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SCALES AND BALANCE: ARCHAEOLOGY, CULTURAL
HERITAGE AND SUSTAINABILITY

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Thank you very much for the invitation to give this talk and for the honour that I think it bestows. It was a particular pleasure to be a second archaeologist speaking at the Academy in 2007 and that archaeology was part of so many discussions at the Symposium on ‘Humanities Futures: new methods and technologies for humanities research’ that preceded my talk. I have chosen to address some questions about new methods and technologies in this presentation.

I begin by acknowledging the Yuggerah people, the first owners and traditional custodians of this land. It was particularly good to be told yesterday by Traditional Owner Des Sanday of the limits of his Yuggerah country.

New technologies have provided access to information across the world on an unparalleled scale and have allowed access to new types of information. This has enabled archaeologists, historians and other humanities scholars to ground their arguments on a much broader basis than before and with greater ease of scholarship. But this has also led to some unexpected challenges related to differing expectations of the function of such humanities disciplines. These challenges need to be met with a balanced assessment of the value of different humanities.

In this talk I will discuss the political role of knowledge of the past and how that global politics is influenced by the realisation that modern human behaviour is a relatively recent phenomenon in the period since we shared an ancestor with other apes. I will also give examples of the way new technologies have affected the way we can see cultural heritage and discuss the delicate interaction between industry and archaeology with reference to current controversy in the Dampier Archipelago. The talk will end with a discussion of the lessons from archaeology about the sustainability of particular ways of life and the lessons we might draw from them.

The political role of knowledge of the past

I start, then, with the most remarkable transition from the old information technology to the new.

In the evening of 18 December 1994 we set foot, the first for perhaps twenty thousand years, in one of the most beautiful decorated caves in the world: Chauvet Cave.

With these words, the three people who entered the cave on that day described their discovery (Chauvet, Deschamps and Hillaire 1995). In fact, we now know, the paintings had probably remained unseen for 28,000 years about 4,000 years after they were first made (Clottes et al. 1995). On 29 December the paintings were viewed by Jean Clottes, the pre-eminent expert in French Palaeolithic cave art, who overcame his scepticism and accepted their authenticity. Within twenty-eight days of the first discovery, the pictures were on the Internet and seen around the world. As things stand at present, these are the oldest cave paintings in the world, though no one would be surprised if similar ages were eventually demonstrated for paintings or engravings in Australia. The gap between making and rediscovery is therefore the longest and the gap between re-discovery and appearing on the Internet one of the shortest.

This art is the manifestation of what was the second revolution in information technology – the first, of course, was language itself. Mark Kornbluh referred to the Internet in his keynote address to the Academy Symposium that preceded this talk as the second communication revolution – I make it the sixth: language (Noble and Davidson 1996), iconic imagery,¹ writing (Goody 1977), printing (Eisenstein 1979), various means of communication at a distance (Winston 1998) and the digital electronic revolution (Negroponte 1996). There would appear to be a gap here for some work on the implications of the emergence of iconic imagery. The transition from discovery to Internet, therefore, represents a move from the second revolution to the sixth in four weeks.

