Home, What Is It For?

A Syntactic Analysis of the Configuration of Middle Class Apartments Currently Available on the Property Market in Recife, Brazil

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Introduction

This paper aims to broaden a longstanding and thus far unresolved debate in Brazilian architectural theory: whether it is possible to redesign urban apartments to make them better suited to the daily activities and needs of the middle class and more satisfactory in meeting their domestic space requirements.

In researching the socio-cultural design representation of middle-class metropolitan apartments, it was necessary to take into account the lack of studies concerning the profile of the contemporary middle-class family in Brazil, its pluralistic makeup and diverse characteristics. It should also be stated that apartments whose design is supposed to represent the average domestic space requirements of this class form the scope of this research.

According to Space Syntax Theory, space can be understood as a *relational situation*[1]. As such, this theory studies architectural space from a social viewpoint, "*establishes a method of describing space in such a way as to make its social origins and consequences a part of that description*"[2] and creates a "*link between morphological attributes of the space and the human expectations that it must satisfy"*[3].

This theory shows that a better understanding of the precise nature of the relationship between spatial organisation and social life can contribute to formulating a socially representative design and justify its application to the central issue of this research. Now presented as a short paper for the Domestic Space theme, this research was initially conceived as a final project for the Undergraduate Course in Architecture and Urban Planning at the Humanities Faculty ESUDA: Home, What Is It For? - A Syntactic Analysis of the Configuration of Middle Class Apartments Currently Available on the Property Market in Recife, Brazil.

This paper comprises four parts. In the first part, the scope of the study - middle-class apartments with three bedrooms plus servants' quarters and their spatial configurations - are presented. Secondly, the research method is explained. The third part presents and comments on the results of the syntax measurements applied to the configuration studied and compare them with those obtained from researches carried out by IBGE[4], Nomads-USP[5] and SINDUSCON-PE[6] on the wishes of the middle class concerning the domestic space they would like to live in. The genotype that emerges from the recurrences and inequalities in the values of these syntactic measurements applied to each space of the configurations studied, and the way in which they interface and communicate with one another are also analysed from a historical and sociological point of view, with reference to other authors. In the fourth part, to conclude, some comments are made and a new approach is proposed for the initial inquiry: to what extent each social force exerted on the building process of these apartments is imposed on their design.

Object

The object of this investigation was a set of ten metropolitan middle-class apartment plans, randomly selected from those on the property market directed towards a family income of between R$ 2,000.00 and R$ 5,000.00 reais (US$ 600 – US$1,500).

In fact, this is the most common type of apartment available on the Recife property market and also that accounting for the greatest demand. Moreover, this family income bracket is the same as that used by the building industry, as evidenced by two surveys of the Recife property market: *Imóveis Residenciais do Grande Recife, Perfil da Demanda, Ano IV* (Greater Recife Housing Demand Profile – Year IV) carried out in 2000 by SINDUSCON-PE and *IVV-Grande Recife, Índice de Velocidade de Vendas do Mercado Imobiliário, ano VII* (Property Sales Rate Index – Year VII) in March 2002 by FIEPE.[7]

These apartments have certain features in common: they are new, with areas of between 80m² and 110m², they have three bedrooms including one suite, a veranda, servants' bedroom and bathroom and one or two parking spaces (Figure 1). They are all located in Boa Viagem, a middle-class district of Recife, Pernambuco State, Northeast Brazil (Figure 2).

