Guanyingdong Stone Artefact Assemblage Report

HY and BM

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# Introduction

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

to cite: (Yang et al. 2016; Kato, n.d.; Li et al. 2016)

Introduction the distribution of Levallois technique (origin, dispersion, distribution). And specifically in China: XX said there was Levallois in China at YYY site... ZZZ said there was no Levallois in China at WWW site, etc.

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

# The Guanyindong site

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...

some more detail needed about these previous excavations, citation to the reports, summary of main findings from the previous work...

# Stone artefact assemblage

Our analysis collected data on 2309 artefacts from the previous excavations at Guanyindong. At the time of our analysis, the artefacts were stored at the IVPP, Bejin, China. These artefacts come from the 19XX and 19XX excavations. The artefacts from the 19XX excavations (approximaltely XX pieces) were not available for analysis. A total of 176 cores, 160 unretouched flakes, 1192 retouched pieces (including retouched flakes) and 781 pieces of debris were identified (Table 1).

Table 1 Summary of artefact type abundance at Guanyindong

|  |  |  |
| --- | --- | --- |
| Artefact type | Frequency | Percentage |
| Retouched | 1192 | 51.6 |
| Debris | 781 | 33.8 |
| Cores | 176 | 7.6 |
| Flakes | 160 | 6.9 |
| Total | 2309 | 100 |

## Raw materials

The assemblage is dominated by chert (77.1%) followed by limestone (21.6%) and small amounts of basalt, sandstone and quartz (Table 2).

Table 2 Summary of raw materials at Guanyingdong

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Artefact type | basalt | chert | limestone | quartz | sandstone |
| Cores | 2 | 148 | 25 | 0 | 0 |
| Debris | 8 | 595 | 199 | 1 | 1 |
| Flakes | 1 | 114 | 43 | 1 | 1 |
| Retouched | 10 | 922 | 231 | 1 | 4 |

What is the local geology of the area where the site is? Mostly limestone? What about nearby rivers? We need some detail about that here, ok to get it from previous reports, but do not the words copy directly, and need to cite

## Flakes

As chert artefacts are most numerous, we focus our analysis on these pieces. The distributions of the basic size variables are unimodal with long right tails, indicating that most of the artefacts are small, but there are a small number of large pieces (Figure 1). Only a small proportion of the flakes have a blade-like shape. This is indicated by the data points close to the blue line in Figure ??, which shows the ratio flake length and width as 2:1. Most flakes have their widest point at 50% of the length axis.

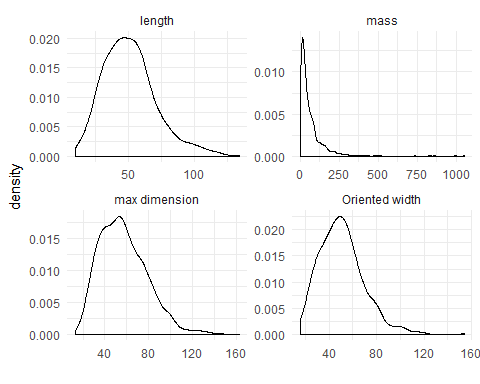
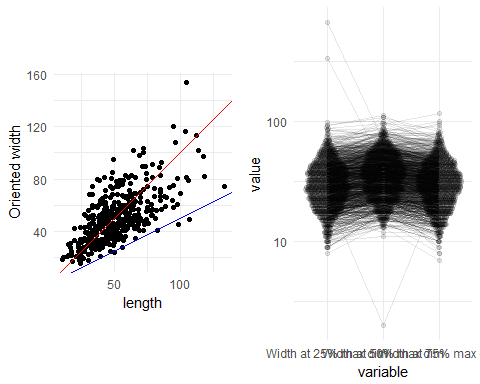


Figure 1 Summary of basic flake size variables



## Cores

## Retouched pieces

### Indices

## Levallois

# Discussion

1. Comparing with other sites in south China, Guanyindong is featured by the appearance of Levallois technique.Why do you think Gyd has levallois? Previous results from other sites in South China suggest that they have no levallois techinique (give examples and discussions)
2. In the lithic assemblage, we found 59 Levallois flakes, 11 Levallois cores, with distinguishable characters from Europe and Africa(less proportion, relative more proto morphology). What are the main difference between Gyd and other sites. What is the implication of such difference. Are there any difference in the Levallois techniques in Europe and Africa or other Asia sites?
3. Provide detailed discussion on the Demographic model, and explain the reason why Levallois technique in Southeast Asia is different from western. China and Southeast Asia is geographically distant from East Africa where Levallois technique is originated, as hominids dispersal from western to eastern, progressively smaller population, drastic changes of environment have made an inevitable influence on the style of Levallois technique.

to cite on the demographic model: (Premo and Tostevin 2016; Grove 2016)

1. Drawbacks (assumptions) of the model. Other possible explanation you can offer.

# Conclusion

# Colophon

This report was generated on 2016-12-01 00:28:07 using the following computational environment and dependencies:

Table 3 R session information

|  |  |
| --- | --- |
| Setting | Value |
| version | R version 3.3.1 (2016-06-21) |
| system | x86\_64, mingw32 |
| ui | RTerm |
| language | (EN) |
| collate | English\_Australia.1252 |
| tz | America/Los\_Angeles |
| date | 2016-12-01 |

