the archaeological material. One clear observable difference is that in the areas that had not been Romanized, the official acceptance of Christianity took place at a later stage, demonstrating the significance of the infiltration phase for this process. Overall archaeological evidence is crucial for the study of Christianization as it provides insight into the pagan peoples that are being converted, as well as numerous groups of people at different levels of the new Christian societies. On a more individual level, great differences are naturally found between the different geographical areas, and future research is likely further to emphasize the variability in the processes of Christianization and Christian practices across Europe.

## Cross-References


▶ Burial Excavation, Anglo-Saxon
▶ Churchyard Archaeology
▶ France: Medieval Archaeology
▶ Scandinavia and the Baltic Sea Region: Medieval Archaeology


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# Chronological Systems, Establishment of


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## Introduction

Today’s student of archaeology might find it difficult to imagine an era when modern chronometric dating methods – radiocarbon and luminescence, for example – were unavailable. How, the student might ask, were archaeologists working, say, in the first half of the twentieth century able to place objects and sites in proper chronological sequence? Given the important roles that chronometric methods play in modern archaeology, together with the precision they seem to impart, it is little wonder that today’s student might view earlier efforts to establish temporal control as rather crude and outdated. Such a view, however, overlooks the fact that early archaeologists devised a battery of clever methods to determine the ages of archaeological phenomena with considerable precision. This kind of chronological control is often referred to as *relative dating*.

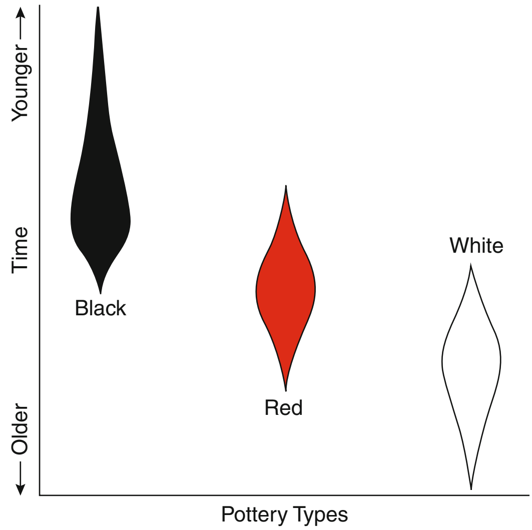
## Definition

Relative dating is defined as the production of a sequence of events for which no fixed or calendrical dates exist. Instead of knowing that a certain kind of pottery was made between, say, CE 200 and CE 400 and that another kind was made between CE 500 and CE 600, all we know is that the latter kind is of more recent origin than the former. The latter kind could postdate the earlier one by several hundred years or by a thousand years, but we do not know this. All we know is that it is more recent. Similarly, we might know, perhaps through historical evidence, the terminal calendrical date of manufacture and use of the later kind of pottery, but we might not know when on a calendrical scale that kind of pottery was first made and thus when it began replacing the earlier kind. In contrast, *absolute-dating* methods – sometimes referred to as *chronometric* methods – yield the amount of time, within the limits of sampling error, that elapsed between each pair of events as well as a calendrical date indicating when each event occurred and perhaps each event's duration as well.

Absolute-dating methods thus provide more than a simple chronological sequence, but they in no sense render relative-dating methods obsolete. There are situations where the latter are preferable, especially when large areal chronologies are desired. Relative-dating methods are inexpensive, as opposed to methods, such as radiocarbon, which may cost as much as $1,000 per sample. Unfortunately, few modern archaeologists have more than a passing acquaintance with the origins of relative-dating methods and as a result have by-passed some of the most innovative work ever undertaken in archaeology. That research is as relevant today as it was a century ago.

## Historical Background

Numerous methods for working out relative chronological orderings have been devised in archaeology, one of which, stratigraphic excavation, had its roots in geological observations of the eighteenth century. *Stratigraphic excavation* is perhaps the best known of the various relative-dating methods used by prehistorians, no doubt because the majority of the archaeological record has a geological mode of occurrence (O'Brien & Lyman 1999). There are also two other methods – *seriation* and *cross dating* – that likewise deserve attention. All of them, however, depend on *artifact types*, especially those that pass the *historical-significance test*. This means that a type comprises specimens that were made during a single, relatively short interval of time and that the frequency distribution through time of the specimens approximates a unimodal curve (Fig. 1). Such a curve reflects the introduction




**Chronological Systems, Establishment of, Fig. 1** Diagram showing temporal alignment of three hypothetical pottery types from latest (*black*) to earliest (*white*) (From O'Brien & Lyman 1999)

of a type, its growth in popularity, and its decline and eventual disappearance. Any type that passes the test is referred to as a *historical type*, the gold standard of relative-dating methods.

