Social dimensions in the architecture of Neolithic Çatalhöyük

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Introduction

Çatalhöyük[1] is an important symbol of the Neolithic in Anatolia. Within the buildings of this settlement spectacular 'art' was found, and beneath the floors of these buildings elaborately furnished burials were unearthed. Among the characteristics of the settlement the absence of streets constitutes a central element for understanding this period. Despite the unique and well known remains found at the site, its architecture has not been studied systematically. The buildings remain to be distinguished. The distinction between shrines and non-shrines has not been fully scrutinised. Most importantly, the appearance of public space at the site has not been studied. In this paper an analysis of the architecture of Çatalhöyük levels VIII - II is presented. A method of distinguishing buildings is proposed. On that basis the analysis focuses on three themes. The first theme is the variability of features associated with the buildings, and the feasibility of the shrines / non-shrines distinction. It is argued that some buildings did indeed function as ritual centres for the inhabitants of other buildings, although they also had domestic functions. Secondly access patterns, and how they relate to the social organisation of the inhabitants of Çatalhöyük, are investigated. It will be argued that a major shift in that social organisation occurred from level V onwards. Third, building continuity and how it relates to the meaning of buildings is discussed. Again a major shift is shown to occur from level V onwards.

When Mellaart began excavating at Çatalhöyük in 1961 he could hardly have anticipated how spectacular his results would be. Although earlier in his career he had already demonstrated that the Early Neolithic period was present in central Anatolia, at his excavations at Hacılar (Mellaart 1970), the finds of the excavations at Çatalhöyük took the scientific community by surprise (Todd 1976: 3; Hodder 1996a: 3; Last 1998: 356). Buildings were found in extraordinary conditions of preservation, with walls sometimes standing up to 2m (Mellaart 1964: 47-8). In these buildings fantastic paintings were found on the walls displaying a multitude of motifs, ranging from geometric patterns to scenes of people associated with animals. Equally spectacular were large sculptures fixed to the walls, often animal heads with life-size horns, and cut-out reliefs. Set in the walls, and in benches, cattle horns were fixed in varying compositions.

These kinds of features were unknown in the Neolithic of the Near East at that time, and they aroused a lot of interest (see for instance Dietrich 1967; Omura 1984; De Jesus 1985; Hodder 1987; Mellaart 1989; Forest 1993; Last 1998). Other categories of finds at Çatalhöyük, such as the burials (Ferembach 1972; 1982; Angel 1971; Macqueen 1978; Hamilton 1996), the textiles (Burnham 1965; Ryder 1965; Vogelsang-Eastwood 1988), and the faunal remains (Perkins 1969; Ducos 1988), have also been studied more or less intensively. In addition, Mellaart's excavations have provided the incentive for a major new excavation project at the site since 1993, directed by Hodder (Hodder 1996a: 2; Last 1998: 356). Given all these efforts it is surprising to find that the architecture of Çatalhöyük has not been studied systematically.

Although the architecture is discussed in a number of publications (Mellaart 1962; 1963; 1964; 1966; 1967; Todd 1976; Hodder 1987; 1990) such matters as building continuity, their variability, and building locations have hardly been considered. Only two short articles have been published on building variability and building continuity respectively (Heinrich, Seidl 1969; Ritchey 1996), and they can be regarded as introductions to the subject.

Despite this neglect the architecture of the site constitutes a very interesting and important source of information for three reasons. First, exceptionally large surfaces were excavated, and extensive plans were

[1] Several spellings are used for Çatalhöyük ('Çatal Hüyük' and 'Çatal Höyük' are common). The one used in this paper is currently becoming increasingly common. It is used both by the present excavators, and in TAY (Harmankaya et al 1997). Çatalhöyük designates Çatalhöyük East (37N06'; 32E08').

obtained at the site (between ca 505m^2 and 2089m^2, see table 1). Large plans were also obtained at other Neolithic sites in the region, such as Aceramic Neolithic Aşıklıhöyük (ca 5200m^2, see Esin 1998; 1999), but in its specific period, ca 7200-6200 BC cal[2], the (Early) Ceramic Neolithic, the large exposures at Çatalhöyük are without parallel in the Konya region. Second, at Çatalhöyük a number of levels have been excavated in the same area, enabling us to compare different levels with each other. Because these levels are situated above one another we can analyse them diachronically. That combination, of large plans of many levels situated above one another, is a situation not found at other Neolithic sites in central Turkey. Third, the architecture at Çatalhöyük features an interesting development from an early settlement form in which no 'public space' exists (levels VII, VIB, VIA), and a later form, which does appear to have public space (levels V-II).

Functionalism and Çatalhöyük architecture

Functional explanations for the dense building pattern of the early levels (VII, VI and VIA) have been proposed. It was suggested that the settlement was built in this way as a defensive measure against either people or floods (Mellaart 1964: 40; 1967: 68-9; Todd 1976: 25). With regard to the threat posed by people one is left with the question; *who* could have threatened the inhabitants of Çatalhöyük? The site measures 17ha, and even if only part of it was occupied at one point in time the population probably numbered in the thousands rather than the hundreds[3]. Remarkably the earliest level VIII at Çatalhöyük seems to have been much more accessible and open than later levels. Also later levels V-II are open settlements. Was the enemy threat not present during these levels?

Another point is that a defensive system is located in most cases on the edge of a settlement only (Hacılar IIA/B constitutes an example of such a system, see Mellaart 1970: figs 72-3). It is not clear from the evidence that the area excavated by Mellaart was located on the edge of the settlement, and even if it were, a single blank wall of buildings would have sufficed as a defensive measure, instead of the dense clustering of buildings we can observe on the plans. In the North Area plan, published by the present excavators (see Matthews 1996), the same kind of dense building pattern can be observed as in the Mellaart Area, suggesting that such a pattern was not a fringe feature, but the normal way of building at the site.

In the case of floods the argument likewise seems to be unconvincing. Level VIII buildings (the oldest level of which a plan with a number of buildings is available) are situated at least 2.5m above the level of the present plain, and the Neolithic plain was certainly at a lower elevation (Roberts 1982: 345). Buildings of later levels are situated at higher elevations, up to 11.5m above the plain level. Floods of more than 2.5m seem an unlikely phenomenon on the large flat plain that constitutes the Konya basin. In addition, the suitability of mudbrick as a material resistant to flooding is highly questionable (Mellaart 1967: 68).

Çatalhöyük architecture as a social entity

Rather than presenting us with a static picture, Çatalhöyük architecture features an agglutinative development that seems to occur from a relatively open settlement in level VIII to a densely built settlement in levels VII, VIB, and VIA (figs 1-4). Later on, in levels V, IV, III and II, open space becomes more dominant and streets appear (figs 5-8). The early part of the development (the agglutination in levels VIII to VIB) has been explained by some authors as a social development. Heinrich and Seidl (1969) have argued for a model in which a small group of initial settlers built the first buildings, that later became the foci of those descended from the original inhabitants. These original buildings acted as 'Stammhäuser der Sippen', around which later buildings clustered, eventually resulting in the dense building pattern we are familiar with at Çatalhöyük (Heinrich, Seidl 1969: 118). Hodder has recently proposed a similar view.

> we might initially anticipate a small group of people on the alluvial fan. As families grow new houses are built using earlier walls. The concern is to stay close to the ancestors and the households gods with which they are associated. Older houses remain so new ones have to be fitted around and between them. The end result is an agglomeration held together by social and religious ties. (1996b: 48, see also Hodder 1998).

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[2] Çatalhöyük is dated roughly between 7200-6200 BC cal (compare Thissen 2000: 82). The calibrations were run with the CALIB 4.2 programme of the Quarternary Isotope Radiocarbon HTML programme designed by M Stuiver and P Riemer. The data fed into the CALIB 4.2 are published by Mellaart (1964: 116), and seem to be confirmed by thermonuliscence dates obtained recently (Parish 1996: 343-4).