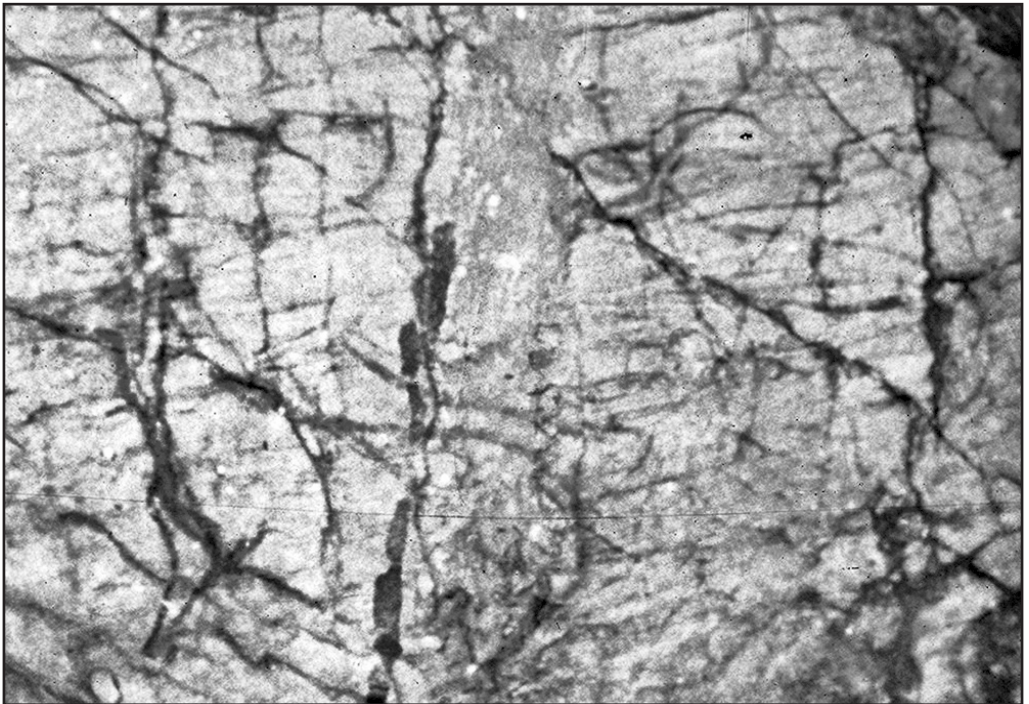
This story contrasts with the original discovery, or perhaps we should say rediscovery of Palaeolithic cave art in 1879. Near Santillana, in northern Spain, Marcelino de Santuola, introducer of eucalypts to northern Spain, was excavating at the entrance to the cave of Altamira and his daughter went deeper into the cave where, by the light of her candle, she discovered multicoloured paintings of bison, red deer and other animals, on the ceiling of a large open chamber (Daniel 1964, 58). The discovery was greeted generally with disdain, scepticism or worse until similar finds were made in France, and, in 1902, Altamira was accepted by the leading French scholars (Cartailhac 1902). Recent reassessment of the history of nineteenth-century attitudes to art in 'primitive' societies suggests that one other contributing factor was the set of preconceptions of the artistic abilities of hunter-gatherers (Moro Abadia 2006).

Leaving aside a sense that the principal problem was French chauvinism, one of the clinching arguments for the authenticity of the French paintings in caves, surrounded as they are today by vineyards that produce the second best wines in the world, was the depiction of reindeer. It was known by the middle of the nineteenth-century that the occupants of the caves of France lived beside and killed this and other species

¹ I give no reference here because I am not completely satisfied that the issues have been adequately addressed hitherto. Both David Lewis Williams (2002) and Merlin Donald (1991) address some issues, but I have significant differences with the accounts of both authors.

(Trigger 1989, 95) that are now confined to the Arctic Circle. No vines grow in such environments, at least until climate change makes it possible. The animals found in excavations were used as a rough guide to chronology to anchor comparative schemes based on the stone tool types found therein. The species found in the excavations and those depicted on the walls of the caves provided the most certain evidence for past climatic change, even though the work to establish the sequence of Ice Ages was not published until 1909 (Penck and Brückner 1909). The archaeologists were ahead of the geochronologists.

But reindeer never reached beyond the northernmost parts of Spain (Altuna 1972), so there were paintings of red deer, not reindeer on the ceiling of Altamira. Elsewhere in Spain, although there were some similarities in the stone tools (Pericot García 1942), the sites I studied in eastern Spain were only demonstrated to belong to the same period when I was able to obtain radiocarbon dates from the old excavations (Davidson 1974). The art there also lacked reindeer, but represented red deer (see discussions in Davidson 1999b, 2005) (Figure 1).



*Figure 1: Red Deer painted on the walls of the Upper Palaeolithic site at Cueva del Niño (Albacete), Spain.
(Photo © Iain Davidson).*

The southern regions of western Europe, therefore, were relatively difficult to relate to each other under the existing framework of understanding climate change, dating and interpretation, and in a variety of ways, both dating and interpretation depended, at first, on the nature of the interactions between French and Spanish scholars and contemporary attitudes to hunter-gatherers.

