

# ARCHY 319

# Archaeology of Australia

Winter 2019

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# What are we going to do today?

Review last week

Intermission: Long Paper Instructions

Inland economies in Holocene

Australia

Intermission: Long paper peer review

Technology in Holocene Australia

**Last  
week**

## Group 1

### Nara Inlet 1: coastal resource use and the Holocene marine transgression in the Whitsunday Islands, central Queensland

BRYCE C. BARKER

#### Abstract

An excavation of a large rockshelter in Nara Inlet, Hook Island, on the central Queensland coast has revealed archaeological evidence for early Holocene marine resource use dating from before 8150 BP. It is argued here that the site demonstrates continuous use of marine resources from the time of its initial occupation, at the start of the Holocene. Along with other recent evidence (Allen *et al.* 1989, O'Connor 1989, Morse 1988) this site represents clear evidence of a continuous marine sequence spanning the Holocene. The continued use of marine resources including mangrove species throughout the Holocene argues against a time lag in the occupation of coastal sites and questions the effects of marine transgression on human populations and marine resources. Major changes in the archaeological record at Nara Inlet 1 do not coincide with the major

colonisation of the continent (Bowdler 1977, Beaton 1985). Beaton (1985), challenging Bowdler's (1977) model of early coastal colonisation, used evidence from research carried out at Princess Charlotte Bay in north Queensland. He concluded that intensive use of intertidal and estuarine environments was a mid/late Holocene event and that the overwhelming number of coastal sites dating to the mid/late Holocene are 'likely to be the nearly complete archaeological expression of coastal foraging in the past'. He stressed that during the latter part of the marine transgression marine resources were overwhelmed by the encroaching sea and did not re-establish until well after sea level stabilisation some 2000 to 4000 years later.

This site represents continuous archaeological evidence that

## Group 3

### Late-Holocene mega-tsunamis in the Tasman Sea: an assessment of the coastal archaeological record of New South Wales

Ian Hutchinson<sup>1\*</sup> and Val Attenbrow<sup>2</sup>

(<sup>1</sup>Department of Geography, Simon Fraser University, Burnaby, British Columbia V5A 1S6, Canada;

<sup>2</sup>Anthropology Section, Research Branch, Australian Museum, Sydney NSW 2010, Australia)

Received 10 May 2008; revised manuscript accepted 3 December 2008

## Group 5

### The recent prehistoric exploitation of edible mussel in Aboriginal shell middens in southern New South Wales

M.E. SULLIVAN

#### *The recent prehistoric dominance of edible mussel*

A striking but hitherto poorly documented feature of many coastal shell middens in southern New South Wales is the relatively high proportion of edible mussel *Mytilus edulis planulatus* in their uppermost layers. Poiner (1971) noted an increase in mussel in the upper layers of several shell middens near Sydney, but the phenomenon was particularly remarked upon by Bowdler (1970, 1976) for a site she excavated at Bass Point (Fig. 1). Bowdler recorded an abrupt change to mussel as the dominant shellfish species in the uppermost layers of this midden and

platforms, rather than engage in the more time consuming diving for large gastropods sheltering in cracks on the platform edges, as they had done previously.

The change to edible mussel as a dominant species in shell middens is widespread. If Bowdler's hypothesis applies generally, then the change to mussel is a cultural marker in the sense of denoting the change to a hook and line fishing strategy. There are few such marker horizons in Australian shell middens, particularly of examples which can be so readily recognised during field survey as the change to a

## Group 2

### Coastal shell middens of the Abydos coastal plain, Western Australia

GENEVIEVE CLUNE and RODNEY HARRISON

Keywords: Archaeology, shell middens, Abydos Plain, Pilbara, *Anadara granosa*

#### Abstract

Middens and mounds dominated by *Anadara granosa* began to be formed on the Abydos Coastal Plain sometime between 4400 and 5300 calibrated years before present, and while mounds appear to have ceased forming some 1800–1600 years ago, middens continued to form until the early twentieth century or later. In some cases, the earliest of these middens and shell mounds formed on top of older middens from which *Anadara granosa* is totally absent, and in which *Terebralia* spp. (while occurring in relatively low concentrations) is the dominant shell species. *Anadara granosa* dominated middens (*sensu lato*) occur in a variety of forms across the landscape, including large shell mounds, earth mounds (or mounded shell middens), lenses of shell eroding out of well-developed dunes, and undifferentiated surface shell scatters.

appearance of such sites in the archaeological record results from a series of changes in economic scheduling, resource availability, social organisation and mobility. Our interpretation of these data suggests that the large, single species *Anadara granosa* middens were occupied during regular, annual periods when large groups of Aboriginal people lived in a semi-sedentary fashion immediately after the wet season, when resources were abundant and ceremonial activities were undertaken. This explanation has implications for the interpretation of single species bivalve dominated shell middens throughout north Western Australia.

### NEW RADIOCARBON DATES FROM KOOLAN ISLAND, WEST KIMBERLEY, WA

Sue O'Connor

This paper presents a series of new radiocarbon dates from Koolan Shelter 2, a large rockshelter in the coastal west Kimberley. These dates establish Koolan Shelter 2 as the oldest dated site in coastal northern Australia and provide firm evidence for a well-established coastal economy by the terminal Pleistocene/early Holocene.

Koolan Island is a small island nestling close to the mainland on the northwest Kimberley coast, between latitudes 16° and 17° and longitudes 123° and 124°. It is the largest of the offshore islands in a chain of islands, the Buccaneer Archipelago, and



# **Intermission: Long paper instructions**

# **Holocene inland economies**

Big issue  
progression or  
diverse trajectories  
of adaptation?

# Amazing examples of economic restructuring

- Semi-sedentary eeling-fishing-focused foragers in southeastern wetlands (Lourandos 1980b, 1983)
- Moth harvesting economies in
- Southeastern uplands (Flood 1980, 1988; Flood et al. 1987)
- Cycad seed using in the eastern highlands (Beaton 1977; Bowdler 1981),
- Seed using in the northeastern rainforest societies (Horsfall 1987)

## IDEAS

# Workism Is Making Americans Miserable

For the college-educated elite, work has morphed into a religious identity—promising identity, transcendence, and community, but failing to deliver.

FEB 24, 2019



**Derek Thompson**

Staff writer at *The Atlantic*



NICKY LOH / REUTERS

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**I**N HIS 1930 ESSAY “Economic Possibilities for Our Grandchildren,” the economist John Maynard Keynes predicted a 15-hour workweek in the 21st century, creating the equivalent of a five-day weekend. “For the first time since his creation man will be faced with his real, his permanent problem,” Keynes wrote, “how to occupy the leisure.”

## MORE BY DEREK THOMPSON

**Amazon Got Exactly What It Deserved—And So Did New York**

DEREK THOMPSON



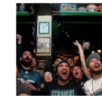
**How Globalization Saved the World and Damned the West**

DEREK THOMPSON



**The Super Bowl's Base Is Eroding Rapidly**

DEREK THOMPSON



**Why Flying Cars Are an Impossible Dream**

DEREK THOMPSON



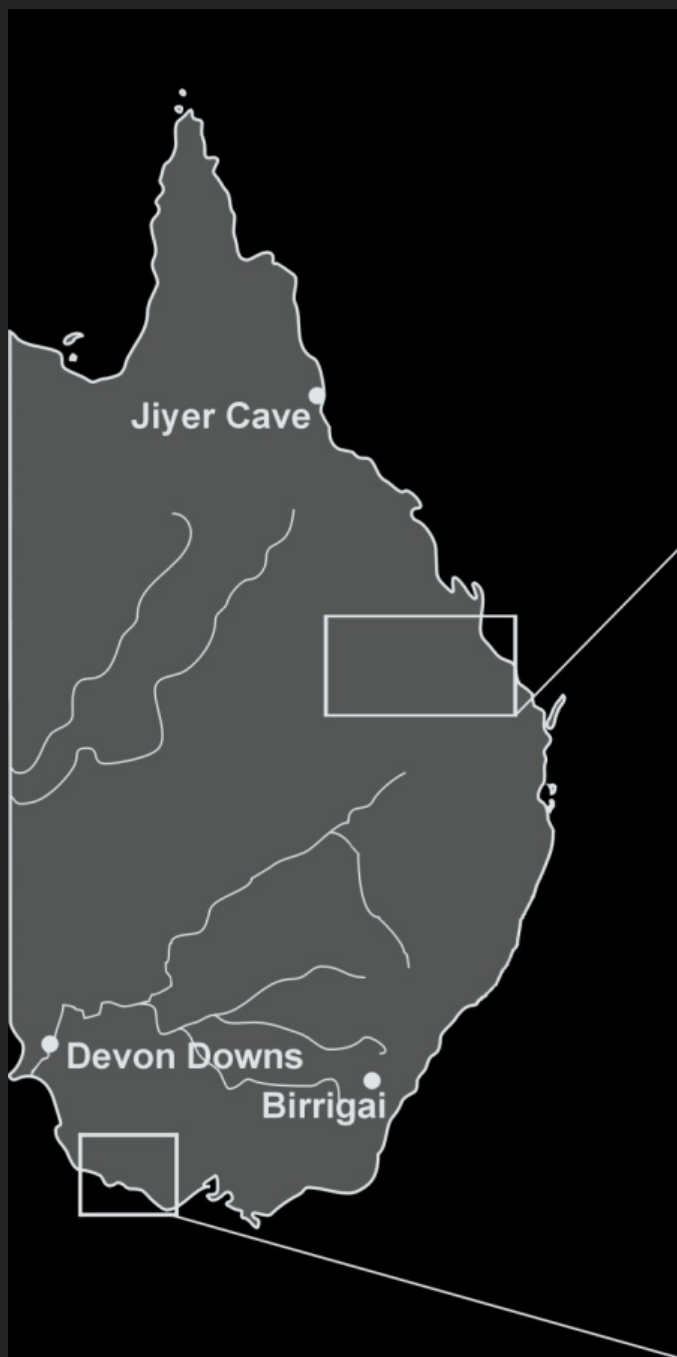
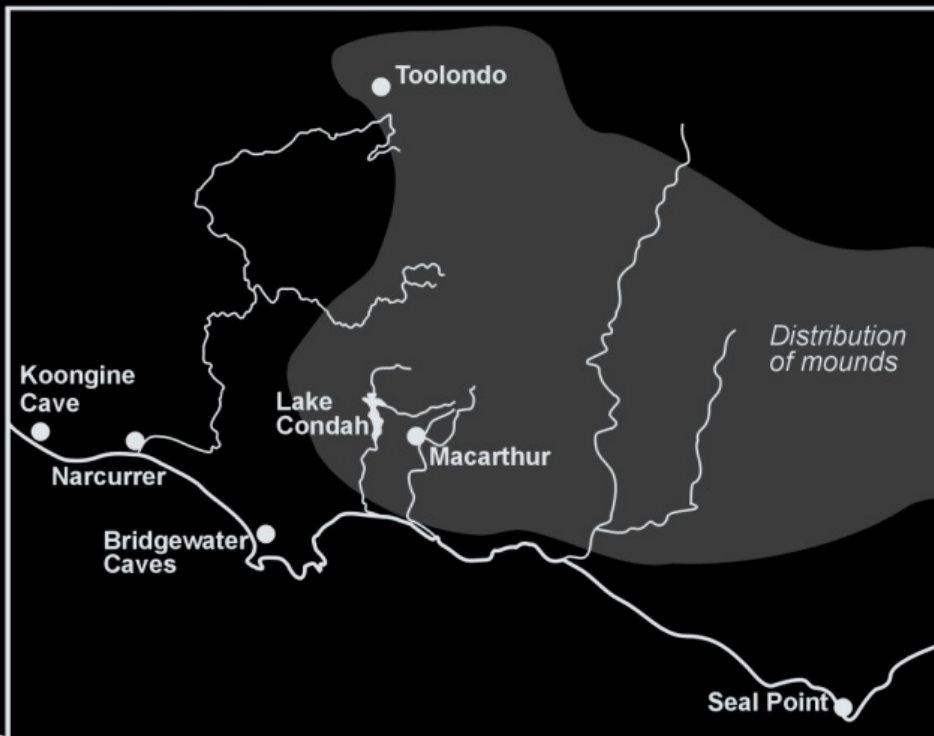
“the American conception of work has shifted from jobs to careers to callings”