[3] In the area excavated by Mellaart, which is about 1/30 of the site, as many as 41 buildings were found. If we take four persons per building (an absolute minimum I would say; see the section on building inhabitants further in the text) we have a population of ca 160 persons in this part of the site alone. If only half of the site was inhabited at one point in time (compare Todd 1976: 73-4) a number of about 2400 would be reasonable. Mellaart mentions 'a conservative estimate' of 5000-6000 people (1975: 99). The plan of the North Area presented by Matthews (1996) is as densely occupied as the area excavated by Mellaart, indicating that the latter was probably not exceptional with regard to its building density.

LEVEL	EXCAVATED AREA	OPEN SPACE	NUMBER OF BUILDINGS	AVERAGE BUILDING SIZE
VIII	525m^2	128m^2 (24%)	11	36m^2
VII	1811m^2	278m^2 (15%)	35	44m^2
VIB	2089m^2	346m^2 (17%)	41	43m^2
VIA	1945m^2	611m^2 (31%)	38	35m^2
V	1670m^2	531m^2 (32%)	22	52m^2
IV	1043m^2	273m^2 (26%)	13	59m^2
III	603m^2	131m^2 (22%)	9	52m^2
II	505m^2	97m^2 (19%)	9	45m^2

Table 1. General characteristics of levels VIII-II at Çatalhöyük

According to this view deliberate choices were made by those who constructed the buildings at Çatalhöyük. These choices were determined by social conventions and influenced by social strategies. The choices, and thus the social conventions and strategies underlying them, can be studied by analysing the architecture. An explanation of the specific settlement form of Çatalhöyük cannot be successful in my perspective if that social dimension is not taken into account. Buildings are not simply tools that we design and use, they partly constitute the fabric of society (see, among others, Hillier, Hanson 1984; Donley-Reid 1990; Chapman 1990; Sanders 1990; Parker Pearson, Richards 1994).

Central subject & limitations of the data

The appearance of 'public space' is the central subject of this paper. What did the specific settlement form of the early Çatalhöyük levels mean to its inhabitants, and why did they reject or adapt it later on? The question will be approached by focussing on three themes; first, the variability of features associated with buildings, second, how buildings were accessed, and third, building continuity. The aim of these approaches will be to clarify some of the diachronic developments that characterise the Çatalhöyük sequence.

Two problems inherent in our data must be mentioned at the outset. Although it has been stated that exceptionally large plans are available of Çatalhöyük we must consider their representativeness. Even in the case of the large exposures of levels VIB and VIA of ca 2000m^2 the excavated area compromises no more than a mere 1/30 of the entire site (Todd 1976: 17). We cannot be sure that this excavated part is representative of the rest of the settlement, even though the plan of the North Area, obtained by surface scraping by the present excavators, located on the northern slope of the mound, has characteristics that are very similar to the area excavated by Mellaart (Matthews 1996: 82, fig 7.3). At Aceramic Neolithic Aşıklıhöyük a central building complex was found among otherwise more or less identical buildings (Esin 1999: 124, fig 1.31). In principle such a central building complex could also have existed at Çatalhöyük[4]. It should also be realised that the developments that occur in the area excavated by Mellaart are not necessarily representative for the whole settlement. Different parts of the settlement may have developed along their own specific trajectories during the course of their existence. Despite these limitations this paper is based upon the assumption that the building pattern and the developments through time in that pattern in the part of the settlement excavated by Mellaart do reflect general developments occuring at Çatalhöyük.

A second limitation concerns the stratigraphy of the site, which is not unproblematic. A final publication of the site was never published, and consequently it is difficult to judge the validity of stratigraphical divisions. However, a re-examination of the sections in the area excavated by Mellaart has confirmed his divisions (Matthews, Farid 1996: 276-89). If the broad outline of the stratigraphy can be accepted, problematic details nevertheless remain. For instance, in the *Anatolian Studies* reports buildings were often reassigned to other building levels (Mellaart 1964: 40; 1966:160). The same absolute elevations for floor levels are often given for successive buildings of different levels. Similar elevations for levels VIA and VIB are given for buildings S 61, 66, S 45, S 44, S 14, S 8, 2, S 5 and 4 (compare Mellaart 1964: figs 1-2). Similar elevations given for levels VIB and VII are given for buildings VII-24/25 / VIB-Z8/25, and VII-26 / VIB-Z9/26 (compare Mellaart 1964: figs 11, 2, and fig 3 of this paper for Z numbers, which were added in cases were original designations could not be found, or occurred twice). Another stratigraphic problem concerns the nature of the level VIA – level V transition, which will be dealt with later on.

[4] There is one indication that this might not have been the case. Whereas at sites like Aşıklıhöyük and Çayönü a more or less clear division between 'normal' buildings, with few ritual features, and architecturally distinct 'public buildings', with many ritual features, can be made, such a division seems absent at Çatalhöyük (compare Özdoğan, Özdoğan 1998).

Selection of the data

The first step in the analysis was to make a selection of what was to be studied. Levels VIII - II as excavated by Mellaart were chosen on the basis of three criteria. First, these levels, unlike earlier and later excavated levels, constitute large exposures. Second, because these levels have been excavated their plans are both reliable and accurate. It can be assumed that all buildings of one level were more or less contemporaneous. Also data regarding the features found in the buildings are available. Third, the stratigraphic position of the levels is more or less clear. In relation to their stratigraphy, it is a great advantage for the study of diachronical developments that these plans derive from the same area. Some buildings reappear in as many as four levels (see section on continuity). The large exposure obtained by the present Çatalhöyük project at the North Area with surface scraping (Matthews 1996) is not included in this study, as it is deficient with regard to the second and third criteria.

Characteristics of the buildings of Çatalhöyük

The settlements of the different levels at Çatalhöyük can be characterised as agglomerations of essentially similar buildings. These buildings vary considerably in size and associated features, but are nonetheless similar in most respects. The typical building has been described by Mellaart (1963: 51; 1967: 56-63). The walls consisted of mud bricks and were approximately 30cm thick. These walls were plastered repeatedly with white clay of which up to 100 layers have been found (Mellaart 1964: 64; Matthews 1999). They carried a flat roof resting on large juniper beams, on which twigs and reeds were topped by mud.

The buildings were accessed via the roof, and entered by way of a ladder[5]. The entrance to the ladder was probably sheltered by some kind of construction, to keep out rain, snow and other climatic extremes. Beneath the ladder entrance (often located in the south), 'kitchen' activities dominated, as attested by the presence of hearths and ovens. Micro-debitage analysis indicates that this part of the house was less clean than the other parts (Matthews 1997). The ladder entrance would simultaneously act as a chimney. Opposite the 'kitchen', the platforms are located (mostly along the east and north walls)[6]. These platforms probably served such mundane functions as sitting, eating and sleeping. However, they are also associated with a more ritual dimension. It is beneath the platforms that burials were found, perhaps referring to an analogy between those who slept temporarily and those who 'slept' permanently. It is above the platforms that paintings, mouldings and cut-out reliefs were most often found. Bucrania are most often found at the separation of different platforms. Thus the buildings are characterised by a strong division between the domestic kitchen part, and the more symbolically charged sleeping platforms (see Hodder 1987).

Despite these similarities that can be found in more or less every building, there are also many differences. These pertain to such matters as the number of rooms, the size of a building, its location and its associated features, such as ovens, hearths, platforms, bins, pillars, posts, mouldings, paintings and burials (see Ritchey 1996). To understand the architecture of Çatalhöyük these differences are of major importance. Essential to a study of variation is the definition of the buildings. On a site without streets distinguishing buildings from one another is not necessarily straightforward. The method used by Mellaart was to assign a number to each room. Little attempt was undertaken to associate rooms with each other, and to define the buildings. Mellaart stated,

> in the absence of communicating doorways one obviously cannot decide whether it is one or numerous buildings (1963: 56).

Instead, Mellaart focuses on the typical building plan (1962: 46-7; 1964: 52; 1967: 58-63), an approach also taken by Hodder (1987). Ritchey (1996) in his re-analysis of building complexity does not distinguish building units either, much to the detriment of his analysis. Thus for the present analysis it is essential to distinguish the buildings at Çatalhöyük in a clear and consistent way.

[5] This has been amply demonstrated. First, buildings were preserved up to 2m and more (Mellaart 1964: 47-8), without a trace of doorways in the walls. Second, diagonal imprints in the wall plaster were found at the places where the ladder stood (Mellaart 1963: pl XVI-b). Third, charred remains of the bases of ladders were found (Mellaart 1963: 75; Cessford 1999). In the later levels IV, III and II, and oddly, in level VIII, examples of doors are present, however.