We now know minute details of the changes of climate from the analysis of the air bubbles in regularly deposited layers of ice in the Greenland and Antarctic ice sheets and other related studies of cores from the sediments on the bottoms of oceans. I illustrate this here (Figure 2) using data from one of the Greenland cores, downloaded from the Internet (http://www.gfz.ku.dk/~www-glac/ngrip/index_eng.htm downloaded 11 November 2007) on which I have superimposed a 500-year moving average to simplify the pattern somewhat. Using such a framework and a variety of methods of radiometric dating, we can situate sites from different local sequences relative both to each other and to a common context of climate, environment and human behaviour.

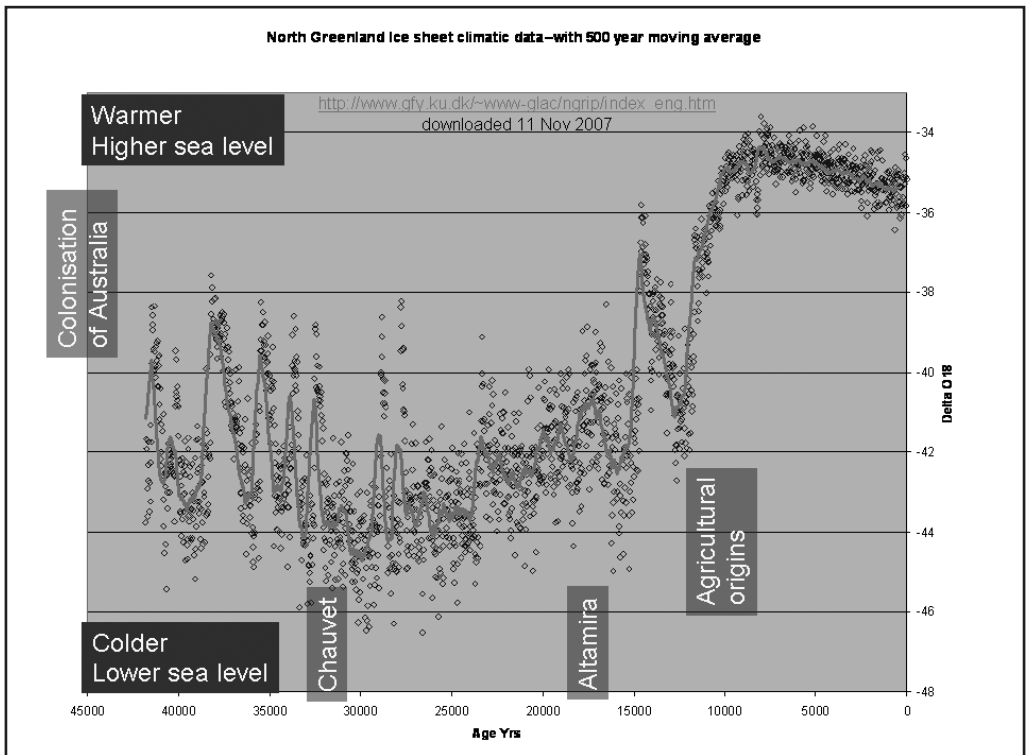


Figure 2: North Greenland ice sheet climatic data with 500-year moving average downloaded from http://www.gfz.ku.dk/~www-glac/ngrip/index_eng.htm, 11 November 2007. (Graph © Iain Davidson).

We can situate the discoveries that interest us in a world transformed by changing sea-levels and expanding and contracting glaciers and we can change the scale of the map to see the finds around the world that indicate the painting or engraving of rock surfaces within particular timeframes. One curious feature of this map, which I cannot elaborate here, is that art appeared early in Australia and South Africa which retained hunter-gatherers until the last century and in Europe where hunter gatherers were replaced by agriculturalists between 8,500 and 5,500 (Turney and Brown 2007). On another occasion I can elaborate why the earliest art is related to non-agricultural societies (for a preliminary outline, see Davidson 2006).