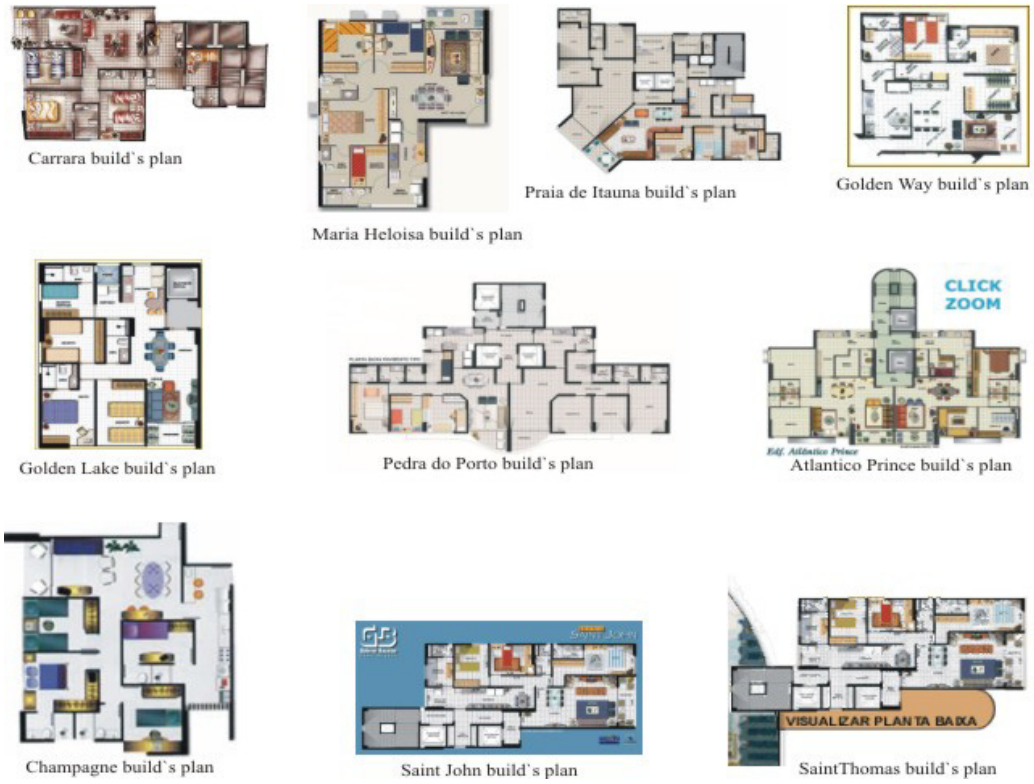

Figure 1. Respective Apartment Plans. Source: Websites of the Recife´s property market constructors

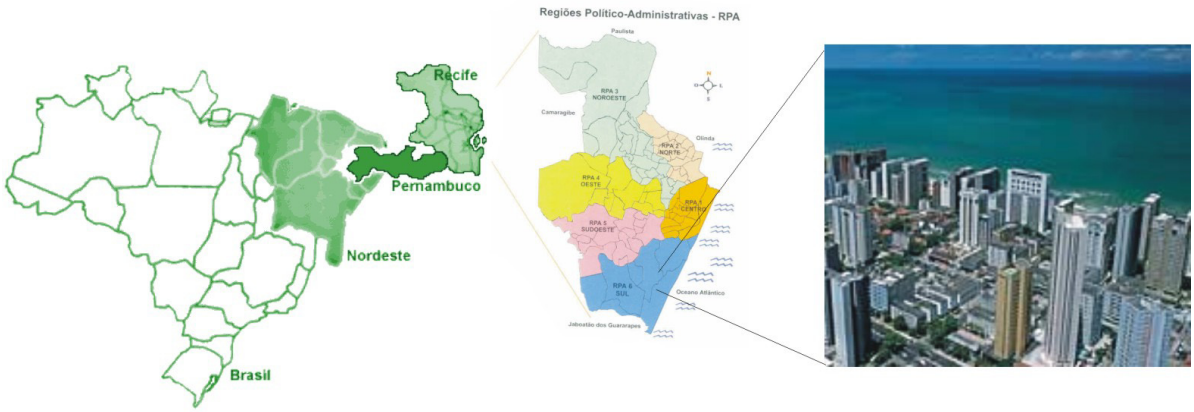

Figure 2. The location of Boa Viagem in the south of Recife, PE, Northeast of Brazil and panoramic view. Source: *Recife in Numbers, 1997, Recife City Council, www.recife.pe.gov.br/pr*

Research Methodology

In order to study the three-bedroom metropolitan middle-class apartment from a social perspective, with the aim of discovering a link between the morphological attributes of the spaces studied and the expectations of the specific income family that it must satisfy, this research methodology was concerned with two levels.

The first of them consisted of the syntax analysis of the spatial configurations and the relations and functions they suggested. This was subdivided into three procedures: first, the syntax measurements were applied to each space of each of the ten apartment plans, which were converted into convex space complexes and then interpreted in justified grafos. Secondly, the results obtained from each space and the way they interface and communicate with one another were analysed and compared. Integration Values, Symmetry and Distributivity, Activity and Circulation Spaces and Entropy were calculated. In a third stage, a genotype was obtained by comparing the recurrences and inequalities observed among the values of the syntactic measurements applied to each space of the spatial complex configurations.

