we do not find situations similar to those in Brasilia.

In Brasilia, we do not have risky situations but we have processes of planning and production of space which are unusual, though by no means exclusive of the Capital. Market forces act here, but they do so under strict conditions. The Pilot Plan is frozen by law: volumetric typology of existing buildings cannot be changed, and empty plots are strictly regulated as to what can be built in them. Architects complain about limits to their creativity: in the residential superblocks all one can design is the cosmetics of the façades – volumetric attributes have been long defined by the Plan, land uses have been pre-determined. City norms offer little ground for individual initiatives as to what, how and where to build. Thus, variation in land values and uses follows a different logic from the one reported by Vaughan in London.

Shopping areas do not spring out of integrated streets or local deformations of the grid, by means of individuals' initiatives and following "natural movement". They have been predetermined according to principles that planners once found fit – zoning, hierarchical street system, neighbourhood units etc. Places for shopping or services thus defined may, or may not, be related with

integration. There are cases of highly integrated commercial streets that went into decay (e.g. the W-3 Avenue); there are cases of segregated commercial streets that are still alive. In both cases, this has to do with local attributes of the places, not with global relations to the city at large: 1) the once lively Av. W-3 could not compete with the local conditions offered by shopping malls that appeared in many parts of the city from the early 1990's onwards; 2) shops in segregated areas could not move to more integrated areas, nor their buildings converted into houses, because of because of land use restrictions – and they are doing reasonably fine, thanks.

By means of varied circumstances, it came to be the case that peculiar types of buildings were realised in highly accessible areas of the city – "JK" buildings and Vila Planalto in particular. They constituted both possibilities and restrictions that have implied access to the place of income layers, which do not conform to what goes around a few metres away. The range of possibilities they provide – together with the possibilities of phasing the construction of the houses, as in the gated communities of the Colorado Borough – by far surpass the "variety" Lucio Costa talked about when he complained about the "uniformity" that was obtaining in flats of the Plan since its inception. Costa's "utopia" (i.e. all income strata living in his superblocks) did not work because providing modernistic apartment buildings is not enough. In Brazilian conditions 46 years ago, as well as now, it does not suffice to deal with diverse flat configurations. The city has to offer a much wider range of alternatives, if it aims at housing for all income strata, from posh single family houses in big plots, through to apartment buildings of various types, through to small plots in which the houses are to be self-produced by the poor (the latter have access neither to the housing market nor to social housing programs, which have never coped with the high demand).

But is Brasilia that unique? Is it odd to the point of denying "normal" processes of urbanistic development worldwide? Moreover, do the pervasive strict rules necessarily imply shortcomings concerning the quality of city space? Accordingly, is this, say, "theory of local properties", particular enough to prevent its application anywhere else? No, to all questions.

True, Brasilia belongs to a trend of "strange" cities, as Hillier (1996, p. 215) once put it, or "formal" cities, as I have preferred (Holanda, 2002). Notwithstanding structural attributes discussed in the latter texts, such cities imply an over elaboration of rules that restrict individuals' initiatives. This is also the case with other Brazilian examples, either small towns also enlisted as Cultural Heritage, or special areas of large cities that deserve special care – for example, the city centres of Recife, Natal, Rio, São Paulo, Porto Alegre, whose transformation is jeopardising the historical quality of the places. Strict rules have to be enforced here, in terms of what and how to build. As it is already showing, individuals' initiatives or "the market" will eventually lead to the loss of a precious building stock. More often then not, these centres, in the integration core of the city in the past, are now peripheral to it, and the process is irreversible in the sense that it is impossible to restructure the metropolitan grid so that they become central again. All attention should now be driven to local properties in order to invert the trend of decay – let's be optimistic about it, for this is possible, as international experience, as well as some recent Brazilian examples demonstrate (Gehl & Gemzoe, 2002; Kunstler, 1996, Vargas & Castilho, 2006).

