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1. *Metodi e strumenti*

THE STRATIGRAPHY OF STANDING STRUCTURES

INTRODUCTION

Archaeological research is grounded in science of stratigraphy, by which the complex relationships between the deposits and interfaces of stratification are examined and understood. Taken uncritically from geology in the early nineteenth century, stratigraphic principles were only applied in a most general manner in archaeology into the mid-twentieth century. The development of stratigraphic excavation and recording in the second quarter of that century led to the invention of the Harris Matrix and its associated methods in 1973. Those concepts revolutionized archaeological thinking and the development of "archaeological stratigraphy" as a science in its own right began after that time. Part of that revolution included a reexamination of methods for the analysis of standing structures (HARRIS 1999).

Archaeology stratigraphy has evolved through several phases, although some archaeologists remain wedded to the earlier and least stratigraphic methods. In the eighteenth and nineteenth centuries, archaeologists were consumed with the acquisition and study of portable artifacts. Stratigraphic deposits and interfaces, and the sequences that formed the testing patterns of archaeological sites were largely destroyed without adequate record. As the nineteenth century progressed, interest also focussed on architectural data in the earth, but the surrounding stratification was destroyed as walls and other structural features were outlined. By the 1960s, attention was directed on the common units of stratification, the layers or deposits. This was followed by the examination of surfaces and interfaces in horizontally-laid stratification, and only towards the end of the twentieth century did the concentrated examination of standing stratification come to the fore.

It was not until the 1930s that interest emerged in the stratification of buildings in excavations and in buildings standing unburied, but a part of the stratigraphic sequence of a site or place. The discovery of "robber trenches" by Mortimer Wheeler in the 1930s was an appreciation of the way buildings could significantly alter stratification. This was a very early recognition of the importance of the "interface" in stratigraphical studies. For several decades, his section drawing of the robber trench was one of the most reproduced diagrams used to illustrate stratigraphic principles in archaeology, yet the value of the interface demonstrated in it was not followed up theoretically until the 1970s (HARRIS 1989).

Buildings were thus identified as one of the great problems in archaeological stratigraphy for several reasons. First, foundation trenches often destroyed much pre-existing stratification, thus complicating the stratigraphic sequence. Secondly, the walls of buildings separated horizontally laid stratification into discrete areas, further complicating the stratigraphic sequence. Thirdly, walls presented a vertical dimension in stratification, confounding prevailing and simplistic notions of superposition, wherein deposits were supposed to lie the one directly upon the other like a deck of cards, with the lower always the older.

The stratigraphic problems of buildings are inseparable from the concept of the interface that was discovered in geology in 1795 by James Hutton and in archaeology by the second quarter of the 1900s by Wheeler, Kathleen Kenyon and others. As a stratigraphic issue, the interface was not followed up after it forcefully presented in KENYON's *Beginning in Archaeology* in 1952. For all the publications of the "New Archeology" of the 1970s and 1980s, little was contributed from that source to the advancement of the development of a science of archaeological stratigraphy. Models were made into magnificent mountains of archaeological jargon founded on a quagmire of poorly collected stratigraphic evidence. This tradition of theory over hard evidence appears to be continued into the new millennium, as some archaeologists continue to call for the adoption of high-level theoretical approaches, without giving much thought to stratigraphic fundamentals. Such new directions would be laudable if grounded in requirements for sound stratigraphical evidence from archaeological excavations. As it is, such constructs will remain inverted mountains of archaeological theory teetering precariously on scrapes of inadequate data, unless all archaeologists adopt rigid stratigraphic methods of excavation and recording.

In studying standing structures, a return to the fundamentals of archaeological stratigraphy is necessary, for standing stratification is one of the major problems facing archaeologists. In the last few decades, archaeology has come to encompass both buried features and standing structures that cannot be excavated except on paper. There are many instances where only the standing and exposed parts of buildings are available for study and no excavation will take place, yet much stratigraphic evidence is available for record and analysis. The study of the evidence in standing stratification has been aided in recent years by the methods of the Harris Matrix. This concept is now discussed, as are the laws of archaeological stratigraphy. More than anything else, the analysis of standing stratification revolves around the concept of the interface, which appears throughout this discussion as a major theme.

THE HARRIS MATRIX AND STANDING STRATIFICATION

The Harris Matrix was invented in 1973 and over the course of five years its major tenets were evolved and tested, the latter mainly on excavations in London. The first textbook devoted to the science of archaeological stratigraphy was then published in 1979,

with a Spanish edition following in 1993. Of universal application, the Matrix and its methods are still ignored by many archaeologists with the resulting destruction of stratigraphic data without proper record. This is particularly true on American and other sites where archaeologists as late as 1999 were excavating stratified deposits by arbitrary levels, thus destroying interface features essential to stratigraphic understanding. Some archaeologists, self-appointed champions who would return archaeology to the methods of geological stratigraphy, have attacked the Matrix as leading archaeology down false paths. The Matrix however evolved in the face of the inadequacy of geological concepts for archaeological contexts.