Three domestic social relationships were considered more closely: between residents, between residents and visitors, and between residents and live-in servants. The root of each justified grafo was set in the space most frequently occupied by its corresponding relational category: the suite, the servants' bedroom and the living room respectively.

The second level was to study these spaces from a historical and sociological perspective using the results of research carried out on middle-class consumers in Recife (Greater Recife Housing Demand Profile – Year IV) and nationwide (Behaviours & Living Spaces, Nomads.USP). The latter was the first research of its kind, providing preliminary results which systematise information concerning the domestic spaces needs of this class, its demands and desires, whilst attempting to understand the changes in these spatial relationships and functions over time in the light of the work of Lemos, Gomes, Freyre, Amorim and Holanda on the evolution of the Brazilian home.

An attempt at comparing the results of these analyses enables the establishment of a hypothesis concerning to what extent the forces involved in the building of these apartments is imposed on their design and also enriches the discussion of a new design for this type of apartment.

Analysis of Results

Hanson's studies concerning the first and most remote human dwellings suggest that function precedes form, the physical spatial delimitation of the space in which it is carried out. Although the design, the plan of a dwelling, apparently subverts this order, it is the channel through which the cultural information of a region, an ethnic group or a generation that will be crystallised in the future building are transmitted and preserved for future generations.

Recurring configurations in the design of dwellings are thus found and it is this recurrence, also found in the spatial configurations of the middle-class apartments studied in the district of Boa Viagem, that is the desired subject of speculation in this chapter.

Close observation of the syntactic measurements of these apartments (Figure 3) reveals a pattern of recurrence in their values which attest to the existence of a genotype. Values of around 1 and below of real relative assymetry (RRA) of the most integrated areas such as the dining room, living room and circulation areas are found. The areas of average integration such as bedrooms, bathrooms and kitchen display RRA values of between 1.0 and 1.5, whilst those of high segregation, such as the servants' quarters, show values of between 1.6 and 2.9.

PLANS / SPACE	PL1 - CARRARA *n* =14 *c* =14						PL2 – MARIA HELOÍSA *n* =14 *c* =14						PL3 – PRAIA DE ITAÚNA *n* =14 *c* =14						PL4 – GOLDEN WAY *n* =16 *c* =16					
	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC
Hall	34	2,615	0,269	1,009	0,992	0,044	33	2,539	0,256	0,960	1,041	0,044	34	2,615	0,269	1,008	0,992	0,044	54	3,600	0,371	1,480	0,676	0,040
Dinning room	26	2,000	0,167	0,624	1,602	0,044	25	1,923	0,154	0,576	1,736	0,044	30	2,307	0,218	0,816	1,225	0,044	32	2,133	0,162	0,645	1,550	0,040
Living room	36	2,769	0,295	1,105	0,905	0,044	35	2,692	0,282	1,056	0,947	0,044	40	3,077	0,346	1,297	0,771	0,044	44	2,933	0,276	1,100	0,908	0,040
Veranda	48	3,693	0,449	1,681	0,595	0,044	47	3,615	0,436	1,633	0,613	0,044	52	4,000	0,500	1,873	0,534	0,044	65	4,333	0,476	1,897	0,527	0,040
Circulation	29	2,231	0,205	0,768	1,302	0,044	27	2,077	0,180	0,672	1,488	0,044	24	1,846	0,141	0,528	1,834	0,044	34	2,267	0,181	0,721	1,387	0,040
Bedroom	40	3,077	0,346	1,297	0,771	0,044	39	3,000	0,333	1,248	0,801	0,044	34	2,615	0,269	1,008	0,992	0,044	50	3,333	0,333	1,328	0,753	0,040
Bedroom	40	3,077	0,346	1,297	0,771	0,044	39	3,000	0,333	1,248	0,801	0,044	34	2,615	0,269	1,008	0,992	0,044	58	0,409	0,409	1,632	0,613	0,040
Bathroom	40	3,077	0,346	1,297	0,771	0,044	39	3,000	0,333	1,248	0,801	0,044	38	2,923	0,320	1,200	0,833	0,044	58	0,409	0,409	1,632	0,613	0,040
Suite	38	2,923	0,321	1,200	0,833	0,044	37	2,846	0,308	1,152	0,868	0,044	34	2,615	0,269	1,008	0,992	0,044	46	0,295	0,295	1,176	0,850	0,040
Suite bathroom	50	3,846	0,474	1,777	0,563	0,044	44	3,385	0,434	1,624	0,616	0,044	41	3,154	0,359	1,344	0,744	0,044	55	0,381	0,381	1,518	0,659	0,040
Kitchen	31	2,385	0,231	0,864	1,157	0,044	30	2,307	0,218	0,816	1,225	0,044	28	2,154	0,192	0,720	1,388	0,044	38	0,219	0,219	0,873	1,146	0,040
Service area	39	3,000	0,333	1,248	0,801	0,044	38	2,923	0,321	1,200	0,833	0,044	36	2,769	0,295	1,104	0,906	0,044	48	0,314	0,314	1,252	0,799	0,040
Servant bedroom	49	3,769	0,462	1,728	0,579	0,044	50	3,846	0,474	1,777	0,563	0,044	46	3,539	0,423	1,585	0,631	0,044	60	0,429	0,429	1,708	0,586	0,040
Servant bathroom	61	4,693	0,615	2,305	0,434	0,044	50	3,846	0,474	1,777	0,563	0,044	58	4,462	0,577	2,161	0,463	0,044	74	0,561	0,561	2,239	0,447	0,040

