

SPATIAL THEMES AMONG THE TRADITIONAL HOUSES OF TURKEY

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0 Abstract

This paper deals with a sample of traditional house plans from a variety of towns located in different regions of Turkey to investigate underlying themes of spatial-functional integration in their space configuration. Distinctive patterns of integration have been found which might have led to the genotypical differences in the syntactic dimension of houses. The results of the syntactic analysis are then interpreted through some historical references to be able to make some guesses concerning the sources of these genotypical variations, and the nature of their geographical distribution.

Keywords: domestic space, Turkey, traditional

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1 Introduction

It has generally been accepted that it is possible to see the variety of the cultures of Anatolia which has been reflected in the regional variety of its vernacular architecture (Kuban, 1995). However, a careful examination of house plans may show that there may be similarities in the architecture of houses which are in different regions, while there may be considerable differences in house design within the same region. The houses which are scattered over a vast area from east central Anatolia to the Balkans appear to share similar general descriptions, but also show some variations which are generally explained in terms of the construction materials and techniques used (Kuban, 1995:16; Eldem, 1984). When concerns are exclusively architectural, only vague aspects such as the existence or absence of certain architectural elements and their compositional variations according to some simple rules (Karpuz, 1984:77), or different stages in an assumed evolution of a single abstract geometry (Kuban, 1995:105), besides superficial influences of some remote cultures pointing to the surface characteristics of few examples (Imamoglu, 1992: 213) define the degree of variability. Rather than looking for surface similarities of architectural elements, this paper aims to study the space structure of a sample of traditional house plans from Turkey using space syntax (Hillier and Hanson, 1984) to explore how far it is possible to find spatial-functional themes in their space patterns underlying apparent diversity, and how these spatial-functional patterns have a relation with the geography of Turkey.

Present study, although by no means exhausting all the house types that exist in Turkey, includes 121 house plans built between the seventeenth and the nineteenth centuries which come from the towns of Bursa, Kusadasi and Kütahya, and South-western Aegean sub-region in the West; Adiyaman, Erzurum and Urfa in the East; Aksehir, Ankara, Karahüyük, Kayseri and Konya in the Central region; Antalya in the South; Çankiri, Izmit, Safranbolu, Tekirdag, Trabzon, and Eastern Black Sea sub-region in the North (figure 1). The sample of house plans is not from a single source

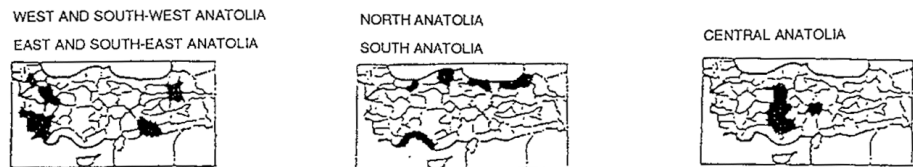


figure 1, Regional divisions assumed in this study

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but was taken from the works of Bektas_ (1992, 1980, 1991a, 1991b, 1991c); Kömürçioğlu E (1950); Tomsu (1950); Karpuz (1984); Imamoglu (1992); Berk (1951); Eser (1955); Günay (1981); Akkoyunlu (1989); Eldem (1984); Akok (1951, 1953a, 1953b); Numan (1981); Erdim (1979); Tosun (1983); Kömürçioğlu A (1952) and Özgüner (1970). It was not possible to include all the house plans available in these studies, but plans were chosen according to the period they were built, the clarity of their presentation techniques, and the completeness of their plans. One house plan from each town and a sub-region is provided as an example in figure 2 in alphabetical order according to where they are situated.

