Brief title: spatial interface between inhabitants and visitors in M'zabite domestic spaces.

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Abstract

The main concern of this paper tends to question the relationship between the structuring of space and the apparent correlation between the spatial patterns and the system of social relations within domestic spaces. Hence, this paper aims to study The spatial interface between visitors and inhabitants with regard to M'zabite traditional houses [Algeria]. The study uses the space syntax, method which proposes a fundamental relationship between the configuration of space in a house and the way that it functions. It is the aim of this research work to test this proposition in an M'zab cross settlement sample. The syntactic property [depth] of the whole sample has been observed in order to explore the sequence of movement and permeability from the entrance. The study points to the penetration of different users into the M'zabite house that is constrained by social/cultural and religious norm. The objectif of this paper is to assert the significance of the entrances in regulating the interior organisation of the M'zabite domestic spaces and provide a further understanding of M'zabite domestic environment. The study shows that the entry and penetration of visitors to the house's interior, in the M'zabite culture, is regulated by certain socio-religious codes. These codes identify the visitors along gender and kinship lines. This identification determines the domain and the spaces where he/she will be received. The intimacy gradient which might be found in each culture at varying degrees, in the case of the M'zabite house, the study suggests that such gradient involves other dimensions than simply front to back, or formal semi-private to most intimate spaces.

1 Introduction

The spatial interface between visitors and inhabitants is one of the essential issues for every house in every culture, and it is central to the theory of space syntax. The penetration of different users into the M'zabite traditional house is constrained by social/cultural and religious norms. The aim of this paper is to assert the significance of the entrance in regulating the interior organisation of the M'zabite house and provides a further understanding of M'zabite domestic environment. According to the late Pierre Bourdieu, the organisation of Berber society in any given period and place is inestricably linked to its setting-the house, the settlement, and the landscap- which in turn had been created by the group [Fentress & Brit, 1996:234].This attempt to analyse the physical structure of the M'zabite house might help to better understand the organisation of the house spatial properties.

In Berber as in Arab communities, visitors are always welcome. Hospitality towards visitors is one of the cultural and religious obligations, yet the spatial interface between visitors and inhabitants lies embedded in social and religious norms, which regulate the penetration and receiving of visitors into the house. The intention here is to explore and interpret syntactically such socio-spatial relationships by detecting the "depth property" from the entrance. This highlights the significance of the entrance and the transition zone in M'zabite culture, in regulating the interface between inhabitants and visitors.

2 Visitor identity and cultural norms

A visitor is a person who is invited to enter " the private territory" of the inhabitants. He/she could be ushered inside the house by a single route or from alternative accesses. These accesses could be defined as formal/informal, or front/back, main/side, social/service, male-female entrances. The visitor could be received in particular or different functional room of the house depending on different factors. The identity of the visitor is one of them.

In the case of the British house [Scott, 1990:162] explains that, strangers and formal visitors are required to approach the front door and pass through the hallway, while the family members and friends are permitted, even encouraged, to come through the back door and directly to the kitchen. She writes:
       "*Indeed the different path or mode of entry would make a social distinction between formal and informal visitors*".
Furthermore, in her views, the different modes of request for entry, which exists in Britain nowadays, tell how close the relationship of the requester is to the households. For instance, a ring on the doorbell signals a formal, impersonal caller while a knock on the door is probably somebody known to the householder and a rapping of the letterbox is usually a relative, a close friend or a neighbour. Thus, entry itself is just an act of coming or going; it embeds certain social codes.

Alexander [1977:610-611] who discusses how visitors are hierarchically received at a Peruvian home explains that the degree of penetration, or into which room the visitor is received, reflects the identity of the visitor. For instance, casual neighbourhood friends will never enter the house; formal friends will be invited into the furnished part of the house, the *Sala*, while relatives and

intimate friends will be received into the family room, the *Comedor-estar*. A few relatives and intimate friends, probably women, will be allowed into the kitchen and maybe in the bedrooms. He considers this socio-spatial phenomenon as an example of what he calls as "Intimacy gradient". Alexander sums up his detailed studies of the Peruvian house by stating that:
 "The intimacy gradient is unusually crucial in a Peruvian house. But in some form the pattern seems to exists in almost all cultures" [Ibid, 1977; 610].

In his opinion the intimacy gradient is found in every building. He quotes:

"All buildings and all parts of buildings which house well defined human groups, need a definite gradient from front to back, from the most formal spaces at the front to the most intimate spaces at the back" [Ibid, 1977:610].

For domestic building, he states that it is a sequence from street to inside the house; gate, outdoors porch, entrance, sitting wall, common space and kitchen, private garden and bed alcoves [fig 01]. In his opinion a bedroom or a boudoir is the most intimate while the kitchen is more public, but the entrance or front porch are still most public of all. Thus, his recommendation is to

" Layout the spaces of a building so that they create a sequence which begins with the entrance and the most public parts of the building, then leads into the slightly more private areas, and finally to the most private domains" [Ibid, 1977:613].

The few examples above of non Arab [Berber] Muslim culture highlight an issue of concern to our discussion, the hierarchical penetration and reception of visitors inside the house, in relation to the identity of the visitors, particularly as formal or informal ones.

