ANALECTA PRAEHISTORICA LEIDENSIA 43/44

PUBLICATION OF THE FACULTY OF ARCHAEOLOGY
LEIDEN UNIVERSITY

THE END OF OUR FIFTH DECADE

EDITED BY
CORRIE BAKELS AND HANS KAMERMANS

LEIDEN UNIVERSITY 2012

Series editors: Corrie Bakels / Hans Kamermans

Editor of illustrations: Joanne Porck

Copy and language editor: Kelly Fennema

ISSN 0169-7447
ISBN 978-90-000000-0-0

Subscriptions to the series *Analecta Praehistorica Leidensia*
and single volumes can be ordered at:

http://archaeology.leiden.edu/organisation/publications/analecta-praehistorica-leidensia/

or

P.J.R. Modderman Stichting
Faculty of Archaeology
P.O. Box 9515
NL-2300 RA Leiden
The Netherlands

The trouble with stratigraphy: case studies from the Near East

Bleda S. Düring

The idea of stratigraphy is at the very foundation of the archaeological endeavour. The use of this concept that was developed in geology enabled archaeologists to establish relative chronologies using the principle of superposition. Stratigraphical reasoning together with the method of seriation formed the basis upon which archaeology as a scientific discipline could be established (Trigger 1989, 73-94). It is perhaps due to the fact that stratigraphy is part of the core paradigm of archaeology: that is that we can study how societies change over time through stratigraphic analysis and seriation studies, that the concept of stratigraphy has not received much scrutiny and has been "overdescribed and undertheorized" (McAnany and Hodder 2009, 2). Publications dealing with stratigraphy have focused primarily on methodology and technical procedures for recording stratigraphy (Kenyon 1952; Wheeler 1954; Harris 1979; Gasche and Tunca 1983; Harris et al. 1993; Warburton 2003), and one recent paper has advocated that we should study stratigraphy in social as well as technical terms (McAnany and Hodder 2009). In this paper, however, my concern is with the idea of stratigraphy itself, and how it distorts our understanding of sites. I will argue that we need to re-think the way we use stratigraphy both in the field and in analyses thereafter.

1 The concept of stratigraphy

The concept of stratigraphy originates in the discipline of geology and took shape in the late 18th to early 19th centuries AD (Harris 1979, 3-7; Rapp and Hill 2006, 5-10). One of the first ideas was that geological strata could be dated through the fossils they contained, and that strata with similar fossils were of similar date. Subsequently it was argued by Charles Lyell that the older the strata were, the fewer fossils would have living counterparts in the world today. In this manner a relative sequence could be set up. Finally, it was argued that strata were deposited in sequential order, the so-called 'law of superposition' and that the youngest deposits were to be found on top, although later processes of erosion, uplift, or tilting could distort what were originally horizontal and continuous strata.

These ideas could be applied with great effect in the emerging discipline of archaeology, where likewise sites could be dated through their associated artefacts, and the law of superposition provided evidence for chronological sequences. Famously, Boucher de Perthes established the antiquity of stone tools by demonstrating their stratigraphic association with extinct animals in a stratigraphic section (Trigger 1989, 91-94; Rapp and Hill 2006, 5-6). From those days onwards the concept of stratigraphy has been of key importance in archaeology. Subsequent studies have focused on how stratigraphy can best be documented in large-scale excavations of complex sites.

One approach is the 'Wheeler-Kenyon' method in which excavation proceeded in square or rectangular trenches, often in artificial spits, and in which baulk sections augmented the stratigraphical information obtained during the excavations in the trench (Kenyon 1952; Wheeler 1954). This system has proven its value and has remained in use in Near Eastern archaeology up to the present (Warburton 2003), including in Leiden expeditions to sites such as Deir 'Alla, Hammam et Turkman, and Tell Sabi Abyad. The critique sometimes voiced that this method is colonial and excludes excavators from their role in the construction of knowledge (McAnany and Hodder 2009, 5-6), confuses the origins of an excavation and recording method with its application. By way of parallel, the metric system was imposed on Europe in the time of Napoleon but nobody today would argue that metres continue to enforce French domination. Likewise, the 'Wheeler-Kenyon' method can be usefully applied on excavations where only skilled archaeologists work and aid them in their efforts to reconstitute complex stratigraphies.