## Key Issues

### Stratigraphic Excavation

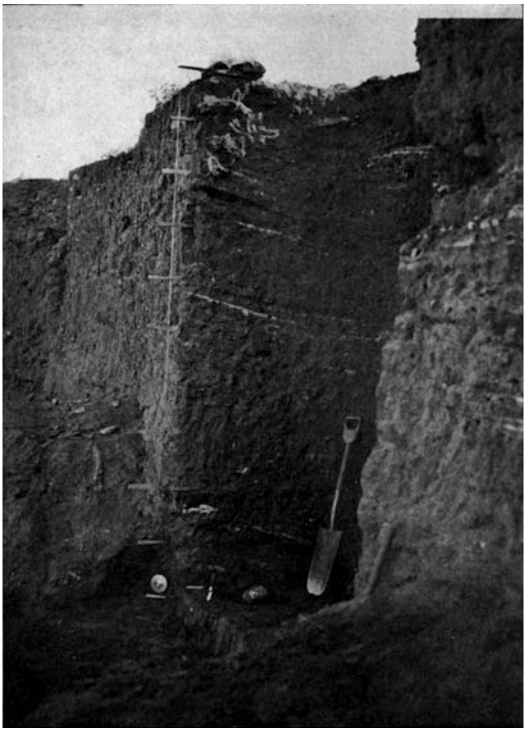
Stratigraphic excavation is defined as removing artifacts and sediments from vertically discrete three-dimensional units of deposition (strata) and keeping those artifacts in sets based on their distinct vertical recovery proveniences for the purpose of measuring time (Lyman & O'Brien 1999). Vertical boundaries of spatial units from which artifacts are collected can be based on geological criteria, such as sediment texture, or on metric criteria, such as elevation. Stratigraphic excavation is based on the commonsense assumption that in a sedimentary column, strata stacked one on another represent the passage of time. More specifically, the assumption is that strata at the bottom of a column were deposited before those above. This is known as the *law of superposition*. Unfortunately, archaeologists often fail to realize that depositional history does not necessarily represent the *age* of the sediments themselves. This includes objects in those sediments. Although artifacts in one stratum were *deposited* before those in a higher stratum, it cannot be assumed that artifacts in the lower stratum are *older* than those in the higher stratum. It could be the case, for example, that artifacts from one period were eroded from one locality and deposited downslope on top of artifacts from a later period.

Thus, superposition is an indirect dating technique when applied to artifacts within strata. It is indirect because the ages of the artifacts are *inferred* from their vertical positions relative to one another. Another way of saying this is that the target event is the age of an artifact's creation whereas the dated event is the age of the depositional event. The work of the archaeologist, like that of the geologist, is to analyze the superposed sediments and to determine when strata were deposited as well as when the sediments were formed. Archaeologists are interested in culturally derived sediments – artifacts – but they realize that the artifacts usually occur within noncultural (natural) sediments. The nature of the latter often is an important source of information relative to the nature of the former.

The problem of identifying the first stratigraphic excavation may never be solved, but historians of archaeology often point to Thomas Jefferson's 1784 excavation of a trench through one of the earthen mounds on his property in Virginia. He subsequently made notes on the stratigraphic relation of layers of earth and human bones in the mound and remarked on the chronological implications of the layering (Jefferson 1801). Jefferson's work was later said to have anticipated modern archaeological methods by a century, but it had no particular impact on Americanist archaeology. As the British archaeologist Mortimer Wheeler (1956: 59) later observed, "Unfortunately, this seed of a new scientific skill fell upon infertile soil. For a century after Jefferson, mass-excavation remained the rule of the day." It was 75 years later, and then in Great Britain, that Jefferson's approach was reinvented with effect. There, on the Devonshire Coast, the excavation of Brixham Cave of England by prominent British geologists and paleontologists in 1858 focused explicitly on stratigraphic context.

In North America, stratigraphic excavation became an art form during the second decade of the twentieth century through the efforts of two prehistorians working in New Mexico, Nels Nelson of the American Museum of Natural History in New York and Alfred V. Kidder of the Robert S. Peabody Museum in Andover, Massachusetts. Nelson started working at San Cristobal, an abandoned pueblo in the Galisteo Basin south of Santa Fe, New Mexico, to test a suspected local sequence of pottery types. In his report, Nelson (1916) stated that by the beginning of the 1914 field season he suspected he knew the chronological order of five types of pottery, two of which exhibited painted designs and three of which contained glazed designs. One of the painted types was suspected of being the earliest of the five because it occurred primarily on small pre-Puebloan sites. The other painted type was known to be the latest of the five types because it occurred in abundance on sites historically documented as postdating the Pueblo Revolt of 1680. Nelson viewed one of the three glazed types as being from the early historical period (1540–1680), given that it was found consistently with bones of horses and other historically introduced domestic animals. The other two glazed types were slid in between the early painted type and the historical-period glazed type. Despite his intuitions regarding the chronological arrangement of the types, Nelson (1916: 162) noted that "tangible proof was still wanting." He found that proof at San Cristobal.

