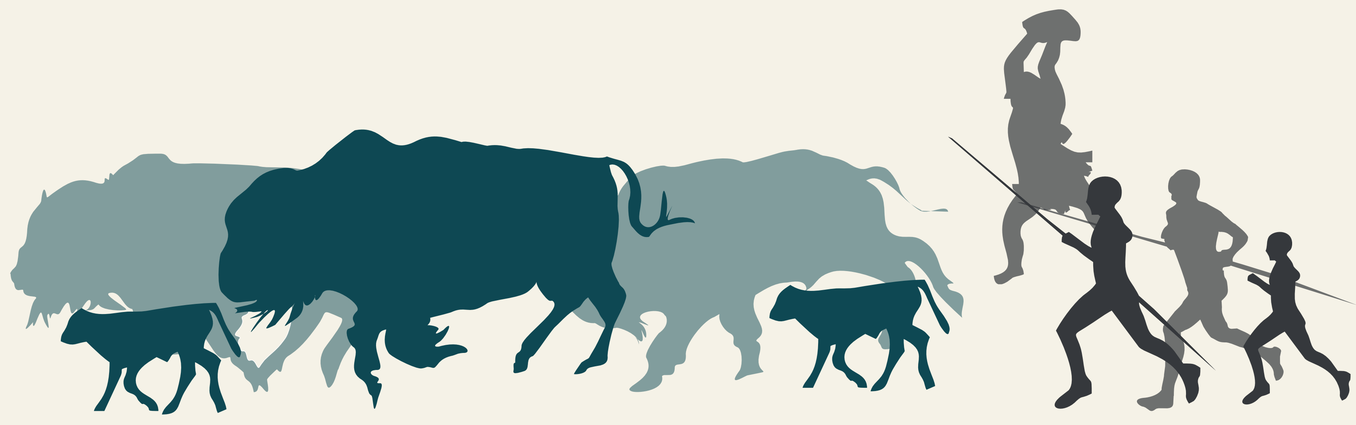
LOWER PALAEOLITHIC COMMUNAL HUNTING

Bison mass predation at Gran Dolina site (Atapuerca)

Antonio Rodríguez-Hidalgo , Palmira Saladié & Andreu Ollé (Institute of Human Paleoecology and Social Evolution-IPHES)



1. CONCLUSIONS

Monospecific faunal assemblages largely dominated by ungulates that exhibit catastrophic mortality profiles, seasonal mortality, systematic exploitation of carcasses, and transport of elements of high utility are common features used to infer communal hunting. These characteristics are fully consistent with those observed in Gran Dolina TD10.2 "bison bone bed" level (15 cm thick), suggesting that cognitive, social and technological capabilities required for successful *communal hunting* was fully developed in the pre-Neanderthal populations of Atapuerca *as early as 400 ky*.

The active cooperation of many individuals in a previously conceived plan, not only for the hunt but for processing, transporting, and meat sharing are fully linked with modern human like *behavioral* complexity and *plasticity*.

The deep knowledge of environments, prey behavior, and seasonal prey biological cycles necessary to perform communal kills are strongly linked with the development of *cognitive tools* such as articulated language.

Gran Dolina TD10.2 and the humans from *Sima de los Huesos* are penecontemporaneous. In this sense, it is plausible to suggest that TD10.2 informs us about the capabilities of the hominins from the Sima site.

2. INTRODUCTION

Zooarcheological research informs us about not only *subsistence* but also *social behavior* in the past. The social organization of hunting parties, the type of predation (number and rate of animal slaughtered), and the technology used (tactics and tools) must be taken into account to identify and classify the *hunting methods* in prehistory. In these sense, *communal hunting is a technique* that implies the participation of several people, including those that usually don't participate in hunting parties as women, children and elders, for killing several prey animals in a single event.

3. METHODS

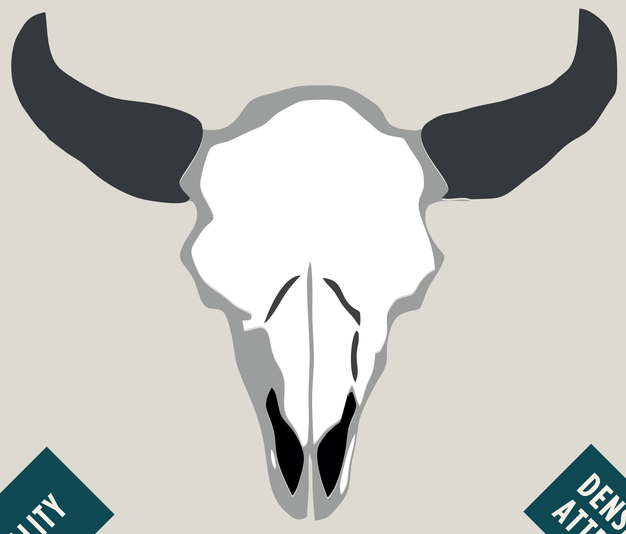
We have taken into account taphonomic modifications in bone surfaces *(Cut-marks, Percussion marks & Tooth marks)*, taxonomic diversity rates *(Shannon Evenness Index & Shimpson Index)*, mortality profiles *(Modified Triangular Graphs)*, seasonality, *(Tooth Eruption, Wear & Microwear)*statistical approaches to density mediated attrition *(Mineral Density)*, skeletal composition *(%MAU)* and economic utility *(MGUI, FUI, Marrow, UMI, MDI)*.