In the description of the house plans there is little information about space use. With the lack of substantive written documents to accompany the architectural drawings, limited understanding of domestic interior and everyday living patterns can be achieved. Nevertheless, the general description of the Turkish house includes the fact that the ground floor spaces are mainly used for storage purposes, and the main living rooms are situated at first floor where the principal space is the sofa which is a transition space giving access to the rooms, and a function space used for daily living. One of the rooms on the first floor is the main room where the head of the family receives his guests. Cooking takes place generally in the garden. In Erzurum houses, while the sofa on the first floor is no more than an enlarged landing of the stairs, the everyday living and cooking space is the *tandirevi* which is situated on the ground floor. Kayseri houses have also a plan development with a *tandirevi* (called *tafana* here) which is described as an elaborate combination of kitchen and winter living room (Imamoglu, 1995:221). The courtyard is the activity centre in which many of the household activities are carried out. Urfa houses are also planned around a courtyard as introvert enclosures with several *eyvans* (open room covered with a vault) inserted among the rooms looking out into the courtyard. Some *eyvans* may be used for receiving guests and for ceremonial purposes, and others provide the main sitting and eating room for the family. Eastern Black Sea region houses, on the other hand, do not have a courtyard. They are classified into two by Özgüner (1970) according to the name and the function of the “common room”. In one type, the *salon* is the common room which is used as a living space as well as a means of transition to the rooms one of which is used for cooking and another one for receiving guests. In the other type, the common room is the *hayat* which is the family living room where cooking also takes place.

The difficulties of using second hand data which were unevenly provided with spatially, functionally and formally by different writers cannot be denied. In addition to that, there are difficulties concerning the existence of multi-functional spaces and the variety of labels they take. These difficulties together with the problem of having a small number of house plans from each town were tried to be eliminated through the way the data is used. First of all, each house was studied individually as a unique phenomenon without considering its geographical location. Secondly, in order to

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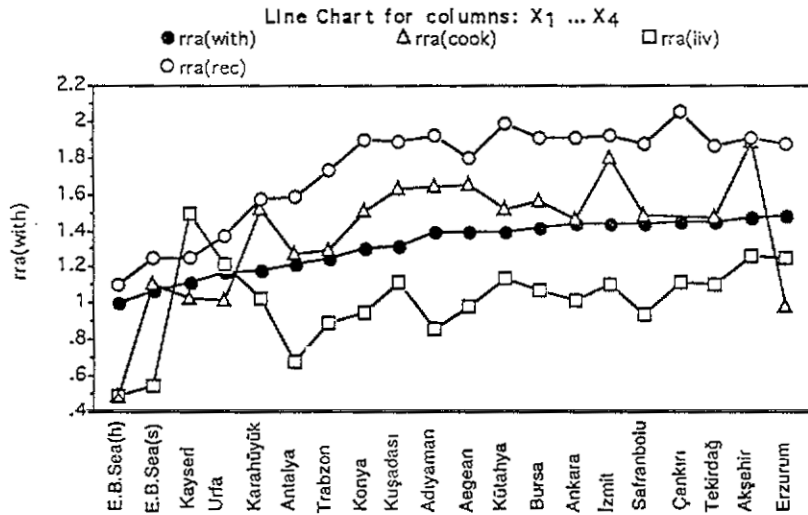
establish consistency in the description of space and everyday life, spaces were considered in terms of the basic functions they carry (cooking-C, receiving-R, living-L) rather than the special names attributed to them. While considering house plans with a view of identifying the spaces where these functions were believed to take place some assumptions were made. This could not be a mechanical procedure for all the houses, and, for some, involved some degree of personal judgement. According to the space syntax theory, when the integration values of a set of spaces assigned to certain key domestic functions are in a certain order, and this order is consistent across the sample, which is referred to as “inequality genotype” by Hillier and Hanson (1984), it may be said that this repeated pattern constitutes the underlying spatial-functional structure of houses. Therefore, our question turns to be how far it will be possible to find spatial invariance in house plans which relate to the key domestic functions of cooking, living and receiving as a system of space.