The Matrix also provided archaeology with a vital tool not found in geology, for it allowed archaeologists for the first time to "see" the stratigraphic sequences of complex archaeological sites, that is to say, sites having many discernible stratigraphic units. The Matrix changed the paradigm of archaeology from the one-dimensional concept embodied in the Wheelerian section drawing to a four-dimensional model that combines the three physical dimensions with that of time, the fourth dimension. In this sense, it is like the "clock face" of twelve hours and the Gregorian calendar of a twelve-month year, which are diagrammatic ways in which time, which does not exist in any material form, can be "seen". More than any other science, archaeology is a time-related discipline and the Harris Matrix has given that emphasis a revolutionary force in its ability to translate the physical evidence of stratification into calendars of relative time, unique to each site, but universally comparable through the Matrix diagrams.

A major feature of the Matrix system is the other great "unseeable" aspect of archaeological stratification, the "interface" between physical stratigraphic units. The concept of the interface dogged the development of geology until Hutton discovered it at the end of the eighteenth century. In spite of its identification in archaeology in the twentieth century, the lack of appreciation of its significance in stratigraphic studies hampered the development of archaeological stratigraphy into the 1970s. No concept is more necessary to stratigraphic analysis, especially that of standing structures, yet none has been so little examined by philosophers of the science. This may be due in part to the fact that interfaces, or surfaces, like time, do not exist in any material form, and can only be "seen" when recorded in a diagram, namely a plan drawing. Thus interfaces and stratigraphic sequences, as illustrated by contour plans and Harris Matrix diagrams, share the common feature of being invisible until illuminated by archaeological methods.

Since interfaces have no physical presence and cannot be excavated, they have been ignored perhaps because of the historical preference of archaeologists for material objects. The obsession with portable artifacts followed by architectural structures has meant that archaeologists have concentrated on the lesser half of stratigraphic data. In ignoring the interface aspects, more than half of the stratigraphic evidence has been relegated to oblivion, since there will usually be more interfacial units on a site than material ones. This is striking shown in the periodization of sites in publications wherein the periods identified are usually those related to the deposits (disuse) rather than the interface periods (use), or a combination of these two very different types of stratigraphic period.

If interfaces are not recorded in diagrams, such as section drawings, they do not exist at all and with their loss goes the possibility of deciphering the stratigraphic sequence of a site. This was the true essence of the controversy following the publication of WHEELER's *Archaeology from the Earth* in 1954 in which he argued for the execution of section drawings with all interfaces drawn. Opposed to him were those archaeologists who did not interpret the interface by recording it with hard lines. Their impressionistic illustrations of stratification made it impossible to add the interfaces after the fact and thus to compile a stratigraphic sequence.

The essential record of an interface is the topographical plan in which it is shown by contour lines. With the archaeological paradigm grounded into the 1970s in the archaeological section, little emphasis was given to the area, or plan view of the interface and thus the much stratigraphic data on many archaeological sites worldwide were lost.

It is now understood that some stratigraphic units only exist as interfaces and have no physical deposit of which they form the surface. Such features are defined as unique because in their creation they destroy pre-existing stratification, rather than adding to it. Their "superposition" is an abstract one and they add a purely time event to the stratigraphic sequence, as opposed to an event of physical mass added by the layer deposit or a wall. Lines in section drawings or contour lines on plans are the only way to define feature interfaces, such as ditches or wall foundation trenches. Without such records they do not exist after the fact of excavation.

Deposits have been seen in a conflated manner in stratigraphic recording, wherein the unit of mass and its surface were given the same unit number and were treated as one and the same. This practice is contrary to stratigraphic principles as it combines the stratigraphy units of disuse with those of use. Units of mass are units of disuse, while interfaces are units of use. The joining together of the mass unit and the interface unit has been carried through into phasing, wherein phases and periods of physical deposition are combined with the interfacial periods of the use of a site. Most site reports reflect the failure of archaeologists to distinguish between, and to separate stratigraphically and otherwise, the two types of period or phases found on every single archaeological site.

It may argued that certain types of deposits are units of use, such as the plough zone in a field, or the muck layer of a farmyard. While it is true that such soil may be in use for a period prior to its formation (that is to say, its preserved stratigraphic form), that activity has to cease for it to become a stratigraphic deposit. A deposit is something created by the disuse of material upon which a surface is then formed. Without a surface, the deposit has no definition and is not stratified and thus of little import in stratigraphical studies. The essence of stratification is that a deposit has been stratified into disuse and a surface which "covers" it (and defines it stratigraphically) is thereby created.

That depositional event and its surface of use are absolutely stratified when a new "deposit" in the evolution of a site overlies them. Only when materials