In Brasilia, there are still unoccupied areas adjacent to quite integrated bits of the metropolis, within or without the area declared Cultural Heritage. Predominantly residential new boroughs are being

announced, some of them quite big (e.g. 100,000 inhabitants). In some cases, little is defined; in other cases, superblocks similar to those of the Plan have been suggested. We have seen the film; we know the end in advance: clear predominance of higher strata of income layers.

Why this should be so? Why should we not strive for new boroughs as microcosms of the whole metropolis? Some speculations have been done by undergraduate students under our supervision. They have proposed the best of the two worlds: besides structuring these boroughs globally, i.e. suggesting land uses in accordance with the integration measures of the axial structure, careful attention has been paid to the parcelling of the land and the restrictions to build in them, in order to guarantee the local variation that will respond to different social classes' buying power. A wide spectrum of architectural types has been speculated, the extremes of which being high towers for posh flats, on the one hand, plots for single family self-produced houses, on the other, and a varied collection of other types in-between. Yes, severe restrictions should be imposed in order to achieve the intended results. Due to the obvious mistakes of the type of restrictions imposed by the Modern Movement, we came to believe that "restrictions are bad", period. Wrong. Our inquiry has showed so. Mutatis mutandis, can we imagine towers 40 stories high along Boulevard Saint Michel, Paris? Or along Paseo de Gracia, Barcelona? Nonsense. Neither should we imagine them in Brasilia superblocks (despite builders' insane dreams otherwise).

One thing is clear from the inquiry: strong local restrictions allowed for the permanence of low-income people in the heart of the city, whom would not be there otherwise – Vila Planalto and "JK" buildings are the most telling examples. These places tell us that a more democratic city is not delirious and naïve utopia – it is possible, here and now. As it has happened at the time of the implementation of these sites, this will depend on specific circumstances, i.e. on the ideological and power game at stake, in which the University of Brasilia, armed with the knowledge it produces, is one of the agents, albeit not a strong one (and yet the University has supported significant social movements, with varying success, in which the author and his students have been involved). If the results of the inquiry make sense, then this is important, for good action presupposes good knowledge.

References

Barros, A.P.B.G. de, 2006, "Estudo Exploratório da Sintaxe Espacial Como Ferramenta de Alocação de Tráfego", *MSc thesis*, Mestrado em Transportes, Universidade de Brasília, Brasília.

Barros, A.P.B.G. de, SILVA, P.C.M. da, Holanda, F. de, 2006, "Exploratory Study of Space Syntax as a Traffic Assignment Tool", A. S. Kubat, Ö. Ertekin, Y. I. Güney, E. Eyuboğlu (Eds.), *Proceedings*, 6th International Space Syntax Symposium, Istanbul, pp.083-01 – 083-14.

Branco, M.C.C.C., 2006, Brasília: Narrativas Urbanas, *MSc thesis*, University of Brasilia, Brasilia: s.n.

Costa, L., 1995, *Lucio Costa: Registro de Uma Vivência*, São Paulo: Empresa das Artes.

Desyllas, J., 1997, "Berlin in Transition: Analyzing the Relationship Between Land Use, Land Value and Urban Morphology", L. Amorim, F. Dufaux, (Eds.), *Proceedings*, 1st International Space Syntax Symposium, London: Space Syntax Laboratory, pp. 04.1-04.15.

Gehl, J., Gemzoe, L., 2002, *Nuevos Espacios Urbanos*, G. Gili SA, Barcelona.

Hillier, B., Burdett, R., Peponis, J., Penn, A., 1987, "Creating Life: Or, Does Architecture Determine Anything?", *Architecture et Comportement / Architecture and Behavior*, vol. 3, n. 3, pp. 233-250.

082-12

Hillier, B., et al., 1993, "Natural Movement: Or, Configuration and Attraction in Urban Pedestrian Movement", *Environment and Planning B: Planning and Design*, vol. 20, pp. 29-66.