2 Spatial configuration of the sample of house plans

The techniques of space syntax will not be repeated here since they have been explained extensively in publications by Hillier and Hanson (1984, 1987). The analysis in the present study deals chiefly with the justified graph (two dimensional graph representation of plans) which is drawn to clarify the permeability (interconnections between spaces) patterns, and to find properties of ringiness (the degree of route choice from one space to another). The number of spaces one must pass through to arrive at a particular space from the carrier (normally the site in which the building sits) indicates the depth of that space. The mean depth of a space from all other spaces in the configuration is integration (rra) which describes how permeable that particular space is. The low values mean higher integration and, the high values mean higher segregation. Another fundamental measure used is the base difference factor (bdf) which expresses the degree of differentiation in the integration of a set of three spaces. Higher values indicate more homogenisation, whereas lower values indicate more structure.

In the procedure adopted justified graphs from the outside have been drawn for each house. The justified graphs in figure 2 are given together with their corresponding house plans. The basic syntactic values were calculated automatically by using a software application "New Wave" developed for this purpose at the Bartlett. The basic spatial and functional data for each individual house in figure 2 are tabulated in table 1 together with the mean for the entire sample of houses. The entry in table 1 also provides the rank order of integration of key domestic functions from the most integrated to the least integrated for each house. The house plans in the sample were obtained as a group for the given town, therefore the mean syntactic and functional data of house plans are given for each town in table 2 with the towns sequenced in alphabetical order.

The town based data are considered as a whole to show the general themes of spatial-functional integration within the sample. Keeping in mind that some of the town samples are too small to be reliable, figure 3, is created by arranging towns from the most integrated to the most segregated with the integration values of main function plotted against the towns. The figure also shows visually where and how the exceptions occur. There seem to be three exceptions in the most integrated part of the



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range, apart from one right at the segregated end. They are Eastern Black Sea Region (hayat houses) where cooking and living are equally integrating ($C=L<R$), Kayseri where cooking is the most integrating while living is the most segregating ($C<R<L$), Urfa where cooking is the only integrating function ($C<L<R$), and finally Erzurum where cooking is the most integrating function although living is also slightly integrating ($C<L<R$). Therefore the town based study suggests two distinctive spatial-functional themes in a sample of house plans from different regions of Turkey. While one of the spatial themes among the sample of dwellings throughout Turkey is defined as a way of constructing the house around the function of living which has been called the living-integrating theme, an alternative way of ordering the house appears to be the one which constructs an integrating interior around the function of cooking, although the spatial and functional properties of cooking are realised in a different way in houses in different locations. This theme may be called the cooking-integrating theme. While Eastern Black Sea hayat houses, Kayseri, Urfa and Erzurum houses are cooking-integrating houses, the houses of Adiyaman, the Aegean region, Akşehir, Ankara, Antalya, Bursa, Çankırı, the Eastern Black Sea (salon), Izmit, Konya, Karahüyük, Kusadasi, Kütahya, Safranbolu, Tekirdag and Trabzon are living-integrating houses.

figure 3. Integration for each main function and mean integration according to towns

Table 3 divides the sample into two along this line, and tabulates their basic syntactic and functional data. There are 98 living-integrating houses in 16 different locations, and 23 cooking-integrating houses in four different locations. When the living-integrating theme is compared with the cooking-integrating theme as a whole, it can be seen that the spatial and functional properties which are realised strongly in one genotype are realised weakly in the other, and sometimes even inverted. Living-integrating houses are significantly bigger while they remain to be tree-like structures, whereas cooking-integrating houses are smaller but distributed systems. Their mean depth is not significantly different than each other's but their mean integration is different with cooking-integrating houses significantly more integrated. The base difference factor shows no significant differentiation for the two themes. Receiving is the most segregated function in both categories of houses. However it occurs significantly shallower and more integrated in cooking-integrating houses, and significantly deeper and more segregated in living-integrating houses when compared to the mean depth and integration of receiving. Living occurs at a closer depth and