How might we view what it is we have just talked about and how it has been affected by new technologies?

Archaeology is a discipline dedicated to recovering lost histories. Let me illustrate this by a story from my own experience. In 1967, I excavated in Jerusalem within weeks of the Six Day War with Palestinian workmen, some of whom had returned there at great danger in order to take part in Kathleen Kenyon's last excavations (see Kenyon 1967). The walls that had been revealed in my trench were those of the Bronze Age Jerusalem, supposedly captured by the David of the Old Testament – and thus likely to be of considerable interest to the Israelis who had just occupied East Jerusalem for the first time.

What strikes me now about this story is the forgetting. In those deep trenches, covered with 3,000 years of rubbish washed over former walls of the city, were buried signs that could be interpreted in terms of a known mythology, and perhaps a history, but which lay unknown, unremarked, and unimportant for most of those thousands of years. Yet here we were in a new age, one that has brought horrors my Palestinian workmen could not contemplate in 1967, in which this wall was not just an indexical sign of particular moments and events of history, but a symbolic sign of the very origins of a state from which the victors of the Six Day War might claim descent. From such forgetting came newly minted memories – and as the excavation of this wall shows so well, the recovery of these memories is a political act. Israel's claim to Jerusalem began with this wall, and with David's defeat of an earlier group of indigenous inhabitants who built it. Yet even in these circumstances of apparently heightened religious and national self-awareness, the wall lapsed into disuse, its histories and heritage were forgotten, and were lost for three millennia.

Who can be certain of the symbolic or religious associations of Palaeolithic cave art of Europe and the reasons for the forgetting that led to ten millennia of ignorance of the reindeer hunters and their art? To understand this, the best perspectives are the long term and the world view. It is these perspectives that archaeology offers, aided, now, by a variety of options made available by new technologies. Indeed, archaeology can also provide new perspectives on the wider regional contexts of the struggles toward state formation of various Iron Age societies in the east Mediterranean,

putting into perspective the particular local histories reflected in those excavations in Jerusalem that reflect David's occupation of the city, or others investigating the almost contemporary fall of Troy described by Homer.

The cave art and the behaviour of its makers had certainly been forgotten, all of it unknown for 10,000 years and most for twice as long. When it was rediscovered, it could only be understood in the contexts of the local conditions both at the time of its rediscovery and of its making. Its discoverers and the scholars who pronounced judgement on its authenticity lacked definitive knowledge of things like it, and exhibited a certain chauvinism when considering the claims of people from other localities. In this, their efforts were not entirely surprising because they had little idea of the nature of variation of ecology of reindeer or of behaviour of hunter-gatherers of the times they were investigating, there was little certain knowledge of the crucial pattern of climatic and environmental change, and no absolute chronology. Now we understand reindeer, hunter-gatherers, climate and environmental change and chronology and can situate the emergence of art not just within the nationalistic fervour of one nation, but as a phenomenon with a relatively restricted time of emergence in relatively few regions, though these are spread around the world.

The global politics of modern human behaviour

Archaeology has provided insights into the global pattern of emergence of behaviours that can all be called hunting and gathering. When the age of the paintings of Altamira was authenticated by the leading French scholars, one-third of the volume was dedicated to the demonstration that rock art was known among hunting and gathering people around the world (including Australia) (Breuil and Cartailhac 1906, 201–25 for the Australian chapter) (Figure 3).

