More on history houses at Çatalhöyük: a response to Carleton et al

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Abstract. In a recent article in this journal, Carleton et al (2013) cast doubt on a hypothesis about the social organization of the Neolithic tell site of Çatalhöyük in central Turkey. The hypothesis concerns 'history houses' that were continually built in the same place and in which many interments occurred. Carleton et al argue that the history house hypothesis 'contends that the corporate kin-group was the main form of socioeconomic organization at Çatalhöyük during the PPNB, and that the corporate kin-groups would have been maintained by the repeated rebuilding of houses in the same place and by the burial of important members under the floors of the houses' (Carleton et al 2013, 1821). They test the history house hypothesis by examining the relationship between continuity of houses and the percentage of houses that contain burial. The purpose of this response is to (a) clarify the hypothesis, (b) show that the claimed test does not test the hypothesis, and (c) demonstrate that poor and out-of-date data were used. Data are presented that go some way to confirm a link between 'history houses' and burial at Çatalhöyük and reinforce wider scholarly discussion of Neolithic history and memory making.

Key words. Neolithic, Çatalhöyük, history, house, kin-group.

1. *Introduction.*

In a recent article in this journal, Carleton et al (2013) cast doubt on a hypothesis about the social organization of the Neolithic tell site of Çatalhöyük in central Turkey, the East Mound of which is dated from 7100 to 6000 cal BC (Bayliss and Hodder 2015). The hypothesis concerns the role of history and history-making at the site (Hodder 2006, 2014b, Hodder and Pels 2010). They argue that the history house hypothesis 'contends that the corporate kin-group was the main form of socioeconomic organization at Çatalhöyük during the PPNB, and that the corporate kin-groups would have been maintained by the repeated rebuilding of houses in the same place and by the burial of important members under the floors of the houses' (Carleton et al 2013, 1821). Houses that were continually rebuilt in the same place and include large numbers of burials have been termed 'history houses' at Çatalhöyük (Hodder and Pels 2010). Carleton et al test the history house hypothesis by examining the relationship between continuity of houses and the percentage of houses that contain burial. They find that these variables do not co-vary and thus suggest that the hypothesis should be viewed with suspicion. They argue more generally that wider discussion of memory and history making in the Neolithic should be curtailed. The purpose of this response is to (a) clarify the hypothesis, (b) show that the claimed test does not test the hypothesis, and (c) demonstrate that poor and out-of-date data were used. Data are presented that go some way to confirm a link between 'history houses' and burial at Çatalhöyük and reinforce wider scholarly discussion of Neolithic history and memory making.

2. *The history house hypothesis*

First, to clarify the hypothesis. The closely packed agglomerated settlement at Çatalhöyük is 12.5 ha in size and the population has been estimated at between 3,500 and 8,000 at the height of its occupation (Cessford 2005). Clustered amongst areas of midden and external activity, houses are built up against

each other with access through the roofs. Four types of building have been identified: history houses, multiple burial houses, elaborate houses, and other houses. History houses (Hodder and Pels 2010) are defined as having at least three phases of rebuilding, and in at least one phase there are large numbers of burials (over 10). They are often more elaborate than other buildings but elaborate buildings and multiple burial buildings exist for which we do not have any evidence that they were repeatedly rebuilt. The measure of elaboration is based on the numbers of floor segments, basins, benches, installations (including bucrania and other animal fixtures), pillars and paintings in the main room of a building (Hodder and Pels 2010: 166). Multiple burial houses have over 10 burials. There can be between 0 and 62 burials in one building. The size of houses varies between 12 and 70 sq m, but there is no correlation between size and the four classifications (ibid.).

The original excavator of Çatalhöyük, James Mellaart (1967), recognized that some buildings were rebuilt many times on the same footprint, reusing the stubs of earlier walls. Many of these were classified by him as 'shrines'. He also recognized that some buildings were not rebuilt to the same degree. Düring (2006, 208) found that the non-continuous buildings 'generally contained fewer burials and mouldings than the continuous ones'. Cutting (2005, 69) noted a possible link between elaborate buildings with large numbers of burials and those with long occupation histories but determined that 'the data to show this are lacking' (ibid.).

