Guanyingdong Stone Artefact Assemblage Report: Taphonomy

HY and BM

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# Introduction

The Guanyindong site, located in Guanyindong village, Qianxi County of Guizhou Province (26°51′26″N, 105°58′7″E) at an elevation of 1464 m a.s.l., is a limestone cave site extending from east to west it was discovered by a team organized by the institute of Vertebrate Paleontology and Paleoanthropolgy (IVPP), Chinese Academy of Sciences in 1964. Several excavations were conducted in 1965, 1972 and 1973, yeilding A total of 176 cores, 1292 flakes, 1101 retouched pieces and 804 pieces of debris were identified.

Introduction of paleolithc research in south Asia (or China).

Introduction the distribution of levollois technique (origin, dispersion, distribution).

Prolem: East Asia, why people thought no levollois. Why studying this site is important. Aim in this study.

## Raw materials

Previous research reported that the stone artefacts are preliminarily made of siliceous limestone, In my observation,the majority of siliceous limestone is classified as chert, therefore, the assemblage is dominated by chert (78.02%) followed by limestone (20.59%) and basalt, sandstone and quartz were only occasionally used and constitute % and % of the assemblage respectively. Although the chert selected varies slightly from color to texture, sub-classification is not conducted due to the consistence of their physical properties which are homogeneous without fracture, joint and constant hardness. Table? Shows the different types of stone artefact that chert and limestone were employed. 84.92 % chert flakes were retouched into stone tools indicating a high efficient exploit of this raw material, although it can be easily obtained nearby. In terms of retouched pieces, 856 of them are made of chert, 216 of them are made from limestone. It is obvious that hominins intended to selected chert as optimal raw material to manufacture stone tools.

flakes Retouched flakes cores debris total

Chert  
limestone

The raw material source are mostly from local area that no further than 10km based on Leng and Li's investigation indicating the ability of local raw material guides the selectivity of kanppers . One possible chert source, located about 4 km (straight distence) is called Jinyan hill, where chert nodules are exposed on surface (Leng, 2001).For limestone and volcanic rocks like basalt and quartz are all from local mountain, river bed and exposed layers. The majority of raw material are accessable within 6 km (Li, 2009) suggesting an relative small foraging territory. Leng also found that the natural chert, volcanic rock, and siliceous limestone nodules were generally larger than specimen from GYD. According to source investigation, ancient knappers were inclined to obtain raw material locally and traverl short distence to get access to raw material, besides, they were aware of raw material selection indicated by the preference of chert, which is easier control and has better flaking property as main knapping object. It also suggests that their foraging radius allows them to collect raw material and return to cave without overnight stop.

## Taphonomy

Among the flakes in the assemblage, 62% (n = 38) are broken. Two processes are likely responsible for this high percentage: manufacturing failures during the knapping activity, and energetic taphonomic processes that have damages the artefacts after discard. The generally homogenous nature of the stone indicates that failures during knapping should be expected at a low frequency, assuming a compentent knapper. Thus, many of the breakages many be attributed to post-depositional processes such as ground surface breakage due to trampling. With just 2 artefacts showing signs of heat treatment, we conclude that artefact damage due to excess heating occured at a negligible rate at GYD.