“Americans have forgotten an old-fashioned goal of working: It’s about buying free time.”

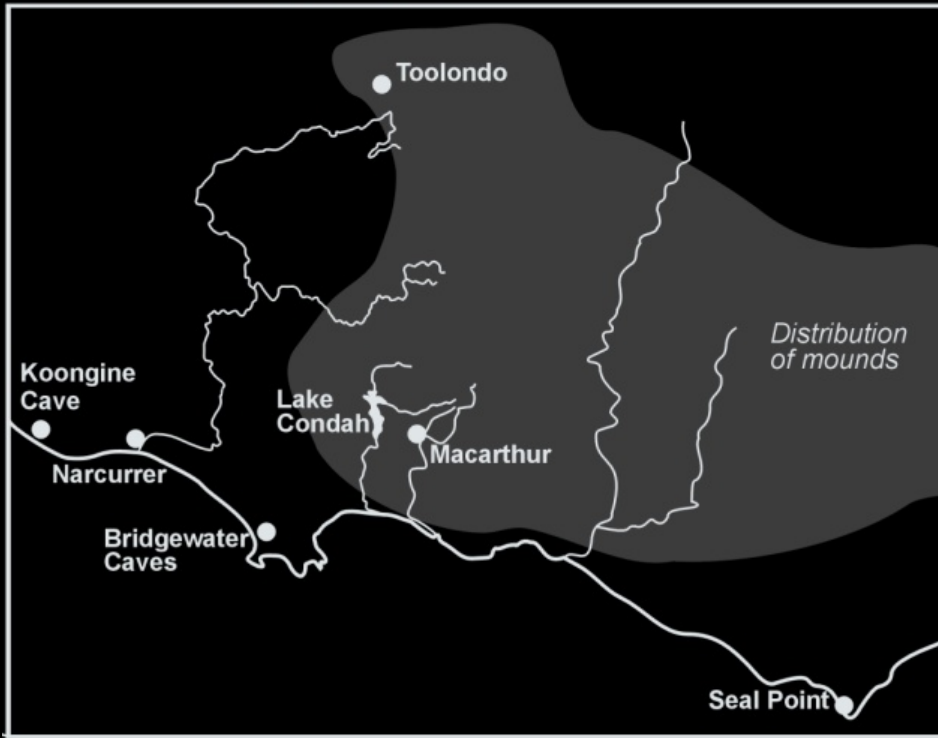
## Carnarvon Gorge region



## Southeastern wetlands



## Southeastern wetlands



A number of archaeologists have described evidence that reflects occupation of wetlands.

Lourandos interpreted stratigraphy at Toolondo as evidence of artificial drainage and eel management.



Earth mounds were seen as habitation sites or garden areas artificially raised above the waters of wetlands.





Southern Highlands



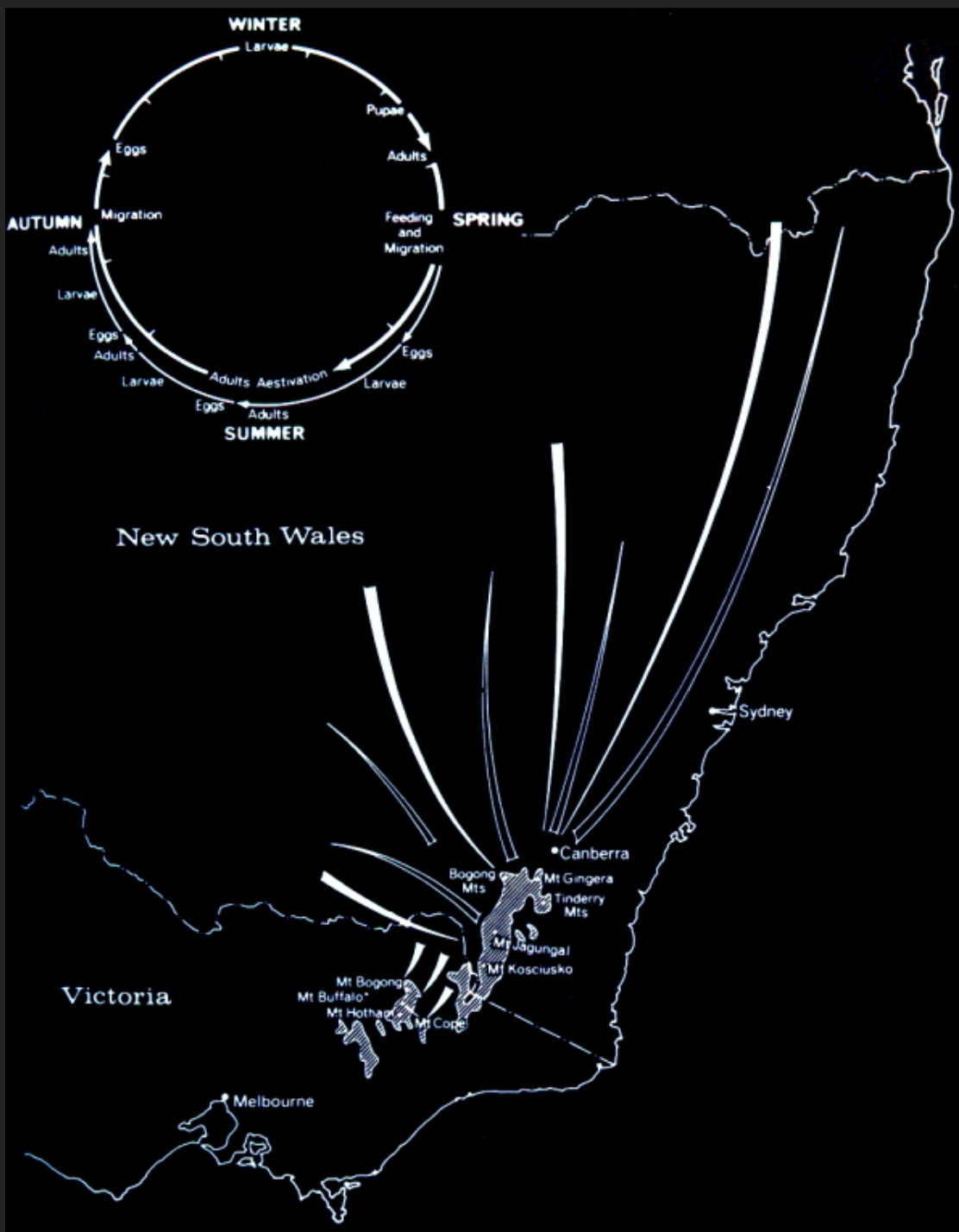


Jo Flood links the increased use of the region to the initiation of the exploitation of specialized resources such as the Bogong moth



A very much sought after and delectable food source.

