

# Taphonomic Analysis of Butchered Chimpanzee Skulls from Liberia

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## Introduction

The postmortem manipulation of hominid carcasses by other hominid individuals wielding primitive tools has become increasingly apparent in various stages of human evolution – including the recent past of Fiji e.g. (DEFLEUR et al. 1993, 1999; FERNANDES-JALVO et al. 1996, 1999; WHITE 1986). In addition, similar evidence is found at an even older archaeological site in South Africa. This most ancient example of a mutilated hominid fossil is from ca. 2 mya levels at the cave site of Sterkfontein (PICKERING et al. 2000). The Sterkfontein hominid specimen (Stw 53), along with other butchered hominid remains from early an African (Bodo, Ethiopia, ca. 600 kya) (CLARK et al. 1994) and Spanish (Gran Dolina TD6, ca. 800 kya; PARES & PEREZ-GONZALES 1995) prehistoric sites, are cranial specimens that bear deeply incised striations on their outer surfaces. These striations are called cutmarks – the accidental traces left by simple stone flakes used as butchering tools.

While cannibalism has been offered as an explanation for the butchered Gran Dolina TD6 remains e.g. (FERNANDES-JALVO et al. 1996, 1999), it is not yet possible to infer the reason(s) for the butchery of the Bodo and Sterkfontein hominids. Reasonable hypotheses include curation (e.g. trophy collection), cannibalism, mutilation and/or funerary procedures (PICKERING et al. 2000; WHITE 1986). We anticipate that a study (currently in progress) of a series of chimpanzee skulls collected by Hans Himmelheber from the Dan people of Liberia in the 1950s (HIMMELHEBER & HIMMELHEBER 1959) will provide data directly relevant to testing one or more of these hypotheses.

## Materials and Methods

The Liberian chimpanzee (*Pan troglodytes verus*) skull sample consists of 278 crania. The collection is curated in the Institute of Anthropology and Human Genetic at the Johann Wolfgang Goethe-University Frankfurt am Main, Germany, and has been described in various publications focusing on morphological research problems (e.g. PROTSCH et al. 1986; PROTSCH VON ZIETEN & ECKHARDT 1988, 1991; DIERBACH 1986; ECKHARDT & PROTSCH VON ZIETEN 1993).

Our research, begun in December 2000, concentrates on describing the taphonomic attributes of the sample. Basic data recorded on each specimen include: general condition, ontogenetic age, sex, and bone surface modifications (including cutmarks, chopmarks, percussion damage, evidence of tooth extraction, subaerial weathering, burning, smoke patina). All bone surfaces are examined macroscopically under a strong, low incidence light and also with 10x

magnification hand lens, following the recommendation of various researchers (e.g. BUNN 1981; BLUMENSCHINE 1995; BLUMENSCHINE et al. 1996; PICKERING & WALLIS 1997). For each cranial specimen, bone surface modifications are described in writing (dictated by RJC and transcribed by TRP) and are also transposed by TRP onto sketch templates of a chimpanzee cranium in norma frontalis, norma verticalis, norma lateralis (both right and left) and norma occipitalis. In addition, bone surface damage is being recorded via black-and-white still photography. Finally, bone surfaces that preserve good examples of specific modifications are molded with a silicone-based impression material. Epoxy resins casts of these molds are being prepared and will be examined and photographed under a scanning electron microscope.

## Summary

The appropriateness of the Liberian chimpanzee skull series for an actualistic approach to butchered hominid crania from very early prehistoric contexts: Because the Liberian chimpanzee skulls were prepared (at least to some extent) as trophies it is likely that they bear cutmark patterns distinguishable from those inflicted by less purposeful processing of head elements, such as may occur with butchery related solely to subsistence activities or mutilation. In addition, modern chimpanzees are morphologically similar to the hominid species represented by the Bodo and Sterkfontein fossil specimens.

Taxonomically, the Stw 53 hominid has been variously described as early Homo (*H. cf. habilis*) (HUGHES & TOBIAS 1977; HOWELL 1978) or a »late example« of Australopithecus (KUMAN & CLARKE 2000). The Bodo cranium is assigned to either »archaic« *H. sapiens* or *H. heidelbergensis* by different researchers see discussion in (CONROY et al. 2000) contra e.g. (MCBREARTY & BROOKS 2000).

Both chimpanzees and the fossil hominid taxa represented by Stw 53 and Bodo share a smaller cranial vault, a more receding forehead and a more prognathic face than are possessed by modern humans. The similarities between the chimpanzee and fossil hominid skulls assure that the modern Liberian butchers and ancient hominid butchers were confronted with similar anatomical »landscapes« around which to remove overlying musculature. This means that the butchered chimpanzee sample is probably a better model for these early hominids than are trophy skulls of modern humans, such as those available from Melanesia e.g. (WHITE & TOTTH 1991).

## Abstract

We explicate the rationale for our taphonomic analysis of a series of chimpanzee (*Pan troglodytes verus*) crania butchered and made into trophies by the Dan horticulturalists of Liberia in the 1950s, and in the possession of Reiner PROTSCH VON ZIETEN in the Institute of Anthropology and Human Genetic at the Johann Wolfgang Goethe-University, Frankfurt am Main. Briefly, the analysis is designed to develop an understanding of the techniques employed by traditional people to deflate and misarticulate the skulls of animals (i.e. Chimpanzees) that are morphologically very similar to African early hominids. This understanding is an important step in attempting to infer the reason(s) for butchery damage observed on two non-modern hominid cranial specimens from prehistoric Africa – the Stw 53 hominid skull from Sterkfontein, South Africa (identified as early Homo or late Australopithecus and dated ca 2 mya), and the Bodo cranium, from the Middle Awash, Ethiopia (identified as archaic *H. sapiens* or *H. heidelbergensis* and dated ca 600 kya).

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