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Theory, Anthropology and Archaeology

The vast majority of human beings possess a perception of a shared reality that they physically inhabit and seek to mentally comprehend and explain this reality to one another. Speculations on the nature of this reality have taken numerous forms and agreement on a particular speculation by a group of individuals constitutes a shared worldview. With a shared worldview, the group can begin to formulate rules that supposedly govern this reality and these rules, taken as a whole, constitute a theory. Most worldviews have something resembling theoretical constructs, yet theories are generally associated with a scientific worldview. Accordingly theory is relevant to all branches of science including archaeology and anthropology. As anthropology may be defined as “the science of humans and their works”, and archaeology as “the systematic study of past human life and culture by the recovery and examination of remaining material evidence” (dictionary.com), archaeology is viewed as a branch of anthropology linked by the concept and theories of human culture.

Theories are used to explain many things in reality. Definitions of what constitutes a theory range from “Abstract reasoning; speculation” to “A set of statements or principles devised to explain a group of facts or phenomena, especially one that has been repeatedly tested or is widely accepted and can be used to make predictions about natural phenomena” (Dictionary.com). The first definition incorporates virtually any reasonable attempt to explain something. One could speculate using abstract

reasoning that the shared reality that humanity physically inhabits was created merely milliseconds ago and that human memories and experiences of phenomena that supposedly took place this morning were and/or are completely fabricated. But such a theory would be seen as conjecture by the latter definition, which happens to be the definition of theory generally accepted by the vast majority of the scientific community.

Scientific theory rests on the premises that the perceived physical reality inhabited by humanity exists, is knowable, and that this knowledge can be attained through replicable observations, methods and experimentations. Upon acceptance of these assertions, the scientist postulates a set of principles that strive to explain the observed phenomena thus constituting a scientific theory. A theory is deemed “true” based on whether or not this set of principles can be demonstrated repeatedly in reality. Thus science also maintains a belief that reality contains a sequential time component, as a theory would be unable to be tested and proven repeatedly at the same time or if time did not proceed sequentially.

Certain branches of science rely heavily on the concept of sequential time. In the physical sciences, the geologic theory of superposition presupposes sequential time in that layers of soil and rock were theoretically deposited on top of one another in the order of the oldest to the most recent. In the 17th century, Steno “had recognized that in any geological formation lower strata can be assumed to have formed before the layers that cover them” (Trigger 2006:140). This theory is coherent to what is known given the human experience of time and can be recreated using colored sand in a box. Once it is proven that this theory is “true”, subsequent theories can be developed. Several scientists a century later noted “strata of different ages each possessed its own

characteristic assemblage of organic fossils and concluded that such assemblages could be used to identify coeval formations over large areas” (Trigger 2006:144). Thus assuming sequential time and the validity of superposition, it can be deduced that similar fossils or artifacts found in layers in other areas would be from a corresponding period in time. This theory of cross-dating objects is necessarily based on the theory of superposition, which was in turn based on sequential time.

The social science of archaeology, dedicated to the study of human material culture in the past, relies on these theories as well as the notion of sequential time and concepts of culture. Without the idea of sequential time, human material culture could not progress from past to present. Without the theory of superposition, artifacts deposited in successive layers could not be ordered sequentially. Without cross-dating artifacts to other similar artifacts in nearby areas one could not define how widespread a particular culture might have been.

The processes by which human material culture has developed and been transmitted through time and space between various cultures is what makes archaeology anthropological. A science of humanity and its works must necessarily include a science of past human cultures and their material remains. The theory of the development of culture/s through time has often been termed cultural evolution and although the nature and meaning of this development of material culture/s and social structures has been debated endlessly, the basic premise that human culture or cultures go through some form of change through time has remained. Explaining how culture changes through time and is transmitted across space has led to more theories. There may have been one genesis or many of cultural products, these products may

have diffused from one area to another through trade or one culture or people may have replaced another through war or migration. All these theories may be valid in certain instances or there may be other phenomena occurring that humanity is as yet unaware of.

Theory is a useful tool for archaeology, anthropology and science. Yet as humanity and its works both past and present would be impossible to replicate and test, the scientific-ness of both archaeology and anthropology is often questioned. However the nature of human perceived reality is such that each unit of space-time can only occur once and forming any replicable theory is therefore probabilistic at best. This necessitates the questioning of scientific theory but also puts social sciences on equal ground with physical sciences. As reality is not replicable, it is dangerous to assume that any science knows anything to be "true". Archaeology and anthropology can therefore be as scientific as chemistry or physics provided they share a similar worldview and incorporate similar methods in developing theories to explain phenomena in the perceived physical reality.

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