

The Palaeolithic Occupation of Vogelherd Cave: Implications for the Subsistence Behavior of Late Neanderthals and Early Modern Humans

Laura Niven

Tübingen: Kerns Verlag, 2006, 312 pp. (hardback), €39.95.

ISBN: 3-935751-04-4.

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The global debate about differences and similarities between Neanderthal and early modern human behaviour is heating up. When debates reach deadlocks, it is often sensible to turn to new empirical work for re-assessment and/or re-interpretation of existing behavioural models. Niven's volume in the Tübingen Publications in Prehistory series represents the definitive work on faunal remains from Vogelherd Cave in the Swabian Jura of Germany. This well-produced book discusses the taphonomic and archaeological analysis of the site's most important Middle and Upper Palaeolithic assemblages providing refined insight into selected subsistence behaviours over time.

Chapter One situates Vogelherd in the Neanderthal/modern human debate. The site is probably best known for its finds of some of the earliest figurative artworks—animal figurines carved in ivory. These are currently considered key elements in definitions for modern human behaviour. While it is unknown which human groups created the organic industries that also include bone, antler, and ivory toolkits, it is apparent that the Swabian Jura was an important region for cultural innovation during the Middle and Upper Palaeolithic transitional period. The faunal assemblages suggest that the cave was used over tens of thousands of years for butchering, processing and consuming game resources. Niven takes the reader through a detailed discussion of the research history of Vogelherd, the Lone Valley, and the curation of the faunal assemblage of Vogelherd over the past century. This background sets the scene for her research design and presentation of results. Her two main goals are identified as; a) presenting a thorough and detailed summary of the faunal assemblages from the Palaeolithic horizons in Vogelherd, and b) modelling the subsistence behaviours of the Neanderthal and modern human occupations of the cave.

In the next chapter, geographical and geological backgrounds are provided for the site. The geology of the cave is discussed in detail and several section drawings accompany the discussion. Vogelherd is placed in a chronostratigraphic framework. This positioning highlights problems with earlier documentation systems and provides a corrected section to be used for future research. This re-alignment is a noteworthy contribution, not only for Niven's own work on the faunal assemblages, but also for possible future work on other material from the site. Comprehensive tables and graphs summarise the radiocarbon data obtained from the site. The associated lithic and organic artifact assemblages, figurative artwork, and human fossils

are briefly reviewed. Illustrations and photographs of the artifacts bring aspects of these assemblages to life. Palaeontological information and a brief fossil history of each mammalian taxon represented at Vogelherd are provided. A summary of the palaeoclimatic conditions during the site's Middle Palaeolithic, Aurignacian, and Magdalenian occupations concludes the chapter.

Chapter Three presents archaeozoological methods used in the documentation and interpretation of the Vogelherd fauna. First, Niven tackles the taphonomy with regard to collection bias, bone modification as a result of carnivore and rodent activity, mechanical bone surface modification, and anthropogenic bone surface modification. She then moves on to bone breakage categories, the evaluation of bone fragmentation, and discussions on *in situ* bone attrition and density-mediated destruction of bone. Niven's thorough presentations of her documentation and interpretation methods following on the taphonomic discussions demonstrate the technical astuteness of her study. Finally, a system of terminology for quantifying and interpreting the Vogelherd fauna is offered in preparation for presenting the bone assemblages.

Niven next provides the archaeozoological results for the Middle Palaeolithic occupation at Vogelherd Cave according to the site's corrected stratigraphy. Comprehensive tables supplement the descriptions of the material. The bone collection from the deepest Mousterian context is treated in detail. The question of whether this sample represents a human and/or carnivore bone accumulation is approached in a robust manner with arguments visually supported by informative bar charts and line graphs. At the end of the chapter readers primarily interested in the larger Neanderthal/early modern human debate are provided with a first glimpse into Niven's explanation. Although the issue of Neanderthal subsistence remains inconclusive, it is assumed that hunting behaviour of the Swabian Neanderthals was similar to the rest of Middle Palaeolithic Eurasia. That is, they were quite capable of fulfilling their nutritional needs through hunting large game.

Presentation of the extensive Aurignacian assemblage is broken down over the next three chapters, exploring specific but related aspects of subsistence behaviour. The datasets allowing for the best reconstruction of Aurignacian subsistence activities are covered in Chapter Five, which investigates human utilization of reindeer and horse. Niven provides the reader with in depth descriptions of the reindeer and horse faunal material from Vogelherd Cave. Discussions on carcass utilisation, breakage of long bones, and

hammerstone percussion damage, as well as chop marks, follow. These discussions are accompanied by ample illustrations that guide the reader through the interpretations. Evidence that indicates extensive and systematic marrow processing of reindeer and horse remains during the Aurignacian at Vogelherd Cave is noteworthy. Seasonal hunting behaviour by one or more groups could be indicated. Butchery and marrow processing of reindeer and horse are consistent through time indicating remarkably patterned practices over a long period.