But now archaeology provides a new perspective by consideration of what was happening at the same time around the world and of the times that comparable things happened in different parts of the world. These are perspectives that are uniquely of our times, because you can be sure that the painters of Chauvet or Altamira had no idea that people were also painting rocks in Namibia (Wendt 1976) or Arnhem Land (Chaloupka 1999), but we do, and even for the people who painted in Chauvet Cave 4,000 years later than the first period of painting, it seems most likely that they perceived that the paintings were done by some previous painters, but they could have had no idea of the time that separated them from those earlier artists.² And we can understand the significance of such contemporary phenomena in different parts of the world, as well as their persistence across the passage of time. Bill Noble and I have argued that it

2 The best evidence suggests that oral traditions do not retain precise information for more than about 10 generations, as P Wiessner, 'The vines of complexity: egalitarian structures and the institutionalisation of inequality among the Enga', *Current Anthropology* 43 (2002): 233–69 has shown in exhaustive analysis of oral traditions in New Guinea by cross-matching of the accounts of interaction among 110 different tribes. And we can be sure that whatever truth may be established about the myths recorded in the Bible or the *Iliad*, is a result of those traditions being written down.

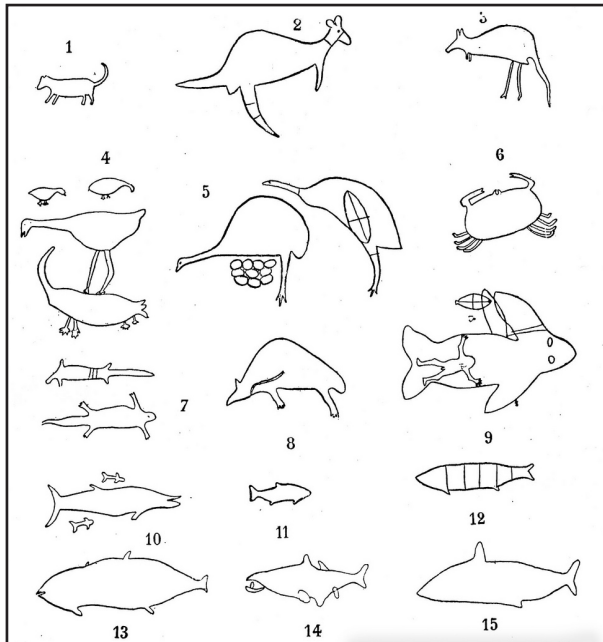


Figure 3: Australian rock engravings (except image 12, which is said to be drawn in black) from Figure 151 in Cartailhac and Breuil 1906. The caption indicates that images 1, 3, 4, 6, and 10 are from Depuch Island. The others are from New South Wales. Depuch Island was inspected as a possible site for the deepwater port which was subsequently established at Dampier. Depuch Island was rejected because of the heritage significance of its rock art (Vinnicombe 2002)!

is a phenomenon closely related to the emergence of language and hence of modern human behaviour (Davidson and Noble 1989, Noble and Davidson 1991). The migrations of modern humans within and out of Africa, humans habituated to a means of communicating using words as symbols of their meanings, carried this new means of communication to the uttermost ends of the earth as surely as broadband carries the Internet. The first information infrastructure was pairs of human minds (Noble and Davidson 1996).

We can situate these events in the context of a global pattern of hominin evolution from three million years ago – here based on the pattern of changes of cranial capacity and stature around the world over the last three million years of evolution of species related to

us and others that are not, such as *Homo floresiensis* (Figure 4).

In passing, we may note that new technologies have created a revolution in the study of fossils. Where previously cranial capacities were measured by pouring birdseed into the skull, the skull of *Homo floresiensis* was first measured by digital CT scan (see Zollikofer, Ponce de León and Martin 1998), and then cranial form and capacity was measured from the digital evidence.

The pattern of changes in human and hominin brain size shows two episodes of stasis, one at the beginning and one from about one and a half million years ago to about four hundred thousand years ago, and two episodes of change. The first of these occurred from two to one and a half million years ago when first selective pressures against large brains were released by, among other things, dietary changes, and then stature change also probably contributed to increased brain size. The second episode of change was not accompanied by stature change (give or take a few basketball players), and I