An important innovation for recording and reconstructing complex stratigraphies was the Harris matrix (Harris 1979), which provided a graphic method for ordering stratigraphic units. This recording tool could be combined with section drawings but also facilitated the development of excavation methods that did not use baulks, such as the British 'single-context recording method' in which each stratigraphic unit (layer, feature or cut) is described separately and linked to adjacent stratigraphic units by means of a Harris matrix (Harris *et al.* 1993; Chadwick 1998). This method is sometimes hailed as a more democratic approach towards the construction of stratigraphy (McAnany and Hodder 2009, 6), although others have argued that the 'single context

recording method' still privileges those who end up writing the site synthesis (Andrews *et al*. 2000).

It appears then that archaeologists have by and large taken the concept of stratigraphy for granted and that it has indeed been "overdescribed and undertheorized" (McAnany and Hodder 2009, 2). Instead, McAnany and Hodder have argued that we should analyse the activities that lead to stratigraphic sequence as in part constituted by social activities. They certainly have a point in that many culturally determined practices, such as how a house should be deconstructed, and where and how people are buried, to mention but two examples, in the end result in the stratigraphies we encounter on our sites. However, here I want to reflect on a more fundamental issue: whether the current concept of stratigraphy distorts our understanding of the past.

2 THE TROUBLE WITH STRATIGRAPHY

The origin of the concept of stratigraphy has implications for the ways in which this idea took shape. In geology there were three laws (Harris 1979, 7): first, that of superposition, which determines that the youngest deposits were to be found on top; second, that of original horizontality, which purports that strata were formed in horizontal layers although later processes of tilting could distort this orientation; and, third, that of original continuity, which means that strata were originally continuous but that later processes of erosion, tectonic and volcanic activities could result in gaps in strata. In archaeology only the first law seems to hold. Certainly many stratigraphic units were not formed in horizontal layers (for example cuts and upstanding walls). More importantly, archaeological strata were not originally continuous and stretching across entire landscapes. Instead, archaeological stratigraphic units are always local, even if we take into consideration very large monumental structures such as the pyramids of Egypt which measure up to 230 metres and are atypical for archaeology.

On the wall in my hallway at home is a map of Leiden that is about ten years old. It shows areas of the city that will be built in the near future at the time the map was printed and have by now been constructed. Otherwise it shows the existing buildings in the city, some of which were built recently, but others date back up to nine centuries ago (the Burcht) (fig. 1). Thus, the city of Leiden as it exists today is a composite of buildings of very diverse ages. However, as any inhabitant of the city of Leiden will be able to tell you the old buildings in the city are not simply old. Structures such as the Pieterskerk, the Burcht, the Hooglandse kerk and the Academie need to be renovated every decade or so, and one could question how much of the present structures is in fact centuries old and to what degree these buildings merely resemble old buildings. Similarly, private houses in Leiden, whether fifty or five hundred years old, are constantly being redeveloped and modernized, and the picturesque historic inner city we all appreciate is in many ways a façade sheltering modern apartments, offices, and stores. The city of Leiden is best described then as being in a state of constant flux, in which certain historic buildings are actively maintained and redeveloped because they are culturally appreciated. Maintaining a historic city centre requires much hard work, determination and great resources

Figure 1 De Burcht of Leiden. Source: Wikimedia Commons. Author: Ellywa.

in the present. The map of Leiden in my hallway is an extreme simplification of a very complex situation of a city with components dating to various periods originally but constantly being reworked in the present.

The contrast with an archaeological stratigraphical plan could hardly be greater. Archaeological phase plans typically aspire to the following principles. First, all buildings on the plan are contemporaneous. Second, they are not simply in use at the same time, but should also have been constructed and abandoned at more or less the same time. Thus, archaeologists ideally produce a series of stratum plans in which each stratum shows a discrete set of buildings belonging to that particular phase *only*. For example, at Çayönü, a well-known Early Neolithic site in southeastern Turkey, a series of discrete phase plans was produced each with distinct building types, such as "the round building phase"; "the grill building phase"; and "the channeled building phase" (Özdoğan 2007). Likewise a recent publication of Beidha presents a series of discrete phase plans labeled A1; A2; B; C1 and C2 (Byrd 2005). Many more examples could be presented of similar field reports.