In M'zabite [Berber] Muslim culture, the identity of a visitor as observer to the house is not only defined as formal or informal, it is defined foremost as male/female, Muhram/non Muhram, and then as formal/not formal. Muhram categories, according to Islam, are those with whom marriage was disallowed such as father, brother, sons, for female and as mother, daughter, and sister for the male. It also includes nephews or nieces and aunts. And for women, they are also uncles, grandfather, brothers or sons and grandmother as well as similar gender [female/female and male/male]. Furthermore, the penetration of a Muhram visitor [male or female] to the inside of the house is not allowed if there is no Muhram present. For instance, if a male Muhram wants to enter the house and there is no male inhabitant present and only non-Muhram female, he is not allowed to enter. It is the same case for a female who comes to visit when there is no female at home but only a male inhabitant who is not Muhram to her. Neither she is allowed to enter, Muhram identity and obligation, with its roots in Islam, includes both male and female, yet the culture discusses it as female obligations rather than both gender. The identity, which embedded socio-cultural and religious norms, plays a significant role in determining how the visitor "will" experience the spatial pattern of the house. Gender identity of the visitor defines the domain into which he/she "must" be ushered. In addition, the male visitor's identity as Muhram and non-Muhram decides the limit he can penetrate into. It also determines, whether he could be exposed to women and whether the women need to veil themselves or not. The status of visitors, as formal and informal, determines the space in which they be received. Yet, in the M'zab, the traditional environment, we notice that the categorisation of the visitor as formal is applied more to male visitors than female visitors.

Spatially speaking, many scholars have described the spatial interface in the Muslim and Arab world between visitors and inhabitants in terms of front and back relationship, or semi-private and secluded domains of the house, and foremost, as male visitors and female members of the family. Mazumdar and Mazumdar, describing the Iranian Muslim Shii community, wrote:

" *The house was divided into two quarters, the Birun, situated towards the outside of the house, for male guests, and the Anderun, situated towards the interior of the house, for females, the female guests, and domestic help. Even though the Birun-Anderun phenomenon varied with the wealth of the households, it nevertheless existed.*" [Mazumdar & Mazumdar, 1997:185]

For the Arab-Muslim community, many scholars defined the spatial relationship between visitors and inhabitant as male visitors and females. Al-Hasseyn [1995] stated that the family section is required to be separated from the male guest's quarter. He explained that since Saudi women do not mix with foreign men this separation is " a design layout necessity". Elfortea [1989:14] clarifies for traditional Libyan Muslim society:

" *Men used the semi-private area of the house around the entrance for their activities. This protected the women's quarter and allowed easy access for male visitors to the other areas*".

Al Azzawi [1970] writes describing the traditional house in Iraq:

" *Off the bent entrance there is a reception room reserved for male guests who are not closely related to the family and who are not supposed to meet or converse with the female inhabitants*". All these examples describe the spatial relation as front, semi-private and male, and back, seclusion and female respectively.

The house in the M'zab also separates the male guest [non-Muhram] and family occupation spatial zones. The split at the Skifa is the prime indication of this separation. This split provides the two genders the possibility of freedom of movement in and out of the house without mixing. The M'zabite family accommodation is relatively at the front [Two steps from the exterior] and not at the back, while the male quarter is deep into the house [The Aali on the first floor] or at the front [The Houdjrat or Douira] on the ground floor. Thus, the movement of the female from the inside to the outside of the house and vice-versa is controlled. It is controlled by socio-cultural norms, which restrict the' female from passing through/by a male zone when there are visitors, unless there is a necessity for this passing.

To clarify the interface between visitors and female/family members our intention is to interpret this spatial relationship syntactically by exploring the depth properties for examples from the sample.

3- General description of the M'zabite house

The following description of the following houses is based on the examination of the plans of about twenty nine houses taken from the five settlements that form the pentapolis of the M'zab valley [Bellal T, & Tacherifte A, 2003: 121-138]. The access from the street to the house is always through the Skifa, or chicane, which plays an important role in the functioning of the

house[see fig 01]. Opposite the front door, a wall protects the Ammas N'Taddart from the view of possible visitors. The door leading to the Ammas N'Taddart is set off from the axis of the front door, and that front door gives direct access to the male reception quarter: the Houdjrat on the ground-floor level or the Aali on the first floor. On one side of the Skifa, there is a room used for keeping the domestic animals. Sometimes in this chicane, there is a recess in the wall in which a hand-quern is kept, allows easy access for the male neighbours who do not have one. Also, water jars used to be kept in this space so that the professional water porters could deliver water to the individual houses without exposing the women to their presence. In most of the examined houses, a morphological feature may be noted; two separate pathways exist to the interior. The first or family path, leads to the Ammas N'Taddart, the large living space surrounded by small rooms [fig 02]. A staircase links the ground floor to the first-floor consisting of multi-functional rooms, the Ikoumar [fig 03] and the Tigharghart or the upper courtyard [fig 04]. Another staircase links the upper floor to the Stah or the terrace [fig 05]. The second pathway leads up from the chicane through another staircase to the Aali [a separate quarter reserved for the male visitors]. The Aali, which is very richly furnished and decorated, consists of one large room, with usually a small window giving onto the street. Sometimes, a bedroom annexes this male reception room.
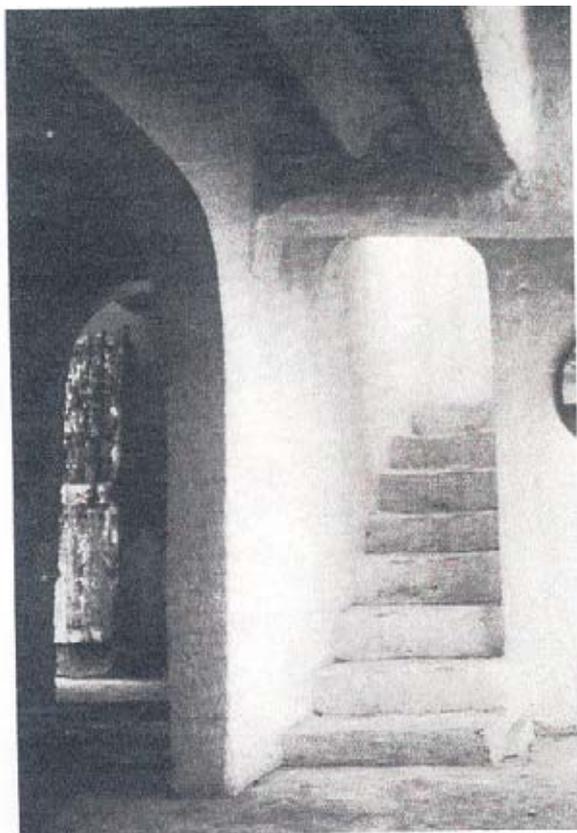