Nelson excavated San Cristobal in arbitrary one-foot-thick levels (Fig. 2) rather than in natural stratigraphic units, and he kept sherds from each level separate. This is the feature of his work that has received attention in histories of Americanist archaeology. Nelson had visited the stratigraphic excavations of European prehistorians Otto Obermaier and Henri Breuil in Spain in 1913 and had seen levels marked off on the walls of the excavations, and he had participated in excavating Castillo Cave – an experience that,



**Chronological Systems, Establishment of, Fig. 2** Stratigraphic cut made by Nels Nelson through midden deposit at San Cristobal, New Mexico (From Nelson 1916 [courtesy American Museum of Natural History])

according to Nelson, served as inspiration for his excavation method at San Cristobal. His technique of excavating in arbitrary levels might have come from Europe, but certainly not the notion that superposed collections marked the passage of time. Everyone knew that. The innovative aspect of Nelson's work was his demonstration that pottery types altered in absolute frequency through time in a pattern that he characterized as "very nearly normal frequency curves [that reflected the fact that] a style of pottery. . .came slowly into vogue, attained a maximum and began a gradual decline" (Nelson 1916: 167).

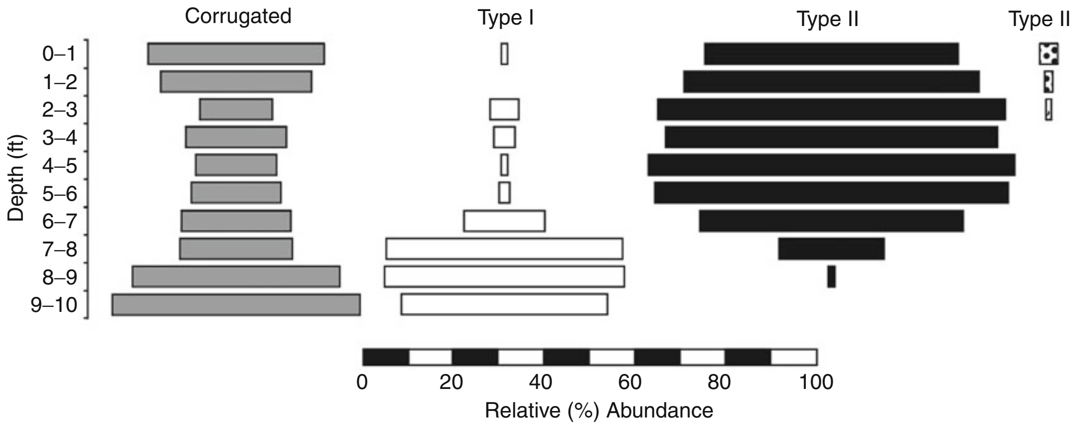
Figure 3 shows Nelson's data graphically as percentages of four pottery types by excavation level. Three of his types – I–III – are of particular chronological usefulness in that they have continuous distributions in time: they come into being, they gain in popularity until they reach their zenith, at which point they begin to fade in popularity until they finally disappear [AR1]. In short, they are good historical types, useful for marking the passage of time. Corrugated ware does not follow this pattern and thus is not a good historical type.

Kidder, who was working at Pecos Pueblo, just to the east of the Galisteo Basin, took notice of Nelson's chronological ordering of pottery types. Kidder had chosen Pecos as his focus of study because historical documents indicated it had been occupied from 1540 until 1840, and preliminary surface reconnaissance had suggested that it had practically all the prehistoric pottery types identified up to that point in the Rio Grande drainage of northern New Mexico:

> [I] hoped that remains [at Pecos] would there be found so stratified as to make clear the development of the various Pueblo arts and to enable students to place in their proper chronological order numerous New Mexican ruins whose culture has long been known but whose relation to one another has been entirely problematical. This hope was strengthened by the fact that Mr. N. C. Nelson. . .had recently discovered very important stratified remains at San Cristobal a few miles to the west (Kidder 1916: 120).

Similar deposits at Pecos would allow comparative analyses and the extension of Nelson's chronology, which ended at 1680 when San Cristobal was abandoned, into the middle of the nineteenth century.

Early in his excavations, Kidder (1916: 122) recognized that pottery types in the lower levels of his trenches were "markedly different from [those] at the top and that there were several distinct types between." Not all excavations at Pecos Pueblo were undertaken with close attention to superpositional relations. Rather, such relations were observed by "tests made at different points as the [excavation] advanced. The tests consisted of the collection of all the sherds in a given column of débris, the fragments from each layer being placed in a separate paper bag" (Kidder 1916: 122). During the first year's field season – the summer of 1915 – those tests employed arbitrary levels that were 1–1.5-ft thick, but when it was apparent that the arbitrary levels split visible strata, "a new bag was started,"




**Chronological Systems, Establishment of, Fig. 3** Nels C. Nelson's pottery data from Pueblo San Cristobal, New Mexico, showing the waxing and waning popularity of types. Note that Nelson believed, correctly, that the frequency of corrugated ware was not a good indicator of age. Note also the essentially monotonic frequency distribution of his types I–III (After Nelson 1916)

which apparently meant that Kidder paid attention to the stratigraphic provenience of the artifacts found within his arbitrary levels (Lyman & O'Brien 1999).