Aestivation



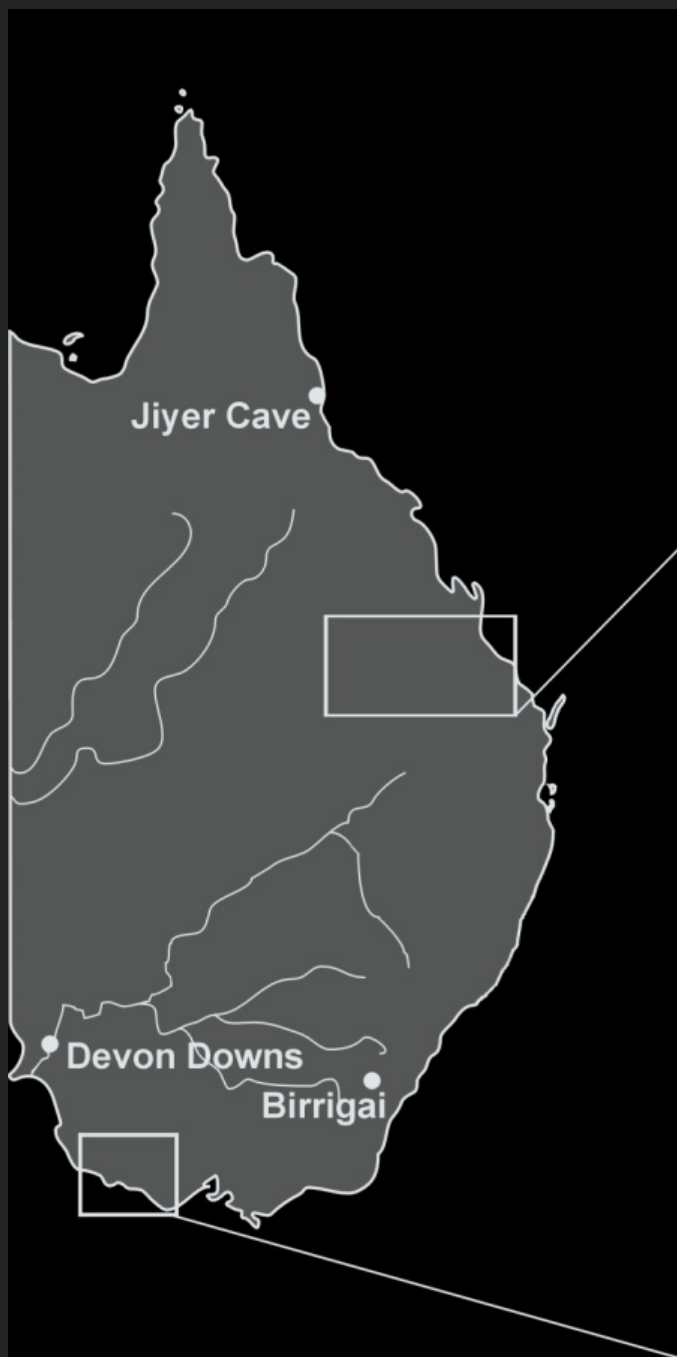
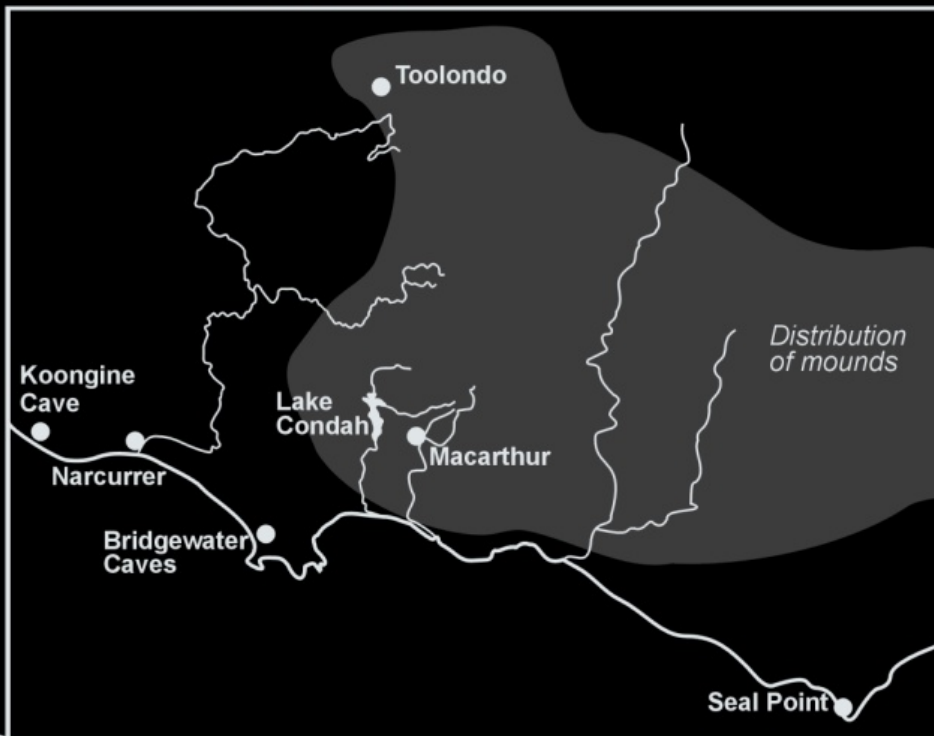
Flood suggests increased archaeological visibility in the last 3,000 years indicates the establishment of a system of moth exploitation.

The same pattern in other environments indicates a different process is probably responsible.

## Carnarvon Gorge region



## Southeastern wetlands







Central Queensland Highlands







**Wanderer's Cave:** A large cave containing a deposit that was 45cm deep.

Burned wood from the base of the deposit gave a  $^{14}\text{C}$  date of  $4320 \pm 70$  BP (ANU-1539).

"...the entire deposit seems to be a midden of *Macrozamia* shells." (Beaton)

In the upper portion of the deposit *Macrozamia* makes up 30% by weight of all archaeological material.

Charcoal, often of burnt *Macrozamia*, makes up a further 54% of the deposit.

**Rainbow Cave:** Long narrow niche in a sandstone cliff. A deposit 60cm deep is contained in the shelter.

Burned wood from the base of the deposit gave a  $^{14}\text{C}$  date of  $3600 \pm 100$  BP (ANU-1521).

Macrozamia exploitation is found in all levels above that 3,600 BP date. Although floral preservation decreased with depth, Beaton was able to estimate an average density of 400-600 nuts/m<sup>3</sup>.

About 50% of shells were affected by fire. Beaton thought this indicated that the nuts were roasted.

Many of the shells were also broken open, Beaton presumed this was by a hammer and anvil.



**Cathedral Cave:** A huge rockshelter, about 40m high, and with a deposit 2m deep.



Beaton suggested that prehistoric people managed cycads to use them as a form of communion food to support large ceremonial gatherings during the last 4,300 years.

Beaton argued that this view of *Macrozamia* use was consistent with ethnohistoric observations of cycads being used at ceremonial congregations (eg. Kunapipi ceremony).



# Alternative model

Brit Asmussen





# NORTH QUEENSLAND RAINFOREST

Antiquity of human exploitation of rainforests in north Queensland has been investigated by Nicky Horsfall.







MR2, open site in lowland rainforest. Basal date 2,700 BP.



Horsfall identified MR2 as a nut processing site, with numerous charred fragments of nutshells from toxic and non-toxic species.







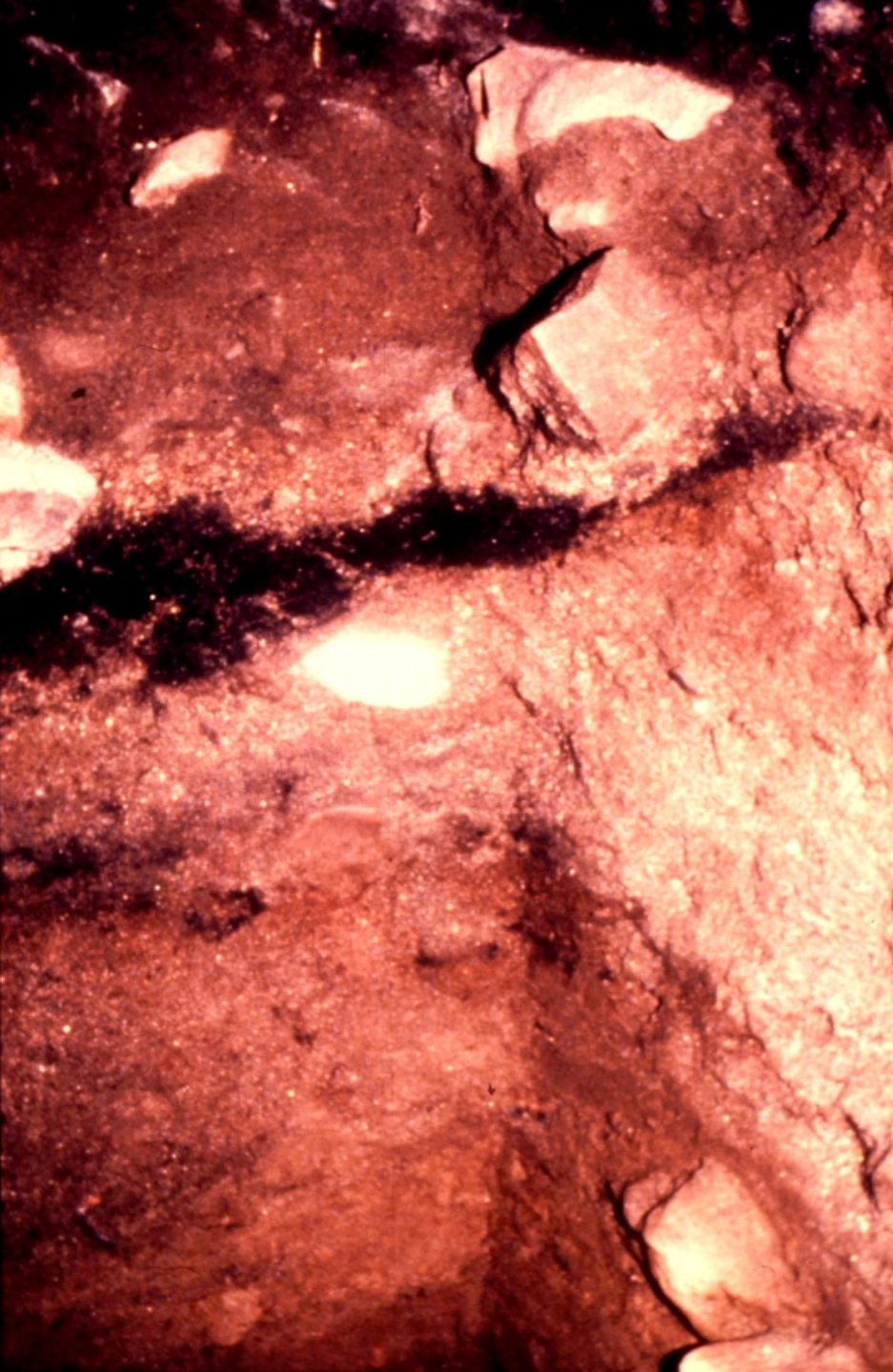
Jiyer Cave, a basalt shelter on the bank of the Russell River, about 60km south of Cairns.





Dozens of grindstones are present on the shelter floor, but not found in the deposit.





Occupation evidence became more common in the last 2,000 years, and is extremely frequent only in the last 200 years.