Such examples suggest that many archaeologists have unwittingly adopted aspects of geology that make no sense in archaeology: namely that archaeological strata can be determined which form more or less continuous and discrete occupation phases across the site, as if they are equivalent to a geological horizontal and continuous layer. Indeed, some archaeologists working in the Near East have excavated in the so-called 'phone booth' strategy: excavating small trenches spread across the tell site, under the assumption that they would be able to link the stratigraphic sequences in the individual mini trenches (Bordaz 1968; Watson and LeBlanc 1990), which suggests that they were working from the idea of continuous archaeological strata. This particular type of excavation strategy was quickly abandoned in Near Eastern archaeology because it proved impossible to construct convincing stratigraphical reconstructions in this manner. Nonetheless, a subsequent project on stratigraphy in Near Eastern archaeology proposes that our methods should be brought in line with those of geology and that geological and archaeological strata are: "subject to similar rules and axioms" (Gasche and Tunca 1983, 326).

The idea that archaeological stratigraphies consist of continuous and discrete occupation phases that seems to be implicit in the concept of stratigraphy as is current in archaeology does not prove problematic for most archaeologists in the field. The reason is simple. The large majority of excavations in the Near East consist either of soundings and excavations of a few adjacent trenches at most or focus on large monumental buildings such as palaces or temples. In the first case construction of a stratigraphic sequence of phases is relatively unproblematic, as the local stratigraphy is usually relatively straightforward. In the second case the stratigraphy is also relatively straightforward because although large areas are excavated, these monumental buildings are renovated or rebuilt in their entirety on a regular basis.

Only in the case of large-scale excavations of non-monumental buildings does the incompatibility of stratigraphy, conceived of as continuous and discrete occupation phases and the archaeological data, become apparent. While large-scale excavations will provide a much richer understanding of the settlement as a whole and changes therein over time (Düring 2006; Özdoğan 2006), a point well exemplified by the Leiden excavations at Tell Sabi Abyad (Akkermans *et al.* 2006), they will also present problems for a stratigraphic understanding of the site in question. At present we are working on the Late Bronze Age stratigraphy of Tell Sabi Abyad in the framework of the ERC funded *Consolidating Empire* research project, trying to work out stratigraphical correlations between more than twenty trenches. This exercise is forcing us to rethink our stratigraphic understanding in very fundamental ways, but it is too early to report on this. In the next section I will therefore discuss some examples I have studied in earlier research on the Neolithic of Central Anatolia.

2.1 Çatalhöyük

The well-known Neolithic site of Çatalhöyük is situated in Central Anatolia on the Konya Plain and can be dated between about 7400 and 6200 BC (Cessford 2001). It was first investigated in the 1960s by James Mellaart and from 1993 onwards a new research project at the site is directed by Ian Hodder (Mellaart 1967; Hodder ed. 1996; 2005a; 2005b; 2006; 2007). The two projects that have been undertaken at Çatalhöyük differ in a great number of respects. The 1960s excavations were designed to obtain the maximum exposures possible with limited resources. In the four campaigns that Mellaart undertook at Çatalhöyük approximately 400 rooms were excavated. The actual digging was mainly executed by Turkish workmen, while the supervision and documentation of the excavations were done by the British field team. It appears that on average 1.7 rooms were excavated per day. The speed with which these rooms were excavated precluded the possibility of careful sampling, excavating building fills stratigraphically, or studying the renovations and modifications these structures went through. By contrast, the Çatalhöyük Research Project has endeavoured to extract a maximum of high-quality data while focusing on smaller excavation areas. A clear example of the labour intensity of this approach is the excavation of building 3. The excavation of this structure, comprising four rooms, by a team from Berkeley took seven campaigns (Stevanovic and Tringham 2003).