PLANS / SPACE	PL5 – GOLDEN LAKE *n* =15 *c* =15						PL6 - PEDRA DO PORTO *n* =16 *c* =16						PL7 – ATLÂNTICO PRINCE *n* =16 *c* =16						PL8 - CHAMPAGNE *n* =16 *c* =16					
	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC
Hall	39	2,786	0,275	1,061	0,143	0,04	47	3,133	0,305	1,214	0,824	0,040	44	2,933	0,276	1,100	0,909	0,040	45	3,000	0,286	1,138	0,879	0,040
Dining room	31	2,214	0,187	0,721	1,387	0,04	35	2,333	0,191	0,759	1,318	0,040	34	2,267	0,181	0,721	1,387	0,040	37	2,467	0,210	0,835	1,198	0,040
Living room	42	3,000	0,308	1,188	0,842	0,04	51	3,733	0,391	1,556	0,643	0,040	38	2,533	0,219	0,872	1,146	0,040	49	3,267	0,324	1,290	0,775	0,040
Veranda	55	3,929	0,451	0,740	0,575	0,04	57	3,800	0,400	1,594	0,628	0,040	52	3,467	0,352	1,404	0,712	0,040	63	4,200	0,457	1,821	0,549	0,040
Circulation	34	2,429	0,220	0,849	1,178	0,04	39	2,600	0,229	0,911	1,098	0,040	36	2,400	0,200	0,797	1,255	0,040	41	2,733	0,248	0,987	1,014	0,040
Bedroom	47	3,357	0,363	1,400	0,714	0,04	53	3,533	0,362	1,442	0,694	0,040	46	3,067	0,295	1,176	0,850	0,040	51	3,400	0,343	1,366	0,732	0,040
Bedroom	47	3,357	0,363	1,400	0,714	0,04	53	3,533	0,362	1,442	0,694	0,040	46	3,067	0,295	1,176	0,850	0,040	51	3,400	0,343	1,366	0,732	0,040
Bathroom	47	3,357	0,363	1,400	0,714	0,04	53	3,533	0,362	1,442	0,694	0,040	46	3,067	0,295	1,176	0,850	0,040	51	3,400	0,343	1,366	0,732	0,040
Suite	45	3,214	0,341	1,315	0,760	0,04	56	3,733	0,391	1,556	0,643	0,040	60	4,000	0,286	1,138	0,879	0,040	53	3,533	0,362	1,442	0,694	0,040
Suite bathroom	58	4,143	0,484	1,867	0,536	0,04	65	4,333	0,476	1,897	0,527	0,040	72	4,800	0,400	1,594	0,628	0,040	67	4,467	0,495	1,973	0,503	0,040
Kitchen	42	3,000	0308	1,188	0,842	0,04	43	2,867	0,267	1,062	0,941	0,040	46	3,067	0,295	1,176	0,850	0,040	46	3,067	0,295	1,176	0,850	0,040
Service area	51	3,463	0406	1,570	0,637	0,04	53	3,533	0,362	1,442	0,694	0,040	47	3,133	0,305	1,214	0,824	0,040	54	3,600	0,714	1,480	0,676	0,040
Servant bedroom	62	4,429	0,527	2,037	0,491	0,04	65	4,333	0,476	1,897	0,527	0,040	64	4,267	0,467	1,859	0,538	0,040	76	5,067	0,581	2,315	0,432	0,040
Servant bathroom	75	5,357	0,670	2,588	0,386	0,04	79	5,267	0,690	2,428	0,412	0,040	64	4,267	0,467	1,859	0,538	0,040	90	6,000	0,714	2,846	0,351	0,040