[6] It is also in this part of the house that posts were often found. Heinrich and Seidl have pointed to the fact that posts are usually present on one side of the buildings only, mostly on the same side as the platforms (1969: 113). These posts supported a corbelling inwards of the roofs, that has been found by Mellaart (1963: 60). It is possible that this corbelling inwards served as a gutter to drain rain water from the roofs of neighbouring houses at higher elevations. Such a suggestion is supported by the difference in floor elevations of adjacent buildings; generally the elevations of floors of buildings with neighbouring walls with posts are higher than those of the unit to which the posts belong. Of course the basic assumption in such a hypothesis is that the height interval between floor and roof of the buildings was more or less the same for all buildings.

Defining buildings

A simple definition was used to distinguish buildings; a building consists of all spaces that are beneath one roof. At Çatalhöyük this definition can be applied easily because party walls were not used. Only in the later levels (II and III) is it sometimes difficult to define the buildings in this way (e.g. in the case of SA1, A2, A3 and B4 of level II), which is partly due to the fact that the published plans of these levels are comparatively less detailed. In figs 1-8 the buildings as distinguished are presented. The walls of the buildings are given a distinct pattern to separate them from the surrounding buildings. The general picture of the building units distinguished in such a manner was remarkably consistent and homogeneous[7]. Buildings were generally of approximately the same dimensions (between ca 30 and 52m^2, see table 1). In some cases very small buildings are present, for instance Z9 and Z10 in level V (fig 5), or Z1 and 33 in level VIA (fig 4) of which it can be doubted that they were independent units. These small buildings could have functioned as annexes to some larger building nearby, but it is impossible to link them to one or another. In other cases buildings with different roof levels were obviously linked, and to separate these buildings seems arbitrary. Two examples are S4 and Z7 in level V (fig 5) and S7 and S14 in level VIA (fig 4).

Building sizes

The buildings distinguished in this way feature a development of gradually increasing average building sizes from levels VIII to II, with a temporary setback in level VIA. Generally speaking the buildings of levels VIII–VIA are significantly smaller than those of levels V-II (see table 1). In levels VIII and VII buildings are generally of a modest size of about 40m^2 but some larger buildings are present in level VII, such as 17/19/20 (ca 85m^2), S29/S31/Z6 (ca 100m^2) and 2/12/16 (ca 75m^2). Level VIB is subsequently characterised by the appearance of more of these large buildings, with two buildings that are larger than 100m^2 (18/34/57/58/59 and S7/11/ 13/S14/S15/ 16/17), and five buildings with sizes varying between ca 60 and 85m^2 (24/25/53, S29/31, Z8, S12/6 and S61). In level VIA many of these large buildings were abandoned or repartitioned into smaller units. In this level the average building size is approximately 40m^2, as in the early levels. The contrast between levels VIB and VIA is a clear one, but its meaning is difficult to ascertain. The buildings in later levels V-II are generally larger than those of level VIA, with average building size greater than 45m^2. This may be partly due to the more open nature of these later levels; expanding a building would have been relatively easy. On the other hand the larger sizes of the buildings of levels V-II may also be caused by the fact that the plans of these are less detailed; because of which it was not in all cases possible to distinguish buildings clearly. Examples of buildings which are probably a combination of several buildings are buildings 14/15/16/18/24/Z3/Z4 of level V (fig 5) and building 12/S8/9/11 of level III (fig 7).

Building inhabitants

It is tempting to speculate on the form of the group of people associated with these buildings. A reconstruction of such a household group is fraught with theoretical difficulties, however. For instance, a household group is not necessarily connected to one building only (Wilk, Rathje 1982: 620-1), and the remains of buildings are not direct reflections of households. Moreover, households are not static units but develop dynamically (Allison 1999: 2). To study household groups and activities accurate and detailed data are essential, data which are presently not at my disposal. The present project at Çatalhöyük is obtaining the kind of precise data that are needed, and the first publications are starting to appear (Hodder 1999). In the absence of such data we can try to estimate the number of people who slept in the buildings. At Çatalhöyük fixed furnishings found provide us with a unique clue for reconstructing the number of beds. The platforms that have been found in the rooms are considered to have been used as sleeping platforms. Two types of platforms can be roughly distinguished; a large and a small type. The large platforms generally measure about 2.60 by 1.30m, the small platforms measure about 1.30 by 1.30m. Buildings generally seem to have at least one large and one small platform, although there are many cases of buildings with either more platforms, or no platforms at all. Venturing a hypothesis, we might suggest that the large platforms were used to sleep upon by (up to two) adults or adolescents, while the smaller platforms might have been used by (up to two or three) children. On that basis it could be suggested that the most common household group would consist of two adults with two children, but both larger and smaller households would have existed. This hypothesis remains to be investigated.

[7] To check the validity of the building units the floor elevations within the units can be used. Ideally the variation of these within a building would not exceed ca 40cm. In many cases it does, however (e.g. S8 and 28 of level VIB, among many other examples). My explanation for this is that the elevations given by Mellaart (see Mellaart 1962: figs 3-6; 1963: fig 5; 1964: figs 1, 2, 11; 1966: figs 1-3) cannot be taken too seriously, as the same absolute elevations are often given for successive buildings of different levels (see the section on data limitations).

