



UNIVERSITY OF CAMBRIDGE

Archaeology Tripos Admissions Assessment

To be sat at noon on 5 December 2017.

1 hour is allocated for this assessment.

Do not turn over until told to do so.

Characterisation in archaeology refers to the identification of chemical or physical properties in a material which permit it to be assigned to a specific natural source of the material. For instance, the archaeologist in Australia may find a polished stone axe, and wish to determine the specific quarry from which its constituent material came. A suitable characterisation study, for instance the petrological examination of a thin section of material taken from the axe, may allow the recognition of petrological or mineralogical features which pinpoint that natural source. A good example is offered by the so-called 'blue-stones' at Stonehenge. These are smaller than the great sarsen stones which form the trilithons of that structure, and are believed to have formed part of an earlier stone monument at the site. As early as 1720, petrological examination showed that they must come from a different source to the sarsens, but it was not until 1923 that the use of the petrological microscope showed them to derive from the Prescelly Mountains of South Wales, over 100 miles away as the crow flies. The distance would be much more by sea and river, since they may have been transported by raft.

The identification of the specific source of the material used for an artefact found on an archaeological site is an obvious indication of the transport either of raw materials or of finished objects. This will often imply trade and hence exchange, and obviously offers indications of early travel and perhaps the development of exchange systems. Distribution maps can show the extent and intensity in the distribution of goods and materials. And the quantitative study of such finds can give useful economic insights. It is often more difficult to decide whether the artefacts in question travelled as a result of exchange, and if so what the other components of the exchange transaction may have been. These remain difficult questions, addressed by a number of analytical techniques.

The early study of trade and exchange in archaeology was based mainly upon the recognition of specific features inherent in the constituent material of artefacts which allowed their assignment to a particular area or place of manufacture. In favourable cases the distribution of such finds could be informative about patterns in the movement of goods, and hence in studying early trade and exchange. An Olmec mask or an Egyptian sculpture could be recognised by its style and workmanship. In favourable cases there might be an inscription, and with coins there could even be a mintmark indicating the place of production. Often, however, the identification of supposedly imported artefacts on archaeological sites were based on supposed similarities which were less conclusive, or upon resemblances suggesting that the object in question might be an imitation rather than a direct import. The results could be made more conclusive if an exotic material could be identified positively. But only in a few unusual cases, such as that of lapis lazuli, the beautiful dark blue stone from Afghanistan so cherished by the ancient Egyptians, could a specific source be suggested simply on the grounds of the appearance of the material. Nonetheless, useful studies were undertaken in the early years of the twentieth century in which maps were prepared of artefacts of a particular material, such as amber, which could be dated by their context (or their form) and which could indeed be assigned to a source area. The amber finds made in contexts of the Aegean Bronze Age were recognised as coming from the southern coasts of the Baltic Sea, where amber occurs naturally. But without further study, there was always a risk that the amber might derive from some other, perhaps unrecognised source of the material, and that the trade routes proposed might be wrong. The amber question was not put on a thoroughly scientific footing until the application of infrared spectroscopy in the 1970s.

- Colin Renfrew, Characterisation and Exchange Theory, *Archaeology: Key concepts* Routledge 2004 pp31-2

With reference to the above passage, answer TWO of the following questions:

- What materials lend themselves best to characterisation in archaeology? What would not be available for study?
- Why might archaeologists be interested in knowing where an object (or its materials) came from?
- Why, in your view, has trade and exchange been so important for past humans?
- If two objects look identical, is it important (to archaeologists or to people at the time) whether they came from the same or different places?