Holanda, F. de, 1997, Exceptional Space, *PhD thesis*, Brasília.

Holanda, F. de, 1999, "Class Footprints in the Landscape", *Proceedings*, 2nd International Space Syntax Symposium, Programa de Pós-Graduação em Arquitetura e Urbanismo da Faculdade de Arquitetura e Urbanismo, Universidade de Brasília, Brazil, pp. 6.1 – 6.9.

Holanda, F. de, 2000, "Brasilia Beyond Ideology", *Docomomo Journal 23*, August 2000, pp. 28-35.

Holanda, F. de, 2006, Brasília: Ciudad Moderna, Ciudad Eterna, In E.R. Villaescusa, C.V. Figueira (Eds.), *Brasília 1956-2006 – de la Fundación de una Ciudad Capital, al Capital de la Ciudad*, Milenio, Barcelona, pp. 127-173.

Holanda, F. de, Mota, A.M.P., Leite, A.A.C., Soares, L.R.B., Garcia, P.M., 2002, "Eccentric Brasilia", *Urban Design International*, vol. 7, pp. 19-28. Joint Centre for Urban Design, Oxford Brookes University. Palgrave Macmillan Ltd.

IBGE, 2005, http://www.ibge.gov.br/home/estatistica/populacao/estimativa 2005/default.shtm (accessed 12.09.2006).

IBGE. Base de informações por Setor Censitário, 2002, *Censo 2000. Resultados do Universo, Distrito Federal,* Rio de Janeiro: Fundação IBGE (in CD-ROM).

Kunstler, J.H., 1996, *Home from Nowhere - Remaking our Everyday World for the 21st Century*, Simon & Schuster, New York.

Medeiros, V.A.S. de, 2006, Urbis Brasiliae, ou Sobre Cidades do Brasil: Inserindo Assentamentos Urbanos do País em Investigações Configuracionais Comparativas, *Doctoral Dissertation*, Faculdade de Arquitetura e Urbanismo, Universidade de Brasília, Brasília.

Ribeiro, R.J. da C., Holanda, F. de, 2006, "What Integration Adds to Quality of Life", A. S. Kubat, Ö. Ertekin, Y. I. Güney, E. Eyuboğlu (Eds.), *Proceedings*, 6th International Space Syntax Symposium, Istanbul, pp.085-01 – 085-14.

Ribeiro, R.J. da C., Holanda, F. de, 2003, "Application of Geotechnology to Urban Configuration". *Proceedings*, 4th International Space Syntax Symposium, Space Syntax Laboratory, London.

Rigatti, D., 2005, "When the City Centre is no Longer the Centre of the City", A. van Nes (Ed.), *Proceedings*, 5th International Space Syntax Symposium, University of Tecnhology, Delft.

Rykwert, J., 2000, *The Seduction of Place- The City in the Twenty-first Century,* Weidenfeld & Nicolson, London.

Vargas, H.C., Castilho, A.L.H. de, 2006, *Intervenções em Centros Urbanos - Objetivos, Estratégias e Resultados,* Editora Manole Ltda, Barueri.

Vaughan, L., Clark, D., Sahbaz, O., 2005, "Space and Exclusion: The Relationships Between Physical Segregation, Economic Marginalization and Poverty in the City". A. van Nes (Ed.), *Proceedings*, 5th International Space Syntax Symposium, University of Tecnhology, Delft.

082-13

Income layers in this paper will refer to earnings of the head of the household, the most detailed data available per census sector (IBGE, 2002). Classification of income layers is the following – poor: ≤ 2 minimum wages per month (henceforth MW); middle-inferior: 2 MW < x ≤ 5 MW; middle-middle: 5 MW < x ≤ 10 MW; middle-superior: 10 MW < x ≤ 20 MW; rich: > 20 MW. The minimum wage today (2006) amounts to the equivalent of US$ 159.00.

082-14