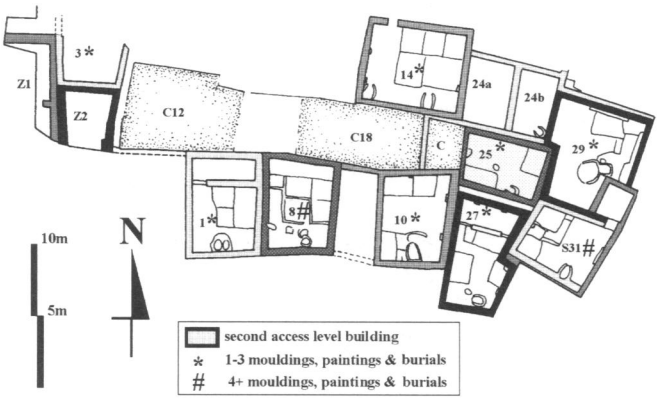

Fig 1. Level VIII

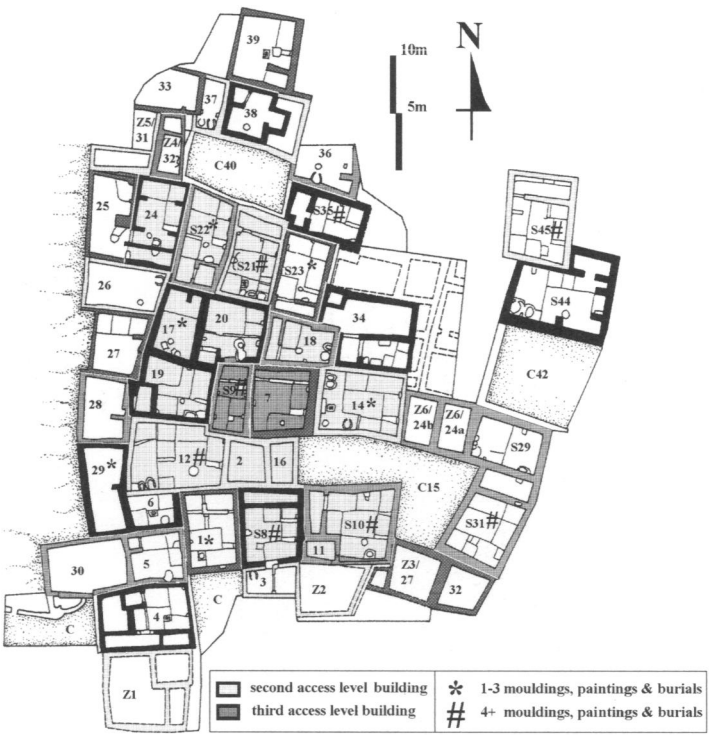

Fig 2. Level VII

Fig 3. Level VIB

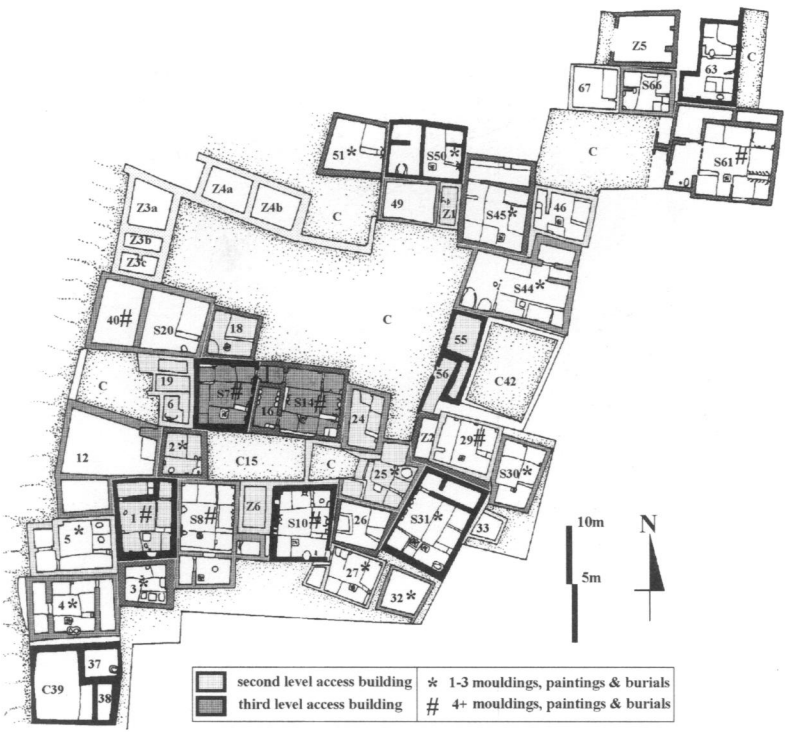

Fig 4. Level VIA

Fig 5. Level V

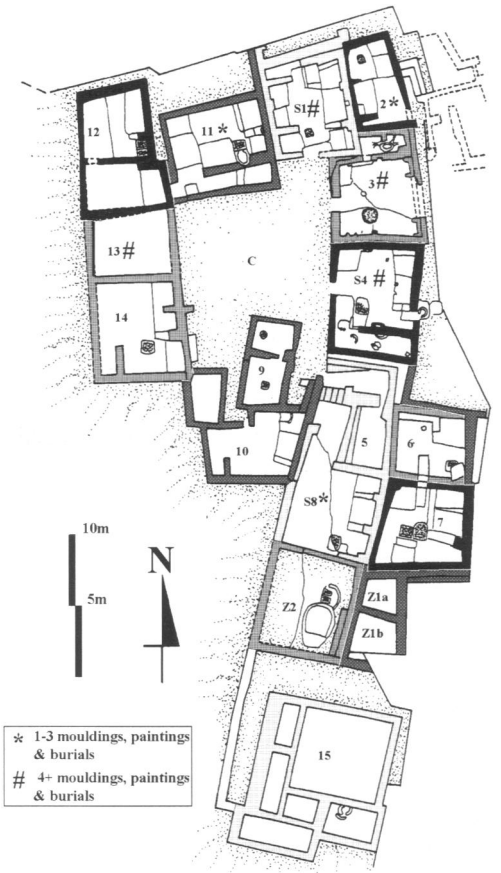

Fig 6. Level IV

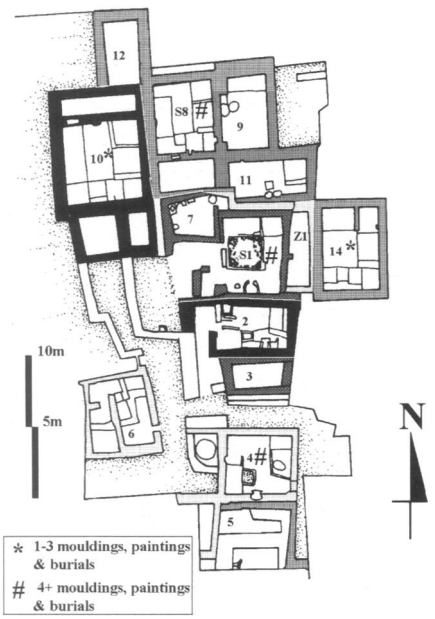

Fig 7. Level III

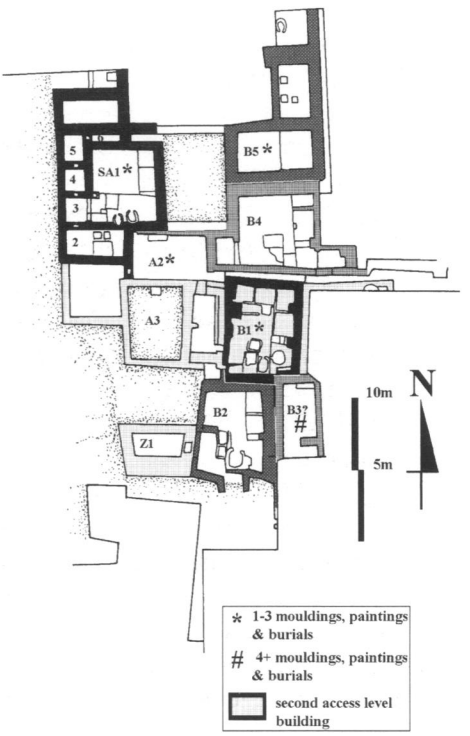

Fig 8. Level II

Measuring building variability

In order to monitor the variation between buildings a database was created. For each level and each building a number of variables were fed into the database. The variables recorded were the number of rooms, ovens, hearths, pillars, posts, platforms, bins, mouldings and burials. Paintings were recorded as either present or not present, as paintings can, by their nature, not be counted as discrete units. The information concerning the number of rooms, ovens, hearths, pillars, posts, platforms and bins was obtained from the plans of the various levels, and by comparison with the data published by Ritchey (1996: 8-10). The plans are of sufficient accuracy in details to permit such a procedure. The information thus obtained will be used to study variation in the furnishings of the buildings, and that variation will be contrasted with other sets of information, such as whether the building is also occupied in earlier or later levels, and how it is located.

The information concerning the presence of mouldings (cut-out reliefs, animal sculptures, goddess figures, bucrania), paintings and burials was more difficult to obtain. This kind of information is either not, or insufficiently, represented on the plans. Information concerning the presence of mouldings and paintings has been published in tables by Ritchey (1996) and by Mellaart (1967: 81). Both of these tables are based on the information in the preliminary reports and in the 1967 book. Comparing the two tables, one finds that considerable discrepancies exist, however. Of the levels studied by me (VIII-II) 18 buildings listed by Mellaart as containing mouldings or paintings were not present in Ritchey's table. On the other hand, Ritchey's table contains 26 buildings not present in Mellaart's table. This is partly caused by the fact that some of the buildings mentioned in the preliminary reports were subsequently renamed, or reassigned to another building level. It is often not possible to find out what the later name of a mentioned building should be. Thus level VI buildings are discussed in the early reports (Mellaart 1962; 1963), but it is not clear later on whether paintings, mouldings and burials should be assigned to level VIA or level VIB. Also it is often unclear how buildings described with an Area A number (without plan) should be connected with later plans, on which Area A buildings were renumbered to E Area numbers. For example, compare descriptions of buildings A VI 4, A VI 5 and A VI 6 (Mellaart 1963: 54), with the plans of level VIA and VIB (Mellaart 1964: 39-40). Consequently the data concerning mouldings and paintings are not considered to be completely accurate or complete. However, in this paper I am concerned with global trends of the plans and not with a detailed analysis of each individual building. While the data are not as accurate as one would like, nonetheless I feel they are reliable enough for our purposes.

Information was gathered as follows. Concerning mouldings it was decided to quantify the amount, in order to be able to distinguish between buildings with many and those with few mouldings. This is possible because mouldings can be considered as discrete units. By contrast paintings often cannot be considered as discrete units, and it was merely recorded whether they were present (value 1) or not present (value 0). The mouldings and paintings will be considered together with the burials as a measure of the ritual elaboration of a building.