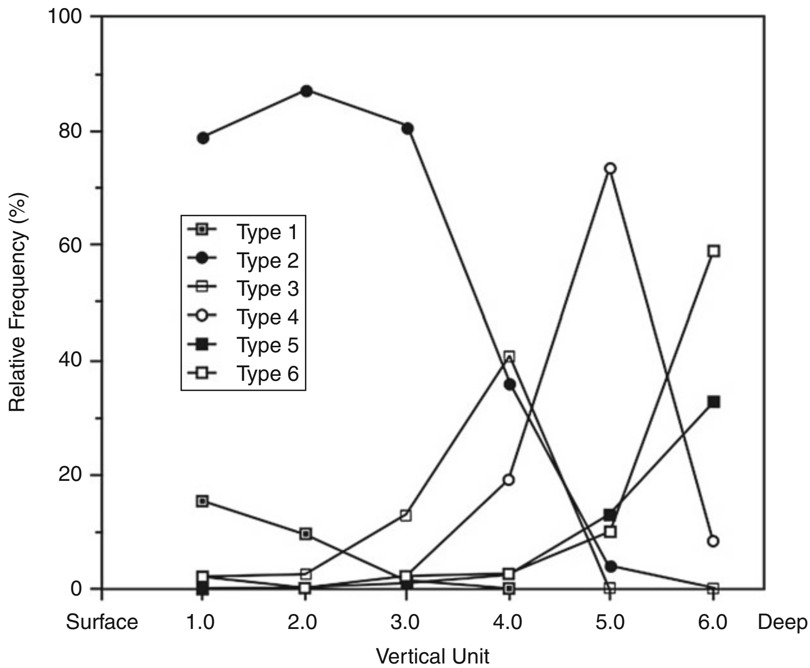
After the first field season, Kidder excavated Pecos Pueblo strictly in visible stratigraphic layers. He not only listed the absolute frequencies of pottery types against their vertical provenience in tabular form, as Nelson had done, he also graphed the changes in relative frequencies of pottery types against his excavation levels (Kidder & Kidder 1917). This analytical technique was later referred to variously as "ceramic stratigraphy" or "percentage stratigraphy" (Willey 1939; Ford 1962). One of his graphs is shown in Fig. 4. Upon inspection of the graphs, Kidder & Kidder (1917: 341) noted that many, but not all, types displayed "approximately normal frequency curves," echoing Nelson in interpreting such curves as "indicating that each [type] had a natural rise, vogue, and decline" (Kidder & Kidder 1917: 349) – the popularity principle (Lyman & O'Brien 1999). In other words, they were good historical types.

## Seriation

More than perhaps any other archaeological method, seriation has had a complex history. Textbooks often credit British archaeologists for introducing seriation into the United States, but in reality only one seriation technique – *evolutionary seriation* – was in use in nineteenth-century Britain, and although that technique was eventually introduced to American archaeologists, it differs significantly from the kind of seriation invented by Americanists in the second decade of the twentieth century. That distinctly American kind of seriation is known as *frequency seriation*, and it eventually led to the Americanist development of what is known as *occurrence seriation*.

Regardless of specific technique, seriation is a descriptive method that orders things – here, artifact assemblages – in a row or column. Seriation creates a linear order, but that order tells us only that the odds are good that two adjacent things are more alike than either is to things farther up or down the order. Seriation is used in archaeology for chronological purposes, but whether or not an order reflects the passage of time is an inference; it is not axiomatic. The term "seriation" is sometimes used as a synonym for "percentage stratigraphy," but this conflates two entirely different procedures. John Rowe (1961: 326) specifically excluded the use of superposed strata in his definition of seriation:

> [T]he arrangement of archaeological materials in a presumed chronological order on the basis of some logical principle other than superposition... The logical order on which the seriation is based is




**Chronological Systems, Establishment of, Fig. 4** A broken-stick graph of data from Pecos Pueblo, New Mexico, showing the fluctuating frequencies of pottery types over vertical space (time) (From O'Brien & Lyman 1999; redrawn from Kidder & Kidder 1917)