Fig 01: View of the Skifa
Fig 02: view of Ammas N'Taddart
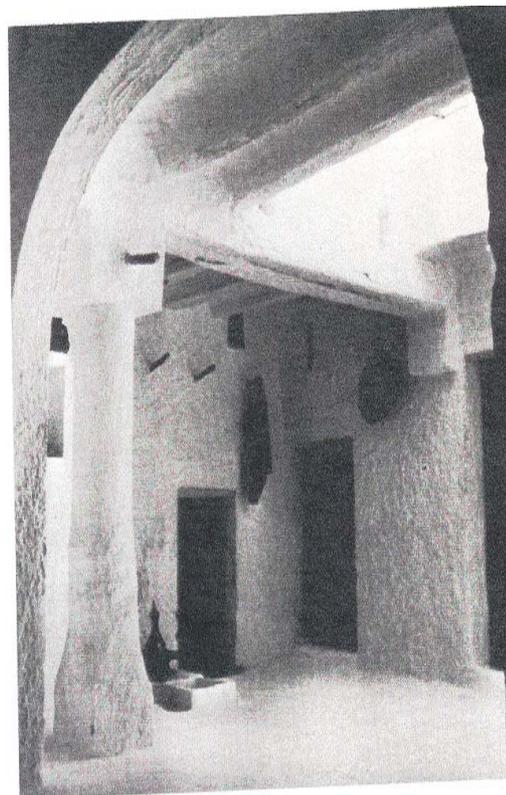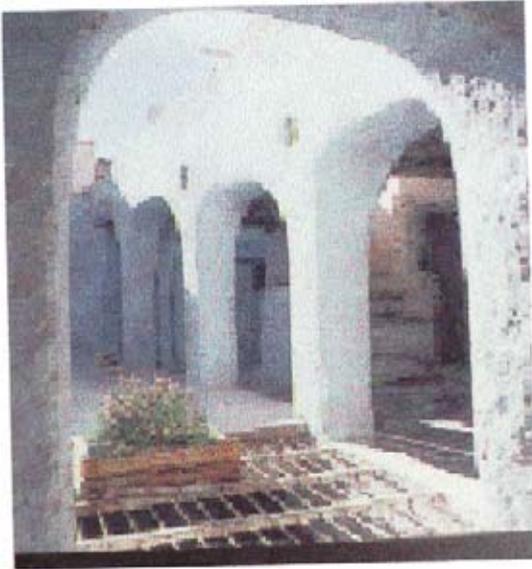
Fig 03: The Ikoumar on the background

Fig 04: The Tigharghart on the forground
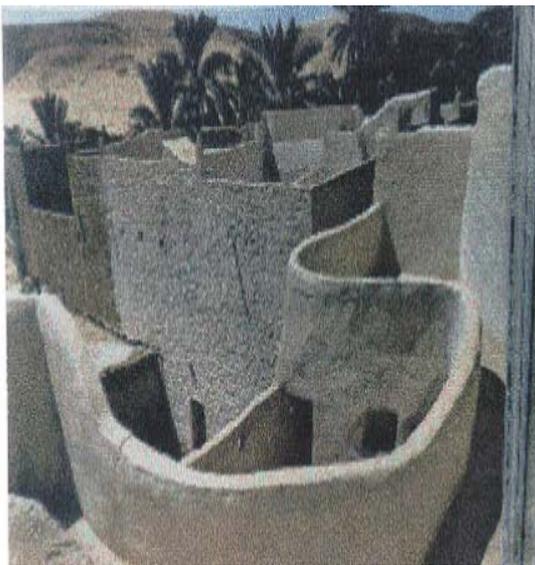
Fig 05: the rooftop of a house in Ghardaia.

The Ammas N'Taddart, as mentioned earlier, is by no means the largest space in the house. No furniture exists in it except for the loom, the built in shelves for the cooking utensils and an oven that occupies one side of it. The Tisifri, [women's living room] gives onto the Ammas N'Taddart. It is used for women visitors and it is in this room where the women move after giving birth. The other rooms that give onto the Wast eddar do not have specific usage. The dimensions of the rooms are modest, they barely exceed two metres in width whereas the length varies and may be relatively important. The toilets are usually located in a remote corner off the Ammas N'Taddart. The house is equipped as well with a traditional bathroom. From the Ammas N'Taddart, a staircase leads up to the first-floor, which consists of the Emess enej or the upper centre, surrounded by small rooms. The ceiling height is very modest, less than two metres twenty centimetres, and in some cases [old houses] less than two metres. On the first-floor the whole family uses the Ikoumar or arched portico for sleeping at night during the summer. It is there, where the women do their washing, sometimes cooking or take their afternoon coffee or tea alone or with their female visitors. In most of the analysed houses the Ikoumar is oriented towards the south or the Southwest. Another staircase leads up from the Emess enej, to the Stah or terrace access to, which is exclusively reserved for women.