The data concerning the burials were also problematic. Mellaart has not published a table with the amount of burials found in each building, and in his preliminary reports only occasional mention is made of burials found beneath buildings, mostly without quantification. The skeletons have been studied by Angel (1971) and Ferembach (1972; 1982). Ferembach received 356 skeletons from all four campaigns, and Angel received 275 skeletons of the first three campaigns, in which 400 skeletons were reported to be found, a loss of almost 40% (Angel 1971: 77). It is not clear how many of the skeletons were not analysed, but the total of 600 mentioned by Hamilton (1996: 244) seems unrealistically high to me, although a certain loss certainly occurred. In addition many skeletons were without a label naming the building in which they were found, or in other cases the labels were read differently by Angel and Ferembach. Hamilton has re-analysed the situation, working with the original notes of both Angel and Ferembach. My data are derived from the numbers given by her (1996: 254-6). The data set of the burials is thus, as with the mouldings and paintings, incomplete. It is assumed that the data we do have are accurate, and sufficient for this analysis, though not ideal. The numbers of burials per building were simply fed into the database, except in the case of level VIA and VIB. Many burials were registered as simply belonging to level VI. In the case of a building that existed both in level VIA and VIB it was impossible to determine whether the burials belonged to level VIA or VIB. That being the case the number of burials was simply divided by two and assigned to the specific level VIA and VIB buildings (thus 0.5 burials also occur).

Shrines and non-shrines

Central to the study of variation between the different buildings and levels is the distinction between shrines and houses as proposed by Mellaart. Confronted with the spectacular finds of wall paintings, sculptures, bucrania, figurines and cut-out reliefs Mellaart introduced the concept of 'shrine' for buildings with large amounts of these 'cultic' objects. The concept of shrine implies that Mellaart interpreted these building as having

primarily a religious function. To distinguish shrines Mellaart (1967: 78) applied the following criteria: (1) the presence of wall paintings; (2) plaster reliefs of deities, animals or animal heads; (3) benches with horns and bull pillars; (4) cult statuettes found in the room or 'ex-voto' figures stuck into the wall; (5) human skulls set up on platforms. He also concedes that the distinction between shrines and houses is often difficult (1967: 78)[8].

Mellaart's concept of shrines has been criticised in two ways. The first critique focuses on the distinction between shrines and non-shrines. It has been argued that the division is blurry and arbitrary (Heinrich, Seidl 1969: 116; Hodder 1996a: 6; Hamilton 1996: 226-7). I agree that the division between shrines and non-shrines is a blurry one, but that alone does not discredit it. Many distinctions crucial to us are blurry (for example the distinction between public and private), and nonetheless structure our lives. In addition, there are very real differences between the buildings at Çatalhöyük, especially with regard to burials, and it would be a mistake to ignore them.

The second critique of Mellaart's concept of shrines concerns the concept itself. Shrine is a modern concept suggesting that a space was exclusively used for religious purposes (see Hodder 1987: 44). In Neolithic society such matters as 'domestic' and 'religious' were probably not separated in the same way as in our society. The concept 'shrine' suggests a kind of Neolithic temple or church. A quick inspection of the shrines at Çatalhöyük informs us that they are very much like the non-shrines in their arrangements and inventory. Thus 'shrine' does not seem to be an adequate concept (Heinrich, Seidl 1969: 116; Hodder 1999: 179). Instead Heinrich and Seidl have argued that they are 'Stammhäuser der Sippen' (1969: 118), arguing that they acted as central buildings that embodied group identities.

If we take the burials, mouldings and paintings to be connected with ritual behaviour, then their presence can be used as an indicator of the amount of ritual behaviour connected with a specific building. The variation between different buildings can be used to assess their relative importance. The combined data of burials, mouldings and paintings were used to classify the buildings. Buildings with a combined total of four or more were marked with the symbol # on the plans (figs 1-8). Buildings with a combined total of one to three were marked with the symbol * (see figs 1-8). In such a classification the paintings are underrepresented, because 1 is the maximum value. That cannot be avoided, as the paintings cannot be counted as discrete units.

The data point to a division into a few buildings with a lot of burials and mouldings, and a larger group of buildings with few or none of these features. It will be demonstrated that a distinction between more ordinary and special buildings can be made. I have made this distinction on the basis of the amount of ritual features present. Somewhat arbitrarily a division was made between buildings with four or more ritual features (burials, paintings, mouldings, marked by the symbol # on the plans), and those with less. Those buildings with four or more ritual features were designated 'ritually elaborate buildings' (or REB). This division between ritually elaborate buildings and normal buildings is arbitrary; other divisions (e.g. a combined total of 5, 6, 7, etc.) are conceivable and equally valid. The point is not that a building with four burials / mouldings / paintings is much more important than a building with three such features, but that the designation 'ritually elaborate building' is a heuristic device for the study of variation.

Comparing ritually elaborate buildings with others it is clear that some buildings contain a lot of burials and mouldings, whereas others contain none, or only a few. Mellaart's shrines were not always among the buildings containing the most ritual features. Of the total of 51 shrines in the levels studied in this paper 26 have four or more ritual features (51%), 23 have between three and one ritual feature (45%), and two have none (4%). In other words, Mellaart's shrines are not always buildings containing the largest amount of ritual features as defined in the present analysis. One of the reasons for this difference is that the burials were not regarded to be indicators of shrines by Mellaart, and a certain difference is bound to occur because of that. Another reason is that paintings are underrepresented, as they can only amount to a value of 1. Thirteen buildings with four or more ritual features were recorded that were not defined as shrines by Mellaart.

In the analysis of the buildings different kinds of data were separated. The buildings that contain the largest amount of ritual features are not necessarily the largest in size or the ones with the largest inventory of furnishings such as ovens, platforms, bins, pillars etc. This is important because it shows that the amount of ritual features is not simply a function of the overall elaborateness of a building. Table 2 demonstrates that a minority of buildings contained the majority of mouldings and burials.

[8] Mellaart found that such a large proportion of the buildings should be interpreted as shrines that the ratio of shrines versus non-shrines could be as high as 1:2 (1967: 70). On the basis of that ratio Mellaart interpreted the area excavated by him as the priestly quarter of the site (1967: 71). One result of the present project at Çatalhöyük has been to show that on other parts of the site cultic features are also present, thus tending against Mellaart's priestly quarter hypothesis (Matthews 1997; Hodder 1999: 179).

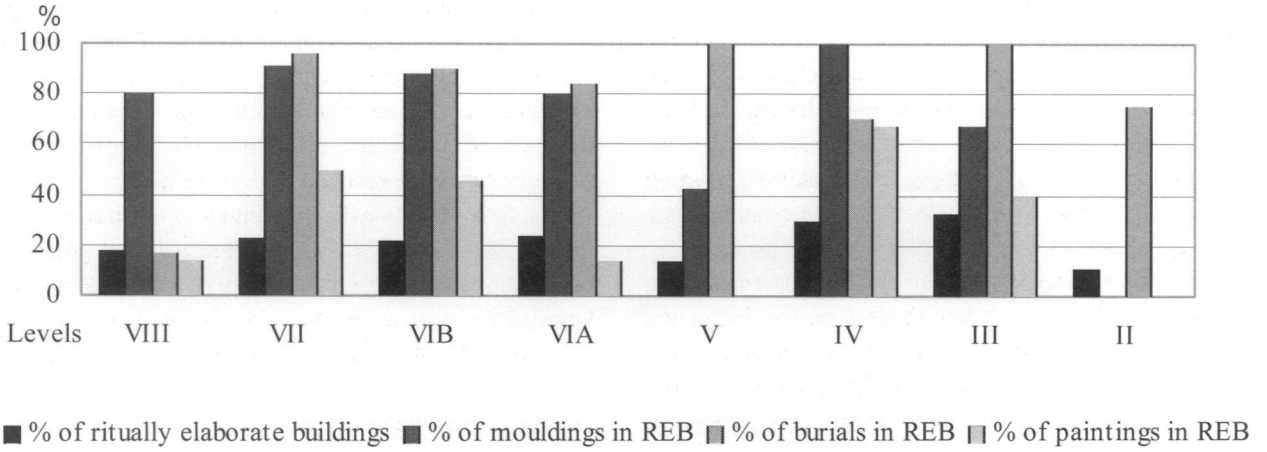

Table 2. Percentages of ritually elaborate buildings, their mouldings, burials and paintings

The ritually elaborate buildings contained 168 out of the 204 mouldings counted (82%), and 272 of the 311 burials (87.5%). The ritually elaborate buildings make up 36 of the total of 157 buildings analysed (23%).

