

MODERN DWELLING IN THE 1970's. A syntactic analysis of residences in João Pessoa, Brazil

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Abstract

The general acceptance of the modern architecture formal repertoire in Brazil is a fact widely known that has inspired numerous studies. However, whereas in the 1950s and 1960s the look of modern architecture pervaded the country, almost without rivalry, in the 1970s a new stylistic trend – loosely evoking our colonial past – gained breadth, in particular amongst middle class houses. Despite the alleged incongruences between form and function – with respect to both the early and the late production –, the geographic and social differences, and the contentions that our modernity goes little beyond skin surface, changes within the domestic space have occurred and cannot be dissociated from the incidence of new sociocultural experiences. It is here argued that the dispute concerning modern housing as a sociocultural issue or a matter of style still functions as a smudge pot to obscure evidences of sociocultural continuity and change. Assuming, therefore, that social patterns are printed on the residential spatial structure (Hillier & Hanson, 1984) we applied space syntax procedures to analyse three homes built in the 1970s in João Pessoa, Brazil. These cases have recently been classified (Araujo, 2010) in opposing categories defined by formal and technical attributes, two of them being considered as truly modern style, the other as a king of stylistic hybridism. We aimed to contribute to reduce the lacuna concerning the understanding of late modern domestic architecture particularly that produced in the Northeast region of Brazil by verifying to what extent this distinctive taxonomy holds when the spatial structure of these buildings are analysed. Results pointed out that despite their clearly diverse shells, the social logic in these houses spatial structures is much the same.

1. OF FORM AND FUNCTION: A (NOT SO) DATED DEBATE ABOUT BRAZILIAN MODERN ARCHITECTURE

The fairly early and general acceptance of the modernist formal repertoire in Brazil is a fact widely known that has inspired numerous studies. As a result of the combined actions that united young designers eager to follow the footsteps of the pioneer masters and affluent novelty-seeking clients, *nouveau-looking* buildings, erected from the 1930s on – especially between 1940 and 1960 – have granted Brazilian architecture space in international publications, for the first time in history and with a visibility never achieved afterwards. From the highly appraised modern buildings to the overwhelming scenario of “soapbox” constructions, the *look* of modern architecture – built shells contained in basic solids with naked surfaces perforated by the ubiquitous horizontal windows (after the *fenêtre en longueur*) – has predominated to this day in most Brazilian towns since the 1950s and in nearly all of them since the 1960s.

It has however been argued that our modernity is not only distant from its European models in terms of tectonics, due to an alleged taste for handling form in a mannerist fashion which is at odds with its constructive support – modern baroque –, but becomes particularly displaced in meaning when confronted with the expectations of social change that was to follow architectural change in the early modernist discourse, especially concerning housing. This view, which was firmly established at the core of the CIAMs discussions and of the modern pioneers’ work (particularly the Germans’¹), served to anchor two well-known mottos of the Modern Movement – *machine à habiter* and *existenzminimum* – and granted ammunition to the detractors of Brazilian modern architecture, but also concurred to foster a certain inferiority complex that may have prevented deeper insights into the sociocultural soul of our domestic modernity (Marques & Trigueiro, 2004).

Despite the pervasiveness of pre-modernist models, of all the geographic and social differences, and of the endless (and rather idle) harangue about incongruences between form and function that would soon creep into the discussion about principles and achievements of the Modern Movement² it does not seem reasonable to deny that modernity brought changes within the domestic space that relate strongly to new sociocultural experiences. We thus believe that even if our modernity goes little beyond skin surface, being to a certain degree the reverse of what had been prescribed in the modernist discourse of the twenties, the combination of new and existing space arrangements (as found in pre-modernist homes) suggests that the domestic space of modernist houses was organised to both reproduce long-time modes of interface among the communities of home users – masters, visitors and servants – as well as to allow for some changing aspects in Brazilian ways of life.

However, the dispute surrounding the idea of housing as a sociocultural issue – in the mode of the European movement original principles – in contrast with the idea of architecture as a matter of style (Hitchcock & Johnson, 1932) still functions, by and large, in our view, as a smudge pot that obscures evidences of continuity and change in architecture, particularly as concerns domestic space, and prevents deeper insights into the social logic of their spatial structures. In Brazil the great majority of studies about modern architecture focus on the built shells of the edifices – volume composition, surface treatment, constructive structure, materials and techniques – whereas their spatial arrangement, when addressed at all, tend to be considered in terms of geometry and function – number, area, shape and adjacencies of spaces designed for such and such use. We here argue that an evaluation of the ways in which a new architectural tendency was adopted and found expression in a particular situation may be enlightened by an analysis that can go

¹ Cozinha Frankfurt (G. Lihotzky, 1926) e *Existenzminimum*, (WESTON, 2002).