4- Space configuration in the traditional Mzabite house

The survey covered about twenty nine house plans. All the plans show the ground floor, the first - floor, and if it exists, the second-floor, the accessible terrace and the cellar. The twenty nine house-plans on which this paper is based, are drawn among these cases. The sample is therefore broadly representative of the M'zab house plan types. The space outside, usually a dead-end, an alley or a lane, is represented as a single convex space. Within the interior of M'zabite houses, it seems that a niche or a couple of steps may be sufficient to define a separate space, which serves a specific function. This architectural elaboration's have been treated as equivalent to convex spaces. For example, the loom site in the Wast eddar could be taken as distinct convex space, although it is not clearly delineated spatially in all cases.

The twenty nine houses were broken down into their convex organisation. Permeability graphs were drawn for each house from the point of view of the house plot. Therefore plans and justified graphs from the outside have been drawn for each example, in order to clarify the space configuration and permeability patterns of the houses. A syntactic analysis is presented first, on a house-by-house basis, in order to group the houses configurationally, and then a statistical and functional account is attempted for the data as a whole, in order to see if space pattern and space use relate systematically to one another.. Basic syntactic data for the set of examples are tabulated in tables [01] showing the mean depth for each case of the sample.

5- Analysis procedures

In this section, the study will focus on the justified graph. We will, at the same time, also bear in mind that the justified graph represents the permeability of the system and that the depth property indicates how many architectural steps one must pass through to arrive at a particular space in the configuration of the house. The study of each example will be completed as follows:
1. The justified graph [s] was/were drawn for each example. A basic justified graph, where all the convex spaces in the house structure were aligned above the carrier of the system [the

exterior] has been drawn for each house [see the justified graphs drawn from the analysis chapter]. The justified graphs corresponding to the entrance have been drawn to illustrate the "sequence" of the permeability of different users of home from the entrance to inside the house. Fig [6-15].

2. Second a comparison between the syntactic property [depth] of particular spaces will be explored. The study focuses on two particular users, the male visitor and female inhabitant, and the two spaces that are most used by each of the users, the Aali [or the Houdjrat, and the Douira] and the Ammas N'Taddart and the Tisifri.

The following are the main spaces that constitute the M'zabite traditional house. The numbering that precedes each constituent space will be used in the description of the house drawings and in the justified graphs that will be shown in figures [6-15].

X: Exterior
1:      Skifa, Taskift or chicane.
2:      Intermediate space.
3:      Tissounane or stairs.
4:      Houdjrat or ground floor male reception room.
5:      Dahlis or cellar.
6:      Wast eddar, Ammas N'Tadart, or centre of the house.
7:      Tisifri or women's living room.
8:      Inayen or kitchen.
9:      Ajmir or toilets.
10:     Lamghassal or traditional bathroom.
11:     Tazeka N'El Aoulet or storage room.
12:     Ikoumar or arched portico.
13:     Tazeka or room.
14:     Tigharghart or upper courtyard.
15:     Aali or first-floor male reception room.
16:     Tazadit or animal room.
17:     Stah or terrace.

