

A great challenge for Palaeolithic Europeans was to survive the frequent cold environments that yielded a low quantity of vegetal foods. Therefore, the chief food resources were protein and fats from animals that frequently migrated seasonally many hundreds of kilometres. Archaeologists suppose that following this prey led these prehistoric people to lead a highly mobile lifestyle. This can explain why archaeologists find similar artefacts hundreds of kilometres away from each other and other stone types far from their original sources.

Still, it is poorly understood how past climate change may have impacted these movement patterns of these early human populations. One good area to better understand this is in the Western Carpathians which experienced dramatic climate fluctuations due to the advance and retreat of the glaciers between 24,000 and 15,000 years ago. The archaeological finds in this region showed that until 24,000 years ago, people frequently moved south across the Western Carpathians until the northern glaciers advanced to where today Berlin and Warsaw are located. For the subsequent 4,000 years, archaeologists have hardly found human settlement traces in Poland, while across the Western Carpathians there are abundant human occupation remains in the Carpathian Basin. However, when the ice started retreating to the north 19,000 years ago, humans moved across the Carpathians again.

One can think the reason for this is because our ancestors were not able to physically tolerate the harsh cold temperatures. However, this research supposes that the absence of evidences for human migration across the Carpathians during the coldest period is not directly the consequence of the cold climate. It could have been rather linked to the migration patterns of the prey of Prehistoric hunters, which were secure food resources all year long in the glacial environment. But, how can we prove this was true?

This research investigates stone tools, animal bones, radiometric dates, and stable isotopes. The stone tools can tell us how people hunted, where they ranged, and how they survived every day. Animal bones can tell about what species they hunted, what season of year they were hunting, and how old the animals they hunted were. Radiocarbon dates can tell us the age of the archaeological sites and when they were hunting. Isotopes can tell us how far and from where animals migrated and under what climatic conditions. Together, the results of these research avenues can enrich our knowledge about how our ancestors dealt with logistical problems, scarce resources, and survival strategies in harsh climatic condition. Of special interest is that several aspects of our behaviour—for example artistic skills, creativity, designing composite tools, ceramic technology—were developed and continuously improved when we were mobile hunter-gatherers in glacial conditions, before humans lived in permanent villages, cultivated plants, and domesticated animals.