² The title of the MoMA 1932 exhibition (*the International Style*) illustrates the argument, for suggesting that what was being produced could be identified primarily as a formal expression.

beyond the physical and geometrical nature of built envelopes and empty spaces, especially as regards residential edifices – the “most complex buildings” in the opinion of many researchers (i.e. Hanson, 1998) –, in order to avoid the risk of proposing mistaken distinctions by overlooking common aspects among spatial structures that respond to (and enable) similar sociocultural practices.

In the 1970s the modernist repertoire still predominated everywhere in Brazil and was viewed as the one and only design option in architectural schools throughout the country, although sharing space in the urban scene with a kind of “neo-traditional” or “fake colonial” formal trend which some academics have associated, not convincingly, with the idea of “regional criticism”, but most prefer to ignore. The three cases analysed here are part of an array of 116 complete house plans compiled by Ricardo Araujo (2010)³ to form the database for his master dissertation about the residential modern architecture built in the 1970s in João Pessoa, the capital city of the state of Paraíba, located in the northeast region of Brazil.

Two of them have been classified by the author as exemplary instances of modern residential architecture. The third case has been categorised as a “hybrid” example of modernism and that kind of previously mentioned “fake colonial” fad, so that despite being contemporary to the others and representing uncountable similar cases built at the time in João Pessoa as well as in most Brazilian towns it was denied status of modernity and therefore excluded from the sample of five cases that was analysed in detail. Six cases were thought to represent the domestic architectural production of João Pessoa at the time, being thoroughly examined by Araujo according not only to the formal and technical characteristics of their built shells but also as regards their spatial arrangement and functions. However, none of the cases classified as “hybrid” qualified to that level of analysis despite the fact that they were many – 26% of the total number of 116 studied plans. We aimed to help clarify some of the questions exposed above and to reduce the lacuna concerning the understanding of late modern domestic architecture particularly that produced in the Northeast region of Brazil by verifying to what extent the distinctive taxonomy advocated by Araujo holds when the spatial structure of these buildings are analysed.

2. BRAZILIAN ARCHITECTURE (OR ARCHITECTURES): A BRIEF OVERVIEW OF HISTORIOGRAPHICAL TRENDS

From the early production of the period between the mid-1930s and the 1950s through to the glorious 1960s of the Brasília phenomenon the modern architecture of Brazil is mostly examined under the light of the international context as it has unfolded in the circuit of Rio de Janeiro, São Paulo and Brasília, except for a few outstanding episodes, usually related to the action of personalities such as Oscar Niemeyer in Pampulha (Belo Horizonte, Minas Gerais) and Luiz Nunes in Recife (Pernambuco).

Things began to change in the 1980s following the development of graduate programmes in architecture and urbanism in the country, and particularly in the 1990s, partly due to the increasing visibility of the DOCOMOMO organisation. Since then various research efforts have contributed to narrow the regional gap and expand knowledge about the modern production. The dissertation from which our object of study has been drawn, exemplifies the various academic attempts to build knowledge about the Brazilian production of modern architecture, in other urban spheres in recent times. We thus aim to contribute to reduce the lacuna concerning the understanding of spatial relations in modern homes of Northeast Brazil by developing

³ Araújo (2010) examined 14.550 plans in the municipal government office for licencing buildings (Arquivo Central da Prefeitura Municipal de João Pessoa), dating from 1975 to 1980 (early 1970s entries were missing). Of these, 217 cases met the criteria defined for the research: designed for single-family residential use, presenting date of conception or construction (from 1970 to 1980) and name of designer, and complete plans in handling condition. Of these, 116 were examined and classified in the categories described in this text.

a kind of “follow-up” to Araujo’s study. It must be noticed that our purpose is not, in the least, to discredit his findings, the result of a time-consuming immersion in archives that brought to light a substantial inedited array of 1970s building plans. Our aim is to further knowledge about “post-Brasilia” architecture by applying configuration analysis in order to ascertain the ways in which the modern (or late modern) rationale is expressed and adjusted to that local reality, and whether a look more or less faithful to national and international trends in the built containers corresponds to evidences of sociocultural change or continuity in terms of spatial structuring.