Recent excavations (Hodder 1996, 2000, 2005a,b,c, 2007a, 2013a,b, 2014a.b) have identified many examples of memory- or history-making in sequences of stacked houses. This has been most clearly seen in the 65-56-44-10 sequence of houses in the South Area (Regan and Taylor 2014). Distinct sources and types of mud brick were used for the houses in this sequence, and Regan and Taylor also note a number of distinct attributes of this late sequence of buildings including the repeated setting of pots in floors at the base of ladders. Russell et al. (2013) note a distinctive set of pathologies in sheep bones from B.65 and its associated middens, indicating some form of isolation for the flock used by the building's inhabitants. Similarly, they note a recurring pattern of wolf paws in the B.65-B.56-B.44 sequence.

There seem to be two main types of history making that occur at Çatalhöyük. The first involves repetitive practices in which the same activity occurs in the same place in a building over time. The second involves the curation and retrieval of objects from earlier buildings and their deposition in later buildings.

As regards the first type of history making, it is important to distinguish the continuity of social practices from continuities produced by material constraints. The habit of building houses exactly onto the firm foundations of the walls of earlier tightly packed buildings meant that house buildings got 'stuck' with a particular plan that continued through time. But in other cases, the repetition of the layout of activities in houses is too great to be determined by house shape, and it may have been produced by discursive and non-discursive routines (Hodder and Cessford 2004). As an example, a heavily eroded B.59 was excavated above B.60. The B.59-B.60 sequence had much strong evidence of specific and exact continuity of layout, including positions of support posts. A figural wall painting in B.60 was in the same location as red painting on the equivalent wall in B.59. There is also evidence of continuities in overall house and midden practices. For example, autocorrelation analyses conducted by Mazzucato (2013) show that cold and hot spots of higher and lower densities of finds exhibit some degree of continuity through time. In particular B.59 was recognized during excavation as low in find densities, but the

analysis shows that B.60 directly above it was also low in density, as was the neighboring midden Sp.60. As another example, Mellaart (1967) found pairs of leopards repeated in consecutive levels VII and VIB on the north wall in building E.44, as well as repeated vulture paintings in his 'Shrine 8' sequence.

The second type of history making involves the curation and handing down of objects. In B.1, a pit was dig down to retrieve an installation or relief from the west wall of the main room (Cessford 2007). In the 65-56-44-10 sequence mentioned above, Boz and Hager (2013) found, on the basis of matching human teeth to mandibles, that bones from a burial in Building 65 had been retrieved and redeposited in a grave in the following Building 56; a clear case of house-based history-making.

So the history house hypothesis centers on the evidence at Çatalhöyük for two forms of history making. There is also much evidence at the site for the circulation of human body parts, including skulls and mandibles of men and women that were removed, circulated and deposited (for example in other graves or in foundation pits for support posts in buildings – Hodder 2006). Since some buildings have up to 62 burials while others have few or none, it seems likely that the houses with many burials acted as preferential burial locations for the inhabitants of other buildings; it is also relevant that some of the burials in buildings with larger numbers of burials are secondary. Houses with many burials may have been important in establishing corporate relations beyond the individual house. I argued in 2006 that one function of the construction of histories may have been to create genealogical links to ancestors buried beneath floors. But to talk of 'corporate kin groups' (Carleton et al 2013) is perhaps to take the evidence too far. Biodistance studies based on dental morphology of the human remains (Pilloud and Larsen 2011) from Çatalhöyük show that biological affinity played only a minor role in interment location. To some degree those that were buried in houses were 'practical' rather than biological kin. The people buried in a particular building may have included adoptive, foster or fictive kin held together by memory and history making. It is also possible that those buried in a building did not live within the 'house' of that building: it is possible that burial location was part of the negotiation of social and economic relations between households after the death of one of its members. On the other hand, the evidence for some degree of distinct diets associated with those buried in buildings (Pearson 2013) at least suggests that the group that ate together also was buried together. Often this co-eating, co-burying group was larger than an individual building – thus a social 'house' consisted of more than one building.