Horsfall suggested rainforests were marginal environments, only exploited intensively by hunter-gatherers if they had a technology to process the toxic plant foods.

Richard Cosgrove argued human rainforest occupation may be far older but not visible.



# Summary of inland Holocene economies

- Economic strategies are adapted to resources in each landscape.
- Economic restructuring is evidenced in some regions but not others.
- Claims for a common progressive trend in the evolution of economic systems during the Holocene, progressing from simple to complex, are not supported

Sandra Bowdler argued for a common cause for all the economic developments in every Australian regions during the mid-Holocene.

Bowdler's model rested upon two propositions:



1. That changes in resource management occurs at or shortly after a package of technological changes appear in Australia.

2. These technological changes were introduced from outside Australia.

**Intermission:**  
**long paper**  
**peer review**

11 Mar: submit your paper  
for peer review

14 Mar: complete your peer  
reviews

18 Mar: submit final version  
for grading

A few tips...

Focus on making **claims** and  
providing **evidence**

Names and numbers are  
excellent **evidence**

**Cite** scholarly sources  
frequently

# **Technology in Holocene Australia**

**Tasmania  
not  
included!**

# Big issues

Did new technology come from overseas? Or was it a local invention?

Where-ever it came from, why did people adopt it? And why did they stop using it?



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This model contains a number of components:

- The origin of changes is external to Australia
- The changes all occur within a short time
- The changes are associated with each other





The claim for external origins  
rely on the Dingo and soft  
technology.

4,500?





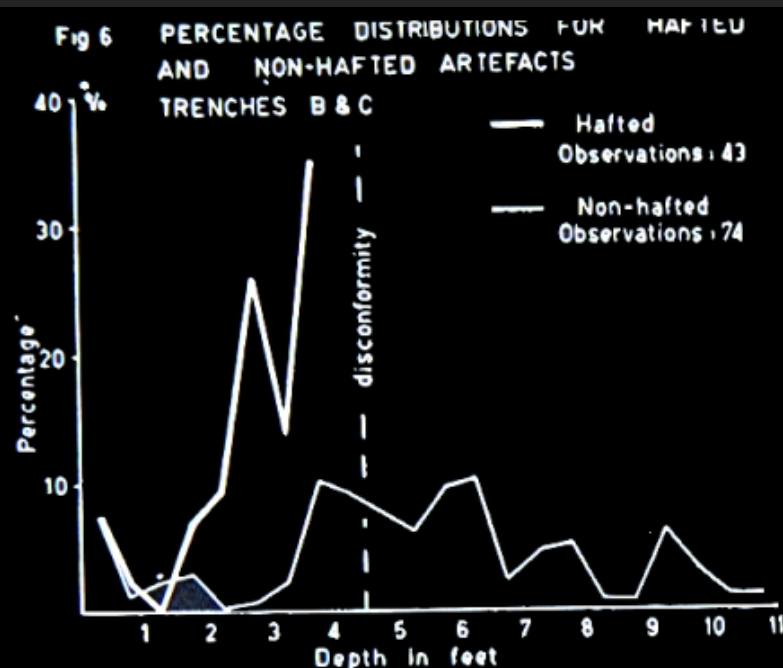


Fig. 6

Percentage distribution for hafted and non-hafted artifacts.

Fig.7 HISTOGRAM FOR TOTALS OF HAFTED/ NON-HAFTED ARTEFACTS

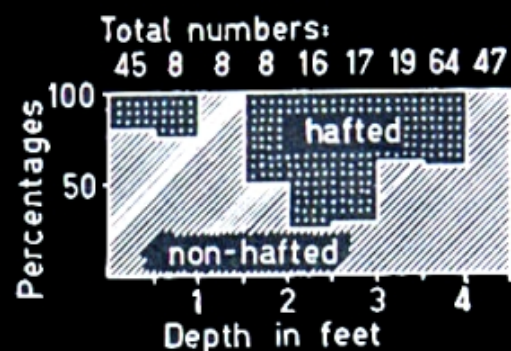


Fig. 7

Histogram for totals of hafted/ non-hafted artifacts.

Fig.8 CUMULATIVE FREQUENCY GRAPH

Cumulative mean weights of non-hafted <400gms.

Trench B/C +1962

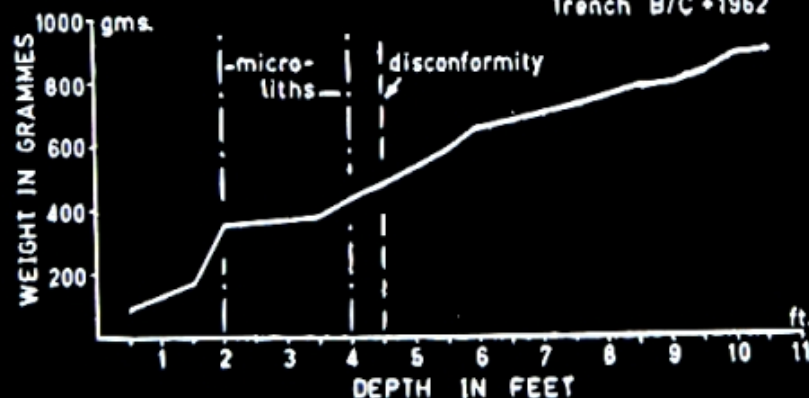


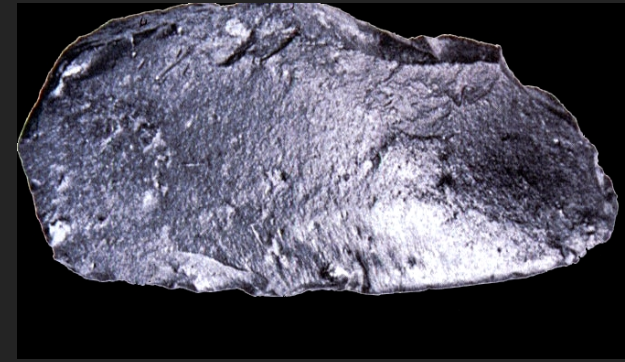
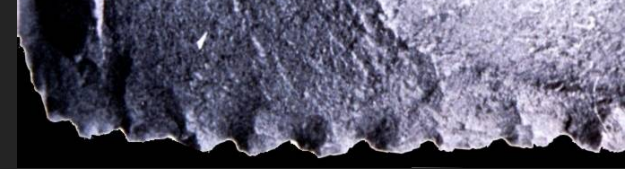
Fig. 8

Mulvaney's findings were :

1. The appearance of small distinctive retouched flakes.
2. A period in which such items were common.
3. More recently, the decline in the frequency of such small distinctive retouched flakes.



Post-Bondaian (Eloueran)  
Few or no Bondi Points.  
Eloueras/bipolar cores and gloss  
common.



Bondaian  
Bondi Points common. Eloueras  
absent or uncommon.



Pre-Bondaian (Capertian)  
No Bondi Points or Eloueras. Saws,  
scrapers.