Three main themes have been privileged in recent research: (1) the identification of buildings (mostly working plans as actual buildings have disappeared or been modified beyond recognition) and their designers; (2) the understanding of the historic framework in which modern buildings were produced; and (3) the classification of modern buildings according to formal attributes. In this context, despite the growing interest in the field of morphology, space analysis within the conceptual framework of the social logic of space is still little explored in Brazil and particularly in some parts of the country as is the case of João Pessoa. In Paraíba, as in most other states in which research about modern architecture is still at the initial stages, studies tend to address the 1950s and 1960s production – the “golden years” of modernism when the then called “functional style” represented not only a new building language but also a new era for the country that was then thought to be heading fast into the future. This concentration of interest has given rise to a term which identifies the production dating from the 1970s on as “post-Brasilia architecture”, a phase still relatively little explored.

Although generally delayed in relation to its origin, the criticism regarding the modern paradigm and production which emerged in the European context in the 1950s gained momentum in Brazil during the late 1970s and 1980s, leading to a widespread search for new expressions that found materialisation in tendencies which signalled distinct views about the previous production ranging from continuity to opposition. Despite having developed by means of a disseminating process, from larger to medium-sized to small towns, that architectural production embodied distinct guises, which expressed more or less acceptance of the new building vocabulary as well as particularities pertaining to the geographic, economic and sociocultural existence of each place.

At one end of the scale, proposals alleged as legitimate heirs of the Modern Movement and of the so-called “heroic production” of the period between the 1940s and the 1960s in Brazil; at the other end, the adoption of various more or less standardised formal fads sometimes justified by the idea of a crisis in credibility concerning modernism that was necessary to overcome. This scenario has been described as one of “pluralism of architectural expressions ensued by diverse lines of enquiry and research”. (Bastos, 2007).

A certain pluralism marks the modern experience in João Pessoa during the 1970s and Araujo has attempted to account for that by classifying his array of single-family dwellings in three major categories: (1) **Brazilian modern legacy**, mostly faithful to the production prior to the 1960s; (2) **Paulistan architecture**, affiliated to the formal vocabulary introduced in Brazil by architects actuating in Sao Paulo (which has been in turn associated to the New Brutalism tendency – a connection never fully accepted); and (3) **Experiences in pre-fabrication and building rationalisation**, attempts to widen the construction field by targeting means of achieving higher standards of economy. These categories embody 86 proposals (74%) of a total of 116 examined cases. The remaining cases (26%) were termed as “**hybrid residences**” for presenting formal attributes considered as deviant from the modern vocabulary (figure 1).

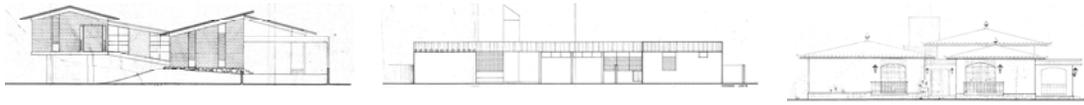


Figure 1: F. Xavier (1975), R. P. Barreto (1977) and A. Q. Lopes houses (1976).

Within this perspective, the question which guides the present study is whether this taxonomy defined predominantly by formal and technical attributes pertaining to built shells holds when the spatial structure of these buildings are analysed.

3. ABOUT OUR SAMPLE AND ITS CONTEXT, AND HOW IT WAS EXPLORED

The three cases herein examined are, as stated before, one-family homes designed or erected in the 1970s in affluent neighbourhoods of João Pessoa with a built area between 200m² and 500m². They were chosen after a thorough inspection of the full (116 cases) and the selected (6 cases) samples examined by Araujo with a view of identifying the characteristics seen as most faithfully expressive of both the well-established expression of second generation modernism and the deviant trend. All of the studied cases are located in the neighbourhoods of João Pessoa that were primarily sought for as privileged places of residence in the 1970s.