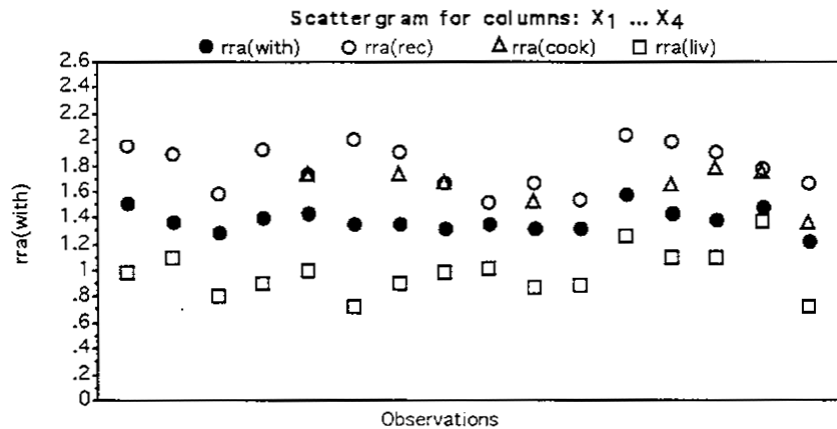
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integration without a significant differentiation for the two themes. Cooking also occurs at a closer depth without a significant differentiation, but it is significantly more integrating for the cooking-integrating theme, and significantly more segregating for the living-integrating theme when compared to the mean integration of cooking. The difference factor for the three key domestic functions is weaker for the cooking-integrating theme, and it is stronger for the living-integrating theme, but the difference between them is not significant. However, while the difference factor when living is substituted with the exterior remains equally strong for the cooking-integrating theme, it becomes significantly weaker for the living-integrating theme.

When the examples of house plans for each theme are reviewed, it can be seen that each theme has a different spatial organisation which is developed for ordering the domestic interior in a particular way. The living-integrating house from Adiyaman (figure 2) has a tree-like justified graph. The courtyard is the most integrated space, and the sofa (the everyday living space) is the second most integrated space. Cooking seems to take place in the courtyard (in a covered shed-sundurma), in the sofa, and in the kitchen on the upper floor. All of the cooking spaces are more segregated than the mean integration. The main room appears to be the deepest singularity within the configuration and is the most segregated. The difference factor is strong (at 0.87) for the three main functions and when the exterior substitutes receiving (at 0.89) and cooking (at 0.86). However, when living is substituted with the exterior the difference factor becomes weak (at 0.95). In other words, living structures the relationships among the main domestic functions and knits together the exterior. The spaces assigned to receiving and cooking do not structure configurational differences of domestic functions to anything like the same extent as living.

The house based data for the living-integrating Aegean region houses are given through the scattergram provided in figure 4 which helps to visualise the data by plotting integration values of the main functions and the mean integration for each individual house. There are 16 house plans which are ordered according to the syntactic size from the smallest to the biggest. In general, the houses show similar properties to that of the house from Adiyaman. Although the spaces assigned to key domestic functions are integrated to a different degree in each house, in all of them living is the only function which is integrated, and cooking and receiving are segregated. However, a closer examination indicates that values for cooking vary considerably. Although, in general, cooking is more segregating than living and more integrating than receiving ($L < C < R$), it can be as segregating as receiving ($L < C = R$), or can be totally absent without an integration value at all ($L < R$). These may be considered different syntactic expressions of the living-integrating theme. The living-integrating house plans from other towns and sub-regions also show the properties of the living-integrating theme with its different syntactic expressions. But the dominant order of integration is $L < C < R$ in all of these locations, except in Çankiri where the inequality genotype is only $L < R$.

In the locations where the cooking-integrating theme is dominant, however, the order of integration is different for each location, showing more individuality. The hayat house from Eastern Black Sea Region (figure 2) has a ringy space structure on which spaces for the key domestic functions lie. Receiving in room 1 lies on a single ring.