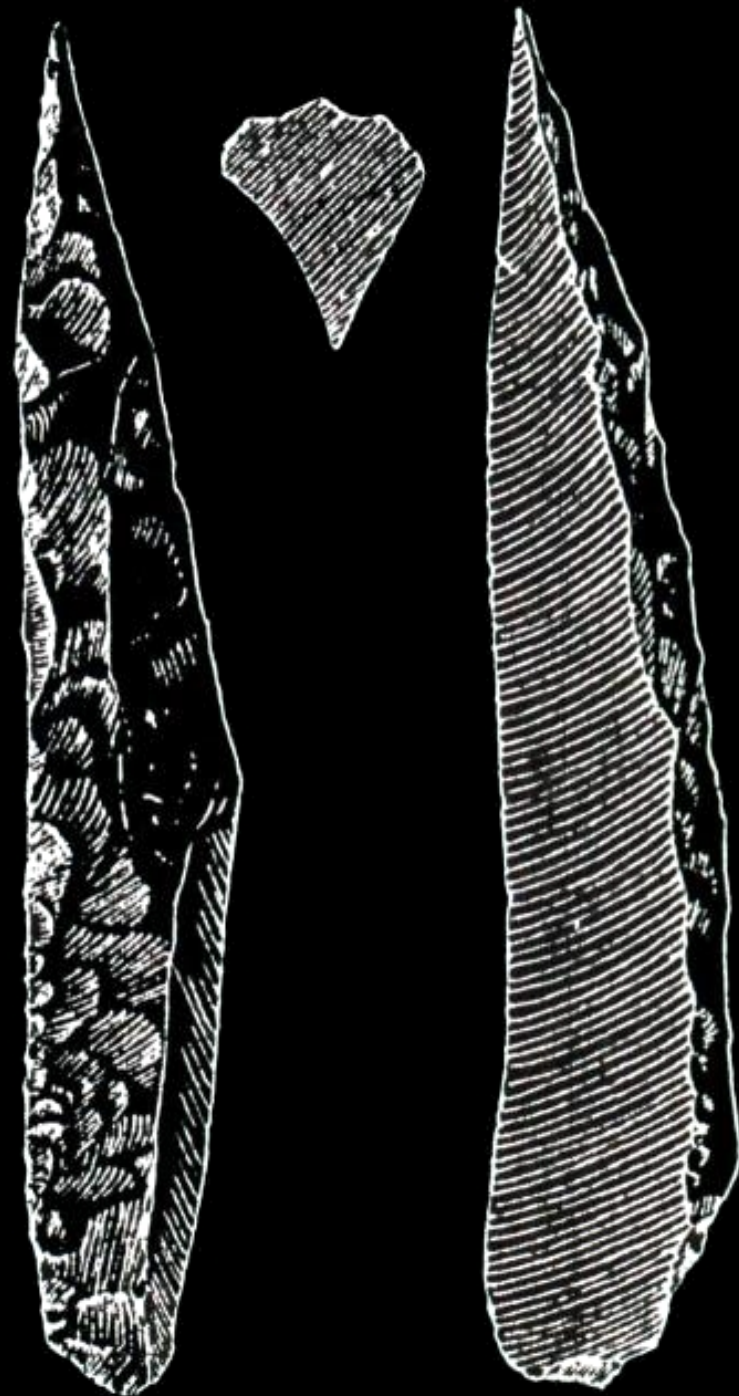


## BACKED ARTEFACTS

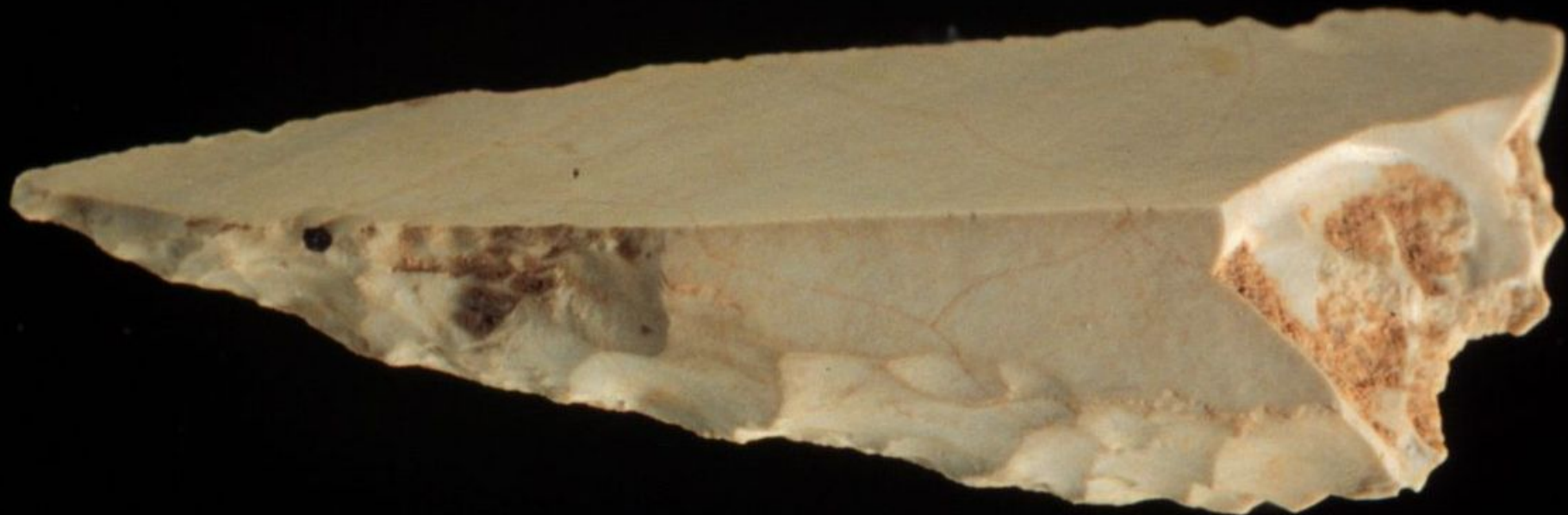
Backed artefacts were the archaeological evidence that first demonstrated that the prehistoric technology was different to historic activities.

They are flakes with steep retouch along one or more margins.

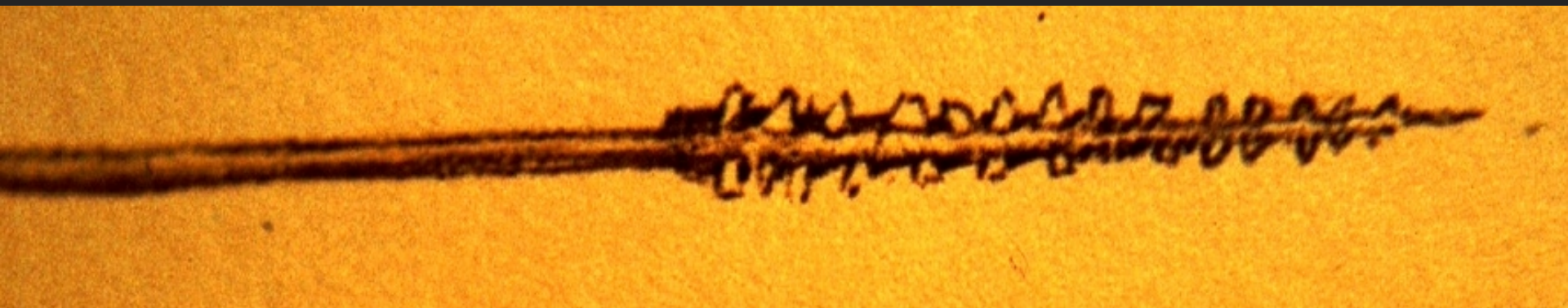
Their distinguishing feature is the near ninety-degree retouch that was often accomplished with the use of bipolar techniques on an anvil













In 1974 Bob Pearce argued that backed blades originated in the Southeast and spread north and west.

It was an Australian invention

In the late 1970's Ian Johnson argued that all of the specimens in levels older than 4,500 must have been disturbed





The implication of Johnson's argument was that backed artefacts appeared suddenly 4,500 years ago.

This led to a revitalization of ideas that backed artefacts were imported into Australia in the mid-Holocene.



An increased and more complex political, social and religious life may have been correlated with a declining devotion of time and energy to the esoterica of technological pursuits. As people concentrated their lives more on interaction and consequently on subsistence production, such activities as stoneworking may have become luxuries which brought little reward and much distraction from the 'important' things in life. (Walters, 1989, p.219)



Variation in backed artefacts has conventionally been measured by classifying specimens into subtypes.

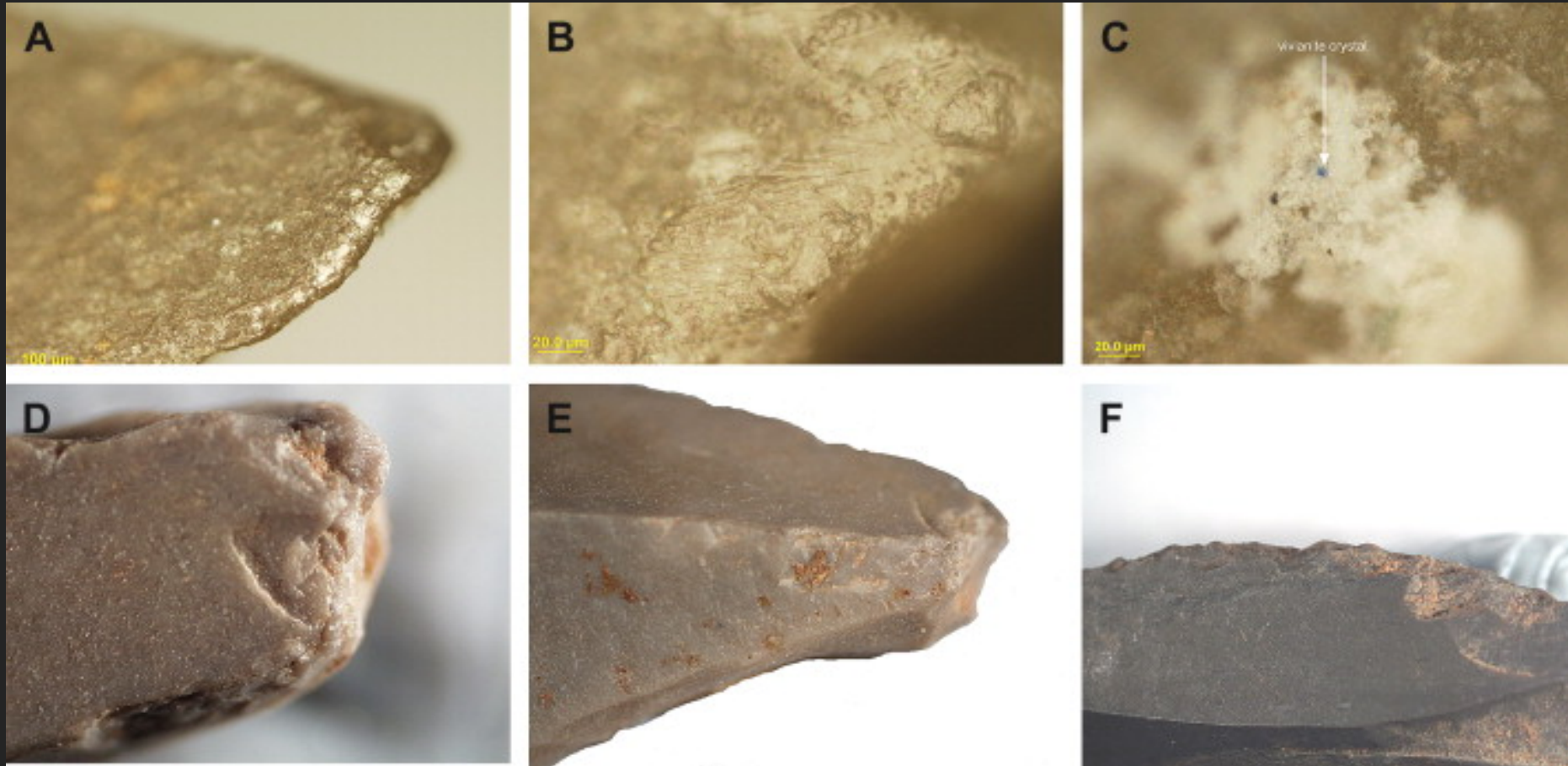


Asymmetrical forms (Bondi points)



Symmetrical forms (Geometric microliths)

Use-wear and residues on backed artefacts from Mussel Shelter. Wood-working was the commonest task, also plant-processing, bone-working and cutting flesh



maintenance rather than extractive





Current knowledge of the distribution of backed  
artefacts

# POINTS

Points are a category of retouched flake that:

have converging, often straight, retouched lateral margins,

are elongate and symmetrical around their long axis, and

have vaguely leaf-like shapes.