Originally founded in 1585 as part of the scheme to protect overseas colonial possessions by the then united crowns of Portugal and Spain, the settlement remained for various centuries around its founding site (*Cidade Baixa*), spreading along the river Parahyba – where commercial and harbouring activities concentrated – and uphill (*Cidade Alta*), where residences predominated amongst administrative and religious buildings. In the second half of the 19th century various migratory flows from the rural areas expanded the population and concurred to consolidate the *Cidade Alta* as a favoured place for residence, which also accommodated administrative, financial and religious functions, attracting public and private investments. In the early 20th century, policies to ameliorate and enlarge the urban infrastructure were implemented, following a rapid population growth added to the influence of sanitarianism and of the embellishment reforms that echoed European and North American interventions as well as those carried on in major Brazilian cities – i.e. Rio de Janeiro, the national capital at the time. From then on the city spread in all directions but especially eastwards, towards the coast. Our studied cases were built in the expansion areas developed in the second half of the 20th century.

In order to compare the three studied house plans that represent the two contrasting categories – (late) “modern legacy” and “hybrid” –, the spatial structures of the cases that make up the full sample were examined and the numbers of their component spaces were quantified by function and by sector. Table 1 displays the minimum, maximum and average number of total spaces in each case pertaining to the full sample, as well as to those spaces used for whatever activity (termed here as “functional”, even if also giving access to other spaces) and those used for circulation only (termed as “transition”). It also displays minimum, maximum and mean numbers of spaces according to the houses functional sectors, with the *social sector* referring to the spaces in which the interface between non-servant residents (herein to be referred as “family”) and visitors is expected to occur, the *service sector* referring to the spaces in which the interface between family and servants is likely to take place or which were designed for the sole use of servants, and the *private sector* used by the family, exception granted for the access of servants when

working there. Guests' rooms were also accounted for as were "other" spaces that appeared in only a small proportion of plans, such as "offices" and "daily meal" rooms as opposed to the more socially exclusive dining rooms.

Houses	Number of spaces by function			Number of spaces by sectors					Labels of "other" spaces
	Total	Functional	Transition	Social	Private	Service	Guests	Other	
Min	12	10	00	01	03	03	00	00	-
Max	42	34	10	10	14	14	04	03	-
Mean	24.28	19.73	4.55	3.98	7.93	6.28	0.47	1.16	-
F. Xavier	26	23	03	04	09	08	00	02	Daily meals / office
R. P. Barreto	23	19	04	04	08	06	00	01	TV room
A. Q. Lopes	30	23	07	04	09	08	00	02	Daily meals / office

Table 1: Synoptic framework of the 116 cases found as representative of the 1970s residential production in Joao Pessoa and the three cases analysed here (below) according to number and function of spaces and sectors.

The built areas as well as the numbers of labelled rooms are displayed in table 2, according to minimal, maximum and average figures found in the sample. In this table, the mode, median and standard deviation values are also presented.

The above mentioned procedures helped to ascertain to what extent the cases singled out by Araujo as highly representative of the modern domestic architecture produced at the time in João Pessoa reflected the full array of collected plans, and to guide our own selection of cases to be syntactically analysed. As can be seen in tables 1 and 2, the cases selected as object of this study fit fairly closely into the average overall picture found by Araujo's survey of 116 cases that are thought to represent that architectural production in terms of number of spaces by function and sector (table 1) as well as in terms of built area and number of rooms per label (table 2).

	Area (m ²)	No. of Storeys	Bedroom	Bedroom	Guest room	WC total	WC private	Living	Dining	WC social	Office	Daily meals	Kitchen	Maids' room
			without ensuite WC/B	with ensuite WC/B										
Min	127.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00	0.00	0.00	0.00	1.00	0.00
Max	654.40	3.50	4.00	4.00	1.00	8.00	4.00	2.00	1.00	2.00	1.00	1.00	2.00	3.00
Mean	296.94	1.59	1.56	1.57	0.29	4.31	2.32	1.22	0.94	0.77	0.45	0.44	1.01	1.12
Mode	180.00	2.00	2.00	1.00	0.00	4.00	2.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Median	266.00	2.00	2.00	1.00	0.00	4.00	2.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
St. Dev.	121.36	0.56	1.03	0.94	0.45	1.19	0.65	0.42	0.23	0.50	0.50	0.50	0.10	0.43
F. Xavier	385.00	2.00	3.00	1.00	0.00	5.00	3.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
R. P. Barreto	225.11	1.00	2.00	1.00	0.00	4.00	2.00	2.00	1.00	1.00	0.00	1.00	1.00	1.00
A. Q. Lopes	312.45	1.00	2.00	1.00	0.00	4.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00

Table 2: Synoptic framework of the 116 cases found as representative of the 1970s residential production in Joao Pessoa (Araujo, 2010) and the three cases analysed here (below) according to built area and number of labelled rooms.