4. HYPOTHESES

1) Yes! *Neanderthals* and other Middle Palaeolithic hominins *hunted*. And they hunted in a wide variety of circunstances trough a wide variety of tactics and techniques including the communal hunt.
2) *Pre-Neanderthals hunted* too, *but* did they use *complex techniques* to do so?.

5. MATERIALS >25.000 SPECIMENS

6. RESULTS



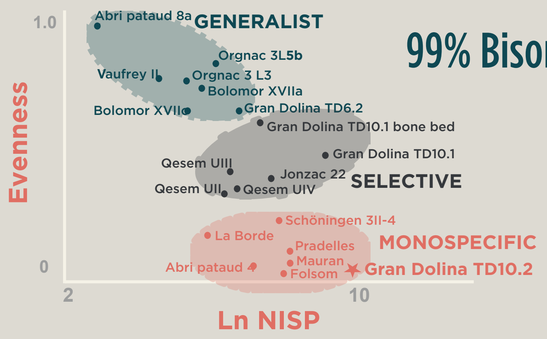
TAPHONOMY

>1000 cutmarked bones
>300 percussion marks

Recurrent early, primary access

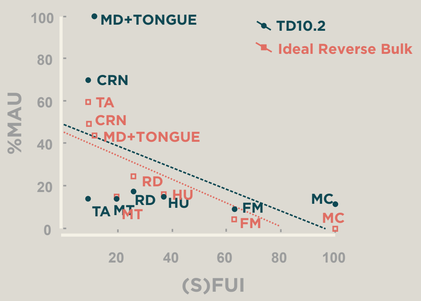
TAXONOMY

99% Bison remains



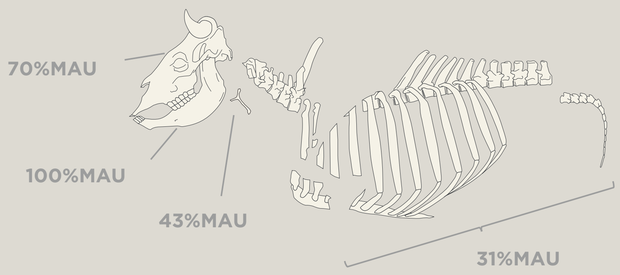
UTILITY

Reverse "bulk" pattern



ANATOMICAL COMPOSITION

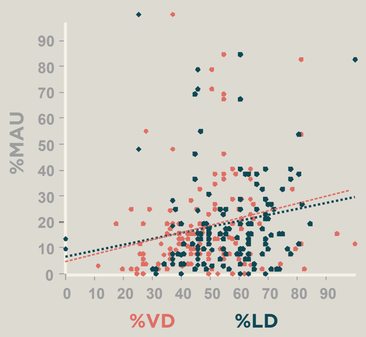
Mainly axial eskeleton including hyoid



DENSITY ATTRITION

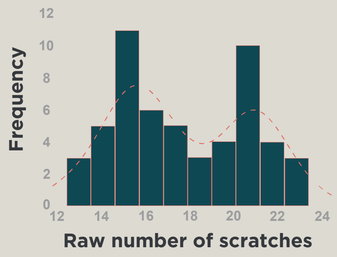
No post-depositional destruction

Volumen Density (rs=0.295 p=0.0001)
Linear Density (rs=0.267 p=0.0007)

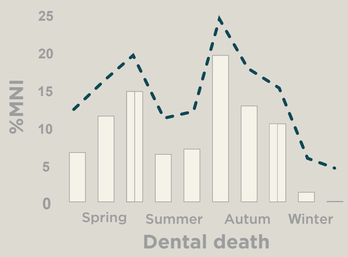


SEASONALITY

Bimodal seasonal mortality



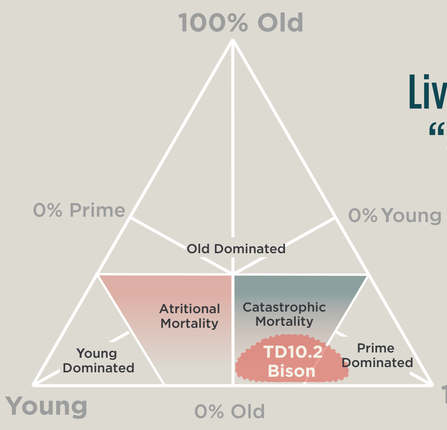
MICROWEAR

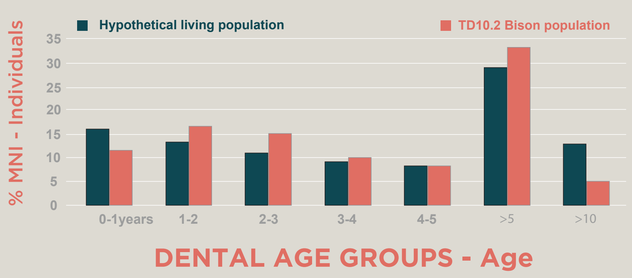


TOOTH ERUPTION AND WEAR

MORTALITY

Living population "catastrophic"





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