From the exploitation of reindeer and horse resources Niven moves to the woolly rhinoceros. Although the role of this taxon in human subsistence is not clear in the Vogelherd assemblage, it is well-represented. Niven provides a thoughtful discussion around the question of rhinoceros hunting and its possible implications. In this chapter she also presents the data for a variety of ungulate taxa that were hunted by Aurignacian groups at Vogelherd, but, in much smaller numbers than reindeer and horse. These animals, such as boar, red deer, giant deer, aurochs or bison, and chamois, seem to have played a secondary role in human subsistence throughout this period. Small mammals and birds were perhaps also exploited, indicating the trend towards an expansion of diet breadth exemplified in the subsequent Gravettian across Eurasia. A wide variety of carnivores is represented in the Aurignacian assemblage including wolf, fox, cave bear, brown bear, wolverine, badger, cave hyena, cave lion, and wild cat. Carnivores thus have a definite presence in the Aurignacian of Vogelherd, but according to Niven, not a dominant one. Interestingly, there is no evidence of human utilization of any carnivore taxon except fox.

Chapter Seven concludes the presentation of Aurignacian fauna with a discussion on the role of mammoths in the economies at Vogelherd. The extensive woolly mammoth assemblage that accumulated during the Aurignacian is a unique aspect of this site. The summary of the mammoth assemblage is divided into sections covering the dentition, skeletal bone and ivory, and cultural and non-cultural modifications of the remains. Niven then goes on to explore questions relating to the processes of transporting the mammoth remains into the cave, and the role of these megaherbivores in Aurignacian subsistence. She suggests that the extent of human/mammoth interaction remains unclear. While the archaeological data show extensive association of groups from this period with the mammoth assemblage, an argument for hunting and butchering is less convincing. Instead, there are indications that mammoth bones were collected from the landscape and used in aspects of Aurignacian everyday life such as organic tool industries, architectural construction, and figurative art. The Vogelherd example illustrates that human behaviour involving the extensive use of mammoth resources may have been in place before the Gravettian, when large mammoth bone sites are especially frequent and widespread.

The ephemeral Magdalenian occupation of the site is discussed in the penultimate chapter. The fauna of the lowest horizon indicate a combination of cold-adapted and

more temperate species. Horse and reindeer are still the primary prey taxa, though exploitation was not extensive. The most interesting evidence for human use involves the cut marks on a wolf cranium fragment. In the final Magdalenian horizon, the faunal assemblage is small and consists mainly of cold climate taxa, such as mammoth, horse, and reindeer. In conjunction with stone and organic artifact inventories, the Magdalenian faunal assemblages from Vogelherd suggest minimal occupation of the cave during this period.

The closing chapter summarises results from the archaeozoological study and their implications for the Palaeolithic occupation of Vogelherd. While the Middle Palaeolithic and Magdalenian assemblages provide limited information on the site's past, the sizable Aurignacian assemblages represent the primary source of information on subsistence strategies and site function. One function of the Vogelherd Cave site seems to center on the procurement and processing of game: as a strategic viewpoint for locating game; a location where production and maintenance of hunting gear took place; and a protected location for processing animals for food. Niven argues that the intensive and patterned ways in which Aurignacian groups processed reindeer and horse were instigated in part by the increased food requirements of seasonal gatherings of people (aggregation). The ivory figurines, ornaments, and sophisticated organic tool technologies at sites in the Swabian Jura are seen as integral parts of communication systems. The presence of these objects mark the Swabian Jura as a key area of early modern human cultural innovation in Europe. Critical to these interpretations is the attribution of such cultural innovations to early groups of anatomically modern humans in Eurasia. Based on the latest radiocarbon dates, indicating a Neolithic age for the Vogelherd human fossils associated with the Aurignacian technocomplex, the verdict is still out.

The volume is rounded off with a comprehensive reference list, a concise summary in English, German, and French, and appendices providing further data on documentation and coding format, summaries of bone modifications, and osteometric information. In Niven's words: "this study confirms the utility of re-analysing old collections of archaeological remains by demonstrating the ability of such data to reveal aspects of prehistoric human decision making, and in turn, by providing the foundation for modelling subsistence behaviour from such museum collections."

Niven's book provides an outstanding synthesis of archaeozoological methodology for students and analysts alike. It offers an interesting historical study of the site and its collections, and a wealth of European Palaeolithic faunal data is assembled between its covers. The data and interpretations are consistently well-presented in tables, a variety of graphs, photographs, and sketches. Niven successfully accomplishes her first identified main aim; to present a thorough and detailed summary of the faunal assemblages from the Palaeolithic horizons in Vogelherd. The second aim; modelling the subsistence behaviours of the Neanderthal and modern human occupations of the cave

is somewhat more challenging in its scope. Though she provides solid interpretations for the faunal data, the book is mainly a technical presentation of an archaeozoological study. Conspicuously absent is any reference to food other than that obtained from animals. In a work that claims to model subsistence behaviours, the possible role of plant foods deserves some mention, even if only to highlight that this is an understudied aspect of subsistence behaviour. Broader behavioural interpretations and hypotheses seem to echo what has already been said for Eurasia during the Middle and Upper Palaeolithic. Thus, readers look-

ing forward to a new take on Neanderthal/early modern human subsistence behaviours, or in-depth discussion on recent debates, might feel somewhat let down after having worked their way through the method and data chapters. That being said, the book is well-written and certainly captures the complexities of studying and interpreting Palaeolithic faunal assemblages. It provides us with rare glimpses into the everyday lives of past peoples who occupied Vogelherd Cave, and will no doubt become a standard work of reference for future research on Middle and early Upper Palaeolithic subsistence behaviour.