4. BRAZILIAN MODERN LEGACY AND “THE OTHER”

Case 1 (Francisco Xavier), built in 1975, and case 2 (Rubens Paes Barreto), built in 1977, were chosen for having been considered as archetypes of an architecture which albeit being *de facto* late modern was apparently faithful to the production prior to the 1960s, being labelled by Araujo as “Brazilian modern legacy” (ML). Case 3 (Antonio Queiroga Lopes), built in 1976 is referred to by Araujo (2010) as an archetype of a hybrid building (H). As concerns the overall spatial attributes no relevant difference between the two ML cases and H can be found, apart from the larger proportion of transition spaces. Considering the average number of transition spaces in the full sample (4,55) and the fact that studies point out Brazilian domestic structures of all times as very economic in areas designed for circulation only in comparison with homes of other nations, as for instance, the British (Trigueiro, 2004), the fairly large number of transition spaces found in H suggests a phenotypical event rather than a distinctive characteristic of “hybrid” homes.

For contrasting the spatial structures of the cases viewed as true late modernist to the alternative drift, their plans were represented and quantified by means of space syntax convex analysis at two levels: the minimal living – the system of interior spaces only – and the minimal living plus exterior – in which all connections between the interior spaces and the exterior were considered. Numerical and graphic representation and quantification procedures were used. The graphic data presented here are planar access graphs worked out over the plans and two sets of justified graphs, one rooted in the exterior, the other in the main entrance. Numerical values of integration (*Real Relative Asymmetry* - RRA) were calculated to measure the accessibility of each space in relation to all others in the system (Hillier & Hanson, 1984). In this study the scale of accessibility (or integration) goes from lower values (more accessible) to higher values (more segregated). The justified graphs were worked out by the application JASS⁴. Figure 2 displays each plan with respective planar access graph and justified access graphs. The justified access graph on the left represents the whole system of interior spaces linked to the exterior by means of all the connections shown in the plan (minimal living plus exterior); the justified access graph on the right represents the system of interior spaces only (minimal living). In both, the spaces are coloured according to the function sector to which they belong – *social* as magenta, *service* as yellow and *private* as green. Transition spaces are shown in black.

⁴ JASS. Created by BERGSTEN, L. et al. v1.0, 21 May 2003, GNU-General Public License.



Figure 2: Houses' plans with respective planar access graphs and justified access graphs. (1) Bedroom; (2) WCB; (3) Living; (4) Dining; (5) Kitchen; (6) Service area; (7) Terrace; (8) Maids' rooms; (9) Garage; (10) Daily meals; (11) Office; (12) Garden.

Justified graphs tend to define a bushy compact diamond-shaped arrangement, fairly shallow – 6 or 7 depth steps – with at least one ring passing through the exterior. Function spaces outnumber greatly transition spaces, proportions being 27 and 26 to 2, and 33 to 4. The few transition spaces tend to be staircases, landings and corridors linking bedrooms only.

There is a strict functional sectorisation – social, service and private. This division generates independent branches or clusters that are linked by a single node – the social and the private sectors linked by a transition space in one of the ML cases and the H case, the social and the service sectors connected by a dining room/kitchen link in both the ML cases and by a mediator in the H case. The social and the service sectors also connect to the exterior in all three cases. The service and the private sectors are linked by a

transition space in H and do not connect in the ML cases. In the three cases examined here servant rooms connects to remaining spatial compound through the kitchen only.

When the exterior is discounted, and graphs are rooted from the main entrance, sectors become even more delineated and detached, thus exposing the relevance of the exterior as an integrator of the spatial systems in all three cases. In the H case, when the exterior was removed from the representation, where transition spaces gained importance as integrators in so far as they connect all sectors.

Similarities among the three cases were also observed when the access graphs were quantified into numerical expressions of inequality – or integration values – to verify how each space and each sector relates to all others in accessibility terms.