Mills (2014) has argued for the importance of a wide range of sodalities that linked individuals and individual houses at Çatalhöyük. So, rather than describing corporate kin, or kin groups, recent research has focused on complex cross-cutting networks on a diversity of planes. Indeed, in the initial account of history houses, Hodder and Pels (2010) do not mention corporate or kin groups. There is little mention of kin at all since the focus is more on the political economy of history houses and on the establishment of authority through managing histories. So I would not argue today that 'the corporate kin-group was the main form of socioeconomic organization' (Carleton et al 2013, 1816) at Çatalhöyük, but I do think that if defined so as to include non-biological kin, the corporate kin group was one mechanism among many for creating cross-cutting ties. These other mechanisms include co-eating, neighbourhoods and sectors, co-production, and participation in a wide range of rituals (Hodder 2014b). The history house hypothesis can be clarified to state that the burial of people below the floors of repeatedly built houses played a part in creating social networks at Çatalhöyük. This interpretive statement is based on the claim

that burials are preferentially concentrated in houses that are repeatedly rebuilt on the same footprint. It is also based on the claim, not examined by Carleton et al, that there are too many burials in some buildings and too few in others for the burials in a building to be directly correlated with the inhabitants of that building.

3. *Constructing a test of the history house hypothesis*

Carleton et al test their version of the history house hypothesis by examining the relationship between continuity of houses and the percentage of houses that contain burial. They argue that if corporate kin-groups were centered on burial of members in particular houses (history houses), there should be a degree of covariation between a measure of house continuity and the percentage of houses that contain burials. They apply factor analysis to several house-related variables including these two variables. The percentage of houses that contain burials is measured as the percentage of houses in any given occupation level that contain adult and sub-adult burials. House continuity is assessed by measuring the degree of continuity of house walls from one occupation level to the next.

Carleton et al 2013 rightly state that Hodder and Cessford (2004, 36) had argued that there is a 'clear link between houses with many burials and houses that are replaced through many levels'. But it is incorrect to turn this statement into a general relationship between the number of houses with burials in an occupation level and the number of continuous houses in that level. The history house claim is that houses with many burials tend to be long lasting. This is not the same as saying that overall, across occupation levels, there is more burial when there is more continuity. The history house hypothesis has never claimed that overall there should be a relationship between wall continuity and the number of houses that contain burials. To draw out the difference more clearly, consider an occupation phase in which there are just two long-lasting houses with many burials and many with only a few and that those with a few do not have continuity. Such a situation would be consistent with the history house hypothesis. But according to the Carleton et al analysis there would in such a scenario be a high percentage of houses with burial and a low number of houses with wall continuity. So the history house hypothesis would be rejected.

The Carleton et al test allows exploration of whether burial occurs in a larger number of houses in phases in which there is more continuity between houses. Because they find in their factor analysis that burial percentages and house-wall continuity do not load on the same factors, they suggest that these two practices do not vary. Although it will be argued below that the data used are inadequate for the purposes of the test carried out, it is indeed the case that frequency of burial does not co-vary with house wall continuity over the occupation phases at Çatalhöyük. The highest frequencies of burials occur in the middle levels (around 6500 BC in South N and O), linked to a marked rise in building elaboration (Düring 2006) and increases in fertility (Larsen et al 2013) and overall settlement extent and density. House continuity is well established from the start of the occupation at the site, and indeed there are earlier sites in central Anatolia, such as Aşıklı Höyük in Cappadocia (Özbaşaran 2011) with even more marked columns of houses repeatedly built on the same footprint. Düring (2006) has shown that in the upper levels at Çatalhöyük the degree of continuity between houses declines and this has been linked to greater economic independence of houses, greater spacing between houses, and lower population densities (Hodder 2014c). The factors leading to burial numbers and house continuity differ. History houses occur in both the lower and upper levels; they occur whether there are many burials in a phase or there are few; they occur whether there is much continuity between phases or little continuity.

So Carleton et al have tested an interesting hypothesis that more burial occurs when there is more house continuity, and they have rightly, as it turns out, found that the two variables do not co-vary. But they have failed to test the hypothesis that they claimed to be testing. To explore the history house hypothesis that corporate kin groups were at least partly centered on long lasting houses in which people were preferentially buried it is necessary to show that houses with many burials tend to be long lasting. This Carleton et al do not do. A simple test of this relationship will be provided below.