PLANS / SPACE	PL 9 – SAINT JOHN *n* =17 *c* =17						PL10 – SAINT THOMAS *n* =17 *c* =17					
	ΣPi	Pm	RA	RRA	1/RRA	RC	ΣPi	Pm	RA	RRA	1/RRA	RC
Hall	52	3,250	0,300	1,229	0,813	0,040	52	3,250	0,300	1,229	0,813	0,040
Dinning room	42	2,625	0,217	0,888	1,126	0,040	42	2,625	0,217	0,888	1,126	0,040
Living room	55	3,438	0,325	1,332	0,751	0,040	55	3,438	0,325	1,332	0,751	0,040
Veranda	68	4,250	0,433	1,776	0,563	0,040	68	4,250	0,433	1,776	0,563	0,040
Circulation	35	2,188	1,158	0,649	1,541	0,040	35	2,188	1,158	0,649	1,541	0,040
Bedroom	50	3,125	0,283	1,161	0,861	0,040	50	3,125	0,283	1,161	0,861	0,040
Bedroom	50	3,125	0,283	1,161	0,861	0,040	50	3,125	0,283	1,161	0,861	0,040
Bathroom	50	3,125	0,283	1,161	0,861	0,040	50	3,125	0,283	1,161	0,861	0,040
Suite	59	3,688	0,358	1,169	0,681	0,040	59	3,688	0,358	1,169	0,681	0,040
Suite bathroom	74	4,625	0,483	1,981	0,548	0,040	74	4,625	0,483	1,981	0,548	0,040
Kitchen	45	2,813	0,242	0,990	1,009	0,040	45	2,813	0,242	0,990	1,009	0,040
Service	61	3,813	0,375	1,537	0,651	0,040	61	3,813	0,375	1,537	0,651	0,040
Servant bedroom	69	4,312	0,442	1,810	0,553	0,040	69	4,312	0,442	1,810	0,553	0,040
Servant bathroom	84	5,250	0,567	2,322	0,431	0,040	84	5,250	0,567	2,322	0,431	0,040

Figure 3. Syntactic measurements of each space of each plans of the apartments

Analysis of the values of the factors of difference on calculating the entropy (Figure 4) confirm this genotype. These values are very similar, all around 0.9, close to unity, revealing similar configurational relationships among all the spaces of these apartments.

space	living room	suite	servant quarter	FD	smaller	medium	bigger	FD
PL1	0.905	0.833	0.579	0.958	0.434	1.018	1.602	0.712
PL2	0.947	0.868	0.563	0.943	0.563	1.150	1.736	0.776
PL3	1.297	0.992	0.631	0.901	0.463	1.149	1.834	0.687
PL4	0.909	0.850	0.586	0.958	0.447	0.999	1.550	0.735
PL5	0.842	0.760	0.491	0.940	0.386	0.886	1.386	0.722
PL6	0.941	0.643	0.527	0.926	0.412	0.865	1.318	0.763
PL7	1.146	0.879	0.538	0.891	0.538	0.962	1.39	0.834
PL8	0.775	0.694	0.432	0.930	0.351	0.775	1.198	0.741
PL9	0.751	0.681	0.553	0.981	0.431	0.861	1.541	0.707
PL10	0.751	0.681	0.553	0.981	0.431	0.861	1.541	0.707

Figure 4. Factors of difference between the suite, servant's quarters and the living room and between the spaces with the smaller, medium and biggest integration values

As observed in the comparative analysis of the justified grafos of these apartments and in the syntactic study of their plans (Figure 3) very peculiar spatial characteristics become evident. The first and most obvious conclusion is that there are configurational changes and constants in the domestic spatial model studied with respect to earlier configurational models such as the eclectic, the colonial and the modernist studied by França[8] and Amorim[9], who confirm the socio-historical-cultural studies carried out by Lemos[10] and Freyre[11]. This observation indicates changes that have occurred in the society that occupies space, appropriates it and interferes in it. They are expressed in the new spatial configuration proposed for this space, whose design translates these new socio-cultural rules.