Amorim (1997) investigated the relationship between function sectors in 140 modern houses built in the mid-20th century in Recife and showed that although the order of accessibility among the 5 functional categories – social (s), service (se), private (p), exterior (e) and mediating space (m) (when two or more sectors were united by a transition space) – could generate 21 different expressions, 3 of these expressions only, embodied 70 cases, 50% of the whole sample, whereas the remaining 50% of cases were distributed among the 18 other expressions. It was found that in 33 cases the social sector was more accessible than the mediator, which was more accessible than the service sector, which was as accessible as the exterior, both being more accessible than the private sector (“ $s < m < se = e < p$ ”); 4 other cases displayed the expression “ $s < se = e < p$ ”, a variant from the former insofar as the same order of integration holds but for the mediating space that is lacking there; another 33 cases show the expression “ $s = se = m < p < e$ ”.

By applying a similar procedure to our sample, we found out that the three cases fit the three predominating expressions mentioned above. It is worth noting that the H case is spatially structured according to an order of accessibility (“ $s = se = m < p > e$ ”) found in 33% of the cases studied by Amorim, who envisaged to investigate truly modern residential architecture (table 3). The two ML cases fit the order of integration expressions “ $s < m < se = e < p$ ” and “ $s < se = e < p$ ”, types 7 and 3, that correspond to another 33% and to 4%, respectively, of the observed houses in Recife (figure 3).

House	Integration Order <i>Integration Value</i>
F. Xavier	Daily meals < garage < hall < dining < office < kitchen < exterior < bedroom < service area < living < master bedroom < maids' room < maids' bathroom $0.63 < 0.83 < 0.84 < 0.96 < 1.03 < 1.09 < 1.22 < 1.24 < 1.28 < 1.36 < 1.51 < 1.65 < 2.04$
R. P. Barreto	Living < hall < dining < kitchen < exterior < bedroom < service area < garage < master bedroom < maids' room = maids' bathroom $0.88 < 1.01 < 1.09 < 1.26 < 1.29 < 1.37 < 1.61 < 1.65 < 1.68 < 2.02 = 2.02$
A. Q. Lopes	Hall < daily meals < exterior < kitchen = living = dining < office < garage < service area < bedroom < master bedroom < maids' room = maids' bathroom $0.79 < 0.87 < 1.08 < 1.10 = 1.10 = 1.10 < 1.13 < 1.28 < 1.35 < 1.38 < 1.40 < 1.98 = 1.98$

Table 3: Ranked order of integration, house by house.

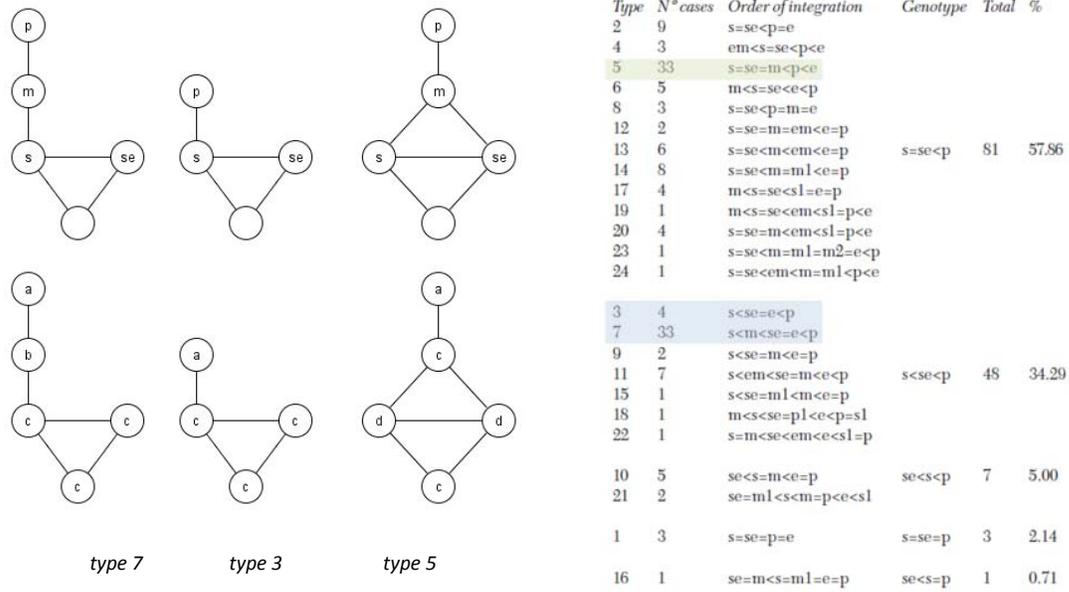


Figure 3: Sectors' graphs and sectors' graphs by space type - (7) F. Xavier, (3) R. P. Barreto, (5) A. Q. Lopes; and on the right, sectors' genotypes table (Amorim, 1997).