4. *Testing the data*

The Carleton et al tests are not relevant to the history house hypothesis. It may seem unnecessary, therefore, to point to inadequacies in the use of data. However, it is important to lay the groundwork for a targeted test of the history house hypothesis.

Rather than base their analysis on recent excavations that have been extensively published, Carleton et al derive their data from a secondary source. Mellaart never fully published Çatalhöyük, but his interim reports and summary accounts have been included in the analyses by Cutting (2005), and it is from here that Carleton et al derive their data. Hypothesis testing does not itself guarantee sound science; it has to be allied with reflexive critique as noted above, and with source criticism, by which I mean a careful and critical analysis of the process of data construction. Carleton et al (2013, 1820) do refer to the well-known difficulties with the Mellaart data, described by Cutting (2005) and Düring (2000), but rather than using modern carefully collected data, they state that 'we think it is implausible that a few sub-metre errors in a plan map, or a handful of unrecorded burials' would result in patterns being missed (ibid).

The recent excavations at Çatalhöyük have demonstrated that Mellaart was correct in many aspects of his analysis of the site. But he used techniques of his time (such as no screening), his paper record was lost, and he dug very fast with, as he often complained, too few resources. In four seasons between 1961 and 1965 he dug for 229 working days, often with a team of 35 men. In that time he dug a trench 20m deep and excavated 144 complete buildings and 351 complete rooms. Thus on average he finished excavating a complete building every 1.6 days. By way of contrast the current project has had a team of about 160 researchers and local staff excavating for 20 years, in which time it has excavated complete or partial occupation sequences in 53 buildings. It took the current project 5 years to complete the excavation of Building 1 and partially excavate the underlying Building 5 (Hodder 2007b), and 7 years to complete the excavation of Building 3 (Tringham and Stevanovic 2012).

Carleton et al use 8 variables in their factor analysis. There are numerous non-trivial problems with all of them. Because Mellaart dug so quickly he did not recognize that all buildings at Çatalhöyük were in a continual process of change and transformation as platforms were added, the number and location of fire installations were changed, paintings got added and covered over. Carleton et al use variables taken from Cutting such as the percentage of houses with platforms, or the percentage of houses with ovens, or the percentage of houses that are 'decorated in some way' (2013, 1817). After at least partially excavating 53 buildings, the current project has never found a building without an oven in at least one phase. In his re-excavation of some of Mellaart's trenches, Baranski (2014, 196) notes 'some of the architectural features were not registered during the 1960's archaeological campaign or at least they were not recorded on the plan. We found, for example, remnants of an oven'. Similarly the current project has never found a house without platforms, and if one looks carefully enough there is always evidence of wall painting in at least one of the up to 450 fine plaster layers on the interior wall surfaces. Mellaart dug so quickly that he often did not see traces of platforms, ovens and wall paintings. Thus to

follow Cutting and argue that, for example, in Mellaart's Level VIB the percentages of houses with platforms, decoration and ovens were 74%, 31% and 38% respectively is simply to document Mellaart's excavation strategy.

The situation is yet more dire with regard to the percentages of buildings with burials. The problems regarding the burial data collected by Mellaart have been fully described by Hamilton (1996, 244). The skeletons were studied in the 1960s by Angel (1971) and Ferembach (1972; 1982). Mellaart refers to the excavation of over 400 skeletons in his reports but only 297 reached Angel, who comments on the huge loss that had occurred. For example, Mellaart mentions 32 skeletons from the building labeled by Mellaart as 'Shrine 10' in Level VI, but none reached Angel. Of those skeletons that Angel did receive, 27 had no labels. Ferembach discovered other disparities.

Thus for Carleton et al to base their analysis on Cutting's record, itself partly derived from Mellaart's data, that 51% of houses in Level VIB had burials is again to rely on wholly inadequate data. In fact, the recent excavations have shown that most buildings have at least one burial. In a summary of burial practices at the site, Boz and Hager (2013, Table 19.2) show that of 31 buildings partially or fully excavated between 2000 and 2008, only 3 had no burials. Variation in the presence or absence of burials in houses in Cutting's data is very much affected by Mellaart's excavation strategies and by the way the human skeletal material from the site was dealt with in the years and decades after discovery. As examples of the discrepancies that arise, Mellaart's building E.VIII.27 is listed by Angel and Düring (2000) (the sources of Cutting's data) as having no burials. The same building was excavated by the current project as Building 43 and 4 burials were found below the floor. Similarly Building 50 was found by the current project to have 15 burials, whereas the same building was labeled E.VII.9 by Mellaart and is recorded by Angel and Düring as having no burials.