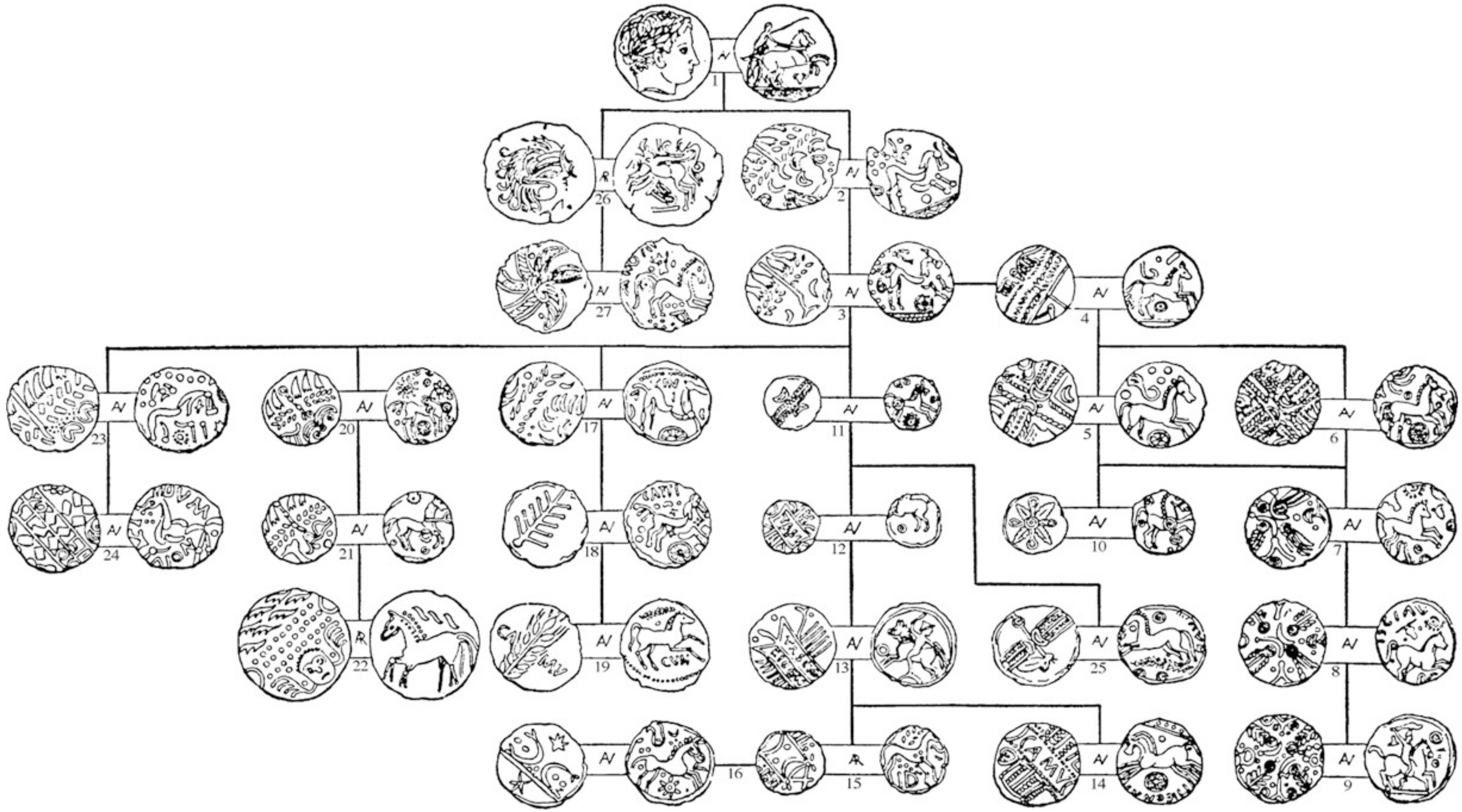
> found in the combinations of features of style or inventory which characterize the units, rather than in the external relationships of the units themselves.

This definition underscores that an ordering is based on formal attributes of the materials used in the seriation. That is, seriation is based on intrinsic properties of artifacts and not on their relative vertical positions in a column of sediments, which is an extrinsic property. Another way of saying this is that seriation is a direct-dating method whereas superposition is an indirect-dating method.

Evolutionary seriation is virtually identical to the technique of paleontologists, who arrange fossils of similar form in an order such that change in character states of the fossils is gradual and continuous. Perhaps the earliest use of evolutionary seriation was by John Evans, who seriated gold coins from Great Britain that were minted prior to and after the Roman invasion of Britain in 54 BCE. Evans (1850) used changes in two characters or dimensions of variation to seriate the coins – weight and design. A third dimension, die size, did not produce particularly useful results. Not visible in Evans's seriation (Fig. 5) is the decrease through time in coin weight. For example, Type 2 coins on average weighed 103.5 grains, Type 3 coins 91.5 grains, and Type 4 coins 87.25 grains. Highly visible, though, is the change in design on both sides of the coins. The sequence begins with the natural-looking laureated bust of Phillip II of Macedon on the obverse and a horse-drawn chariot on the reverse. Through time, the designs on both sides became successively more stylized until a point was reached at which they again became naturalistic:

> Thus far I may observe at present, that the coins generally recede farther from the prototype as the places of their discovery recede from the southern coast – as, for instance, the Yorkshire and Norfolk types Nos. 24 and 16; and that in the southwestern counties the workmanship of the coins appears continually to have deteriorated; while in the southeastern and eastern, after declining for a time, it again improves, probably through the introduction of foreign artists, till, under Cunobeline, it attains its highest perfection (Evans 1850: 137).

