

HOMININ-CARNIVORE INTERACTIONS: EVIDENCE FROM MODERN
CARNIVORE BONE MODIFICATION AND EARLY PLEISTOCENE
ARCHAEOFAUNAS (KOOBI FORA, KENYA; OLDUVAI GORGE, TANZANIA)

by

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ABSTRACT OF THE DISSERTATION

HOMININ-CARNIVORE INTERACTIONS: EVIDENCE FROM MODERN CARNIVORE BONE MODIFICATION AND EARLY PLEISTOCENE ARCHAEOFAUNAS (KOOBI FORA, KENYA; OLDUVAI GORGE, TANZANIA)

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Interactions between Oldowan hominins and larger carnivores likely shaped important aspects of hominin adaptation including morphology, foraging patterns, habitat preferences, and social behavior. Hypotheses of Oldowan hominin carcass procurement strategies include scavenging large muscle masses, flesh scraps and/or bone marrow from larger felid kills. Efforts to evaluate these hypotheses are hindered by a current inability to recognize zooarchaeologically the specific carnivore taxa with which hominins interacted. This dissertation helps redress this limitation by documenting and quantifying taxon-specific traces of modern African carnivore consumption of Thomson's gazelle through buffalo-sized prey carcasses, including gross bone damage patterns, the incidence and patterning of tooth marking, and tooth mark measurements. Integrating these taphonomic traces facilitates the construction of hypotheses concerning the

involvement of particular carnivores with Oldowan hominins. These results are applied to four Plio-Pleistocene archaeofaunas from East Africa to test hypotheses of hominin-carnivore interaction and document hominin carcass procurement strategies.

Oldowan hominin carcass foraging strategies were variable. New studies of three site-scale archaeofaunal assemblages from Koobi Fora, Kenya (FwJj14A, FwJj14B, and GaJi14) document hominin extraction of meat and marrow from several prey carcasses at each site, probably with little involvement from carnivores, which seems to have been restricted to off-site limb epiphyseal destruction by hyaenids following hominin butchery. The precise carcass resource procurement method (hunting, power scavenging, passive scavenging) is indecipherable, but it is likely that hominins were acquiring considerable quantities of meat and marrow. The lack of *bona fide* stone tools at these sites is surprising, despite apparent on-site hominin butchery, and may relate to raw material scarcity.

In contrast, analyses of a landscape-scale sample from lowermost Bed II, Olduvai Gorge, suggests involvement of a variety of carnivores with comparatively less hominin activity. Carnivore activity does not seem to have varied through time during lowermost Bed II, but it does appear to have varied over space in accordance with current predictions of vegetation regimes in different geographic locales. A model of diagnosing carnivores from bone damage and tooth mark patterns, using methodology derived from my modern studies, is applied to carcass parts from individual prey animals found in Beds I and II.