The zoning model remains the same as the modern dwellings, with spaces of greater integration destined for social functions and conviviality, social activities and work. Spaces of medium to low integration are destined for intimate activities such as rest, personal hygiene, retirement and introspection. Spaces with the highest degree of segregation are destined for resident servants and, in some cases, master suites.

The kitchen, for example, displays much higher integration values in the model, since it is not as segregated a space as it used to be in colonial and eclectic houses.

As far as the bedrooms are concerned, there is an interesting point: although they appear as an icon of privacy and isolation, as confirmed by their medium value of spatial integration, they show themselves to be much less segregated than the servant's quarters. The latter, with the lowest values of integration, remain faithful to the colonial and eclectic model and adopt spatial segregation as a means of representing and perpetuating the existing social divisions between the distinct social classes that share the same socio-spatial complex to live in.

Another aspect in which these spaces confirm their peculiarity concerns the few spaces destined for circulation, which indicates a departure from one characteristic of the modern pattern. There is, as far as circulation areas are concerned, the particularity of the function of controlling access to the intimate areas which, in the case of the eclectic dwelling, would be through the living room and not infrequently through the owner's bedroom.

Spatial fluidity, another characteristic of the modern configuration pattern in these apartments occurs with greater frequency between the visiting area and dining area, which invariably appear without a physical division between them. Some of these plans also display an absence of physical barriers between the kitchen and service area. This fluidity is not observed in the other areas of the apartment.

From the point of view of syntactic analysis, however, the spaces destined to house different functions were considered in isolation so as to make each one a distinct convex space.

The topological analysis of these spaces shows a curious feature concerning the configurational position of the veranda. Although they are a reinterpretation of the porches, terraces and verandas of the colonial plantation house, these spaces have lost their control function. Their high degree of segregation points to isolation in relation to the other areas and disqualifies them for the function of conviviality. In the same way, they lose the characteristics of relational interface with the outside world, except in the visual sense.

Their retention as an independent and integral space in the apartment designs analysed can only be explained in terms of their meeting a demand of the middle class, the target buyers of this type of apartment. This is confirmed by the housing demand profile study carried out by SINDUSCOM-PE on the same social class (Figure 5). This would thus appear to reflect reverence for tradition.

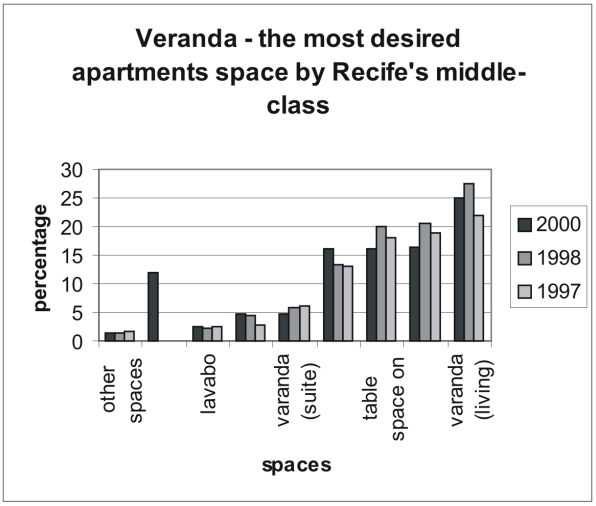

Figure 5. Veranda – the most desired apartment space by Recife's middle-class. Source: Sinduscon-PE

There is also the example of the servants' quarters. Just as in the case of the balcony, the quarters for live-in servants display a highly segregated topological position and their function as a room for the live-in servant to stay and rest is falling into disuse. A spatial legacy from the "sobrados", the middle-class architectural sample of the early 20th century, those rooms appear as a preference of the current middle-class consumer, as shown by the aforementioned housing demand profile study (Figure 6). What should be emphasised here is that the preservation of the topological position of this space just as it appears in the apartments studied is due to the imposition of the preferences of this class of consumers.

