INTRODUCTION

• Stone artifact edge damage can inform upon past human behavior through usewear patterns.
• 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 GaJj17, 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?

MATERIALS AND METHODS

<table>
<thead>
<tr>
<th>Assemblage</th>
<th>Use</th>
<th>Post-Depositional</th>
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</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Butchery: 12 flakes</td>
<td>Trampling: 10 flakes</td>
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<tr>
<td></td>
<td>In situ: 154 segments</td>
<td>Surface: 78 segments</td>
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<tr>
<td>Archaeological</td>
<td>Butchery: 11 flakes</td>
<td>Trampling: 12 flakes</td>
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<tr>
<td></td>
<td>In situ: 49 segments</td>
<td>Surface: 57 segments</td>
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FLAKE EDGE INTENSITY SCALE

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

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.

EDGE ANGLE

Prior studies have demonstrated a correlation between higher instances of damage and lower edge angles. 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.

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.

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.

ACKNOWLEDGEMENTS

We thank the Koobi Fora Research Project, the National Museums of Kenya, and NSF-RSES grants 1358178 and 1358200 for funding and logistical support. The Koobi Fora Middle Stone Age project was supported by Fulbright-Hays, the Wenner-Gren Foundation, and the Leakey Foundation (PF45). Additional funding was provided by the William Warren Endowment Fund. Additional thanks to Ella Beaudoin for continued input and Kara Peters for butcheries. We thank Warren McPherron, Cyndi Cushing, and Richard Dibble.