Paintings, on the other hand, were often not associated with the mouldings and burials and occur, it seems, more or less independently. Only 16 out of the total 47 paintings registered occurred in ritually elaborate buildings (34%). It seems paintings were not always connected to ritually elaborate buildings, and could occur in normal buildings as well.

This pattern is reflected in the individual levels. Table 2 shows us that the ratio of ritually elaborate buildings / normal buildings is remarkably consistent at around 20% of the buildings, except in levels IV, III, and II. Of these levels only a few buildings are available, because of which the numbers are less reliable. In all levels except V and II more than 60% of the mouldings were found in the ritually elaborate buildings. In all levels except VIII more than 60% of the burials were found in the ritually elaborate buildings. The same is not the case for paintings, however, the presence of which does not seem to be associated with the ritually elaborate buildings. Based on the fact that a minority of buildings contains the large majority of burials and mouldings we can deduce that ritually elaborate buildings were important in all levels studied.

The ritually elaborate buildings were probably important for groups larger than those inhabiting the buildings. It would be implausible to suggest that only the inhabitants of those buildings containing burials and mouldings performed the rituals of burials and those with which the mouldings were connected. Instead it seems that certain ritually elaborate buildings containing a lot of burials and mouldings might have been important also for the inhabitants of other buildings, and it indicates that others were probably linked to these buildings as well. The exact nature of such a link, and the kind of group involved in it is, of course, beyond our scope. What is important is that through such gatherings in ritually elaborate buildings a bond between those involved might have been created. In such a view ritually elaborate buildings might have been places where social identities were (re)created.

Building accessibility

In the levels VII-VIA a choice was made not to create a public domain. This choice was impractical, and the inhabitants of the neighbourhood must have been hindered considerably in locomotion and transportation of goods to and from their houses. In the earlier levels at Çatalhöyük buildings were built closely together. Each building had its roof at a distinct elevation, assuming that the interval between floor and roof is more or less the same for all buildings (these floor elevations might vary by as much as 3m for adjacent buildings of a level, for instance in the case of buildings 36 and S12/6 of level VIB, see Mellaart 1964: fig 2). Thus the roofs of the neighbourhood presented a fragmented agglomeration of distinct spaces. Many ladders would have been ascended or descended to approach a building that was located centrally. Each roof would have had a ladder entrance that connected it with the building below, probably covered by some kind of structure. On the roof goods were stored and activities would have been performed, as is demonstrated by the find of a collapsed roof with the remains of cattle horns and a hearth lying on top of it (Stevanovic, Tringham 1999). This indicates that these roofs were not 'public' space. Neither were they private areas, because other people were allowed to pass by. The question is who was allowed to do so, and under what conditions? The inhabitants would have been very much aware of each other's movements, and it would have been hard to perform activities unmonitored.

In this section the accessibility of the buildings at Çatalhöyük will be discussed in an investigation of how buildings were reached, and which buildings were located most centrally. A basic methodology for such an analysis is provided by Hillier and Hanson (1984). At Çatalhöyük exceptionally large plans are available, in archaeological terms, combined with a stratigraphy of many levels, that may enable us to study developments rather than presenting a static picture. In addition, an interesting development occurs from the early levels (VII, VIB and VIA) without streets to the later levels (V, IV, III and II) in which streets are present, to some degree. Given these circumstances a spatial investigation seems very appropriate. The repetitive nature of the building methods at Çatalhöyük and the absence of upper storeys are two conditions that would satisfy many of the critics of the Hillier and Hanson method[9].

As is often the case an idea that could work in theory proved to be impractical in reality. The first problem is that we do not have a complete settlement in the plans at Çatalhöyük. The 'limited scale' of the exposures, *as a function of the total size of settlement*, inevitably frustrates our efforts to comprehend Çatalhöyük at the level of settlement. As Mellaart states, we do not even have one complete settlement block (1967: 54), assuming that such discrete settlement blocks did indeed exist, which is not necessarily the case. In that regard it is doubtful whether many of the elegant, but time consuming, methods of Hillier and Hanson would be a useful addition to our analysis. More important is that Hillier and Hanson's method was designed for systems that do have a street system (1984: 95). At Çatalhöyük, of course, such a division is, partly, absent. If we are to use Hillier and Hanson's method it should be modified.

In the end it was decided to work with the plans as we have them, rather than abstracting the access patterns into a kind of tree-graph. Each building and each court was regarded as a unit. 'Depth' (minimally how many spaces have to be passed to reach a certain building) was represented by applying a pattern to the interior of the buildings. Buildings that are directly accessible from the surrounding courts are left unpatterned, buildings that are accessible only via another unit are patterned with dots, and those that are only accessible via two other units are patterned with crosses (see figs 1-8). In the early levels VII-VIA all communications are supposed to have been via the roof, which would involve less locomotion on the vertical plane, except where doors connect the buildings to open spaces, or where a neighbouring roof is not present. Thus in the absence of streets and doors (as is the case in levels VIII, VII, VIB and VIA) the courts are regarded as negative spaces in the access patterns.

Two additional measures will be discussed to characterise the building plans. The first is Hillier and Hanson's 'convex articulation' (1984: 98). In that formula the number of convex spaces (in our case the number of buildings + the number of courts, or the number of units) is divided by the number of buildings. In our case this will not express the convex articulation of the public space, but will give an idea as to how 'open' a level is. I will rename the index 'vacancy index', and divide the number of buildings by the number of buildings + the number of open spaces. If the index approaches 1 there are very few open spaces, if it approaches 0 there are a lot of open spaces. Very large open spaces will be subdivided into convex spaces for the index calculation. On table 5 it can be seen that the value of the vacancy index is high initially, ca 0.8, but in level V a major break occurs, after which the value stabilises at ca 0.56.

The second measure is Hillier and Hanson's 'building-space indexes' (1984: 101) which express how many buildings are accessible through a space (for instance building 27 in level VIII has a building-space index of 3, as it borders on three other buildings, see fig 1). In our case this simply means how many buildings neighbour a certain building.

Level VIII seems to have been an open settlement where the buildings could be accessed directly, although the small exposure could be deceptive. Building 14 seems to have a door, a feature not found in other buildings older than level IV. An interesting exception to the direct accessibility is building 25, the only building that could be approached exclusively via other buildings.

In subsequent levels VII-VIA the plans consist of more or less concentric access patterns. The outer circle consists of buildings that can be directly approached through the surrounding open spaces. A second group of buildings can only be approached via the outer ring of buildings. In levels VII and VIA a third group also exists, that can only be approached via the roofs of two other buildings. This is not the case in level VIB, because of the larger units present.

[9] One of these criticisms is that, when we study the spatial configuration we are studying the initially created conditions whereas buildings may be used in a number ways other than what they were created for. A second critique applies to the fact that we cannot adequately apply an access analysis if we lack the information about the upper storeys (Brown 1990).

