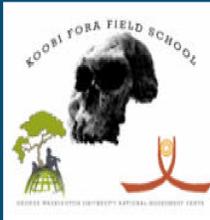


Assessing Edge Damage in MSA Lithic Assemblages: Experimental Proxies for the Analysis of Use and Post-Depositional Damage

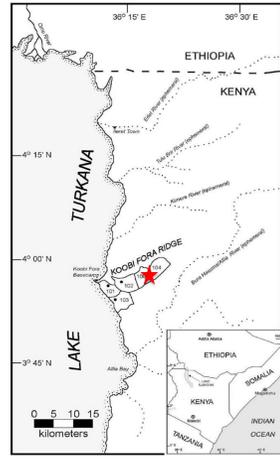
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INTRODUCTION

- Stone artifact edge damage can inform upon past human behavior through usewear patterns¹
- Non-anthropogenic post-depositional processes, such as trampling, can also cause artifact edge damage
- Distinguishing anthropogenic from non-anthropogenic forms of edge damage is enigmatic
- Butchery and trampling experiments were conducted and the results compared to with artifacts from GalJ17, a Middle Stone Age (MSA) site in area 104 of Koobi Fora, Kenya
- Questions:**
 - Can usewear and post-depositional damage be distinguished through continuity and intensity?
 - Are experimental proxies accurate predictors for archaeological edge damage?



Lepre & Kent, 2010



Figure A. Trampling experiment of ignimbrite and basalt flakes on sand substrate. Trampling was performed by one individual over the course of one hour.

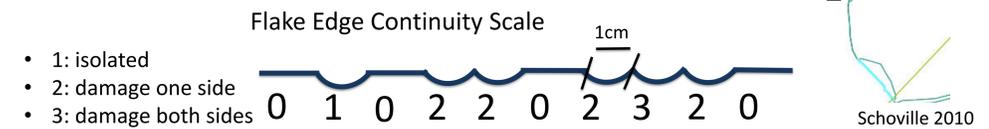


Figure B. One of three butchery experiments performed with ignimbrite flakes. The butcher defleshed and disarticulated one goat limb with each flake.

MATERIALS AND METHODS

Assemblage	Proxy	
	Use	Post-Depositional
Experimental	Butchery 12 flakes 154 segments	Trampling 10 flakes 78 segments
Archaeological	<i>In situ</i> 11 flakes 49 segments	Surface 12 flakes 57 segments

Flake edges were split into 1 cm segments, starting from the left side of the platform with the ventral side facing up. Segmentation allowed for assessment of changing edge angle along the flake.² These segments were qualitatively coded for damage continuity along the edge and damage and intensity.