In the order of accessibility concerning the convex spaces considered individually (as displayed in the line diagram shown in figure 3) the RRA values of key spaces oscillate in a similar mode for ML and H cases. In fact, the major disparities – the garage and to a lesser extent the living room – relate to the two ML exemplars, whereas the H house holds a middling position in between them. A similar overall picture concerning both the pattern of variation and the expression of accessibility inequality amongst convex spaces was also found with the graphs reworked to represent the minimum living structure (without the exterior) (figure 5).

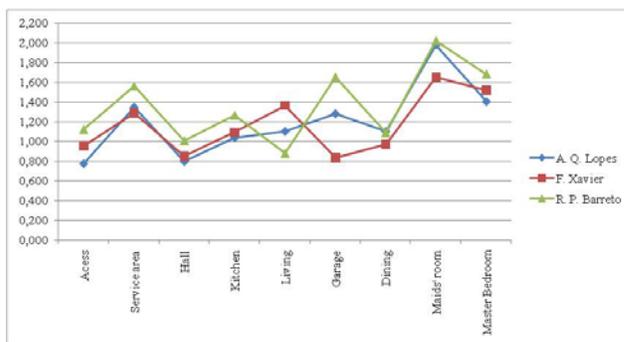


Figure 4: Graphic - RRA values of key spaces of minimal living plus exterior structures.

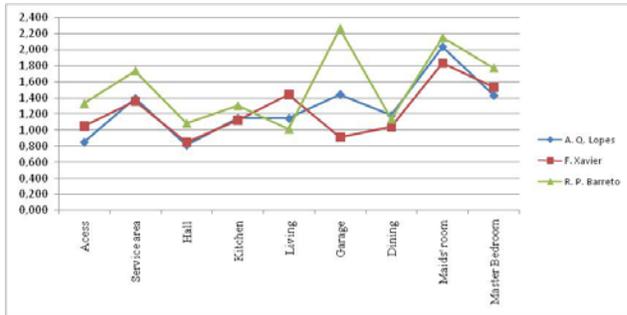


Figure 5: Graphic - RRA values of key spaces of minimal living structures (without the exterior).

Besides that, minimum and maximum RRA values behave in a comparable and closely related way in the H case and in one of the ML cases, whereas the other ML example presented considerable disparity concerning the most segregated spaces between the minimal-living and the minimal-living-plus-exterior structures (figure 6).

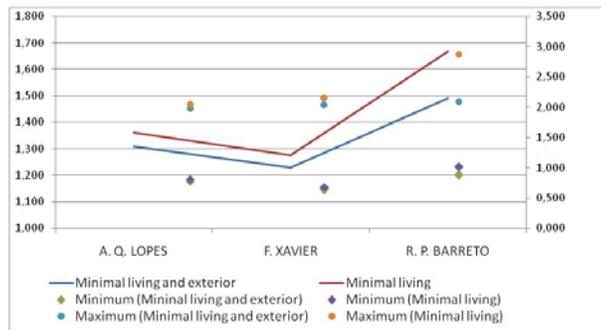


Figure 6: Graphic - RRA values and houses.

5. FORM VERSUS SPACE OR SPACE AND FORM

The functionalist discourse of the 1920s proposing a house that – likewise a town – should “work” as efficiently as a machine found early and strong resonance in Brazil, being translated into the strict compartmentalisation of plans into functional sectors. This design principle allied to the way the sectors were situated in the plot with reference to ventilation and sunning may be considered as the leading commandments for structuring space in modern houses as well as the principal distinction between these and their predecessors. Whereas the spaces used by servants were clearly set apart from those used by family and visitors in pre-modernist as well as in modern houses, the intermingling of family and visitors which occurred in several points, with bedrooms opening directly into living and dining rooms or connecting to one another in the older homes literally disappeared after the 1950s. Furthermore, the private sector has become more and more withdrawn from the domestic spatial compound in time, reaching levels of segregation similar to those of the servant quarters. This particularity points towards new requirements of privacy not only for the family but also within the family⁵.