Given these differences in excavation strategies, it is perhaps understandable that the new Çatalhöyük research project regarded the Mellaart stratigraphy as suspect. There was, at least initially, a widely shared view amongst the members of the new project that the 1960s data were both biased and unreliable (*e.g.* Hamilton 1996; Cessford 2001, 722). During the 1960s Mellaart distinguished 15 building levels at Çatalhöyük, numbered from top to bottom 0 – XII. Level VI was later subdivided into VIA and VIB, VIA being the more recent occupation. Mellaart's stratigraphy of Çatalhöyük developed considerably over the course of the 1960s excavations and several readjustments were made as new data emerged in the course of the ongoing project, in which buildings were re-assigned to other building levels. Until the 1963 campaign the stratigraphy was not altered, but after that it was decided to alter the relative position of some buildings previously assigned to levels VII and VI (Mellaart 1964, 40). Level VI was subdivided at this point into VIB (older sub-phase) and VIA. It was stated that the buildings of level VIA were all burnt, and contained pottery, whereas only some of the level VIB buildings were burnt and these buildings lacked pottery. In this process of sub-dividing level VI some buildings were assigned exclusively to VIB or VIA, but the majority of buildings were drawn on the plans of both VIB and VIA. This later group of buildings was drawn for the most part with identical ground plans and floor elevations on both plans, suggesting that they were 'generic' level VI, rather than VIB or VIA. Given these circumstances, it seems that the VIB/VIA distinction applies to only a minority of the buildings involved, rather than representing a complete 'redevelopment' of the area. These alterations took the form of: first, abandonment and transformation into midden areas; and, second, renovation and/or rebuilding. These modifications of individual buildings dispersed over the excavated area were then lumped by Mellaart into 'level VIA', but it is far from clear whether they actually represent a single horizon. Subsequently, in the 1966 report it was stated: "it now appears that level VI shows two phases of building only in the houses. Those shrines built in level VIB that were still in use in VIA were remodelled, but not rebuilt." (Mellaart 1966, 166). Moreover, during the final 1965 campaign at Çatalhöyük, Mellaart excavated a group of buildings in Area F that do not seem to have been affected by fire and were simply labelled "level VI" (Mellaart 1966, 172). In the 1967 monograph Mellaart likewise designates many buildings as level VI, rather than VIB/VIA, indicating that the distinction was often not easy to draw (Mellaart 1967, 81, 102). Similar problems seem to have arisen during Mellaart's final excavation seasons concerning the delineation of levels VII and VIB. A group of buildings formerly assigned to level VII (in the 1962 report) were reassigned to level VIB in the 1964 report (Mellaart 1964, 40). Subsequently, in the 1966 report, a group of level VIB buildings were reassigned to level VII (see Düring 2006, 142-145 for details on all these issues).

It appears that the distinctions between levels VII, VIB, and VIA became increasingly difficult to draw in the course of the 1960s excavations, a point that emerges from the many re-assignations of buildings from one level to the next, and the conceptual problem of distinguishing sub-phases within level VI that are valid for some buildings only. It is evident that these problems became more pronounced with the expansion of the excavated area, in the course of which it became increasingly difficult to accommodate the data into the existing stratigraphy. The problem here is not in the quality of the fieldwork, but rather in a conceptual framework that is geared to isolating discrete occupation phases in vernacular village buildings. In the words of one project member of the new excavations at Çatalhöyük: "The recent excavations have demonstrated that levels do not form absolutely contemporary events as individual structures have their own unique life histories and that a degree of overlap between levels is probable." (Cessford 2001, 722).

However, as a heuristic tool and an approximation of contemporary horizons Mellaart's stratigraphy has been vindicated. In the initial stages of the new project, the extant profiles in the Area excavated by Mellaart were cleaned, drawn and analysed. From this it was concluded that on the whole Mellaart's stratigraphical divisions can be corroborated, even if some problematic details remain (Matthews and Farid 1996, 287-288). Thereafter the results obtained in the present excavations have been fitted into Mellaart's pre-existing stratigraphy, and the discussion of the 'South Area' – where Mellaart excavated previously - was organized along Mellaart's stratigraphical divisions and buildings and deposits are on a level-by-level basis (Hodder and Cessford 2004; Farid 2007). Only after fifteen years of new excavations was Mellaart's stratigraphy finally replaced by a new stratigraphy (Farid 2008) (fig. 2). The main reason for proposing this new stratigraphy was that as the excavation area increased in size it became increasingly difficult to link the newly excavated buildings with the Mellaart stratigraphy, mainly because it was realized that each building had its own stratigraphy and these stratigraphies could not be fitted into a few levels that represented continuous and discrete occupation phases. Instead of Mellaarts stratigraphy, an alphabetic phasing is proposed per excavation area, and these area stratigraphies can be correlated with each other to some degree by means of absolute dating. Some buildings may occur in various of these phases and in other cases a level may be skipped in the overall sequence. Thus, strata are no longer continuous and discrete occupation phases: they may be present in some areas and absent in others and buildings can exist in several stratigraphic phases. In effect, the new Çatalhöyük