Unifacial

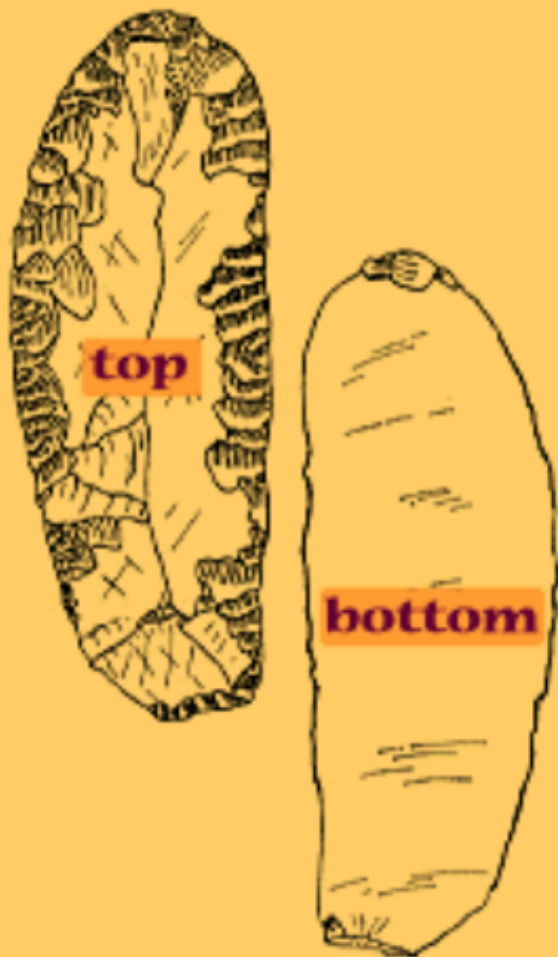


Bifacial



Serrated/Dentated





unifacial



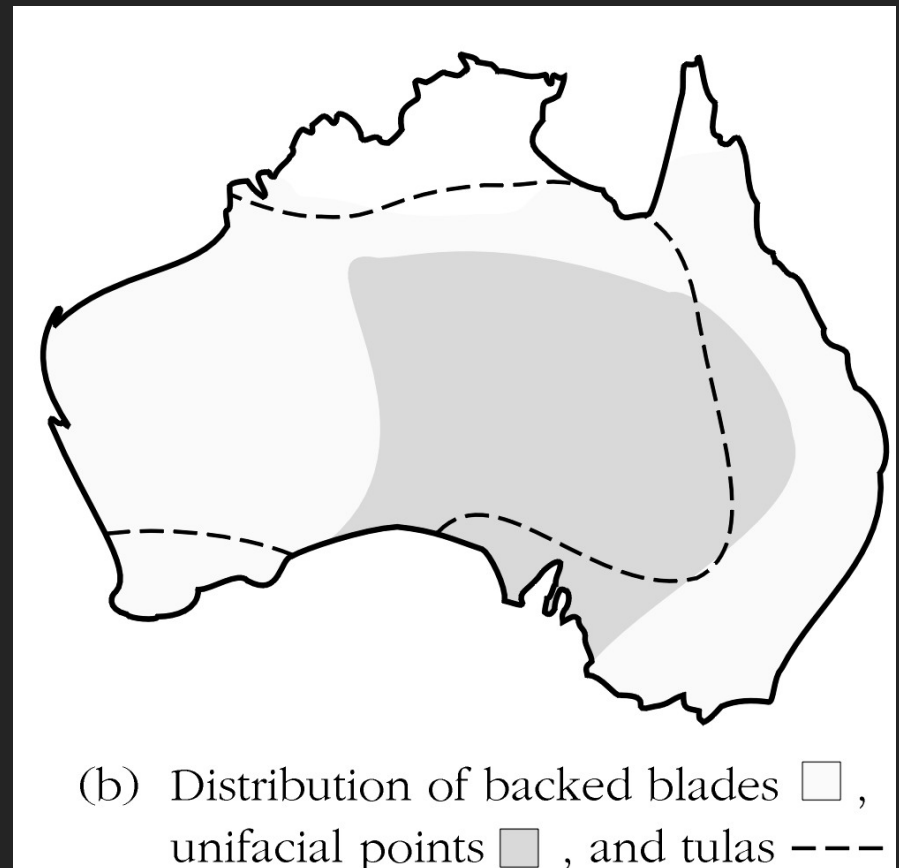
bifacial



Bifacial points

## Small Tool Tradition

It has been suggested that all of these types of stone artefacts form a single package, that they have a common origin and appear at the same time and represent a single phenomenon





## Small Tool Tradition



It has been suggested that all of these types of stone artefacts form a single package, that they have a common origin and appear at the same time and represent a single phenomenon

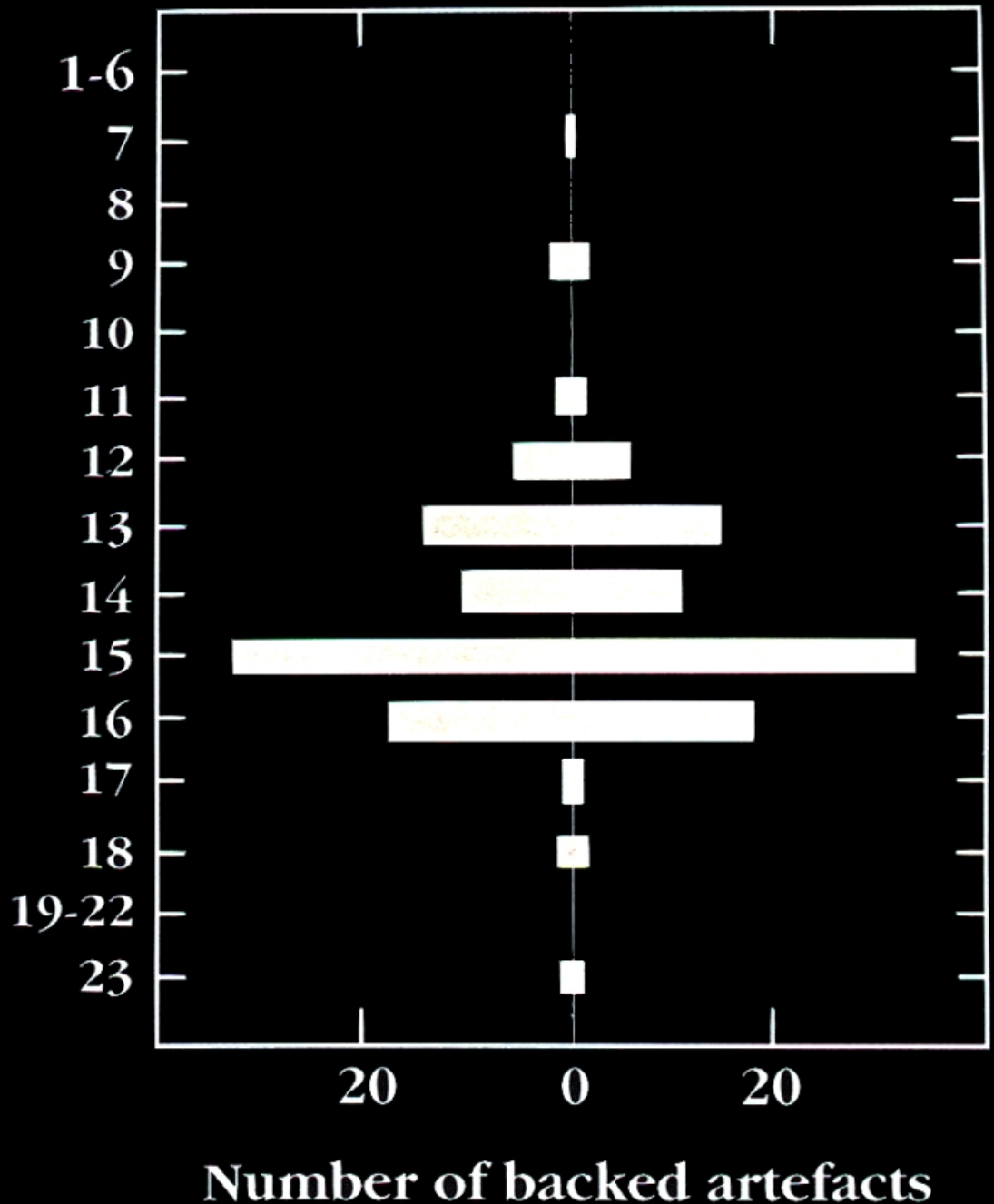
This is unlikely because:

1. Different geographic distribution.
2. New evidence of chronology.
3. Ill defined functional and technological relationship between different types.

Example of the vertical distribution of backed artefacts in a site excavated near Sydney by Val Attenbrow.

The association of the lowest backed artefacts are not explained by vertical movement

Spits





In the east they are manufactured during the early Holocene, in archaeological deposits dated to before 7-5,000 BP.

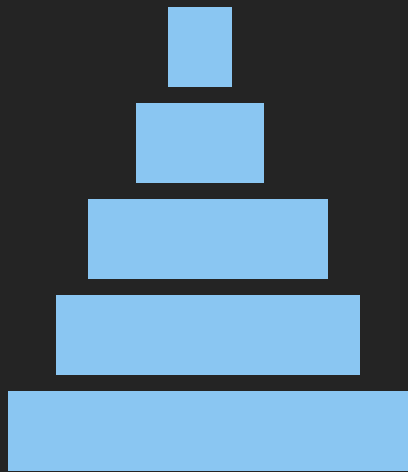
Discussions of backed artefact chronology have failed to sufficiently differentiate between

1. the first appearance of backed artefacts and
2. the major phase of backed artefact discard.

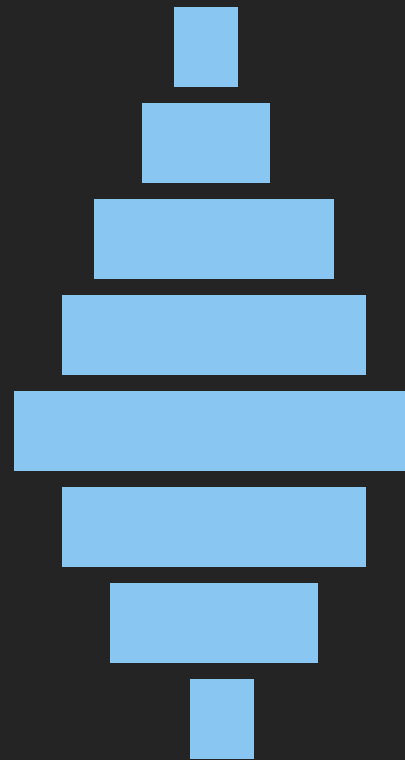


These conclusions are congruent with our current understanding of chronological change.