Similarly, British archaeologist Sir William Matthews Flinders Petrie used evolutionary seriation, together with a novel grouping procedure akin to occurrence seriation, to make



**Chronological Systems, Establishment of, Fig. 5** Stylistic changes in British coins proposed by John Evans. The sequence begins with the natural-looking laureated bust of Phillip II of Macedon on the obverse and a horse-drawn chariot on the reverse. Through time, the designs on both sides became successively more stylized until a point was reached at which they again became naturalistic (After Evans 1850) chronological sense out of some 4,000 predynastic burials from several localities along the Nile River north of the Valley of the Kings in Egypt. The key to Petrie's analysis was finding an attribute that changed states through time and then using that attribute to construct a temporal sequence of pottery forms. This attribute, as it turned out, was vessel handles. Petrie suspected that handles were functional on earlier jars, which tended to be large and bulky, but that through time they had become less functional and more decorative, such that by late in the sequence they were simply adornments: "The most clear series of derived forms is that of the wavy handled vases.... Beginning almost globular, with pronounced ledge-handles...they next become more upright, then narrower with degraded handles, then the handle becomes a mere wavy line, and lastly an upright cylinder with an arched pattern or a mere cord line around it" (Petrie 1901: 5). This is evolutionary seriation. Once Petrie had the vase sequence worked out, it then became a matter of ordering grave lots based on the vase forms associated with them. Further, vessel types that co-occurred with particular handled-vase types then became markers in their own right and could be used to place correctly other grave lots that did not contain handled vases.

As opposed to evolutionary seriation, frequency seriation is strictly an American innovation. A.L. Kroeber, a student of Franz Boas and the founder of the anthropology department at the University of California, gets the credit, based on analysis of pottery sherds he collected from the surfaces of some 15 sites in the countryside around Zuni Pueblo, New Mexico, in 1915. He noticed that some collections tended to be dominated by "red, black, and patterned potsherds," whereas other collections were dominated by white sherds (Kroeber 1916: 8). He concluded that "There could be no doubt that here, within a half hour's radius of the largest inhabited pueblo [Zuni], were prehistoric remains of two types and two periods, as distinct as oil and water. The condition of the sites indicated the black and red ware ruins as the more recent" (Kroeber 1916: 9). Based on historical evidence and on the condition of the sites, Kroeber (1916: 9-10) concluded that

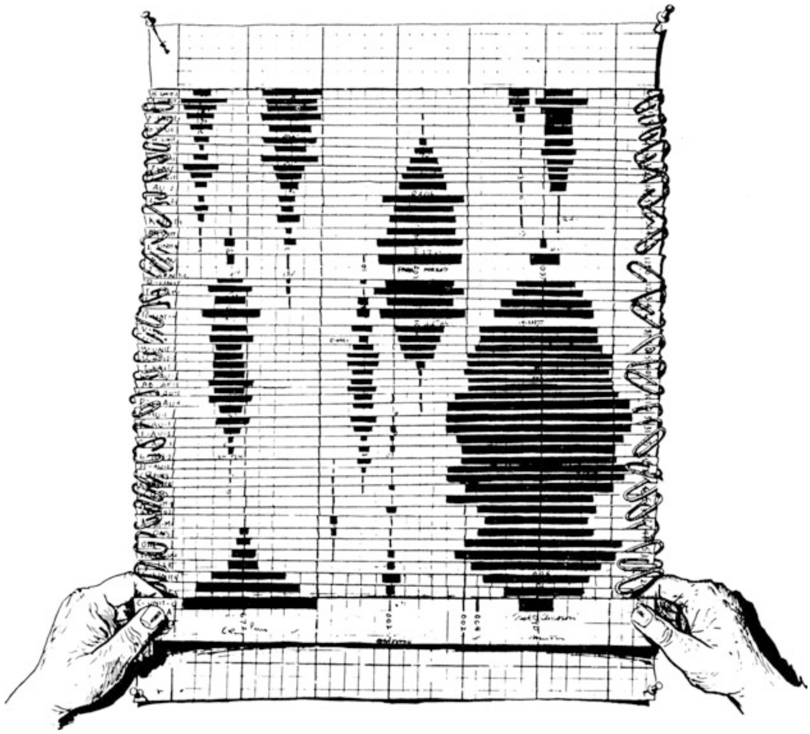
**Chronological Systems, Establishment of, Table 1** An example of a frequency-seriation procedure

| | Historical type | | | | |
|---|---|---|---|---|---|
| Assemblage | 1 | 2 | 3 | 4 | 5 |
| Unordered | | | | | |
| A | 10 | | 30 | 10 | 50 |
| B | | | 50 | 30 | 20 |
| C | 20 | | 15 | | 65 |
| D | | | 40 | 60 | |
| E | 30 | 25 | | | 45 |
| F | | | 20 | 80 | |
| Ordered | | | | | |
| E | 30 | 25 | | | 45 |
| C | 20 | | 15 | | 65 |
| A | 10 | | 30 | 10 | 50 |
| B | | | 50 | 30 | 20 |
| D | | | 40 | 60 | |
| F | | | 20 | 80 | |

concerning "the type and period of white ware and the type and period of black and of red ware, the latter is the more recent [belonging] in part to the time of early American history; the former is wholly prehistoric."