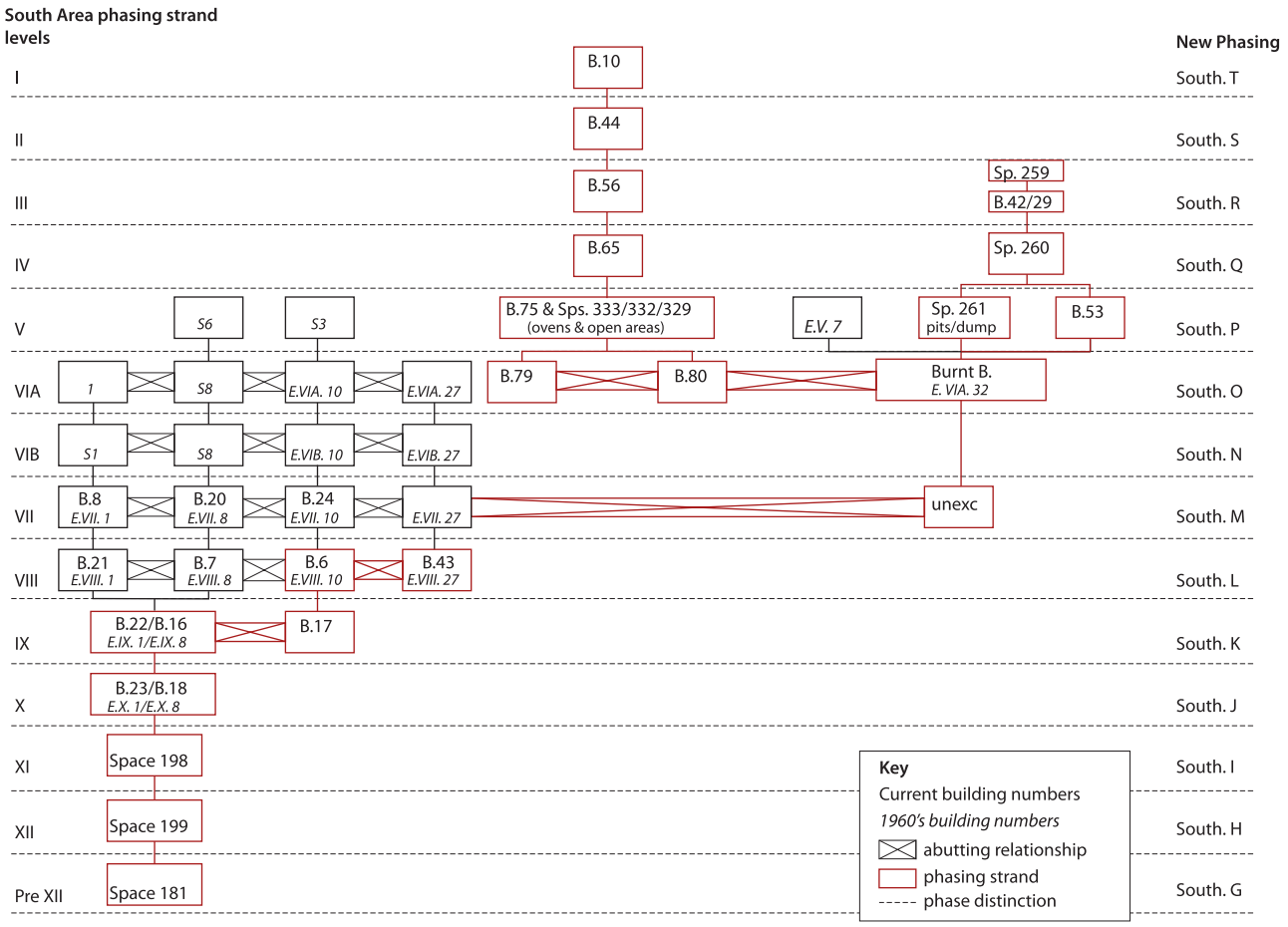

Figure 2 New chronology for South Area in Çatalhöyük. copyright Catalhoyuk Research Project (figure credited to Shahina Farid).

stratigraphic scheme has managed to break free from the geological biases inherent in the stratigraphy concept.

2.2 *Canhasan I*

Canhasan I, like Çatalhöyük, is located in Central Anatolia, and the sequences of both sites overlap. Excavations took place in the 1960s, and they have been published in three volumes (French 1998; 2005; 2010). The sequence spans the Late Ceramic Neolithic (layers 7-4), Early Chalcolithic (layers 3, 2B, and 2A), and Late Chalcolithic (layer 1). There is some controversy over the layer 2B/2A chronology at Canhasan 1. Radiocarbon dates from layers 2B and 2A give a range of 6000 – 5500 BC, which is Early Chalcolithic in local culture history (Thissen 2002). The older layers 7-4 probably date to the second half of the seventh millennium BC.