The justified graph from the exterior shows that the houses are deep from the exterior [the mean average for the whole sample is 04.52]. Observing the depth of the male guest room, we noticed that the Houdjrat or Douira are shallower at depth two [eight cases for the whole sample: houses 04-06 from the ksar of Ghardaia, houses 04, 06, and 09 from the ksar of Beni Isguen, house 01 from the oldest settlement of El Ateuf, and house 01 from Melika], while the Aali is at depth three [sixteen houses: houses 02-03, 08-09, and 11 from the ksar of Ghardaia, houses 02-06 from the ksar of Beni Isguen, houses 01-04 from the ksar of El Ateuf]. The result shows interesting finding for the female quarter. The permeability graph from the Skifa shows that the Wast Eddar is just at depth two, when we exclude the intermediate space where it exists [all the houses of the sample] that means that the Ammas N'Taddart which is a female space par excellence is shallow from the exterior, which contradicts what it has been assumed that the female spaces are secluded and oriented towards the back of the structure. The Tisifri or women living room is one step further at depth three from the outside as the Ammas N'Taddart gives onto it.
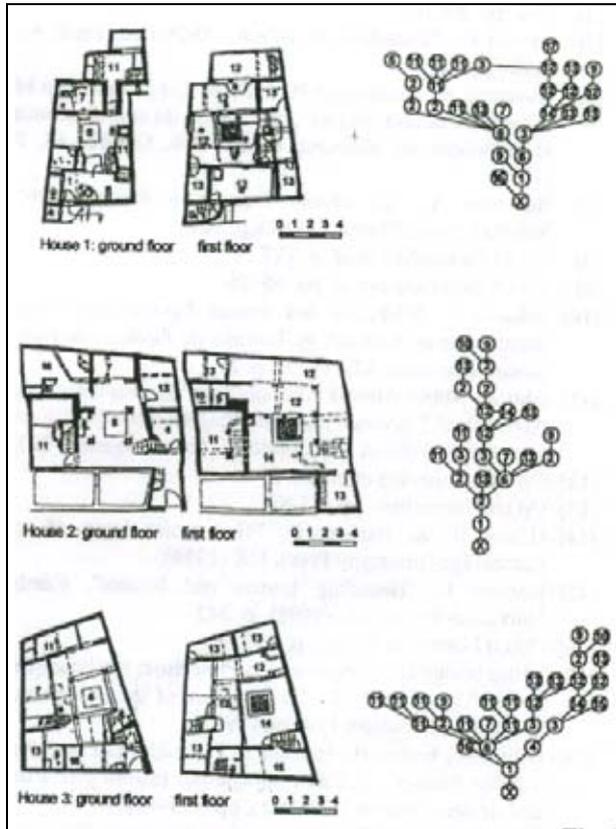
Fig 06: plans and graphs of houses1-3.
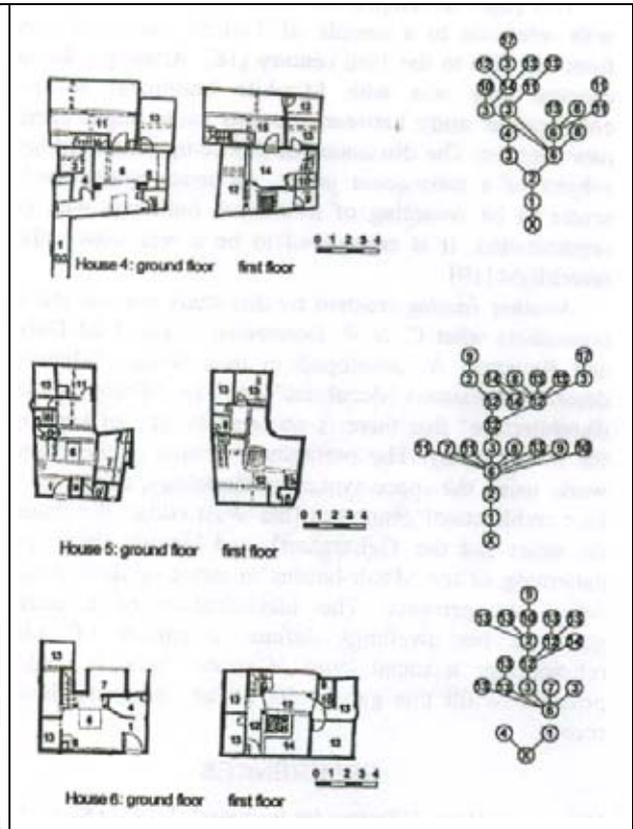