Kroeber's ordering of sites based on relative frequencies of pottery types can best be seen by using an imaginary case, as is shown in Table 1, which lists five historical types – in Kroeber's case, pottery types – across the top and six artifact assemblages (A–F) down the left-hand margin. The numbers in the rows indicate the percentage of a particular pottery type in a particular assemblage. For example, assemblage A contains 10 % pottery-type 1, 30 % pottery-type 3, and so on. Percentages add to 100 % for each assemblage. Table 1 begins with the assemblages in no particular order. The seriation procedure would be to sort the assemblages such that each column of percentages approximates a unimodal frequency distribution, such as is shown in the ordered part of Table 1. Note that it makes no difference if the ordering from top to bottom is "E, C, A, B, D, F" or "F, D, B, A, C, E"; knowledge of the direction taken by time's arrow must come from data independent of the seriation.

Before computing power was available, archaeologists performed frequency seriations



**Chronological Systems, Establishment of, Fig. 6** James A. Ford's thumbs-and-paper-clips method of seriating collections. Each strip of paper represents a surface collection or excavation level; on each strip bars have been drawn to indicate the percentage of each pottery type. The strips are then moved around until the best fit is attained (From Ford 1962)

by hand. James Ford (1962) suggested using long strips of paper containing bars of length proportionate to the percentage of a particular pottery type in a particular assemblage. Each strip shown in Fig. 6 is a separate assemblage, with bars showing the percentage of each type of pottery contained in that collection. Eleven pottery types are shown on the graph, although no assemblage contains sherds of all 11 types. Once each collection is graphed in terms of type percentages, the strips are moved up and down until a best fit is found, meaning that there are as few violations of the unimodal distribution as possible. That is, the resulting type-frequency curves – what Ford (1952: 344) referred to as "'battleship' frequency curves" – are as close as possible to those shown in Fig. 1.

Occurrence seriation, which is based on the presence/absence of historical types instead of on their percentages, was suggested as an alternative to frequency seriation in the late 1950s and early 1960s by Rowe (1959) and Paul Dempsey & Martin Baumhoff (1963). Rowe argued that frequency seriation was subject to sampling problems, and Dempsey & Baumhoff pointed out that low-frequency types may be among the best time-indicators and that even the presence of single specimens of certain types could be significant in establishing chronologies. As in frequency seriation, the procedure is to sort the unordered rows – the assemblages – so that each historical type – each column – displays a continuous distribution. We can take the same data shown in Table 1 and reduce it to presence/absence data, as shown in Table 2. The order resulting from meeting the expectations of the seriation model is given in the lower half of Table 2. As in Table 1, the direction of time's arrow is unknown, so the ordering from top to bottom could be either "E, C, A, B, D/F" or "D/F, B, A, C, E." Note that in Table 2 assemblages D and F are identical in terms of the types they contain. They cannot be sorted and must, in this example, be considered contemporaneous.

## Cross Dating

Geologists have long used fossils included in units of deposition to correlate those layers across

**Chronological Systems, Establishment of, Table 2** An example of an occurrence-seriation procedure

| | Historical type | | | | |
|---|---|---|---|---|---|
| Assemblage | 1 | 2 | 3 | 4 | 5 |
| Unordered | | | | | |
| A | + | | + | + | + |
| B | | | + | + | + |
| C | + | | + | | + |
| D | | | + | + | |
| E | + | + | | | + |
| F | | | + | + | |
| Ordered | | | | | |
| E | + | + | | | + |
| C | + | | + | | + |
| A | + | | + | + | + |
| B | | | + | + | + |
| D/F | | | + | + | |

**Chronological Systems, Establishment of, Fig. 7** Three views of a Folsom point made of chert. Specimen is approximately 11 cm long

space, often vast amounts of space, and archaeologists have done the same, using *marker types*. The usefulness of marker types is tied to their geographic range – we might desire types that appear over a wide area – but also to their life span – we want types with limited chronological ranges. Not all archaeological types meet these criteria, and in fact, few do. Sidestepping the many complex issues that surround how types are created in the first place (O'Brien & Lyman 1999), suffice it to say that many types have too much variation built into them to serve as much more than gross chronological markers. All too often, when a sherd of a particular pottery type is found in one area, and the finder tries to match it up against a published type description of that type, the match is left than perfect, and the person is left wondering, "Is this or is this not a specimen of that type?"

