Assessing surface movement at Stone Age open-air sites: first impressions from a pilot experiment in northeastern Botswana

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ABSTRACT

Open-air sites are ubiquitous signatures on most archaeological landscapes. These sites are, however, commonly affected by a number of post-depositional factors that alter their spatial patterning. This paper presents the results of an open-air experiment conducted in northeastern Botswana to investigate the taphonomic factors affecting such sites. In this experiment two surface scatters modeled on known Bushman open-air camp sites were created and material (stone tools, ostrich eggshell fragments, ceramic sherds, glass beads and faunal remains) systematically scattered across them. The two scatters were laid out in a colour-coded, nested square design to record the movement of material throughout the experiment. One site was excavated after four months and the other after 12 months. The results show little horizontal material movement especially in the central ‘hearth’ areas of these scatters and an initial, rapid, vertical period of mobility, after which a majority of surface artefacts are protected from subsequent movement, preserving the general scatter structures. This experiment suggests that open-air sites can offer detailed spatial information relevant to forager settlement structure that is often not accessible at rock-shelter sites.

HIGHLIGHTS

- The results show little horizontal material movement and a short period of vertical mobility.
- After this a majority of surface artefacts were protected from subsequent movement.
- Upswards of 80% of material remained in its square of origin even after 12 months of exposure.
- Smaller materials (glass beads and ostrich eggshell fragments) showed the least amount of movement.
- Over 50% of the experimental materials moved less than one meter between four and 12 month sites.
- Post-depositional processes least disturbed the central ‘hearth’ areas.

CONCLUSIONS

The majority of the deposited materials remained at the site (Table 1), with more than half remaining at or near where they were initially placed. The least movement was recorded at the centre of each site and in the smaller material categories (beads and OES fragments), even though a greater proportion of the larger categories (ceramics and stone tools) were recovered. The low degree of mobility observed in this study indicates that by studying dense patches at open-air sites we may be able to identify single-occupancy sites and possibly nuclear-hand site structures more accurately. The information derived from studies of well-preserved open-air sites can supplement data from rock shelters and in certain cases provide levels of detail not possible at sites where space is recycled and multiple occupations are often superimposed directly over one another.

Table 1: Outline of placed and recovered finds at the 2 experimental sites. Original refers to the weight (g) of each material type placed at the sites, recovered is the amount excavated after four (SE-S) and 12 (SE-L) months. % elsewhere refers to the amount of material found outside of their square of origin.

<table>
<thead>
<tr>
<th>Material</th>
<th>Original (g)</th>
<th>Recovered (g)</th>
<th>% of original</th>
<th>% elsewhere</th>
<th>Total % found</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pink</td>
<td>Orange</td>
<td>White</td>
<td>Total</td>
<td>Pink</td>
</tr>
<tr>
<td>Read</td>
<td>10</td>
<td>8</td>
<td>10</td>
<td>28</td>
<td>7.1</td>
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<tr>
<td>Ceramic</td>
<td>732</td>
<td>658</td>
<td>558</td>
<td>1948</td>
<td>543.1</td>
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<tr>
<td>Shell</td>
<td>32</td>
<td>34</td>
<td>32</td>
<td>98</td>
<td>26.0</td>
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<tr>
<td>Stone tool</td>
<td>762</td>
<td>864</td>
<td>842</td>
<td>2468</td>
<td>1039.0</td>
</tr>
<tr>
<td>SE-L (12 months)</td>
<td></td>
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<td>77.8</td>
</tr>
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</table>

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REFERENCES


