

A Reply to Otterbein

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In his discussion "The earliest evidence for warfare?" K. F. Otterbein comments and makes observations about the cannibalism found in the TD6 level of the Gran Dolina site (Sierra de Atapuerca, Burgos, Spain). We appreciate the comments received, and we are pleased for the interest shown in our work.

The main and most interesting comment made by Otterbein focuses on the possibility of an armed confrontation between different political groups that would have happened among early Pleistocene hominins (around 800 ky). Otterbein says, "I believe we can conclude that the earliest known evidence for warfare has been found." We think that this statement, although possibly correct, should be qualified and, above all, empirically supported.

Fossils recovered from the TD6 level, human and non-human, have provided exceptional information. The investigations have led to inferences and interpretations relevant to the early hominins' behavior. Thus, we believe that the cave was a home site where hominins carried out different activities, such as tool production or food processing (Bermúdez de Castro et al. 1999; Carbonell et al. 1999; Díez et al. 1999; P. Saladié, R. Huguet, J. C. Díez et al., unpublished manuscript). We also believe that the oldest hominins of Europe cooperated in carrying out tasks such as hunting and the transport of large animals hunted. This transport is aimed at food sharing with other individuals of the group even

though they had not participated in the hunt (P. Saladié, R. Huguet, J. C. Díez et al., unpublished manuscript). These data suggest that these hominins were living in social groups.

Other aspects relating to social cooperation are not testable archaeologically because some behaviors cannot be traced. Thus, behaviors such as cannibalism, which are highly complex, may have different origins and objectives. In TD6, the treatment of human bodies and the way they were abandoned, as well as the repetition of events, has led to the conclusion that this is a case of exogenous cannibalism (Carbonell et al. 2010). It is true that exogenous cannibalism documented among *Homo sapiens* usually occurs in a warfare context. However, to establish direct analogies between modern humans and early hominins could be, at the least, risky once we make interpretations and even more so when we know that the two species have different ecological contexts, technology, and subsistence systems (economy). Furthermore, if it indeed had existed among Pleistocene hominins, symbolic worlds would also be different. Even so, we cannot ignore the record we have, which indicates to us that the TD6 cannibalism is a case of intraspecific and intergroup violence, the oldest one recorded to date.

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