Truncation Horizons and Reworking in Urban Stratigraphy

by Brian Yule

This paper suggests that field archaeologists may often not recognise ‘reworking’ in the excavation of complex urban stratigraphy. The identification of truncation horizons may enable the archaeologist to distinguish between reworking and dumping. It is considered that the standard approach to the construction of the Harris matrix may actually mask the presence of truncation horizons. Consideration of all the physical relationships of a context, not only the latest, would enable truncation horizons to be identified, and allow reworking to be recognised.

My proposition that reworking is often not recognised in complex urban stratigraphy is admittedly not based on a thorough survey of the literature. It is an impression gained during my research on the ‘dark earth’ in London (Yule 1990), from a small number of available London archives, and from more generalised statements about its formation process in London and other towns. It seems to me that we have been too ready to interpret ‘dark earth’ horizons as dumped, rather than subject to processes of reworking.

In this paper I have used the Winchester Palace, Southwark site to illustrate several probable reworked deposits.

Interpretation of mixed earth layers relies overmuch, I believe, on the nature of the layers, in isolation from their context in the stratigraphy. Stratigraphic evidence, particularly the identification of truncation horizons, may help us to distinguish between dumped and reworked strata. I define a ‘reworked’ layer as one which has undergone mixing and post-depositional transformation; at the base of the reworking there is necessarily a truncation horizon.

A truncation horizon at the interface between strata is equivalent to a geological ‘unconformity’, indicating a break in the sequence. Harris, in Principles of archaeological stratigraphy, refers to this horizon as an ‘interface of destruction’ (Harris 1989, 68), but gives little guidance as to how such an interface may be recognised, or how overlying layers may be interpreted.

It is generally accepted that in the absence of truncation a layer deposited naturally or anthropogenically would be expected to seal a single chronological horizon. A corollary of this is that more than one chronological horizon exposed at an interface implies truncation and the presence of a truncation horizon. Of course we should not expect all truncations to necessarily expose multiphase strata; eg the truncation horizon produced by the reworking of a thick destruction dump would simply reduce the thickness of the latter, and not necessarily expose earlier strata.

The interpretation of layers that seal a truncation horizon is not straightforward; layers may be dumped - as in a make-up sealing an eroded surface, or, reworked - as in a worm-sorted soil or a plough soil. While it is difficult to be prescriptive when the potential sites and agents are so numerous, it seems clear that biological or anthropogenic reworking should be considered an interpretation for many well-mixed earth layers sealing truncation horizons.

Some examples of probable reworking are presented from Winchester Palace, Southwark (Yule 1989; research archive and publication in preparation). The accompanying schematic section across the site highlights putative truncated horizons and (hatched) reworked layers; the standard Harris matrix shows the sequence of groups (Fig 1).

The sequence can be briefly summarised as follows:

Group 20 is the ‘natural’, a sandy gravel, overlain by 21, a pre-Roman waterlain flood clay. Groups 22-25 are three phases of Roman buildings. They are sealed by Group 28, a make-up across the whole area for a masonry building, represented here by Groups 31 and 36, which is part of a multiphase sequence and is in use from the 2nd to the 4th century. Several hypocausted rooms are demolished in the early 4th century – Group 37 is demolition debris filling one of the hypocausts, and Group 38 robber trenches. Group 40 ‘dark earth’ forms in the post-Roman period, during which there is an erosion event. Group 41, which truncates the Roman sequence at the east end of the site. After infilling there is late Saxon occupation, as evidenced by several pits, Group 43. Medieval Winchester Palace dates from 1150, comprising Group 44, the eastern precinct wall and building range with internal floors, and external Group 45 garden soil.
Examples of reworking:

1. The weathering and development of a soil in the top of the Group 20 'natural' sandy gravel represents biological reworking.

2. The cut through the Roman sequence at the east end of the site is an obvious truncation horizon. However its interpretation is not certain: how do we explain the recorded cut line, and the filling in of the cut with 1 m of unstratified, homogeneous dark earth? The absence of tip lines makes it difficult to interpret the infill as dumping. The original cut may have been the result of erosion of the bank of a stream, assumed to have flowed just east of the site. The cut may have been infilled naturally (probably over a period of centuries) by soil development due to biological reworking of exposed strata, and the process of soil creepage and slippage down the slope resulting in natural soil accumulation.

3. Group 28 is also probably a reworked deposit, though there is no obvious truncation horizon at its base. The deposit appears similar in character to the 'dark earth' but has significant quantities of charcoal and slag, particularly towards the base of the layer. The charcoal and slag do not seem to be associated with any on-site process, and may represent industrial waste brought onto the site as bulk material in levelling up dumps. Subsequently during the life of the building represented here by Groups 31 and 36, that part of Group 28 which was external to the building was relatively much more mixed than that part which was sealed by the building. Mixing would have been the result of biological reworking - the process of soil formation, and anthropogenic reworking - the presence of late 2nd-century pottery may indicate the digging in of kitchen waste to a garden area.

4. The Group 45 dark brown earth deposit was external to, and contemporary with, the Group 44 medieval building range. There is documentary evidence for this area being the Bishop's 'privy garden'. What is the source of the earth? Dumping of imported earth is a possibility, but seems less likely than reworking. favouring the latter interpretation is a clear truncation horizon.
which exposed earlier Roman strata, and the presence of much residual Roman pottery. Reworking may have comprised digging over of the ground and subsequent biological mixing, via root and worm action.

5. The Group 40 post-Roman 'dark earth' is probably also a reworked deposit, but is little represented on this site.

I believe that on many sites 'dark earth' formation results in part from biological reworking of earlier deposits during site abandonment. The identification of truncation horizons at the base of such layers which prompted their interpretation as reworked rather than dumped deposits (Yule 1990, 621).

Do we record stratigraphy so that we can recognise truncation horizons? It seems to me that our concern with establishing the sequence, as in the standard Harris matrix, masks the presence of such horizons. Harris' Law of Stratigraphical Succession states:

A unit of archaeological stratification takes its place in the stratigraphic sequence of a site from the position between the undermost (or earliest) of the units which lie above it and the uppermost (or latest) of all the units which lie below it and with which the unit has a physical contact, all other superposition relationships being redundant. (Harris 1989, 34)

This has led to the failure of most excavators to record the relationship of a layer to any but the latest of the underlying layers. I agree that in drawing the Harris matrix this is good practice - the matrix should be kept as a vehicle for displaying the sequence, and would be crowded with 'cross-overs' if all relationships were to be shown. But I believe we should be at pains to record all physical relationships of a context, because this would enable truncation horizons to be identified.

The Group 45 medieval garden soil at Winchester Palace is a good example: although the Harris matrix shows no relationship with earlier Roman layers, Groups 28 and 37, the fact that Group 45 physically seals them is significant to its interpretation as sealing a truncation horizon, and therefore raising the possibility that the deposit is reworked.

The failure to identify truncation by reworking means that we may not recognise the extent to which earlier stratigraphy has been lost.

Acknowledgements

Special thanks are due to my wife, Annie, for her help with the text. Also to Julie Carr for drawing the figure and the City of London Archaeological Trust for funding it.

References