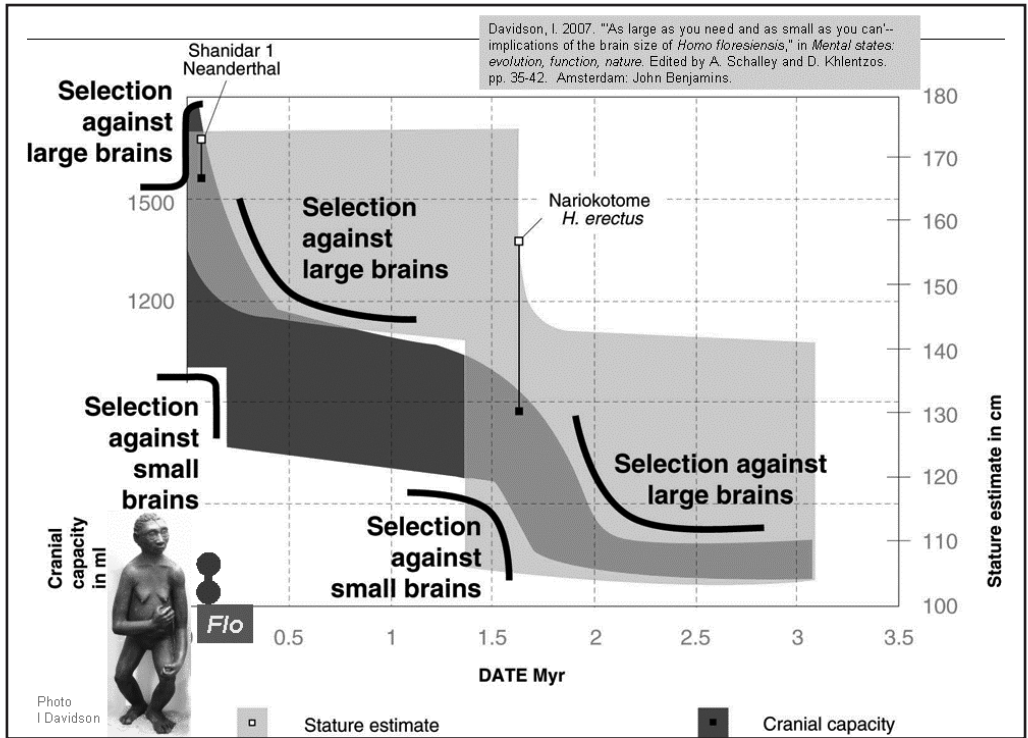


Figure 4: Cranial capacity, stature and natural selection among humans and their ancestors. Photo of model of *Homo floresiensis* by Iain Davidson. See Davidson 2007.

have suggested that the major selective pressure at this time was through changes in cognition related to the emergence of language as we know it, some time before about 70,000 years ago (for a fuller discussion of these issues, see Davidson 1999a).

One of the clinching arguments about the emergence of language is the evidence for the late colonisation of Australia between 45,000 and 50,000 years ago (Davidson and Noble 1992). The first colonisation of Australia always involved several sea crossings, some of which were to a shore that could not be seen at departure – a process that can be studied through new technologies by simulation of winds and currents (Birdsell 1977, Irwin 1992). Noble and I argued in 1992 that the construction of watercraft, its use for fishing (Balme 1995) and its associated technology (probably of nets) must have been the product of cognition that depended on language. We can never test that, either by new technologies or old, because creatures with all human abilities other than language just do not exist.

The discovery by Mike Morwood's team of the remains of a new species of hominin on Flores, which they call *Homo floresiensis*, lends support to this argument (Brown et al.

2004, Falk et al. 2005, Morwood et al. 2004, Tocheri et al. 2007). I have argued that the story of the changes in cranial capacity can only be interpreted as involving the extinction of successive populations with small brains when creatures emerged with larger brains (Davidson 2007). The only way in which the small brained and short individuals of *Homo floresiensis* could have evolved was if there was an absence of competitors.

This view would suggest that the first colonists of Australia did not take the southern route, but that Flores was colonised from the east, only then leading to the extinction of its mini-fauna – *Homo floresiensis* – after 12,000 years ago (Balme et al., in press). There is some support for this hypothesis from the genetic evidence from Bali that suggests colonisation from this direction (Davidson 2008b, Karafet et al. 2005).