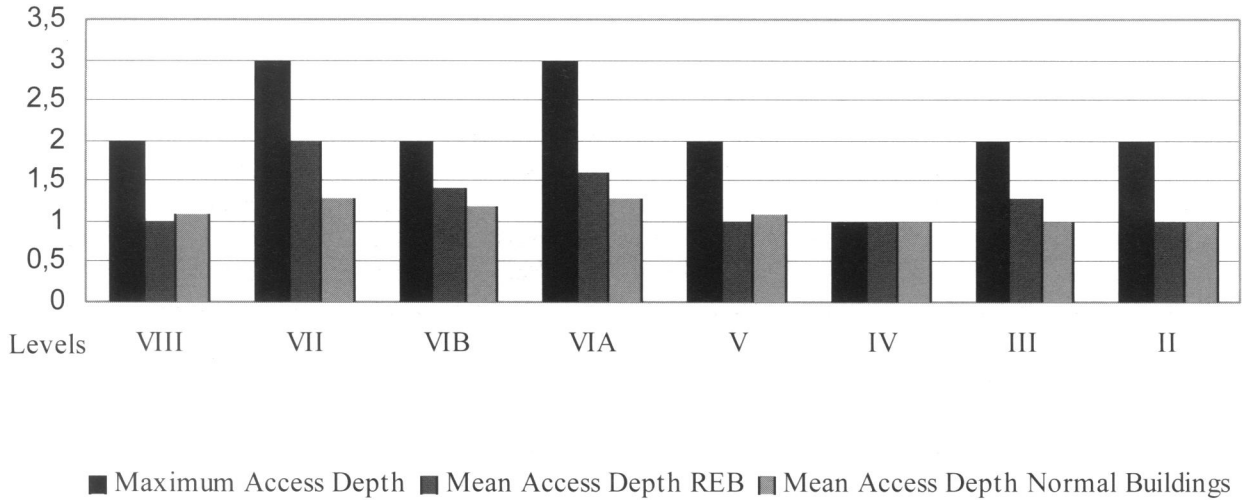

Table 3. Access depths

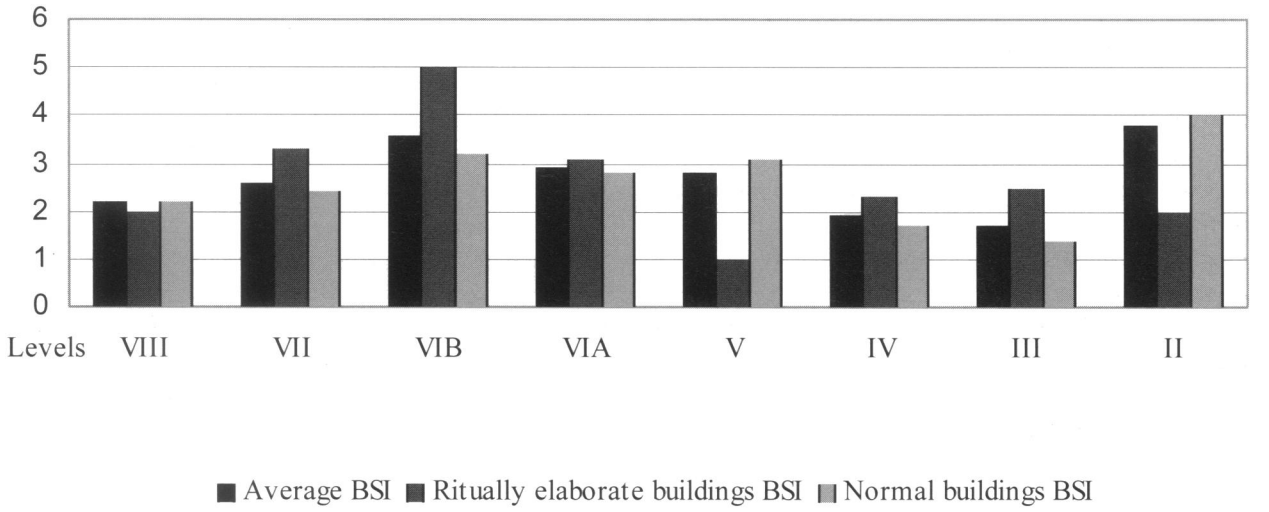

Table 4. BSI indexes

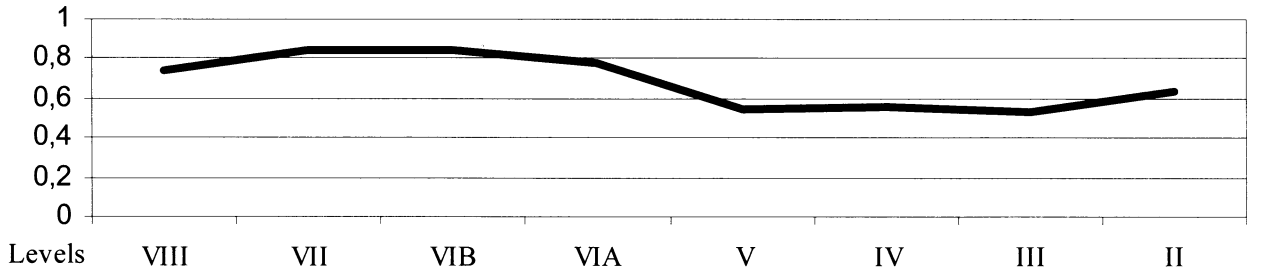

Table 5. Vacancy index

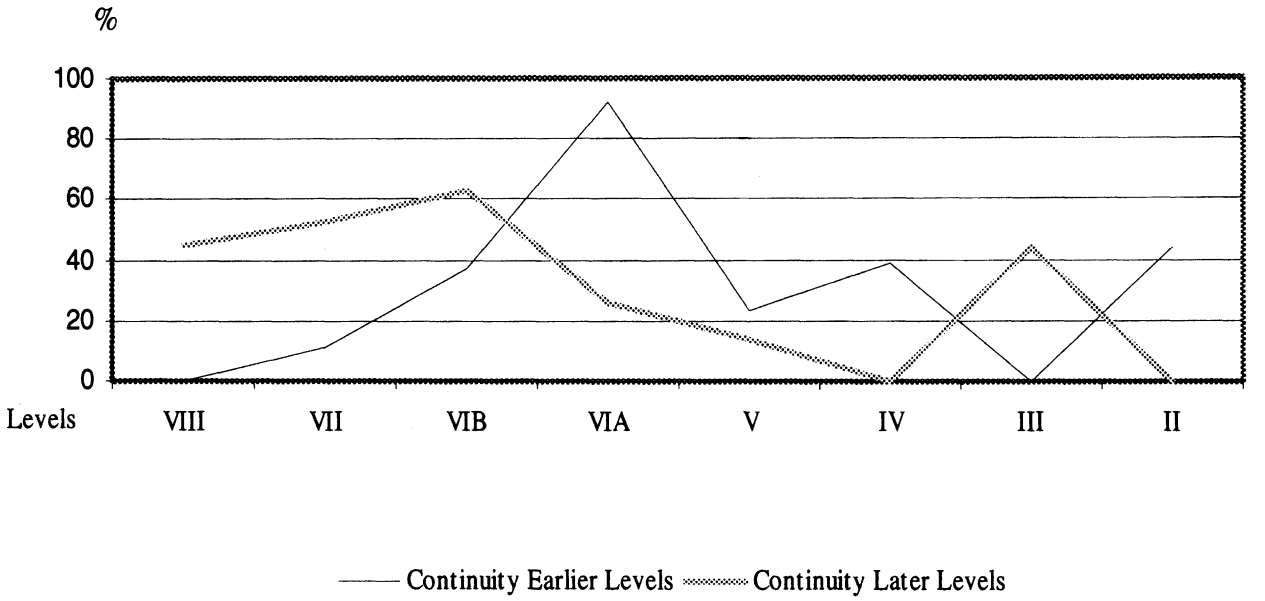

Table 6. Building continuity

It is relevant that the ritually elaborate buildings are often located in the second or third access level. In level VII five out of the eight ritually elaborate buildings are located at the second or third level, in level VIB only four of the nine buildings were located in the second level, and in level VIA five out of the eight ritually elaborate buildings are located in the second or third level. In general, the mean access depth of ritually elaborate buildings is higher than those of ordinary buildings in these levels, as is demonstrated in table 3. The building space indexes are generally of highest value at the second and third access levels. In the early levels the ritually elaborate buildings are often among the buildings with high building space indexes, meaning that through them many other buildings can be accessed, and that they can be accessed via many other buildings (see table 4).

The neighbourhood might have been conceived as consisting of increasingly private circles (compare Hodder 1996b: 48). The most important ritually elaborate buildings were often located in the core of the settlement, in the second or third access level. The neighbourhood would have been approached from the surrounding courts. People would have ascended to the roofs and thus have entered the first zone. That act would probably have been privileged to the inhabitants of the neighbourhood. A stranger could probably not have entered without permission. The privacy of the group inhabiting the neighbourhood would have acted as a means to ensure that. The ritually elaborate buildings were located at a deeper level. These could probably not be approached undetected by the inhabitants of the neighbourhood. That the most important buildings were often located centrally in the neighbourhood would have been a kind of 'internalisation' of the importance attached to them. Buildings that were important were situated 'deep', and they were perhaps only accessible to the members of the neighbourhood. These were intimate places, located intimately.