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one passing from the exterior. By becoming the most integrated space as well, the hayat seems to be the configurational centre of the house. While a distinctive spatial culture in Eastern Black Sea Region puts an emphasis on the distributed space structure and the function of cooking, the house from Erzurum (figure 2) is a tree-like, deep and segregating structure like living-integrating houses, but the way the key domestic functions are spatialised shows striking differences. Receiving takes place in the selamik (men's section) which is shallow from the exterior, rather than being the deepest space. Cooking takes place at the entrance section of the tandiveri (the cooking and living room) which is in fact at the shallow end of a long sequence of space passing through several transition and function spaces including the seki (the living and eating space). Besides strongly integrating cooking, living is integrating up to a certain extent, but it does not structure the configurational differences among domestic functions. All this evidence points to a distinctive spatial culture existing in Erzurum expressing itself through deep and segregating configuration in which cooking is strongly integrating, and receiving is significantly shallow. The house from Kayseri seems quite unlike any house so far. The house has a justified graph with several rings one of which globally connects different sections of the house together (figure 2). On that main ring lies several transition spaces besides the cooking space which is the most integrated function space in the configuration. Not only the global movement, but a local movement is also internalised in the cooking space. It is connected to the living seki in the tafana (the cooking and living room) which is only one step deeper than the cooking area but one of the most segregated spaces within the house. There is no single function space which structures the system of space. Quite contrary to the living-integrating cases, the most segregating living points to a distinctive pattern of integration in Kayseri which puts an emphasis on the function of cooking. Finally, the house from Urfa shows some significant differences in its space patterns. The configuration has several rings passing through different convex spaces of the courtyard which create a global asymmetry (figure 2). Although all the function spaces are situated off the courtyard, each has a different depth and integration depending on which convex space of the courtyard it is connected to. Neither local nor global movement is internalised in the kitchen which is a dead-end space. The kitchen is the most integrated function space. The men's reception rooms are clearly separated from the rest of the house at the entrance section. The properties of distributed space structure, integrated cooking, and shallow and slightly segregated receiving may point to a distinctive spatial culture in Urfa expressing itself through

figure 4. Patterns of integration of main domestic functions for houses in Aegean Region

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the way the key domestic functions link to the system of space. This analysis shows that cooking space operates through aspects of configuration to exploit the basic potential of space in a different way for cooking-integrating houses in different locations, to make types of houses different from each other. It seems that the invariance among them is cooking as the most integrated function space.

Now we can consider the question related to the relation between different spatial-functional themes and their regional distribution. For this purpose the sample is considered as a whole on regional basis. Table 4 presents the basic syntactic and functional data for the sample organised according to the regions assumed (figure 1) which are sequenced in order of integration from the most integrated to the least integrated. Figure 5 plots the regional integration values for the key domestic functions and the mean integration value for the overall pattern against the regions. The figure is rich in information to identify regional inequality genotypes. It shows a regional genotype of $L < C < R$ which stays more or less constant under increasing regional segregation, except for East where cooking and living change places. An increase in integration of cooking, and an increase in segregation of living in East turn the inequality genotype to the one where cooking becomes the most integrating function.

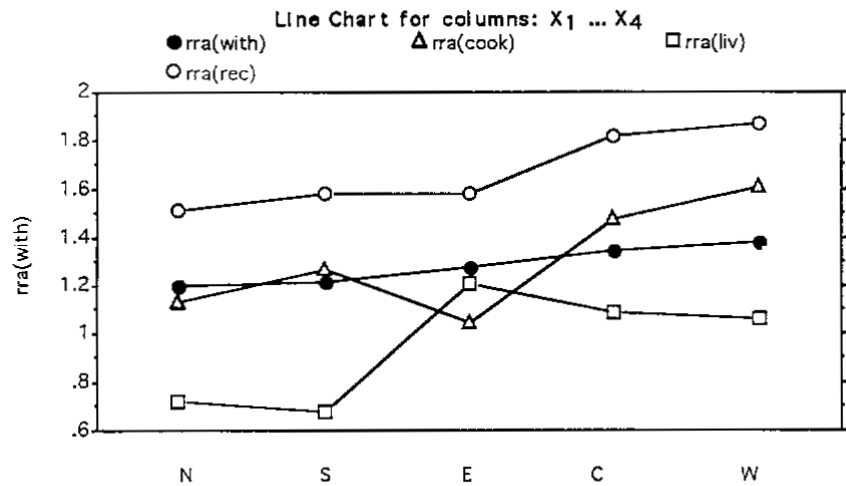
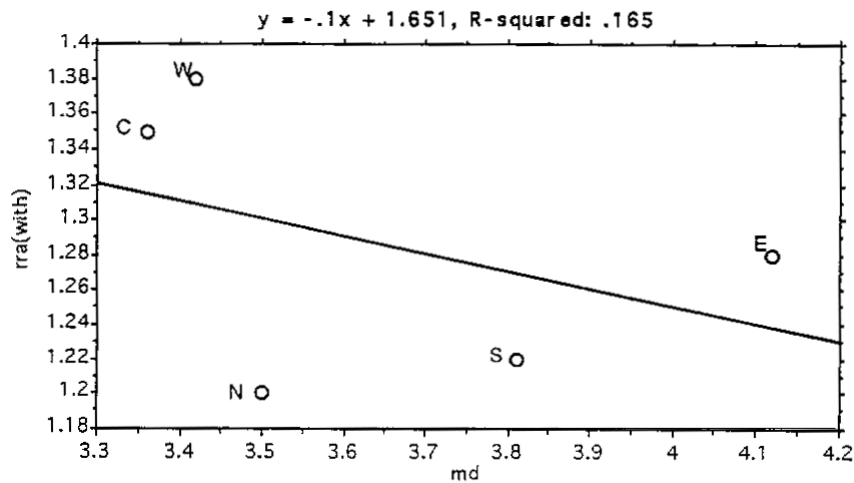