Layers 7 and 6 at Canhasan have been investigated over an area of 2 by 3 metres only, and little is known about them. Layer 5 was excavated over 4 by 4 metres, and a confusing array of walls and internal division walls was found. Layer 4 is likewise poorly documented. The single excavated building had multiple floor surfaces made of high-quality plasters which rested on wooden beams. On the floors various domestic features were found, including two hearths, a series of six bins, and two embedded querns. Besides, floor compartments with plaster ledges were found similar to those documented at Çatalhöyük East. Subsequent layer 3 was excavated over 10 by 10 metres, and in this area one poorly preserved structure was found. In this layer the first mould-made mud bricks occur and walls became more massive. Another innovation in layer 3 is the use of internal buttresses.

The most extensive exposure at Canhasan I is that of layers 2A and 2B (fig. 3). A neighbourhood of approximately 15 buildings was excavated in which buildings were completely surrounded by other structures. The buildings unearthed in layer 2 at Canhasan 1 were initially interpreted as constituting one layer, but were later subdivided into layers 2B (older) and 2A, both of which were argued to encompass several building

Figure 3 Plan of layers 2B and 2A (grey) at Canhasan I. (Produced by author and Medy Oberendorff).

levels. This sequence is in many ways problematic and difficult to conceptualize (Düring 2006, 261-264). From the outset of the excavations at Canhasan, French recognized a 'Middle Chalcolithic' 2A layer with distinctive pottery that was found in a variety of deposits, including pits and deposits of debris and ash. Many of these deposits were found over and within buildings of the earlier layer 2B buildings, but no substantial structures could be associated with layer 2A. In 1966 French noted for layer 2A: "The problem which still remains unsolved after five years of excavation over an area of more than 1100 square metres is: where was this settlement?" (French 1966, 115). The problem was partly solved in the following season, when it was postulated that some of the structures that had been assigned to layer 2B, could in fact be assigned to layer 2A, and this brought about the transfer of a whole series of structures located on the western edge of the plan to layer 2A. It appeared that all these layer 2A structures were superimposed on top of layer 2B buildings (French 1968, 169). In the final report on the stratigraphy and structures of the site French explains the rationale behind these re-assignations. He argues that some of the layer 2A buildings were "inserted" into existing layer 2B structures. This "insertion" was achieved by constructing new structures within extant older buildings, although in some cases this procedure involved removing some of the earlier walls and features. The inserted structures that were built in this way did not damage the surrounding buildings, and followed the alignment of the settlement in general.

The prime issue that French does not solve in his final publication on the stratigraphy and structures of Canhasan I is the relationship between the building remains of layers 2A and 2B. The issue is whether the 2B buildings that were not replaced by 2A insertions continued to be in use alongside those of layer 2A, or whether they were no longer inhabited. French opts for the latter position (French 1998, 65). This interpretation has one important problem, however. If it was indeed the case that the buildings of layer 2B were already in disuse and falling apart, why were the layer 2A buildings inserted carefully into the older settlement structure? The sort of insertion procedure described by French would only make sense if the 2A structures replaced some of the older 2B structures while coexisting with others. If true, the division between the two layers is less rigid than envisaged by French. Rather than a wholesale reconfiguration of the settlement, buildings were renovated by inserting a new set of walls in front of the existing walls of a building, possibly because a particular structure was no longer structurally sound.

3 Discussion and Conclusion

In this paper I have argued that the concept of stratigraphy as it is used by archaeologists still bears the hallmarks of its origin in geology. More specifically, archaeologists often conceive of their stratigraphy as consisting of a series of continuous and discrete occupation phases. While such a conceptualization is not problematic where archaeologists dig relatively small exposures, or focus on large monumental structures, archaeologists that have excavated large areas of village or towns in the Near East have run into problems, as I have demonstrated both for Çatalhöyük and Canhasan I. The reason for this is that a settlement is best described as being in a state of constant flux, in which certain historic buildings are actively maintained and redeveloped. While the example of Leiden discussed earlier may not be completely relevant for the Near East, because loam buildings cannot be preserved and renovated for centuries as some historic buildings in Leiden are, the idea of more or less constant and fragmented changes in the built environment certainly holds. Unlike the solid structures built in most of North-Western Europe, a loam building cannot be considered a finished product, fit for occupation until the end of its use-life, after its construction is at an end. The upkeep of such a building requires constant care and effort. In most cases this takes the form of re-plastering of wall surfaces and of repairing weak spots on the roof. Furthermore, such buildings can be modified and expanded relatively easily: rooms can be added without much ado, interior walls can be added or removed, doors and windows can be opened or closed without much effort (see Stone 1981; Peters 1982; Horne 1994 for more details).