The pattern just described is not apparent in level VIII (fig 1), which might have been much more open. It is, however, appropriate for levels VII and VIA (figs 2, 4), and, to a lesser degree, to level VIB (fig 3). Level VIB was shown to have less depth at the access level. That may be explained as a function of the larger buildings in level VIB. Roofs were larger, which caused the roof interface to be less fragmented, and thus more accessible. The more shallow access pattern of level VIB need not be interpreted as a change in how privacy constituted the neighbourhood, rather it seems to have been an effect of the appearance of larger buildings. This is also indicated by the reappearance of a deeper access pattern in level VIA.

What is remarkable about level VIA is that a major effort was undertaken to surround the courtyards with walls. These walls were obviously meant to shape and control access patterns. Two effects can be seen to occur. First, the courtyards become more private, as they can only be accessed from the neighbourhood, not from outside. Second, the plan of the neighbourhood itself became deeper. The ritually elaborate buildings of the neighbourhood became more difficult to access. Thus the surrounding of the courtyard with walls can be seen as a strategy to maintain the concentric access pattern, described above, at a moment when it was threatened due to the abandonment of a number of level VIB buildings.

In level V the concentric access pattern was abandoned, however. Streets were introduced, connecting the central courtyards with other parts of the settlement. Ritually elaborate buildings were no longer located centrally in the neighbourhood (see tables 3, 4). Instead they were located on the fringes, often surrounded on many sides by open space. These ritually elaborate buildings were easy to access, they could be approached more or less undetected and then be ascended. Thus the system of locating the most intimate buildings at the most intimate places was abandoned. This development occured simultaneously with a major discontinuity in building traditions.

Building continuity

The continuity of buildings with earlier and later levels was measured as follows. The plans of the various levels were compared with those of their precursors and their successors. Although no coordinates are given in the plans it is often immediately apparent how the plans should be overlain. In the case of clear continuity of a building the value 1 was given. In some cases buildings follow the course of the walls of their precursors only in parts. In that case values such as 0.5 and 0.25 were given. In the case of positive discontinuity of a building (e.g. when a building was transformed into a court, or when the new building totally disregarded the course of the walls of its precursor) the value -1 was given. In many cases discontinuities occurred on the fringes of plans; in that case the value 0 was given, as it could be that either the size of the excavation area or erosion in antiquity were the cause for such a discontinuity.

The earlier levels at Çatalhöyük have a remarkable degree of continuity. Some buildings can be traced, with slight modifications, from level VIII up to level VIA (e.g. buildings 1, 8 and 10). Thus these buildings were reconstructed over a period that might have lasted for hundreds of years. The difference in elevation of the floor level between the level VIA successors of a level VIII building may amount to as much as 3.90m (e.g. in the case of building 10). These 'ancestral' buildings could not be detected by the inhabitants of the site, but in all probability a certain importance was attached to building continuity. In part this may have been a practical measure, as previous walls could serve as a foundation for new buildings. One could also argue that there was simply not enough space to expand in other directions. A closer look reveals that this is not true in all cases (compare the development of buildings 1, 8 and 10 through levels VII, VIB and VIA on figs 2-4).

The high degree of continuity is visible in table 6, which combines the percentages of continuous buildings as compared to earlier and later levels. Continuity from earlier levels is low initially, as each level exposure is larger than the previous, which is why most buildings cannot be demonstrated to have a proponent, and thus the percentages are low. If we look at buildings in the area that was excavated in the previous level, through the continuity of buildings with later levels, it is clear that continuity is high in levels VIII-VIA. Whereas in levels VIII, VII and VIB buildings were generally rebuilt along the lines of their predecessor, in level VIA a lot of previous buildings were not rebuilt, but those that were rebuilt are largely reconstructions of earlier level VIB buildings (92%).

However, in level V that continuity was abandoned. In the construction of level V, the builders seem to have disregarded the continuity of building that had characterised building traditions at Çatalhöyük for centuries. Only 23% of the buildings of level V existed in previous level VIA. It seems as if the buildings, and the continuity with the past they represented, were suddenly not important anymore in the way they had been. After level V, building continuity remains relatively unimportant, compared to the earlier levels. Thus a major break seems to have occurred at level V, along with a change in access patterns, as discussed above. I argue that both developments represent the same discontinuity. The link with the past was no longer important in the way it had been before, and the neighbourhood no longer was an intimate agglomeration of normal and ritually elaborate buildings.

With regard to this break in continuity it is important to scrutinize the stratigraphic data concerning the level VIA-V transition. Mellaart mentions that a part of level VIA was destroyed by a 'great conflagration', causing organic materials, such as wooden vessels, basketry and textiles in the burials beneath the floor to become carbonised up to a depth of 3m below the floors of level VIA (Mellaart 1963: 44, 54, 59; 1964: 85-6). It seems that after the end of level VIA the area did not remain unoccupied for a long period. Mellaart states concerning a group of level VIA buildings that were not burned, 'These houses had not been destroyed by fire and were swept clean before they had been filled in to make room for houses of level V' (Mellaart 1966: 172, compare also Mellaart 1964: 42). Also when comparing levels VIA and V it is clear that despite the small overall building continuity a number of buildings are built directly on top of the remains of older buildings (for instance level V buildings S2, S3, S8 and S12). In conclusion, at the time that level V buildings were constructed those of level VIA must have been physically present. Nonetheless the conflagration that took place at the end of level VIA could have been in part responsible for the break in building continuity in level V.

In the earlier levels at Çatalhöyük (VIII, VII, VIB and VIA), buildings were continuously being rebuilt on the same spot over and over. Every act of rebuilding, every time a floor or wall was plastered, would have been a continuation of the past in the present. As Hodder suggested these buildings might have embodied and constituted the social unit (1998). It is argued that people did not associate themselves with a building only because they lived in it, but that specific buildings were important as a link with the past, to specific people, whose family history might have been tied up with that of the building. Hodder suggests that people became 'bound between walls', and that buildings had *histories* (1998: 90). The history of a building created an association between the present inhabitants and those of the past; the past became the present, in a sense.

Synthesis

An important development can be documented at Çatalhöyük. It is the development of public space. In levels VII-VIA a choice was made not to create a public domain. This choice was impractical, and the inhabitants of the neighbourhood must have been hindered considerably in locomotion and transportation of goods to and from their houses. Each roof was at a distinct elevation, and many ladders would have been ascended or descended to approach a building located centrally. Also the inhabitants would have been very much aware of one another, monitoring each other's movements closely. I suggest that the inhabitants of such a neighbourhood associated themselves with each other. Thus the neighbourhood would have been a physical manifestation of a group. Within such a neighbourhood some ritually elaborate buildings were located, in which most of the burial rites and those connected with the mouldings took place. The fact that these are often centrally located, in the second and third access level, suggests that they were exclusively used by the inhabitants of the neighbourhood. In any case they would have been hard to reach unseen by outsiders. Through building continuity the link with the past was emphasised. Specific buildings and localities must have been important to people. Buildings had histories that were tied up with those of their inhabitants.

A major break occurs in level V however. Simultaneously public space is introduced, building continuity is abandoned, and ritually elaborate buildings become easy to access. It seems individual buildings had lost their historical importance; identities were no longer linked to specific buildings and specific localities. The same development seems to have taken place at the scale of the neighbourhood. The neighbourhood no longer expressed the manifestation of a group. Instead it seems that individual groups of building inhabitants now became the focal unit, inhabiting buildings that could be approached in isolation. Though ritually elaborate buildings continued to be in use, they were no longer difficult to access.

Thus it seems that at Çatalhöyük the appearance of public space is accompanied both by a detachment of history via locality and buildings, that had previously characterised its architecture and through it its inhabitants, and a shift from a large social group, that numbered the inhabitants of approximately 30 buildings, to a smaller social group; the inhabitants of a single building.

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