figure 5. Integration for each main function and mean integration according to regions.

In order to see the general spatial characteristics of regions as a whole, figure 6 shows each region as a dot located on the horizontal axis according to its mean depth and on the vertical axis according to its mean integration. It can be seen that West and Central regions are distinctive in being both segregated and shallow, North and South are integrated and deeper, while East is deepest and at the midpoint on integration. These general relations among regions are then checked out for the regional patterns of main domestic functions in figure 7 which shows a scattergram plotting the regional mean for integration against mean depth for each main function. The dots are labelled up according to regions. It is seen that the regional means for receiving are at the upper right hand quarter of the scatter implying depth and segregation where West is the deepest and most segregated, North has the highest integration, and East is the shallowest. Regional means for living cluster in the integrated part of the scatter. All regions except South have cooking shallower than living. The depth of cook-



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a specific part of the scatter. This result should be approached with care since it may be misleading due to the existence of a limited number of houses "7 cases" from this region. For all regions cooking is less integrated than living, except East where cooking is both shallower and more integrated than living.

figure 6. Correlation of depth and integration for overall regional means.

As a result of regional analysis it can be said that while the living-integrating houses are diffused all over Anatolia with some broad regional variations, the cooking-integrating houses seem to be concentrated in the eastern parts of Turkey (East, Central-East, North-East and South-East). At the same time, a careful observation shows the existence of towns in that area with cooking and living integrating houses neighbouring each other. The living-integrating salon and the cooking-integrating hayat houses are not only in the same sub-region of Eastern Black Sea, but they are virtually from the same area with no variations in climate, which is mild and rainy all year round, topography which is steep northern slopes of the young mountain range, and building material which is timber. Likewise Kayseri and Karahüyük, and Urfa and Adiyaman are neighbouring towns where the houses display variations of the living and cooking integrating themes in their space organisation.