This argument depends on an interpretation that modern humans were much more flexible in their behaviour than their forebears, an argument consistent with the behaviour of the earliest colonists of Australia. In 1968, Rhys Jones (1968) showed on remarkably slight evidence, that people (whom he called ‘man’) colonised rapidly into all environments of Australia. Recent work shows fundamentally the same story. People were in most habitats in Australia by 40,000 years ago – most, except grassland and temperate rainforest, though they were not far off both of those (Figure 5). And by 30,000 years ago they were in the central deserts and people were navigating in the seas off the north-east of Papua with relative ease.

This rapid adaptability, recently argued in the joint paper by Balme and others (in press), is a feature of the cognitive ability of modern humans expressed as increased information flow, greater planning depth and symbolic conceptualisation, particularly as a result of the emergence of propositional thought (Davidson 2008b). Moderns, in this sense, could solve problems creatively in entirely new ways. And I want to emphasise this as I move into the next section of this talk – that whatever the sophistication of our data, whatever the impact of new technologies on our capacity to assemble it, analyse it or present it, in the end we still need to have appropriate ideas, some would call them theoretical approaches, to understand them.

Forty years ago when I began my formal studies of archaeology at the University of Cambridge, I found myself on the edge of new thinking. David Clarke, one of my lecturers and tutors, was the leader of his generation. The famous beginning of his book *Analytical Archaeology* – ‘Archaeology is an undisciplined empirical discipline ...’ (Clarke 1968, xiii) – still strikes us with his polysyllabic turns of phrase that neatly capture an aspect of the themes of this symposium: the impact of new technologies on our disciplines in the humanities.

[Archaeology] has remained an intuitive skill – an inexplicit manipulative dexterity learned by rote.

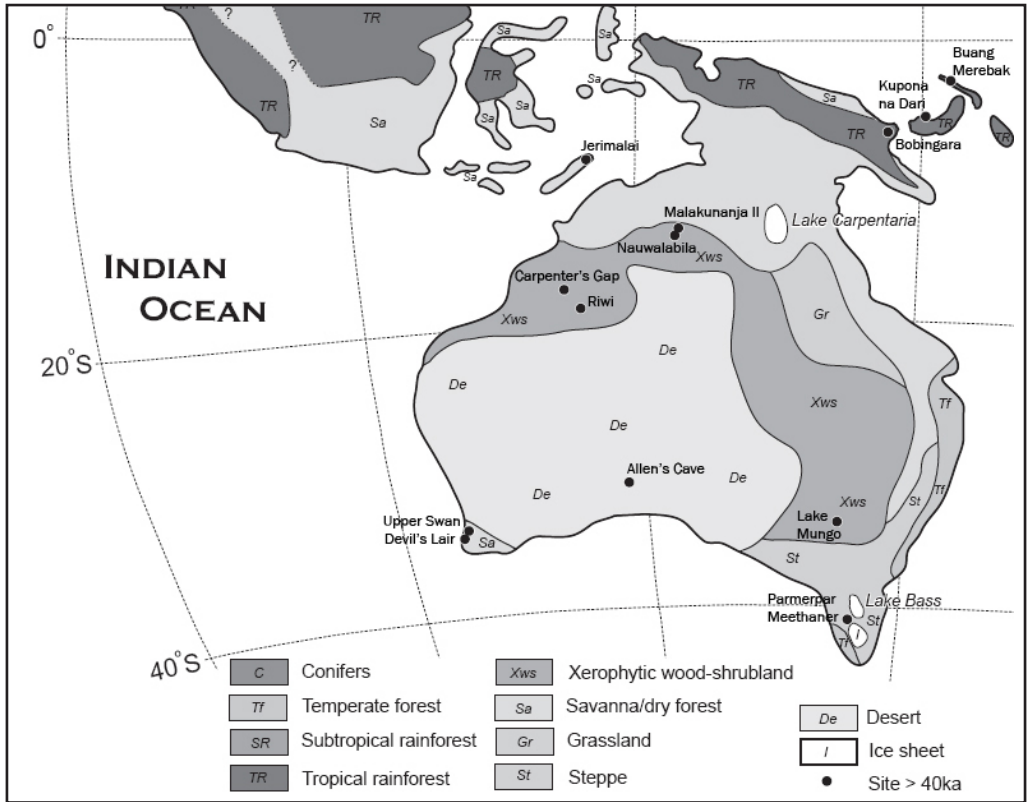


Figure 5: Sites on Sabul and adjacent islands older than 40,000 years ago after Balme et al. (in press). The vegetation zones for the last Glacial period are derived from Hope et al. (2004).