Fig 07: plans and graphs of houses 4-6.
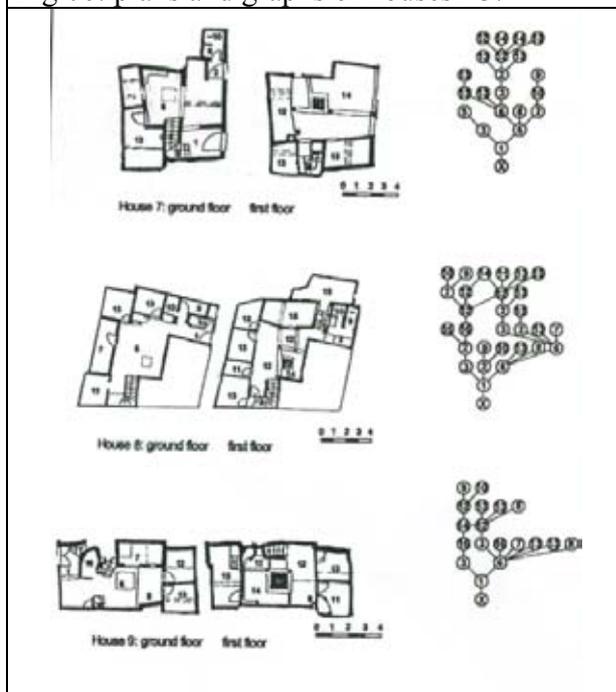
Fig 08: plans and graphs of houses 7-9.
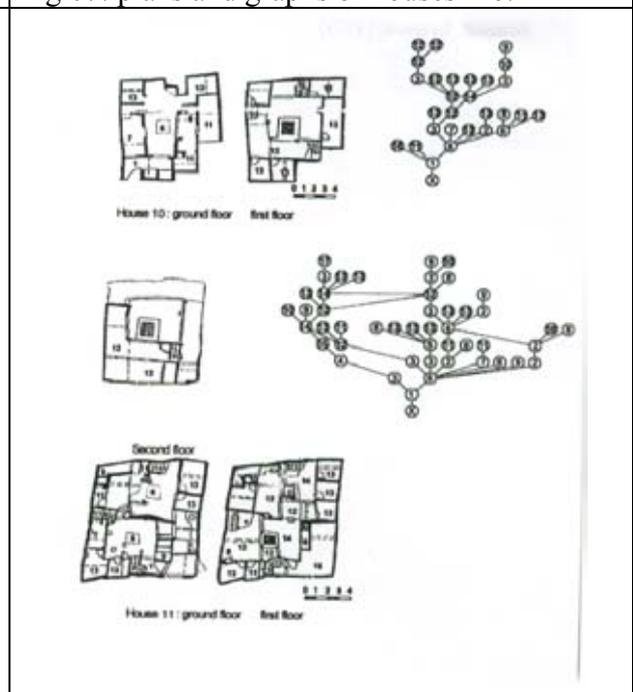
Fig 09: plans and graphs of houses 10-11
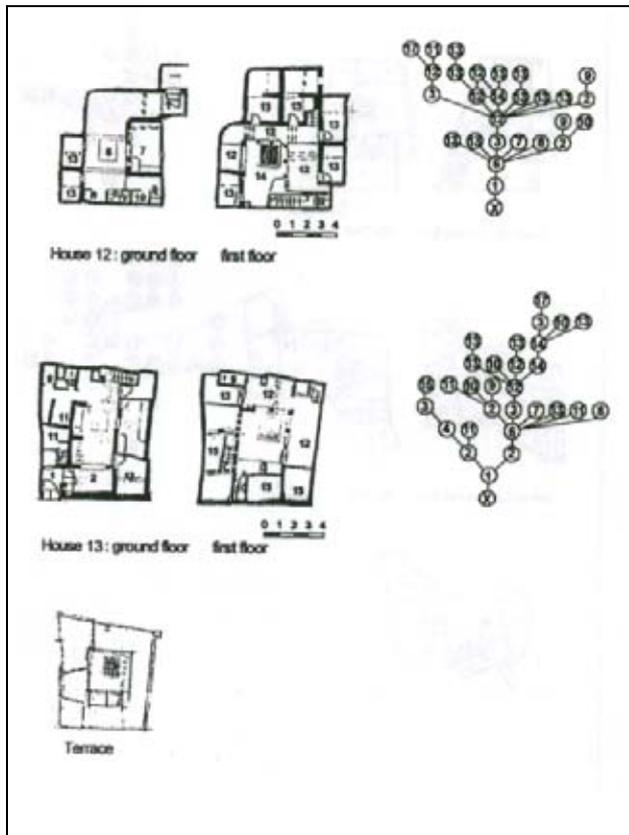
Fig 10: plans and graphs of houses12-13.
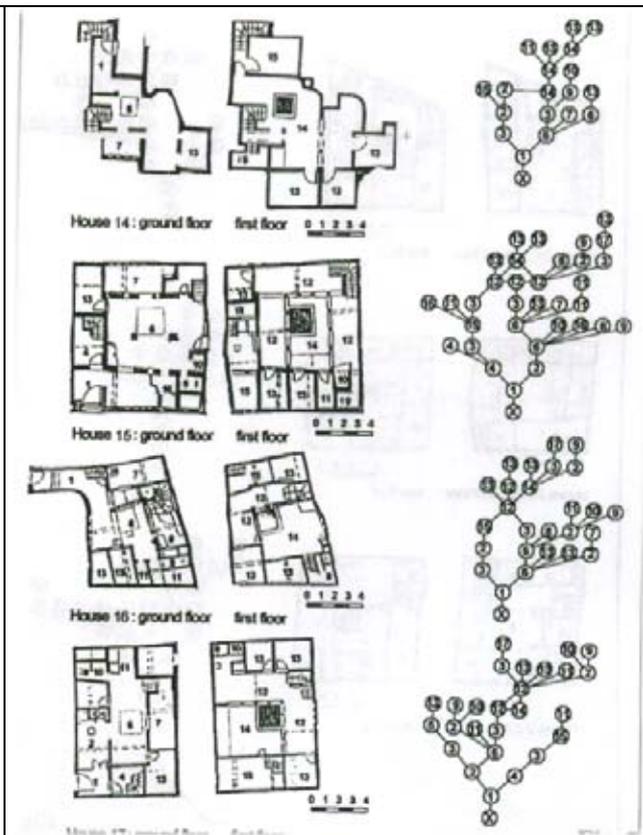
Fig 11: plans and graphs of houses 14-17.
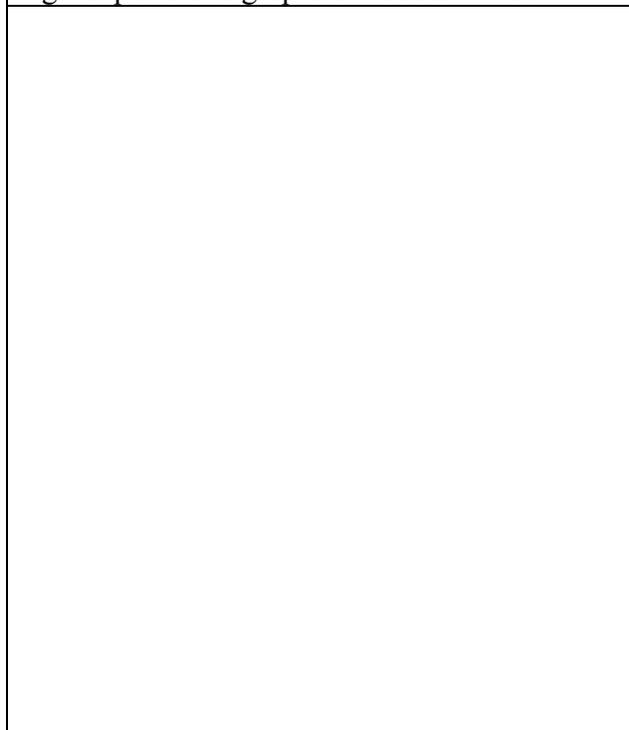
Fig 12: plans and graphs of houses 18-21.
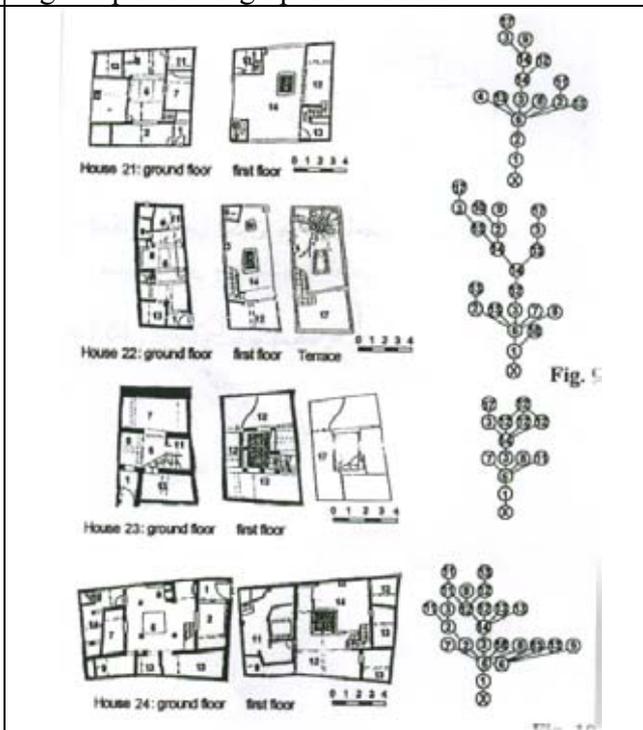
Fig 13: plans and graphs of houses 21-24
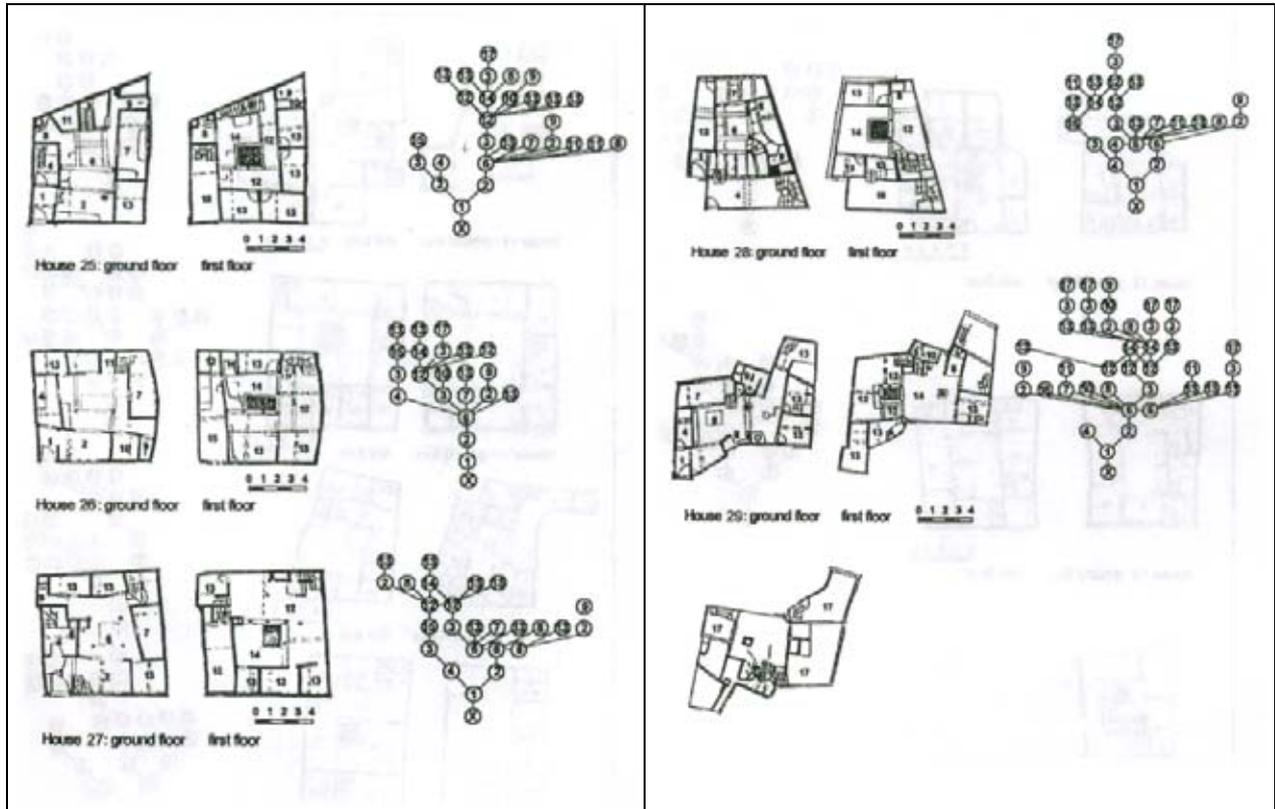
Fig 14: plans and graphs of houses 25-27	Fig 15: plans and graphs of houses 28-29.

