

BEHAVIORAL IMPLICATIONS OF THE MUIERII 1 EARLY MODERN HUMAN SCAPULA

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The emergence of the Upper Paleolithic has been seen at a watershed in terms of human projectile technology, with the appearance of abundant organic and lithic spear points relative to the Middle Paleolithic, and associated changes in human upper limb anatomy related to throwing. An analysis of the Muierii 1 Early Upper Paleolithic (EUP) scapula, in conjunction with arm remains from Mladeč, indicates that these EUP humans do not show the upper limb changes associated with projectile throwing. The nature of the habitual spear use patterns in the EUP should therefore be reassessed.

INTRODUCTION

It has long been maintained that the emergence of the Upper Paleolithic, and in particular the appearance of the Aurignacian with its relative abundance of polished antler and bone projectile points, heralded a significant expansion of human projectile technology. Although a significant shift in the humanly-derived faunal profiles of Early Upper Paleolithic versus Middle Paleolithic sites has been hard to document, it has been suggested that this shift in projectile technology involved some combination of greater distance (and hence safety) of the hunters from their prey and possibly a sufficient increase in hunting returns to enable an increase in the social allocation of subsistence labor (Churchill and Rhodes, n.d.a).

At the same time, the dearth of securely dated human upper limb remains from the Early Upper Paleolithic has prevented an adequate assessment of whether the changes in human upper limb morphology evident between Middle Paleolithic Neandertals and Middle Upper Paleolithic (MUP) (Gravettian *sensu lato*) humans were present in the Early Upper Paleolithic (EUP). The arm bones from Mladeč provide a mosaic impression (Trinkaus et al., 2006), but they have not been analyzed from this perspective. It is in this context that the Muierii 1 right scapula, found half a century