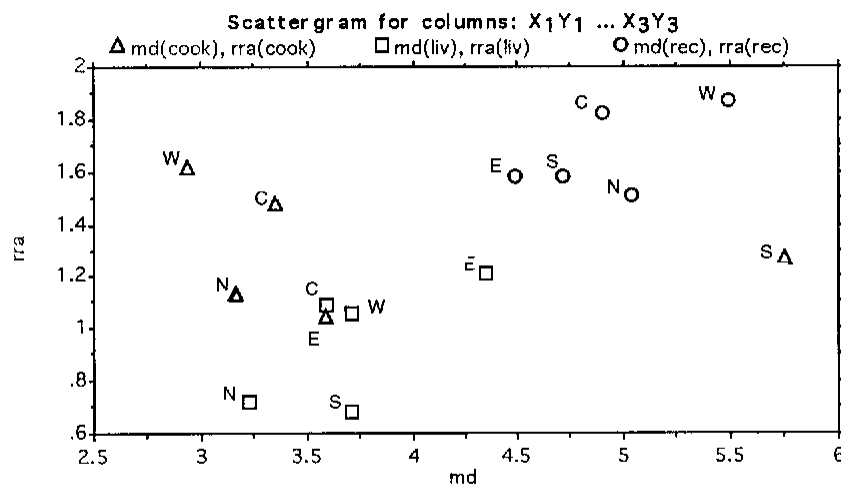


figure 7. Regional patterns of main domestic functions

3 Interpretation

Although the present study is concerned only with the spatial analysis, some guesses will be made concerning the sources of the two themes identified and the way they distribute over the geographical regions. Due to the scarcity of information relevant to the socio-historical dimension of houses, the explanations can only be treated as speculations which require a different kind of further research. Nevertheless some available historical data has made evident that, since antiquity the population of Anatolia was comprised of many different peoples coming from outside Anatolia, but at the same time, originating in Anatolia (Jameson, 1971). Ottoman society was also a multi-cultured society whose main element was Turkish nomads (Vryonis, 1971; Planhol, 1959; Orhonlu, 1963) who entered Anatolia since the 12th century, and had a symbiotic relationship with its local agricultural societies (Eberhard, 1953). Although the newcomers were originally nomads and lived in the yurt (circular tent with a dome), a settled way of life quickly developed during the 14th-15th centuries especially all over Western Anatolia where nomads pooled in high concentrations. It is claimed that (Vryonis, 1971) the majority of local people in these areas were absorbed and increasingly integrated into the style of life of their Turkmen neighbours. Planhol (1959) thinks that the shift to the settled way of life "... shows an extremely distinctive pattern over Anatolia". It first began to develop mainly in the inland basins of the northern mountain chains, and North-Western and South-Western Anatolia, and secondly along the southern border of the central steppe, and in the region of the Göller Bölgesi in the north of Antalya. Likewise for Vryonis (1975) the settlement of nomads first began in the Western Anatolia and also "...in the strongholds of the high mountainous perimeters of the Anatolian plateau". In a short period of time "... many of the Türkmen tribes came to be fixed in the area which reaches from Ankara and Konya in the east, to the Marmara, Aegean and Mediterranean seas in the west ... Finally nomads successfully pushed westward and eventually reached the sea." The settlement process continued during the following centuries without interruption with the successive shift of population from east to west, and then from west to east which was much more modest in scale.

How does this distribution pattern of nomad settlements throughout Anatolia as described by historians relates to our finding? According to our results, the houses with the living-integrating theme diffuses all over Anatolia but concentrates mainly in the Western Anatolia and along the "yayla belt" (summer pastures on high grounds usually along the inland edges of the mountains surrounding the Anatolian plateau). This geographical area covers the inner slopes of the mountains in North where the towns of Çankiri and Safranbolu are situated, North-West (the towns of Tekirda, Izmit, Bursa and Kütahya), Western Anatolia up to the Aegean Sea (the town of Kusadasi), South-West (Aegean region), and Antalya area in the South. The eastern borders of the area reaches Ankara in the north, and Konya in the south, connected through Aksehir on the Western Anatolian threshold which separates the inner Anatolian plateau from the Western Anatolia. This is in agreement with the observation of Planhol that there were no nomad's settlements in the beginning in the central steppes besides the Taurus and the low peripheral plains. Therefore, although tenuous, we may say that there may be a suggestive link between the distribution pattern of living-integrating houses and the settlement patterns of nomads over Anatolia. The diffusion of living-integrating houses in fewer numbers all over Anatolia

including the Northeast and the Southeast may be related to successive migrations of people from east to west and vice versa throughout Anatolia for centuries. Unfortunately there are no house plans available from these periods. In their absence we turn to ethnographic records which describe the settlement processes and the dwellings of settled nomads in more recent times. They provide the evidence that nomads who settled near Sakarya in the North (Dönmez, 1963-64), and near Antalya in the South (Kolars, 1963) built living-integrated houses in the 1960's when they were at different stages of their settlement history.