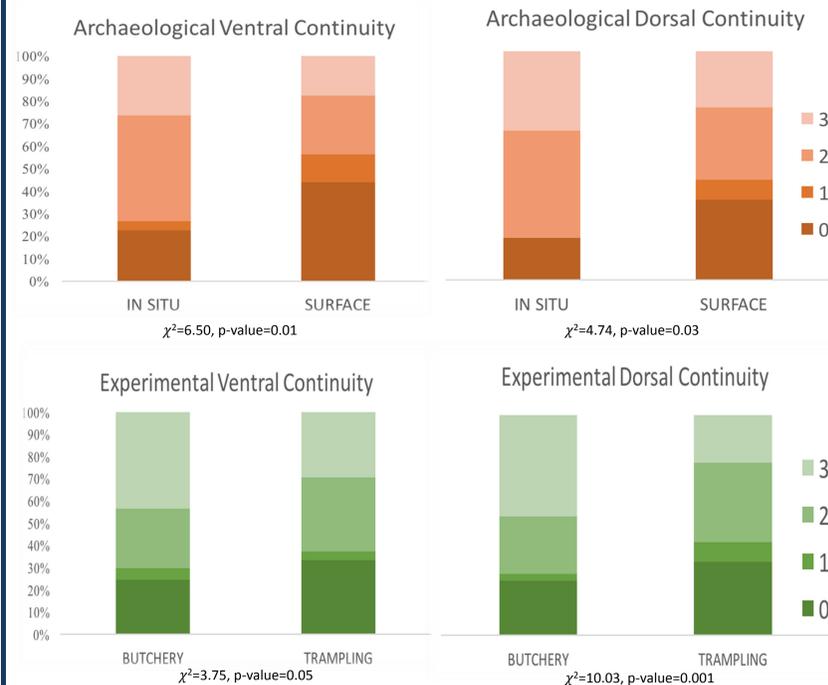


- 1: isolated
- 2: damage one side
- 3: damage both sides

RESULTS

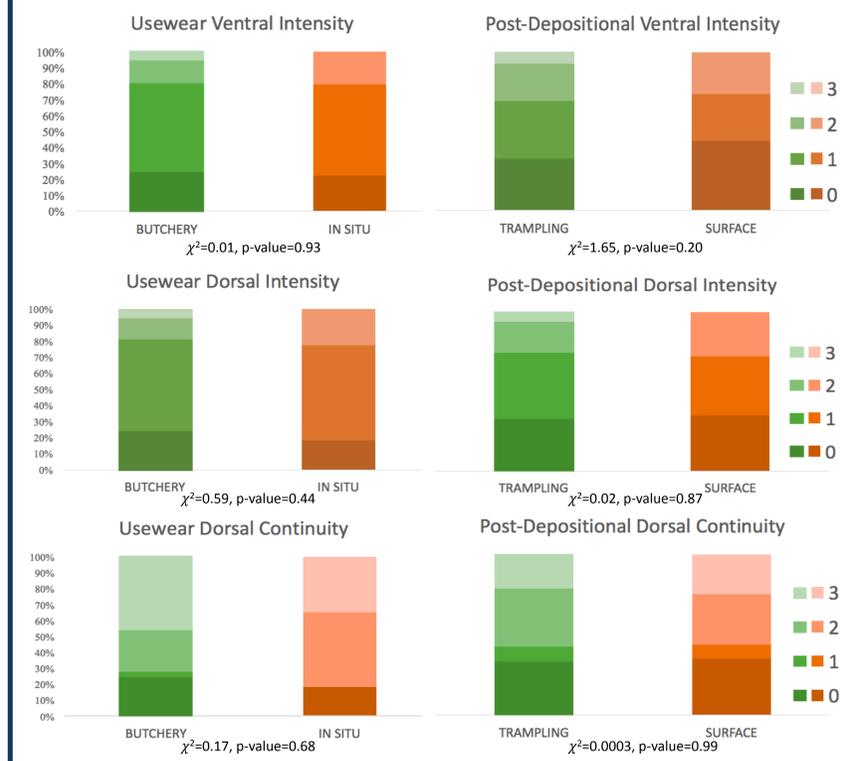
DISTINGUISHING ABILITY

- The ability to distinguish between usewear and post-depositional damage was determined through distribution analyses. This used comparisons between:
 - In situ* and surface collections (archaeological assemblage)
 - Butchery and trampling experiments (experimental assemblage)
- Significant differences in distribution (Kruskal-Wallis tests) indicated that the damage done to the two samples was different enough to be distinguished as usewear or post-depositional damage when assessed through ventral and dorsal continuity



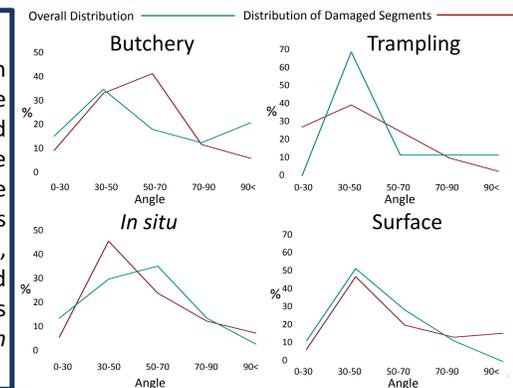
PROXY UTILITY

- The distribution of damage was assessed between the experimental proxy and the archaeological collection it was hypothesized to predict
 - In situ* and butchery collections (usewear)
 - Surface and trampling collections (post-depositional damage)
- Kruskal-Wallis tests determined useful proxies for ventral intensity, dorsal intensity, and dorsal continuity in the usewear and post-depositional damage assemblages



EDGE ANGLE

Prior studies have demonstrated a correlation between higher instances of damage and lower edge angles.³ The angle distribution for the trampling and surface collections are similar, allowing for more accurate damage comparisons. Although the angle distributions indicate more damage on higher angles for the butchery sample than for the *in situ* collection, this can be attributed to the flake attributes preferred by the butcher who completed the three experiments rather than a reflection on the distribution of the *in situ* collection.



CONCLUSIONS

- Experimental proxies show that it is possible to recreate patterns of archaeological usewear and post-depositional damage in relation to ventral intensity, dorsal intensity, and dorsal continuity. The experiments yielded an appropriate proxy for determining ventral continuity patterns for usewear, but not for post-depositional damage.
- Damage analysis also demonstrates that it is possible to distinguish between usewear and post-depositional damage from patterns of damage continuity on both the dorsal and ventral flake surfaces.
- Combining these two facets, the most promising field of proxy design and damage analysis is dorsal continuity.
- Qualitative intensity categorization may be too subjective to yield definitive results for distinguishing between usewear and post-depositional damage. Further efforts to quantify these categorization should hopefully yield more definitive patterns of damage intensity in archaeological and experimental assemblages.^{1,4}

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