The recurrent spatial characteristics in the apartments studied signal a tendency to repeat the spatial configuration, which is confirmed through the determination of the genotype of the apartments offered by the property market in Recife, which is presented as a socio-spatial synthesis of architectural needs with respect to the contemporary domestic space desired by the income bracket of the middle class studied.

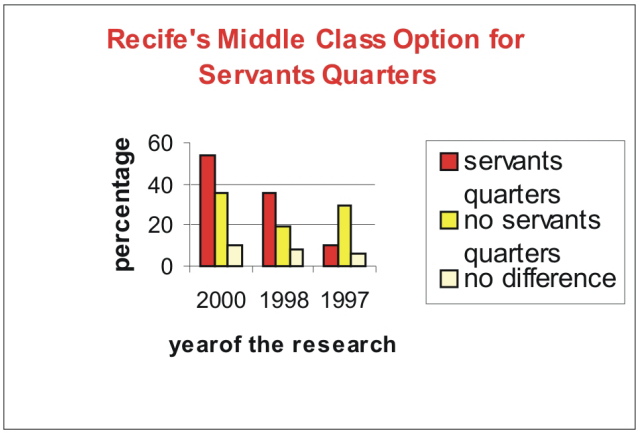

Figure 6. Recife´s middle-class option for servant's quarters. Source: Sinduscon-PE

In fact, the genotype determined here by the recognition of the recurrences and similarities in the syntactic measurements applied to each space of the plans analysed and the way in which each of them constitutes its relational interfaces suggest that these apartments' configurations carry strong social characteristics in detriments to the hypothesis that there is a single configurational model made available and imposed by the property market on the class of consumer studied.

Close observation of the configuration of these apartments show the preservation of highly segregated spaces with difficult topological access and divested of their original functions. Such spaces can constitute examples whose socio-cultural significance supplants functional needs and imposes itself on them, as reflected in the design of the domestic space.

Conclusion

Although confirming Hillier's affirmative that *"architecture decides form and hope for function"*[12], the apartment plan syntax measurement results seem to suggest more; they appear to encourage and restrict social relations at the same time that they reflect them. Indeed, with respect to domestic space, Hanson (1998), analyzing primitive domestic spaces, suggests that the symbolic structure of a dwelling is so strong that it comes to represent the cosmology of its inhabitant.

In Brazilian academic literature and thought, there is a tendency to lay the whole blame for what is generally considered to be the inadequate architecture of this kind of apartment on property speculation. However, the syntactic analyses carried out on the configuration of these apartments reveal the need for more caution in accepting this argument as an absolute truth.

Moreover, the genotype obtained by comparing the recurrences and inequalities in the values of the syntactic measurements applied to each space of the configurations analysed, and the way they interface and communicate with one another, suggests two things: either these apartments carry strong socio-cultural characteristics in their configuration or this model of space configuration is imposed by the property market as the only one this social class can afford.

Close observation of the retention of some of the most highly segregated and purportedly least useful spaces such as the veranda, a colonial legacy; or the servants' quarters comprising bedroom and bathroom, another inheritance from the early Brazilian urban middle class lifestyle and its architectural sample, the "sobrado", suggests that these seem to be either examples of cultural meaning supplanting specific functional needs or a market imposition.

The main variables that have been dealt with throughout this study and their socio-economic-cultural implications related by the studies available help to clarify the matter. From the market imposition/preservation of socio-cultural heritage dichotomy, a third option that confirms the essence of the Spatial Syntax Theory emerges i.e. that there is a social logic imprinted on the design of domestic space configuration and that this logic is the result of social forces which interact on the spatial configuration (produced by the design), establishing a model that underlies them.

Whilst systematising information whose analysis will enable the comparison of the genotype found in the design of these apartments with the configuration models this middle class desires for its domestic spaces, this paper will allow the core question of this project - is it possible to propose a new design for these apartments? - to be dealt with.

Harries (2001), proposes *"reintroducing the idea that architecture's ethical function is to articulate and establish the ethos, to permit humankind to dwell"*[13].

In this sense, says Ghirardo (2001), *"only when architects, critics and historians accept the responsibility for building – in all of its ramifications – will we approach an architecture of substance"*[14].

