

Human-Environment correlations during the Pleistocene-Holocene transition in Central Europe

Akira Ono^{1*}

¹Tokyo Metropolitan University

Issues of Humans-Environment correlations have always been central to Palaeolithic archaeology, specifically on the period of Pleistocene/Holocene transition. This presentation focuses on this topic with particular reference to the referential connection among climatic, faunal and archaeological records of Pleistocene /Holocene transition in the middle course of Rhine, and the upper Danube area in Central Europe that has responsibly to the combinations of lithostratigraphy, biostratigraphy, archaeological stratigraphy and numerical dates.

The chronological framework of prehistoric archeology in Central Europe explicitly illustrates as Palaeolithic, Mesolithic and Neolithic. The later Palaeolithic is subdivided into Late Palaeolithic and Final Palaeolithic, which corresponds to the Magdalenian and Federmessergruppen. The end of Final Palaeolithic is identical with the end of Ahrensburgian Tanged-Point industries during Younger Dryas Stadial, and this directly continues to the Early Mesolithic in the Preboreal period of early Holocene.

The most radical environmental change throughout Central Europe was Younger Dryas / Preboreal rapid transition, representing the extinction of mammoth-steppe faunal assemblage, and the emergence of warmth-oriented species such as roe deer (*Capreolus capreolus*) and beaver (*Castor fiber*). In consequence, various tools and figurines which had made of thick compact-bone and ivory were totally disappeared. The lithic tool assemblages of the Late Paleolithic Magdalenian were quite well standardized mostly into five tool-types, whereas the final Paleolithic and early Mesolithic tools turned into diverse and less-standardized microlithic tool production. These lithic production changes thorough the end Pleistocene to early Holocene corresponds to vegetation and faunal diversification caused by radical termination of the ice age into post-glacial environment.

It will tentatively be concluded in the following three points. First, big game extinction caused by both climatic warming and hunting pressure definitely gave influence in a negative way such as the thick compact-bone tools and ivory artifacts were totally disappeared at the end of Magdalenian period. Second, microlithization and de-standardization of lithic tool types imply the emergence of flexible lithic tool making, and this does not imply the minimization of tools themselves. Third, although the main lithic tool-type of Federmessergruppen represents as the Federmesser (Pen-knife), which was generated from the palaeolithic tool-type tradition, this one supposes to be hafted on the top of arrow-shaft as an arrowhead. Several arrow-shaft smoothers excavated from archaeological sites support this prediction. It is possible to set out an idea that bows and arrows had invented through the Final Palaeolithic adaptation processes to the forest environment during the Allerød Interstadial, and lithic tool type discrepancies such as Federmesser and arrowhead will provide a testable comparative criterion stretches beyond Europe.

Keywords: Central Europe, Humans-Environment correlation, Final Palaeolithic, Early Mesolithic, Younger Dryas, Preboreal