

Australian Flaked Stone Tools: A Technological Perspective

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ABSTRACT. Australian flaked stone technologies are examined from a flintknapper's perspective. We identify six different flaking techniques in the archaeological collections, but only a single reduction sequence. The five stages of this sequence are described in detail and it is demonstrated that Australian technologies are highly opportunistic. We examine major classes of Australian flaked stone artefacts — adzes, backed artefacts, burins, points, 'scrapers', 'utilized flakes' — from a technological perspective. We conclude that most morphological variation within these broad classes is not the result of deliberate design. We also note that 'backing' is simply the application of already-known bipolar technology to small flakes, and that more precise use-wear studies are needed to determine that 'scrapers' and 'utilized flakes' were actually used as tools.

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Stone tool manufacture has been established for at least 2.5 million years. In this period, flintknappers have transformed stones into tools by literally thousands of different techniques. Technological sophistication, necessity, and time and energy expended to make these different stone tools have varied considerably throughout prehistory, with every technology having in common the basic necessity of producing functional tools.

In this paper we argue that within Australia and Tasmania all the tool type preforms used throughout the last 40,000 years were produced from a single reduction sequence. Lithic raw materials were selected and reduced, solely by percussion techniques, into a variety of flakes and blades which served as preforms for formal as well as informal tool types. Heat treatment was frequently employed at different stages of reduction to improve the flaking qualities of the raw materials (Flenniken & White, 1983). The technologies used in Australia were thus ingeniously simple and flexible. They were also highly opportunistic, and exploited the potential of the reduction sequence in a variety of ways.

In the sections which follow we present Australian flaked stone technologies as a single sequence, for the sake of clarity and continuity. We stress that this sequence was rarely produced prehistorically as a

single event from a single piece of stone. Our account is based on JJF's flintknapping experience, replicative experiments, intensive inspection of museum collections and material from a number of archaeological sites, discussions with various colleagues, and the literature.¹ It is important to note that this paper is primarily JJF's technological view of the Australian flaked stone material and we do not attempt any detailed comparison with ethnographic or archaeological assemblages from particular sites. As far as we are aware, no studies based on a detailed understanding of knapping technology have been made of Australian assemblages, although such are now in progress (e.g. by D. Witter, P. Hiscock and R. Fullagar). These are clearly necessary to test and develop the interpretation given here.

We start by defining the concepts of technique, sequence and technology (cf. Crabtree, 1972; Flenniken, 1981). A technology is the total sum of flintknapping knowledge possessed by a group of knappers and demonstrable from the end-products of their knapping behaviour. Each technology is composed of a number of particular techniques, which are specific methods by which flakes are removed from a stone to achieve a particular goal. The techniques, and the sequence in which those techniques are applied to the stone, form an identifiable cultural pattern. This