Sudden appearance



Gradual evolution



Time

Abundance

# Early backed artefacts in the southeast and northeast

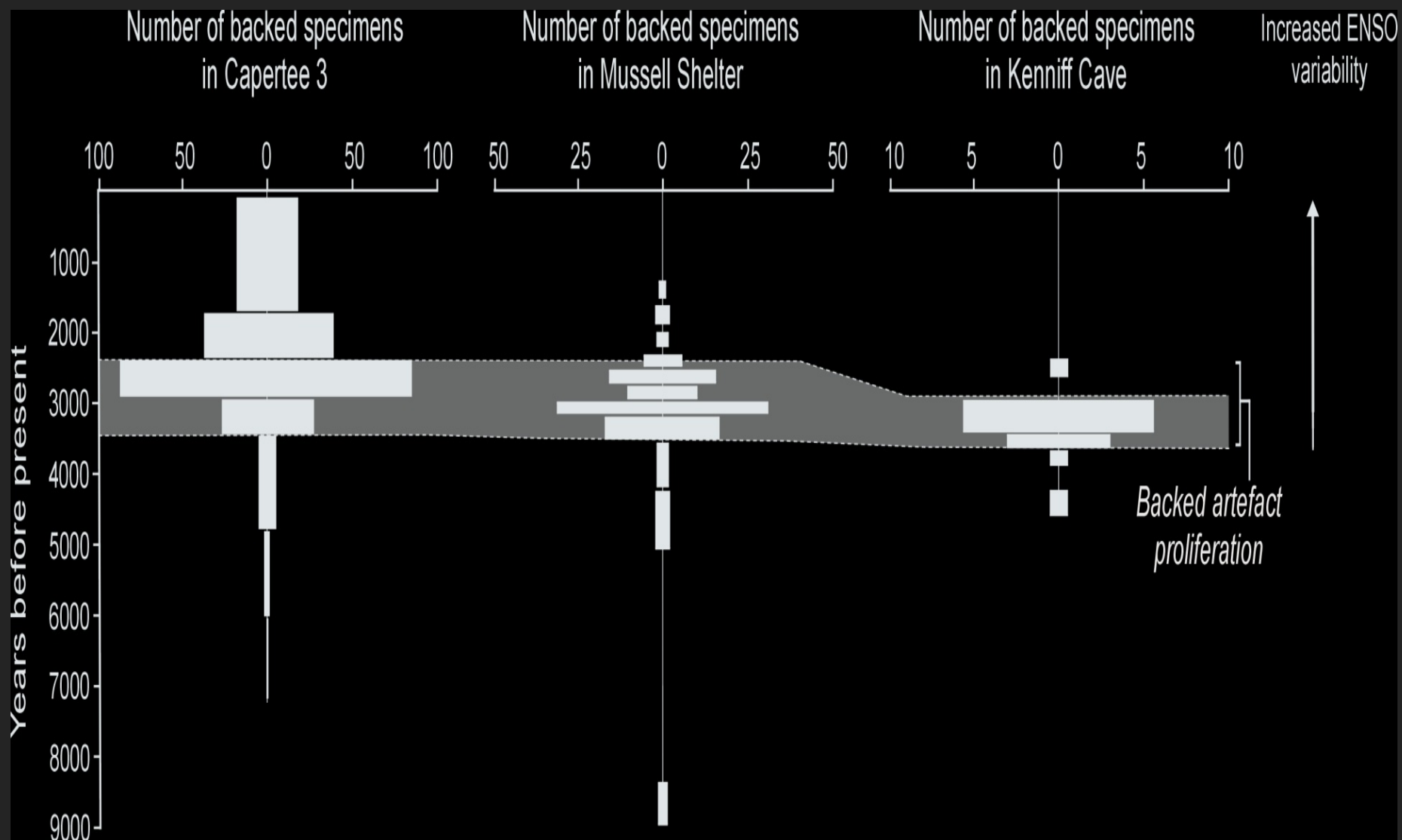
Mussel Shelter: 6,200-9,500 years bp

Loggers Shelter: 9,400 years bp

Capertee 3: 6,800 years bp

Walkunder Arch: 15,500 years bp

OLH in the Gulf of Carpentaria: 15,500  
years bp

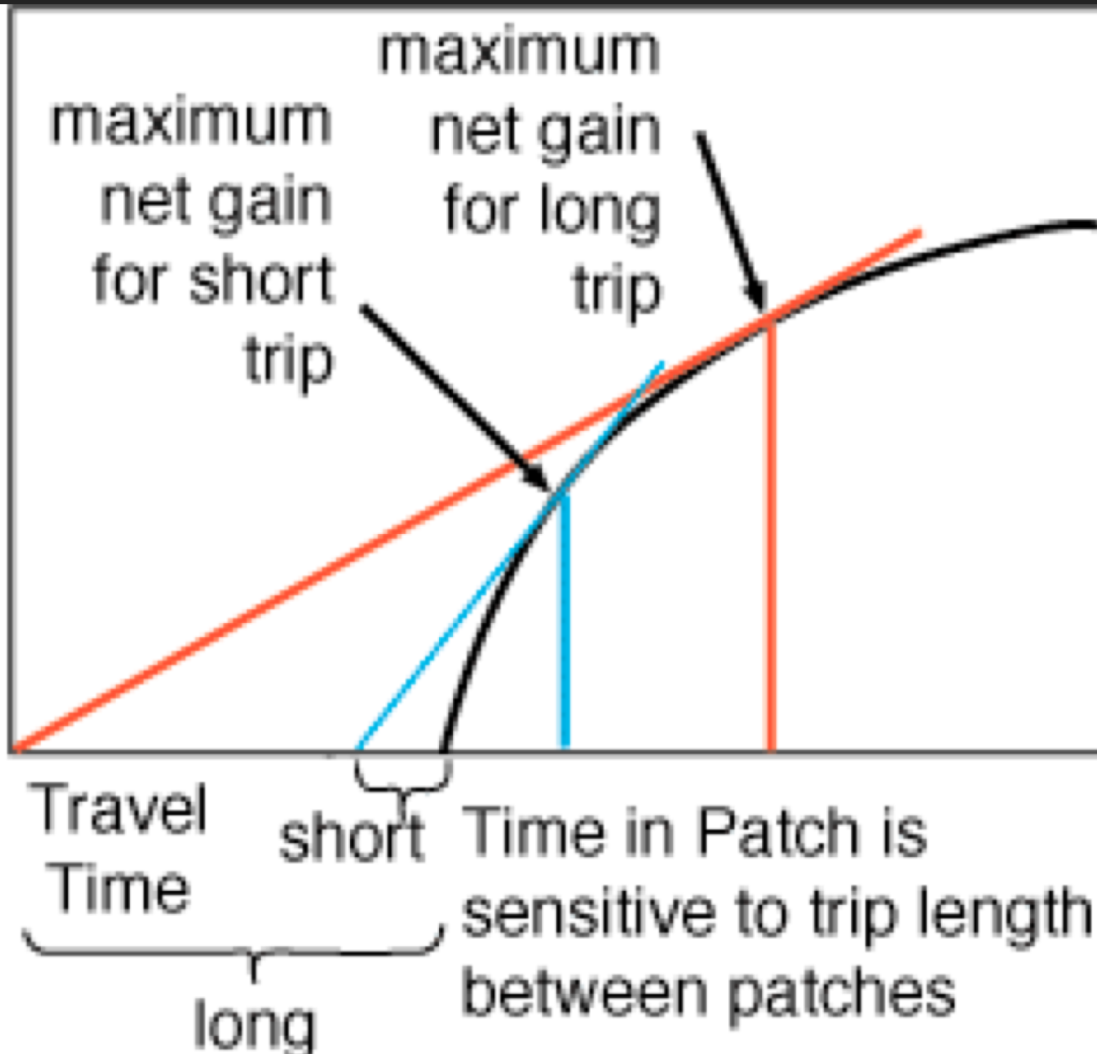


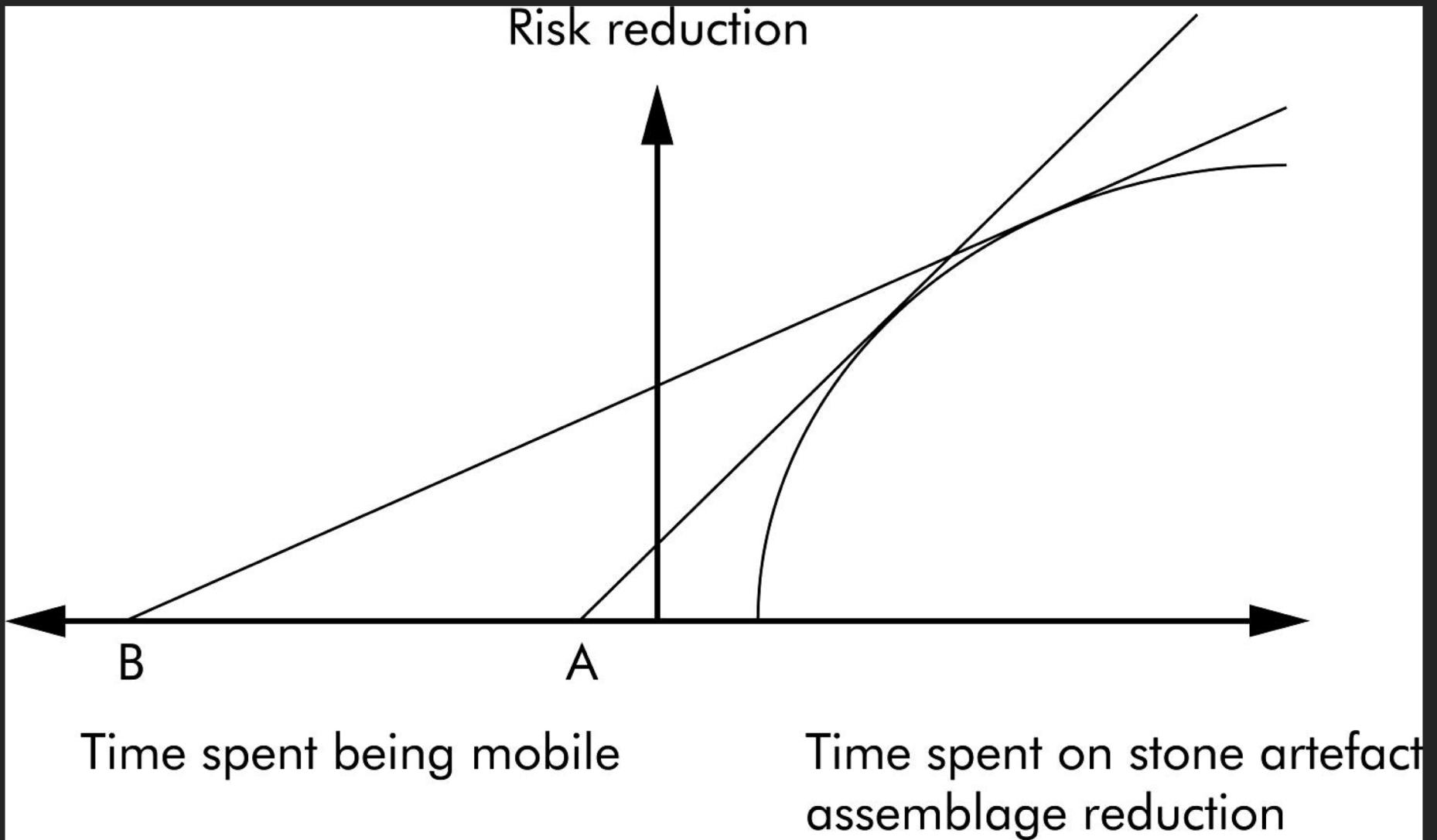




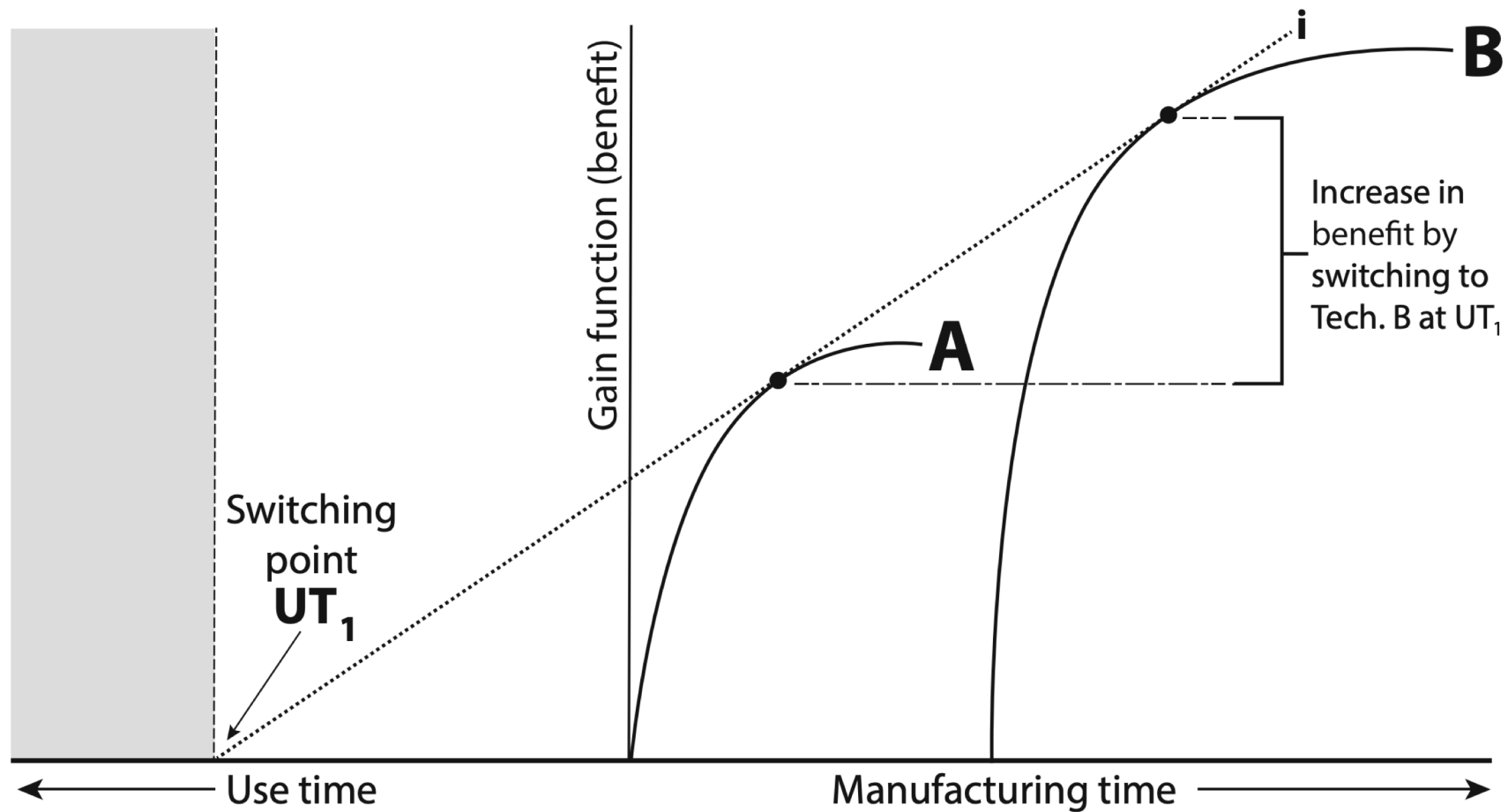
High risk is a low probability of foraging success or a high negative consequence following from foraging failure.

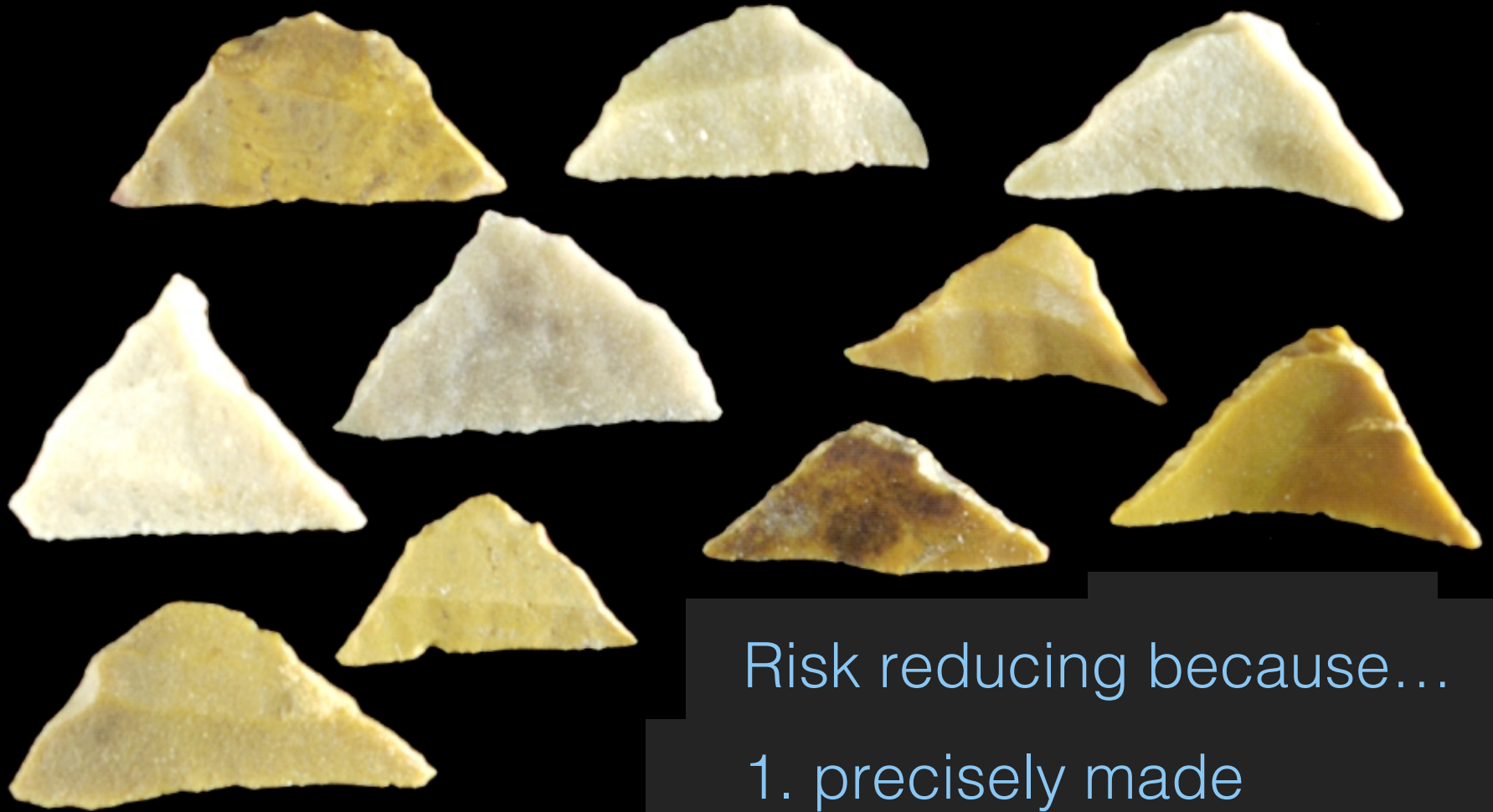
Energy  
Gain or  
Food  
Intake











Risk reducing because...

1. precisely made
2. standardised size and shape
3. multifunctional

These features can be understood if these implements are seen as components of portable, reliable composite tools that reduce uncertainty during the exploitation of the landscape.

Years BP	Effective Precipitation		Backed artefact production
0-2,000	Increasing but still variable		Low
2-4,000	Low and variable		High
4-5,000	Declining		Increasing
>5,000	High		Very low



# Summary

Points and backed artefacts are probably not part of the same package

Holocene abundance of small artefacts probably emerged from much earlier local technology

Did this proliferation of small tools come from social processes or adaptive needs?

# THE END



A  
*Warner Bros.-First National*  
PICTURE