Once in while, though, artifact types do fit the bill and become excellent marker types that can be used for cross dating. In North America, one such type is the Folsom point (Fig. 7), which was used to tip spears between about 8950 BCE and 8500 BCE. In the early decades of the twentieth century, purported finds of early tools in North America were invalidated on various grounds, but the breakthrough came in 1927 when workers from the Colorado Museum of Natural History recovered several small, fluted points in association with the remains of extinct bison (*Bison antiquus*) in an arroyo near Folsom, New Mexico. The stratigraphic association was in a geological context that lay near the temporal border between the late Pleistocene and the early Holocene epochs, or about 11,000 years ago. Even in the 1920s stratigraphers knew what the glacial-age boundary in the western United States looked like in terms of sediments and strata, and thus the age assessment of the bison-kill site was not a shot in the dark (Meltzer 1991). The 19 projectile points unearthed at Folsom were easily recognizable because of the fine flaking and the presence of channel scars, or flutes, on both faces that resulted from the removal of long flakes. It was impossible to confuse this kind of point with more-recent kinds, and it instantly became a chronological marker eventually referred to as the Folsom type. Whenever a Folsom point is discovered in the western United States, it is clear that early bison hunters were responsible for its manufacture.

## Future Directions

There is a tendency in archaeology, like in many disciplines, to dismiss the work of decades earlier on that grounds that it is outdated and unsophisticated, and nowhere is that more prevalent than in discussions of chronological methods. One might suppose that the work of prehistorians such as Nelson, Kidder, and Petrie does not particularly matter anymore because radiometric dating has alleviated our chronological problems, thus rendering any consideration of seriation, stratigraphy, and marker types moot. Alternatively, one might argue that there are two reasons why knowledge of relative dating is key to successful archaeological research. First, absolute radiometric methods do not solve all chronological problems. One needs to evaluate and test the results obtained from the application of these methods, and relative-dating methods provide one source of test implications. Second, radiometric methods may not always be applicable, given the vagaries of the processes that formed and continue to form the archaeological record.

The chronological work that began in Europe in the nineteenth century, based on the principle of artifacts being used to mark the passage of time, reached a zenith in the American Southwest during the second decade of the twentieth century. Archaeologists can still take much away from the reports that emanated from that work.

**Acknowledgments** Portions of this essay are adapted from Lyman & O'Brien (1999), O'Brien & Lyman (1999) and O'Brien (2003).

## Cross-References

▶ Dating Techniques in Archaeological Science
▶ Stratigraphy in Archaeology: A Brief History

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# Chronopolitics and Archaeology

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## Introduction and Definition

*Chronopolitics* designate several fields of interest and endeavor that intersect with the pragmatics, production, and perpetual maintenance of particular temporalities. Because these fields oscillate paradoxically, and somewhat precariously, between those pasts that are remembered (ostensibly for present and future generations) and those pasts that are condemned to Lethe (the river of forgetfulness in Hades), they ignite an array of interests and passions, controversies and disputes, which are negotiated through debate and destruction, regulation and compromise. Here are not considered the chronopolitics of Paul Virilio (2000) that arise at the end of geography, where the geopolitics of three-dimensional space and the reality of distances are canceled out in a revolutionary shift to the politics of compressed time seen in the quasi-instantaneous exchanges of images and sounds, exemplified in the amplification of optical surveillance and advertising across the electronic ether (though the chronopolitics behind the assumption of a wholesale revolution are discussed below). Nor is this topic addressed in a way that would suggest that those pasts that are remembered are the byproducts of human-centered groups enacting their conscious and willful powers of selection. Before further elucidating and exemplifying these chronopolitics, it is important to bring to the reader's attention the old Greek meanings for the constituent words of chronopolitics, *chronos* and *politics*.

*Chronos* is, in its fullest sense, often translated as "time" and this is the conventional meaning associated with terms such as "chronometer" or "chronology." However, *chronos*, in a more specific sense, is the periodic, ordered, or arranged time; it is the time of classification and metrology. *Chronos* is time as separate from events. It is time as a kind of external parameter. *Chronos* as the ordering is often contrasted with what the Greeks term *kairos*, the time that is more contingent, even chaotic and weather-like (Witmore 2007).

As with *chronos*, politics is also considered here in a double sense. Politics centers upon issues raised in a public forum. Here one encounters the old Greek meaning of *ta politika*, which denotes "public matters" or "civic affairs." In a second sense, politics is connected to a kind of curious and probing attitude (Shanks 2004). Taking direction from critical theory (e.g., Leone et al. 1987; also Wilkie & Bartoy 2000), this is politics as a spirit of caution and concern set to expose assumptions and the taken-for-granted myths perpetuated to facilitate control and to extend power and, thereby, its inequities. Politics is not only a matter of worrying over what is best; it is also a matter of crafting "new weapons" (Deleuze 1995). As such, politics is tied to a sustained commitment to effect positive social change as a component of humanistic and scientific responsibility (McGuire 2008).

## Key Issues/Current Debates/Future Directions/Examples

So, if politics turn around controversies, then chronopolitics follow such controversies through to their realization as temporalities. For want of