How can archaeologists capture such dynamic changes in their stratigraphy? Part of the solution has already been developed in projects such as Çatalhöyük – discussed above – and Tell Sabi Abyad (Kaneda in prep.). At both projects the idea of stratigraphy as consisting of a series of continuous and discrete occupation phases has been abandoned. Instead stratigraphies are constructed for specific excavation areas in which not all buildings and trenches have all stratigraphic phases and some buildings may survive over several phases. The stratigraphic sequences of excavation areas are linked with one another through stratigraphic reasoning if direct stratigraphic relationships exist or by means of a good series of radiocarbon dates.

Archaeologists will continue to publish stratigraphic phase plans. While we need such plans to construct our understanding of the past, we should emphasize more that they are at best a simplification of a complex series of irregular processes and changes that constitute the settlement at any one time. And, many of the small changes occurring in buildings cannot be represented on them. To some degree this can be ameliorated by the use of digital technologies: it is possible to start producing dynamic 'movie-like' stratigraphic reconstructions showing small changes in the settlement rather than static plans. However, we will also have to concede that there is no way of directly linking many

of the minor changes in one building with those occurring elsewhere. Thus, we should come to terms with stratigraphies that are messier and less secure than what we see in many standard publications. On the other hand, such stratigraphies will be a much better description of what past settlements were like and how they changed over time.

Acknowledgements

As an archaeologist who was trained in Leiden and did my PhD there I feel much gratitude to all those colleagues and teachers who supported me throughout my career and brought me where I am today. It is thus with great pleasure that I offer this paper for this celebratory volume. I would also like to thank Tijm Lanjouw en Victor Klinkenberg for reading and commenting on a draft of this paper.

References

Akkermans, P.M.M.G., R. Cappers, C. Cavallo, O. Nieuwenhuyse, B. Nilhamn and I.N. Otte 2006. Investigating the Early Pottery Neolithic of Northern Syria, New evidence from Tell Sabi Abyad. *American Journal of Archaeology* 110, 123-156.

Andrews, G., J.C. Barret and J.S.C. Lewis 2000. Interpretation not record, The practice of archaeology. *Antiquity* 74, 525-530.

Bordaz, J. 1968. The Suberde excavations, southwestern Turkey, an interim report. *Türk Arkeoloji Dergisi* 17/2, 43-71.

Byrd, B.F. 2005. *Early village life at Beidha, Jordan. Neolithic spatial organization and vernacular architecture. The excavations of Mrs. Diana Kirkbride-Helbaek*, Oxford.

Cessford, C. 2001. A new dating for Çatalhöyük. *Antiquity* 75, 717-725.

Chadwick, A. 1998. Archaeology at the edge of chaos, Further towards reflexive excavation methodologies. *Assemblage* 3, www.shef.ac.uk/assem/3/3chad.htm.

Düring, B.S. 2006. *Constructing Communities, Clustered Neighbourhood Settlements of the Central Anatolian Neolithic, ca. 8500-5500 Cal. BC*, Leiden.

Farid, S. 2007. Introduction to the South Area Excavations. In: I. Hodder (ed.), *Excavating Çatalhöyük, South, North and KOPAL Area reports from the 1995-1999 seasons,* Cambridge**,** 41-58.

Farid, S. 2008. A review of the Mellaart Level system and the introduction of a new phasing system at Çatalhöyük 2008. *Çatalhöyük Archive Reports*, http://www.catalhoyuk.com/archive_reports/.

French, D. 1966. Excavations at Can Hasan, Fifth preliminary report, 1965. *Anatolian Studies* 16, 113-123.

French, D. 1968. Excavations at Can Hasan, Seventh preliminary report, 1967. *Anatolian Studies* 18**,** 45-54.

French, D. 1998. *Canhasan sites I, Stratigraphy and structures*, London.

French, D. 2005. *Canhasan I: The pottery*, London.

French, D. 2010. *Canhasan I: The small finds*, London.

