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# Application of stable isotope analyses to examine prey mobility in two Middle Pleistocene sites

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## Résumé

An important topic arising from the original "Man the Hunter" conference held in 1966, has been the extent and nature of hominin mobility and landscape use. Zooarchaeological analyses have been used to explore this issue through examination of species representation, age/sex profiles and cementum bands in teeth. Here we demonstrate how stable isotope analyses of faunal remains can complement such data.

To this end we applied strontium, oxygen and nitrogen isotope analyses of faunal samples from two Middle Pleistocene faunal assemblages from different geographic regions, both dated to marine isotope stage 7; the site of Holon, central Israel and the site of Payre in south-east France. This research expands on previous studies into the lifeways of Middle Pleistocene hominins at these sites (e.g. Chazan and Horwitz 2007; Moncel et al. 1993).

Results of the strontium analysis of 14 aurochs (*Bos primigenius*) teeth from Payre, shows a low level of mobility in marine isotope stage 7 for 11 samples, while three samples indicate increased mobility at this time. These samples have strontium values that correspond to the Massif Central, ca. 35km from Payre. At Holon, the strontium analysis of 15 teeth of fallow deer (*Dama cf. mesopotamica*), aurochs and straight-tusked elephant (*Palaeoloxodon* sp.) shows a shorter minimum distance of mobility for all samples. However, the relatively uniform geology surrounding Holon provides less opportunities for discriminating short distance mobility.

At present, it is unclear whether the greater degree of prey mobility observed at Payre reflects a different hunting strategy by *Homo neanderthalensis*, the amelioration of climate in that region during MIS 7a and 7c, or simply reflects the greater discrimination in strontium values for the diverse geology of geographic regions of France as opposed to Israel. With further multi-isotope analysis we hope to discriminate between these options.

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## References

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