6- Discussions:

The entry and penetration of visitors to the house's interior, in the M'zabite culture, is regulated by certain socio-religious codes. These codes identify the visitors along gender and kinship lines. This identification determines the domain and the spaces where he/she will be received.

The intimacy gradient [Alexander, 1977] which might be found in each culture at varying degrees, in the case of the M'zabite house, such gradient involves other dimensions than simply front to back, or formal semi-private to most intimate spaces, for the above reasons. The syntactic property [depth] of the whole sample has been observed in order to explore the sequence of movement and permeability from the entrance.

Table 01 : Basic syntactic data. Convex Spaces

House N°	M.D	House N°	M.D
1.	**4.33**	16.	**5.00**
2.	**5.08**	17.	**3.82**
3.	**3.92**	18.	**4.72**
4.	**4.90**	19.	**5.09**

5.	**5.17**	20.	**4.76**
6.	**4.15**	21.	**4.20**
7.	**4.47**	22.	**4.55**
8.	**4.48**	23.	**3.92**
9.	**3.66**	24.	**4.38**
10.	**4.75**	25.	**4.82**
11.	**5.22**	26.	**4.00**
12.	**4.11**	27.	**4.15**
13.	**5.00**	28.	**3.80**
14.	**4.15**	29.	**5.52**
15.	**5.24**	Mean	**4.52**

MD: Mean Depth

In all examples the justified graph was constructed, corresponding to the exterior and the basic justified graph, in which all the spaces in the structure are located in relation to the carrier. The justified graphs showing the route of permeability from the threshold, prove that the Ammas N'Taddart, which is used by the family members, and the male guest room on the ground floor [the Houdjrat or Douira], are relatively shallow in relation to the street, and they are in the front positions relative to the street, while being in a front/back relationship with each other. At the same time the Aali [male guest room on the first floor] or the basement [there are three cases in the sample houses 07 and 11 from the ksar of Ghardaia, and house 01 from the Ksar of Melika], are deep inside the structure, three steps respectively from the carrier.

The finding also shows that, the family and male domains are in a parallel route see fig [13]. In relation to the street, the family occupation of space is deeper than the male guest room when we exclude the Aali or the basement [there are four cases in the sample; house 07 and 11 from the ksar of Ghardaia, and house 01 from the Ksar of Melika], hence the male visitors will penetrate
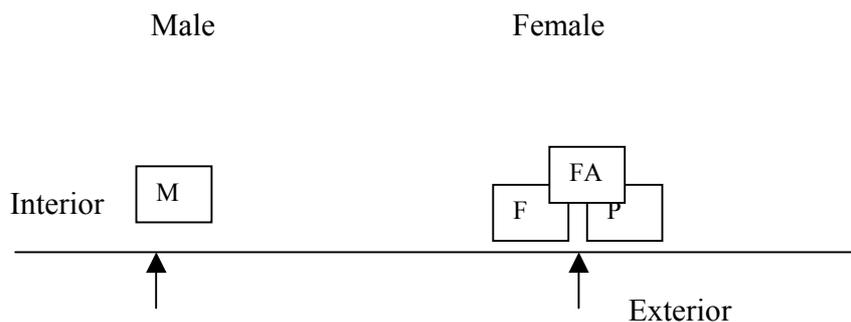
Fig 15: the parallel model .
M: stands for male, F: stands for female, FA: stands for family, and P stands for personal or individual.

the house without crossing the family domain. The study in this section provides further understanding of the M'zabite domestic environment in terms of visitors and inhabitant interface. In actual terms, the interface between male visitors and family domains. The study also asserts

the significance of entrance in regulating the interior organisation of the M'zabite house in terms of depth properties.

A general overview of the house of the M'zab sample suggests a prime model, that defines the house as a collection of domains, e.g. male visitors/male and family/female. This model is built on socio-cultural norms that are based on the empirical findings. These latter, suggest that the houses tend to be divided into two separate domains, one section is exclusively used by the inhabitants and the other is reserved for receiving male guests, thus the configuration appears to modulate the social dynamics of the house's occupants by distancing the hosts from immediate contact with male guests. The analysed sample shows a tree-like structure of M'zabits homes, however in some cases, the houses seem to be rooted to their sites in permeability with a ringy root passing, through either, the Ikoumar or The Tigharghart. The ring from the Skifa through the Aali to the Ikoumar or the Tigharghart permits a degree of the tuning of the host-guest relation in the houses.

Compared to other Berber houses in northern Algeria, the M'zabite spatial configuration seems to be the result from a conservative attitude as opposed to the progressive one which does not allow for subtle differences by the opening up of routes [Bellal T & Brown F, 2001:41]. A second spatial type of the houses is deep core and ringy and can be considered to be the most obvious manifestation of the fine-tuning of configuration to modulate the social dynamics of the house occupants: guests/hosts, men/women. The remaining houses are characterised as being shallow and ringy and thus, offer their residents an alternative and route choice. Hillier & Hanson, suggest that these configurations support patterns of 'spatial solidarity' in which household members and visitors are brought together by the dwelling's spatial configuration [Hillier et al,1995:475-498].

The results also show that the exterior zone is always segregated from the domestic life, which confirms the social code in such a culture and the need for modification in the methodology. Concerning the spatial interface between visitors and inhabitants the study provides further understanding of M'zabite domestic environment in terms of visitors and inhabitants interface. In actual terms, the interface is between male visitors and family domains. The sudy also asserts the significance of entrances in regulating the interior organisation of the M'zabite house in terms of depth properties.

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Glossary of terms

English	M'zabite [Berber]

Domestic spaces and House's objects

Ground floor	Aday
First floor	Emess Ennedj
Terrace	Stah
Basement	Tamadmourt , Dahlis or Damous
Chicane	Taskift or Skifa
Threshold	Ataf N'taddart
Women's living room	Tisifri
Ground floor main area	Ammas N'taddart
Kitchen	Inayene
Bedroom	Tazeka
Storage room	Tazeka N'el Aoulet
Animal room	Tazdit
Traditional bathroom	Lamghassel
W.C.	Ajmir
First floor arched portico	Ikoumar
First floor upper courtyard	Tigharghart
Terrace portico	Ikoumar nenije amakrane
Weaving loom area	Tahja
Roof-light	Drabez or Chebek
House	Taddart
Stairs	Tissounane
Door	Taourt
Entrance door	Ataf N'taddart
Wall	Marou, pl Imouran
Ceiling	Gharf
Small window	Alloun
Built in shelves	Tebaijet
Raised bed or bench	Amchan
Jar for dates	T'khabit
Jar for grain	Akoufi