Gasche, H. and Ö. Tunca 1983. Guide to archaeostratigraphic classification and terminology: Definitions and principles. *Journal of Field Archaeology* 10, 325-335.

Hamilton, N. 1996. Figurines, clay balls, small finds and burials. In: I. Hodder (ed.), *On the Surface, Çatalhöyük 1993-5*, Cambridge**,** 215-264.

Harris, E.C. 1979. *Principles of archaeological stratigraphy.* London.

Harris, E.C., M.R. Brown and G.J. Brown (eds) 1993. *Practices of archaeological stratigraphy*, London.

Hodder, I. (ed.) 1996. *On the surface, Çatalhöyük 1993-95*, Cambridge.

Hodder, I. 2005a. *Inhabiting Çatalhöyük: Reports from the 1995-1999 seasons*, Cambridge.

Hodder, I. 2005b. *Changing materialities at Çatalhöyük: Reports from the 1995-99 seasons*, Cambridge.

Hodder, I. 2006. *Çatalhöyük perspectives: Themes from the 1995-9 seasons*, Cambridge.

Hodder, I. 2007. *Excavating Çatalhöyük: South, North and KOPAL Area reports from the 1995-1999 seasons*, Cambridge.

Hodder, I. and C. Cessford 2004. Daily practice and social memory at Çatalhöyük. *American Antiquity* 69, 17-40.

Horne, L. 1994. *Village spaces, Settlement and society in Northeastern Iran*, Washington and London.

Kaneda, A. in prep. *Development and change in the organization of settlement and architecture in the Late Neolithic,* Leiden, PhD Thesis.

Kenyon, K. 1952. *Beginning in archaeology*, London.

Matthews, W. and S. Farid 1996. Exploring the 1960's surface. The stratigraphy of Çatalhöyük. In: I. Hodder (ed.), *On the surface, Çatalhöyük 1993-95*, Cambridge**,** 271-300.

McAnany, P.A. and I. Hodder 2009. Thinking about stratigraphic sequence in social terms, *Archaeological Dialogues* 16, 1-22.

Mellaart, J. 1964. Excavations at Çatal Hüyük, Third preliminary report, 1963. *Anatolian Studies* 14, 39-119.

Mellaart, J. 1966. Excavations at Çatal Hüyük, Fourth preliminary report, 1965. *Anatolian Studies* 16, 165-191.

Mellaart, J. 1967. Çatal *Hüyük, A Neolithic town in Anatolia*, London.

Özdoğan, A. 2007. Çayönü. In: M. Özdoğan and N. Başgelen (eds), *Anadolu'da uygarlığın doğuşu Avrupaya yayılımı Türkiye'de Neolitik d*önem. *Yeni kazılar, yeni bulgular*, Istanbul**,** 57-98.

Özdoğan, M. 2006. Hypothetical approaches and realities, Research strategies in defining space and context. In: D. Papaconstantinou (ed.), *Deconstructing context, A critical approach to archaeological practice,* Oxford**,** 159-175.

Peters, E. 1982. Ländliche bauweisen im Keban-Gebiet. *METU – Keban Publications* 7, 217-232.

Rapp, G. and C.L. Hill 2006. *Geoarchaeology. The earth-science approach to archaeological interpretation*, New Haven.

Stevanovic, M. and R. Tringham 2003. The excavation of the BACH 1 Area 2003, *Çatalhöyük Archive Reports*, http://www.catalhoyuk.com/archive_reports/

Stone, E.T. 1981. Texts, architecture and ethnographic analogy, Patterns of residence in Old Babylonian Nippur, *Iraq* 43, 19-33.

Thissen, L. 2002. Appendix I, The CANeW 14C databases, Anatolia 10,000-5000 cal BC. In: F. Gerard and L. Thissen (eds), *The Neolithic of Central Anatolia*, Istanbul**,** 299-337.

Trigger, B.G. 1989. *A history of archaeological thought*, Cambridge.

Warburton, D.A. 2003. *Archaeological stratigraphy, a Near Eastern approach*, Neuchatel.

Watson, P.J. and S.A. LeBlanc 1990. *Girikihaciyan, A Halafian site in Southeastern Turkey*, Los Angeles.

Wheeler, M. 1954. *Archaeology from the earth*, London.

Bleda S. Düring
Faculty of Archaeology
Leiden University
P.O. Box 9515
2300 RA Leiden
b.s.during@arch.leidenuniv.nl