Carleton et al base their assessment of house continuity on the overlap in plans from level to level in the Mellaart sequence. Again the data used are so flawed as to undermine the analysis undertaken. Cutting's plans are themselves a simplification of the Mellaart plans. More adequate copies of the Mellaart plans have been published (Hodder 1996) and it is not clear why these were not used. But even these versions of the Mellaart plans have been shown to be inaccurate when re-excavated in modern conditions. In a recent study Baranski used modern planning methods (a Trimble S8 Total Station) in order to evaluate on the site the plans published in the Mellaart archive, and found that 'the real outlines of the architectural remnants rarely fit with the available archive plans' (Baranski 2014, 194). Walls on the Mellaart plans were in the wrong place by up to 2.5m (Baranski 2013, 220). 'The real outlines of the buildings rarely match with the plans, but also some buildings have different orientation, structural character and stratigraphic relations to each other' (Baranski 2013, 233). There is more than the 'few sub-metre errors' claimed by Carleton et al.

5. *Evaluating the hypothesis with modern data.*

Given the difficulties in using secondary data at least partly derived from Mellaart, it is necessary to use data collected by the current project, and only to use the Mellaart data when corroborated by recent re-excavations. It is also necessary, as noted above, to construct a test that is relevant to the history house hypothesis.

According to the history house hypothesis, buildings with larger numbers of burials should occur in longer strands of rebuilt buildings. Combining current data with Mellaart data that have been verified in

recent excavations, it is clear that some buildings were rebuilt on the same footprint at least 6 times whereas other buildings were never rebuilt on the same footprint. The numbers of buildings in stacks shown in Table 1 are minimum numbers. In many cases excavations have not found the lowest building in a stack, or upper buildings in a stack have been eroded off the mound. There are limitations also regarding the number of burials found in buildings in which the occupation deposits have been fully excavated. The burial process at Çatalhöyük was complex and the current project has recognized a range of human bone deposition categories: primary, secondary, tertiary, primary disturbed, primary disturbed loose (Boz and Hager 2013, 415). The 'observed MNI' figures shown in Table 1 are based on an examination of the archaeological context in which the bones were recovered and on the determination of age, sex and number of duplicating skeletal elements. The 'observed MNI' does not normally count bones from tertiary or primary disturbed loose categories (Boz and Hager 2013, 416). Building 1 is unusual in its large number of burials stretched over several phases, and in its larger number of secondary burials.

Figure 1 shows the covariation between the number of buildings stacked in a sequence and the maximum number of burials in a building in that sequence. Overall there is a tendency for larger numbers of burials to occur in buildings that are part of longer stacks. The correlation coefficients are not high, ranging from a Multiple R-squared of .398 if the outlier Building 1 is included, to .596 if it is excluded. Since the data are not perfectly normally distributed, Figure 1 shows a log transformation, with a Multiple R-squared of .579. The p-values are all significant ranging from .008 to .001 to .001 respectively.

While there is thus some support for the history house hypothesis given current data, fuller confirmation must await further excavation so that the lower sequences of building stacks can be explored and complete stacks established. The numbers of burials in buildings are also the result of numerous factors other than the number of stacked buildings. For example, a recent analysis based on current research has confirmed a statistically significant link between building elaboration and numbers of burials, as initially suggested by Düring (2000). There are also changes through time, with the highest concentrations of burials occurring in levels South M, N and O, equivalent to Mellaart's levels VI and VII (ibid.). Further work is needed on a larger sample size to explore the intersections between these different variables.