Table 4 Packages that this report depends on

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| package | \* | version | date | source |
| assertthat |  | 0.1 | 2013-12-06 | CRAN (R 3.3.2) |
| beeswarm |  | 0.2.3 | 2016-04-25 | CRAN (R 3.3.2) |
| bookdown |  | 0.3 | 2016-11-28 | CRAN (R 3.3.1) |
| colorspace |  | 1.3-1 | 2016-11-18 | CRAN (R 3.3.2) |
| DBI |  | 0.5-1 | 2016-09-10 | CRAN (R 3.3.2) |
| devtools |  | 1.12.0 | 2016-06-24 | CRAN (R 3.3.2) |
| digest |  | 0.6.10 | 2016-08-02 | CRAN (R 3.3.2) |
| dplyr | \* | 0.5.0 | 2016-06-24 | CRAN (R 3.3.2) |
| evaluate |  | 0.10 | 2016-10-11 | CRAN (R 3.3.2) |
| ggbeeswarm | \* | 0.5.0 | 2016-02-21 | CRAN (R 3.3.2) |
| ggplot2 | \* | 2.2.0 | 2016-11-11 | CRAN (R 3.3.2) |
| gridExtra | \* | 2.2.1 | 2016-02-29 | CRAN (R 3.3.2) |
| gtable |  | 0.2.0 | 2016-02-26 | CRAN (R 3.3.2) |
| htmltools |  | 0.3.5 | 2016-03-21 | CRAN (R 3.3.2) |
| knitr | \* | 1.15.1 | 2016-11-22 | CRAN (R 3.3.2) |
| lazyeval |  | 0.2.0 | 2016-06-12 | CRAN (R 3.3.2) |
| magrittr |  | 1.5 | 2014-11-22 | CRAN (R 3.3.2) |
| memoise |  | 1.0.0 | 2016-01-29 | CRAN (R 3.3.2) |
| munsell |  | 0.4.3 | 2016-02-13 | CRAN (R 3.3.2) |
| plyr | \* | 1.8.4 | 2016-06-08 | CRAN (R 3.3.2) |
| purrr | \* | 0.2.2 | 2016-06-18 | CRAN (R 3.3.2) |
| R6 |  | 2.2.0 | 2016-10-05 | CRAN (R 3.3.2) |
| Rcpp |  | 0.12.8 | 2016-11-17 | CRAN (R 3.3.2) |
| readr | \* | 1.0.0 | 2016-08-03 | CRAN (R 3.3.2) |
| readxl | \* | 0.1.1 | 2016-03-28 | CRAN (R 3.3.2) |
| rmarkdown |  | 1.0.9013 | 2016-12-01 | Github ([rstudio/rmarkdown@5d05a39](mailto:rstudio/rmarkdown@5d05a39)) |
| scales |  | 0.4.1 | 2016-11-09 | CRAN (R 3.3.2) |
| stringi |  | 1.1.2 | 2016-10-01 | CRAN (R 3.3.2) |
| stringr |  | 1.1.0 | 2016-08-19 | CRAN (R 3.3.2) |
| tibble | \* | 1.2 | 2016-08-26 | CRAN (R 3.3.2) |
| tidyr | \* | 0.6.0 | 2016-08-12 | CRAN (R 3.3.2) |
| tidyverse | \* | 1.0.0 | 2016-09-09 | CRAN (R 3.3.2) |
| vipor |  | 0.4.4 | 2016-10-05 | CRAN (R 3.3.2) |
| withr |  | 1.0.2 | 2016-06-20 | CRAN (R 3.3.2) |
| yaml |  | 2.1.14 | 2016-11-12 | CRAN (R 3.3.2) |

The current git commit of this file is 57df4a0972d9f0d1d972544df28aff54b7fb7b1d, which is on the master branch and was made by Ben Marwick on 2016-12-01 00:12:40. The current commit message is "build".

# References

Grove, Matt. 2016. “Population Density, Mobility, and Cultural Transmission.” Journal Article. *Journal of Archaeological Science* 74: 75–84. doi:[http://dx.doi.org/10.1016/j.jas.2016.09.002](https://doi.org/http://dx.doi.org/10.1016/j.jas.2016.09.002).

Kato, Shinji. n.d. “The Use of Lithic Raw Materials During the Upper Paleolithic in Eastern China: A Focus on Microblade Industries.” Journal Article. *Quaternary International*. doi:[http://dx.doi.org/10.1016/j.quaint.2016.05.006](https://doi.org/http://dx.doi.org/10.1016/j.quaint.2016.05.006).

Li, Feng, FuYou Chen, YingHua Wang, and Xing Gao. 2016. “Technology Diffusion and Population Migration Reflected in Blade Technologies in Northern China in the Late Pleistocene.” Journal Article. *Science China Earth Sciences*, 1–14.

Premo, L. S., and Gilbert B. Tostevin. 2016. “Cultural Transmission on the Taskscape: Exploring the Effects of Taskscape Visibility on Cultural Diversity.” Journal Article. *PLoS ONE* 11 (9): e0161766. doi:[10.1371/journal.pone.0161766](https://doi.org/10.1371/journal.pone.0161766).

Yang, Shi-Xia, Ya-Mei Hou, Jian-Ping Yue, Michael D. Petraglia, Cheng-Long Deng, and Ri-Xiang Zhu. 2016. “The Lithic Assemblages of Xiaochangliang, Nihewan Basin: Implications for Early Pleistocene Hominin Behaviour in North China.” Journal Article. *PLoS ONE* 11 (5): e0155793. doi:[10.1371/journal.pone.0155793](https://doi.org/10.1371/journal.pone.0155793).