⁵ Recent studies point out that individual requirements of privacy have peaked in contemporary dwellings where bedrooms turned into self-contained worlds apart (França & Holanda, 2003; Marques & Trigueiro, 2004; Amorim, 2008) epitomises this state of affairs.

The cases examined here show that in the 1970s, the design commandments resulting by our acceptance and interpretation of the Modern Movement principles remain as strong, even stronger perhaps, than in the earlier days of modern design.

The comparative examination of the three access graphs rooted from the exterior shows aspects that have been found in various other studies of modern Brazilian houses, some of which also inherited from pre-modernist dwellings. A fairly compact and shallow diamond-shaped arrangement, with interior spaces interconnected through the exterior and few transition spaces, common to all three cases, are characteristics found to be recurrent in Brazilian homes since the 19th century (Trigueiro, 1994).

The functional sectorisation observed in all three cases has been (and still is) an axiom in housing design generally adopted in architectural schools throughout the country since at least the 1950s, as extensively discussed in configuration studies (Amorim, 2008). So is the divorce between the social and the service sectors, which tend to connect to one another solely through a dining room – kitchen link or via the exterior. However, it was observed that in the H case, transition spaces seem to have been created to promote more possibilities of connecting sectors without abdicating their independence. .

The social sector, or else the rooms that support the interface between family, visitors and occasionally that of servants (in waiting), function as a buffer between the privacy of the family and the presence of domestic workers. Whereas in pre-modernist houses the servant quarters were often situated in a block separated from the main building, in modern houses – as in the three cases examined here – they tend to be placed under the same roof although totally set apart from all other rooms to which they connect solely by the kitchen (or the exterior).

Traces of continuity and change relating previous dwellings were also noticed when the exterior was discounted and sectors became even more strongly delineated. The relevance of the exterior as a means to integrate the system is a historic characteristic of Brazilian homes (Trigueiro, 1994); on the other hand the loss of distributedness is much stronger here than in pre-modernist dwellings due to the reduction or disappearance of interior rings, a feature also distinctive of early modern houses.

The order of accessibility concerning the convex spaces considered individually strengthens the idea of a syntactic soul that does not seem to match the shaping of its container. Variations in the RRA values of key spaces are similar regardless of the case being labelled as a true “Brazilian modern legacy” or as a “hybrid” type, which was seen to present values located in between the other two.

The hybrid case matches the expression of integration inequality concerning functional sectors in a third of the cases of modern dwellings examined in Recife, the same proportion found for one of the “modern legacy” cases.

The relative position of the servants’ bedroom as one of the most, or *the most* segregated space is a solidly established circumstance in Brazilian domestic space since colonial times. The space used for eating as the most accessible non-transition spaces is also a long-time inheritance, dating from the mid-19th century in some social spheres and from the early 20th century nearly everywhere in the country. So is the position of the visitors’ room, which varies slightly, though remaining firmly set on the integrated side of the accessibility scale. The well-integrated position of the kitchen as well as the segregation of the master bedroom, however, are aspects that came into being with modernism and are still becoming more and more evident.

We have, therefore, sought to demonstrate that our modernity may go beyond skin surface in so far as the shape of the container box and the structure of the contained space may not correspond. Studies indicate that aspects such as spatial continuity and high visibility versus control of access characterises Brazilian modern residences. This apparent paradox is treated in these buildings by means of design strategies conceived to direct routes and people. We thus believe that despite the demonstrated patterns of change in the conception framework of the modern house, some very strong spatial structuring remains unaltered, signalling the spatial opposition of roles among the communities of residents – family and servants (or servants and non-servant residents) – and between these and visitors.

Given the reduced size of the sample these findings (the outcome of an initial analytical stage in an on-going research that gives support to a Master Dissertation in post-Brasília modern domestic space in João Pessoa) cannot be taken as conclusive. They are, however, a good start, in a field of research still marked by myths and blurriness. They also served to strengthen expectations concerning the adequacy of well-tested and easy-to-work methodological procedures to achieve our aims as well as about the suitability of Araujo's plan collection – which is now being explored in a deeper and larger scope – as a source of research capable of shedding light on domestic architecture and modes of life in the 1970s.

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