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Changing Perspectives in Australian Archaeology, Part IV

Quantifying Stone Raw Material Size Distributions: Investigating Cortex Proportions in Lithic Assemblages from Western New South Wales

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ABSTRACT. Recent studies using a methodology for the quantification of cortex in lithic assemblages indicate a deficit in cortical surface area in mid to late Holocene contexts in western New South Wales, Australia. This result is interpreted to reflect the extensive transport of artefacts away from their place of production, thus providing a measure of prehistoric mobility within contexts otherwise noted for technological expediency. Here we provide a further investigation of the observed pattern by testing the null hypothesis that all artefacts were discarded where produced. We calculate the size of stone cobbles required to account for the cortical surface area and volume observed archaeologically and compare these values to the distribution of cobble sizes from the raw material sources from which the assemblages were produced. Results indicate that the very large cobble sizes implied by archaeological cortex proportions are not found in a large enough frequency to reasonably represent the average cobble size chosen for reduction. We conclude that the null hypothesis, that artefacts were discarded where they were produced should be rejected in favour of the original interpretation of cortex loss indicating artefact transport.

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Archaeologists have in recent years been able to document the ways people made and maintained stone tools and how these varied with their degree of mobility and sedentism. Mobile people were often able to use distant raw material sources and carry artefacts from these places to locations where they were needed. In these situations, limitations on the quantity of raw material that might be carried often promoted an emphasis on portability, efficiency and versatility in tool design. Efforts were made to reduce waste and to decrease the likelihood of tool failure as seen by the presence of retouched flake tools, formally prepared cores, blades and bifaces. In contrast, where people were more sedentary, they were sometimes able to move larger quantities of raw material to a single location or position themselves adjacent to stone sources. In these situations an adequate supply of raw material prompted a more casual or expedient approach to technology. Non-formalized artefact morphologies were emphasized leading to the manufacture

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