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Foodways in early farming societies: microwear and starch grain analysis on experimental and archaeological grinding tools from Central China

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Propositions for the PhD thesis

Foodways in Early Farming Societies: Microwear and Starch Grain Analysis on Experimental and Archaeological Grinding Tools from Central China

by Weiya Li

1. The Neolithic grinding tools in the Central plain of China were involved in processing cereals, wood-like material, and bone, indicating their different uses in craft activities as well as in food-processing.
2. The correlation between tool type and function, as indicated by both microwear and starch grain analysis, suggests that people at Neolithic Jiahu probably adopted specific types of grinding implements for processing certain types of materials.
3. Use-wear traces associated with the dry- and wet-grinding of cereals are different. Thus, the application of microwear analysis on grinding tools offers insights into the processed material as well as ancient food-processing techniques.
4. Grinding experiments reveal that dry-grinding produces significant damage to starches, to the point where they may be undetected in archaeological samples, while wet-grinding causes only slight morphological changes to the starch grains. The scarcity of rice starch grains recovered from grinding tools in Neolithic Chinese sites could be caused by the use of a dry-grinding technique.
5. The distinctions among the site of Jiahu and most of the Peiligang Culture sites, are mainly reflected in their different subsistence strategies, in terms of cultivated crops (rice versus millet) and the materials grinding tools processed (cereals versus acorns).
6. Integrating the data from both microwear and starch grain analysis provides a better understanding of the use of the ancient grinding implements and overcomes some of the limitations of both methods.
7. Because the contact material cannot always be inferred through microwear analysis (e.g. wood-like material in the current study), more grinding experiments need to be carried out for the study of ancient grinding implements in Chinese archaeology.
8. The dry-grinding method employed in the early farming societies in the upper catchment of the Huai River, could have been inherited from the

earlier hunter-gatherers, but could also be associated with the adopted broad-spectrum subsistence strategy.

9. Spatial distribution, completeness, size, and raw materials of archaeological grinding tools need to be documented in a more detailed manner for the sake of further research issues such as location of grinding activities, feasting models, and ritual practices.
10. It is efficient to reconstruct elements of lifeways of early farmers by combining the research on grinding tools and the information related to food and food-related activities.
11. Urbanization is taking away valuable ethnographic information (e.g. use of different types of traditional agricultural tools) that can be used by archaeologists to interpret the past. Thus, it is imperative to document lifeways in rural areas in China and other parts of the world.
12. Nowadays, social media platforms are becoming more useful than publications to reach the public. Therefore, skills in social media usage should also be developed by archaeologists.