6. *Conclusion.*

There are numerous difficulties in establishing the number of buildings stacked above each other at Çatalhöyük, and in establishing the numbers of burials in buildings. As noted above, there is a need for further excavation and analysis in order to determine whether larger numbers of burials only occur in buildings with long histories. Despite initial positive evidence of covariation between these two variables, the history house hypothesis remains a hypothesis to be tested. But in contrast to the claims made by Carleton et al (2013), the hypothesis can in the future be tested on carefully scrutinized data using tests that are relevant to the hypothesis. Even if a close correlation is found between the numbers of buildings in stacks and the numbers of burials, more work would need to be done to evaluate the history house hypothesis that the burial of people below the floors of repeatedly built houses played a part in creating social networks at Çatalhöyük. In particular, it is necessary to demonstrate that those buried in a long-lasting series of buildings included inhabitants from other buildings, and that the history houses provided foci of memory for a larger group than an individual building.

In more general terms it is clear that hypothesis testing is not a sufficient guarantor of rigorous science. The test conducted may not be a test of the hypothesis, and it may use data uncritically. Hypothesis testing needs to be allied to reflexive source criticism and contextual analysis.

It can be argued (Hodder 2007b) that history making is an early and key part of the Neolithic process throughout the Middle East, a necessary component of the temporal depth that becomes essential in societies that increasingly depend on delayed returns for labor input. History and memory making have come to be widely explored as a central processes in the Middle Eastern and European Neolithic (eg Bradley 2002, Tilley 2004, Whittle and Benson 2006). It would be disappointing if the analysis by Carleton et al were to inhibit further discussion of these ideas.

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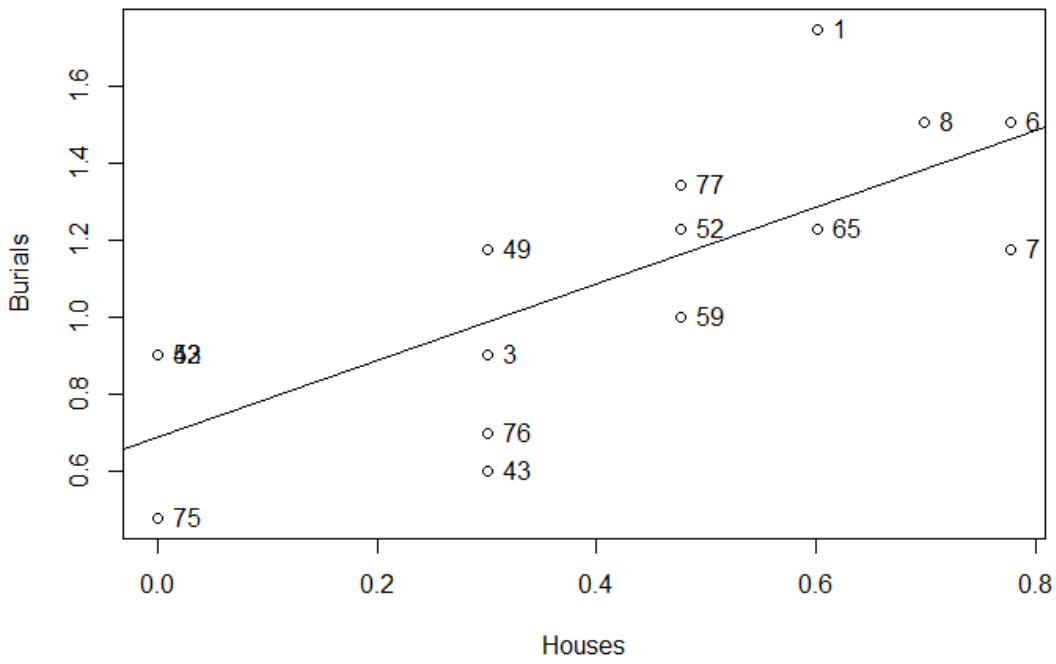

Figure 1. Relationship between the maximum number of burials in a house or house sequence and the minimum number of houses stacked on the same footprint at Çatalhöyük.

Burials	Houses	Identifier
56	4	1
0	2	2
8	2	3
32	6	6
15	6	7
32	5	8
8	1	42
4	2	43
17	4	65
15	2	49
17	3	52
8	1	53
10	3	59
3	1	75
5	2	76
22	3	77

Table 1. The maximum number of burials in a house or house sequence and the minimum number of houses stacked on the same footprint at Çatalhöyük. The identifier is the number given to a house by the current project or the number given to one of the buildings in a stack of houses.