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Although the historical argument summarised above is correct for Anatolia in general, there were some exceptions, one of which is described in detail by Bryer (1975) for the Eastern Black Sea sub-region. The settlers in the 12th century were pastoral people who “quickly established the transhumant pattern of movement with flocks and families” between summer and winter settlements (Vryonis, 1975) in the western part of the sub-region. In other words, the local settlements became Türkmen settlements at once in the western part. Their transhumance life style did not appear to be on the decline up to the 1960s (Planhol, 1966). However, according to Bryer (1975), local settlements in some of the valleys in the eastern part of the region retained their distinctive subculture inherited since antiquity to a comparatively later times, where the local state of Trabzon was the representative until the 15th century. Their economy was depended on coastal agricultural economy which, according to Bryer, gave this local identity its distinctive staying power. For the Eastern Black Sea Region, Bryer (1975) thinks that the experience is unusual "for it demonstrated how the empire of Trebizond and a nest of (Turkish) emirates could coexist on the same territory" for centuries where they were doing different things. In this connection, if it is possible to speculate that an evolutionary settlement was responsible for the non-local diffusion of living-integrating houses, is it possible to relate the cooking-integrating houses with survived local cultures whose main industry was agriculture in the coastal Black Sea area? It is interesting to hear the local culture of this “antique society” in the songs survived (Bryer, 1980) even in the 1970s. It is certainly tempting to think that it might also survive in the ways houses were built. In fact, the evidence is more obvious since one of the settlements where the original coastal settlers were driven after the 15th century is the hill-settlement of Çaykara (Bryer, 1980) where one of the hayat houses in our sample comes from (figure 8).

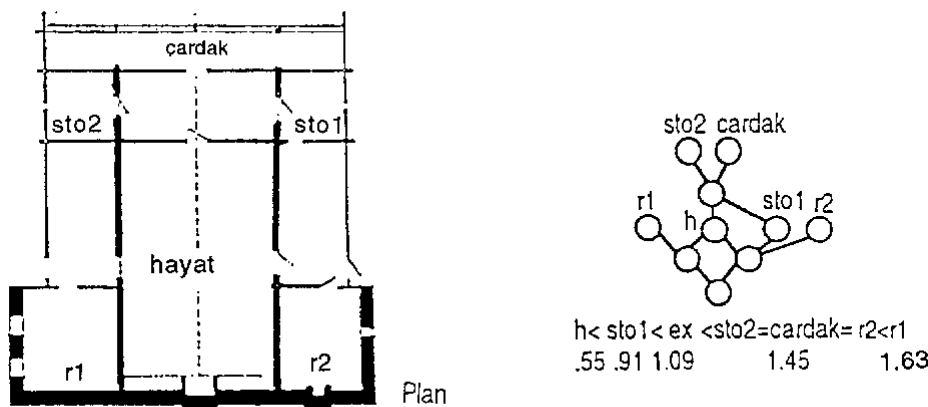


Figure 8. House plan and its corresponding justified graph from Çaykara in Eastern Black Sea Region

In order to be able to relate the cooking and the living integrating spatial themes to the wider historical developments more specifically, these different spatial themes need to be studied further to investigate the ways in which they order the domestic interior to construct a living complex to support different lifestyles. Therefore it needs to be investigated how far the production of living-integrating houses was actively involved in social changes happening during the processes of settlement which was not sudden but through stages each of which required a quite different rhythm of life (Bates, 1974; Cribb, 1991; Kolars, 1963). Likewise, we need to investigate how different socio-cultural ideas of some local societies have been built into the space patterning of cooking-integrating houses, and how far their different types of social structure required different kinds of spatial organisation in order to be that type of society. Only these investigations provide a basis for speculations related to the historical context. Therefore, the present research set the conclusions obtained as an hypothesis to be tested in further research by exploring the social significance of different spatial themes.

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