On studying the contemporary middle-class apartments from the perspective of Spatial Syntax Theory and establishing a comparison between the design offered by the property market and that which could supposedly result from the recurring social relations within it or the needs declared by its users, we believe that we are making an analysis of the greatest pertinence for the flow of current Brazilian architecture: because what is really being discussed is the relationship of forces whose result makes the political decision of how, where, for whom, in what way and for how much to build.

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[1] Holanda, F. & Kohlsdorf, G.,1995.
[2] Hanson, Julienne & Hillier, Bill,1982.
[3]Holanda, F. & Kohlsdorf, G., 1995.
[4] IBGE – Instituto Brasileiro de Geografia e Estatística (Brazilian Geography and Statistics Institute).
[5] Nomads – USP – Departamento de Estudos da Habitação Metropolitana –da Universidade de São Paulo (Metropolitan Housing Studies Department, University of São Paulo).
[6] SINDUSCOM-PE: Sindicato da Indústria da Construção de Pernambuco (Pernambuco State Building Industry Federation).
[7] FIEPE: Federação das Industrias do Estado de Pernambuco (Pernambuco State Industrial Federation).
[8] França, Franciney, 2000, *passim.*
[9] Amorim, Luiz do E.,1999, *passim.*
[10] LEMOS, C., 1989, *passim*.
[11] Freyre, Gilberto, 1975, *passim.*
[12] Hillier, Bill. "What we mean by building form...
[13] Harries, Karsten,1999, p.392.
[14] Ghirardo, Diane,1999, p.390.

Bibliography

Amorim, Luiz M do Eirado, 2000. *The Sectors Paradigm. A study of the Spatial and Functional Nature of Modernist Housing in Northeast Brazil*, London, P. Doctoral Thesis, Faculty of Built Environment, University College.

Cavalcanti, Alâni F.. *A casa de meu pai era diferente da do meu avô, e a minha, era diferente das duas: um estudo morfológico de exemplares caicoense*, Available on the internet via http://www.seol.com.br/mneme/006-p.htm. (acessed on 15/01/2002).

Freyre, Gilberto, 1975 *Casa Grande & Senzala*, Rio de Janeiro, Editora José Olympio.

Hanson, Julienne, 1998, *Decoding Homes and Houses*, Cambridge, Cambridge University Press, 1998.

Hertzerberger, Herman, 1999. *Lições de Arquitetura*, São Paulo, Martins Fontes.

Hillier, Bill & Hanson, Julienne, 1982, *The Social Logic of Space*, Cambridge, Cambridge University Press.

Holanda, F. & Kolsdorf, G., 1995, *Arquitetura como Situação Relacional*, Brasília, UNB.

Holanda, F. & França, Franciney, 2000. *Meu quarto, Meu mundo: Espaço Doméstico na Alvorada do Terceiro Milênio*. IV Seminário DOCOMOMO BRASIL, Brasília.

Lemos, Carlos A.C., 1976. *Cozinhas, Etc...*, São Paulo, Editora Perspectiva.

Hillier, Bill; Hanson, Julienne & Peponis, John, *What do We Mean by Building Function?*, London, Bartlett School of Architecture and Planning, University College of London. s.d. 12p. (Mimeo)

Ghirardo, Diane, *The architecture of Deceit* in Nesbitt, Kate (ed.), 1999, *Theorizing a New Agenda for Architecture. An Anthology of Architecture Theory*. New York, Princeton Architectural Press.

Harries, Karsten, *The ethical function of architecture*, in Nesbitt, Kate (ed.), 1999,*Theorizing a New Agenda for Architecture. An Anthology of Architecture Theory*. New York, Princeton Architectural Press.

Sindicato da Indústria da Construção Civil do Estado de Pernambuco, 2000. *Imóveis Residenciais do Grande Recife, Perfil da Demanda ano IV*, Sinduscon / PE.

UNB.Fau [on line]. *Análise Sintática de Espaços Domésticos no Distrito Federal*. Availableontheinternetbyhttp://www.unb.br/fau/pos_graduação/cadernos_eletronicos/analise_sintatica/analise_sintatica.htm (accessed on October, 21, 2001).

USP.Nomads [on line]. *Primeira e-pesquisa Nomads .usp. Comportamentos & Espaços de Morar*, availble on the internet by http://www.eesc.sc.usp.br/nomads/e-pesquisa_resultados.htm (accessed on 13th March 2002).