The adaptive repatterning of archaeology has been set in motion by the discipline's coupling with the study of systems, ... cultural ecology, locational analysis and analytical and inductive statistics powered by those key innovations – the digital and analogue computers.

Clarke's book was a plea for more explicit formulation of the theoretical underpinnings of our discipline, particularly in understanding concepts of culture used by archaeologists. The discipline had derived these concepts from Gordon Childe (see for example Trigger 1980, 40–44), the great Australian prehistorian who died fifty years ago in October 1957.³ Most importantly, Childe had seen that the archaeology of Europe was not just a record of pottery, settlements and monuments together with the bones of animals and a few handfuls of burnt seeds, but the raw material of a story of the emergence of the

³ The letter Childe wrote some time before 20 October 1957 concluded 'Now I have seen the Australian spring: I have smelt the boronia, watched snakes and lizards, listened to the "locusts". There is nothing more I want to do here; nothing I feel I ought and could do.' G Daniel, 'Editorial', *Antiquity* 54 (1980): 1–6.

distinctive features of European cultures. It is not for nothing that his great book *The Dawn of European Civilization* (Childe 1925) was still available in bookshops at least until the 1980s, sixty years after its first publication. What he achieved in that book was to make the broken remnants of people's lives thousands of years ago part of the heritage of all Europeans. What Clarke was trying to do was to make the process of running such arguments more than the work of a creative genius with 'manipulative dexterity', but to put it onto a systematic basis that would be appropriate to the methods then becoming available through new technology. Alas, in his tragically brief thirty-nine years he could do no more than excite our imaginations about how we might arrive at new syntheses by this means.

New technologies and cultural heritage

What Childe and Clarke were conscious of was that the stories created from the archaeological evidence – what I have called lost histories – through their newly minted memories could demonstrate the cultural heritage of continents. It may not be the heritage that is present today, like King George Square in Brisbane that is so redolent of memories of the demonstrations against the repressions of the Bjelke-Petersen government. Rather it is the heritage that is the foundation of later societies and needs to be recovered by archaeologists (for discussion of these concepts see Davidson 2008c).

I can illustrate this point from a completely different angle. As Lloyd Rees lay dying, Brett Whiteley wrote to him in tribute about the influence that Rees's paintings had had on him. I will take the liberty of reading part of that letter.

I was a fourteen-year-old boy when after school I visited for the first time, a one-man show of your landscapes at the Macquarie Gallery. I had been drawing and painting since early consciousness and ... had no real idea of direction ...

But these little pictures signed in the corner L Rees, seemed to have filtered and sometimes dredged the whole of Europe through them. They contained nature AND ideas, they contained naturalism but seemed also very invented, and the adventure of them was that they showed the decisions and revisions that had been made while they had been painted.⁴

This 'whole of Europe' that Whiteley wrote of is the very essence of the meaning of heritage. I think Childe was saying something very close to the inverse of what Whiteley meant: that European society was 'filtered and sometimes dredged through' its archaeological past. We might well consider how this idea relates to matters closer to hand than Europe – our understanding of Australian society and the past it has been filtered and dredged through.

⁴ A photocopy of this letter was exhibited at the New England Regional Art Museum during its exhibition 'More affinities: Whiteley and Rees' in 2006.

I am going to make comments about two studies (Figure 6) I have been involved in with different degrees of engagement, from my own research in north-west Queensland and as a supervisor and assessor of work in the Dampier Archipelago.

Selwyn Ranges

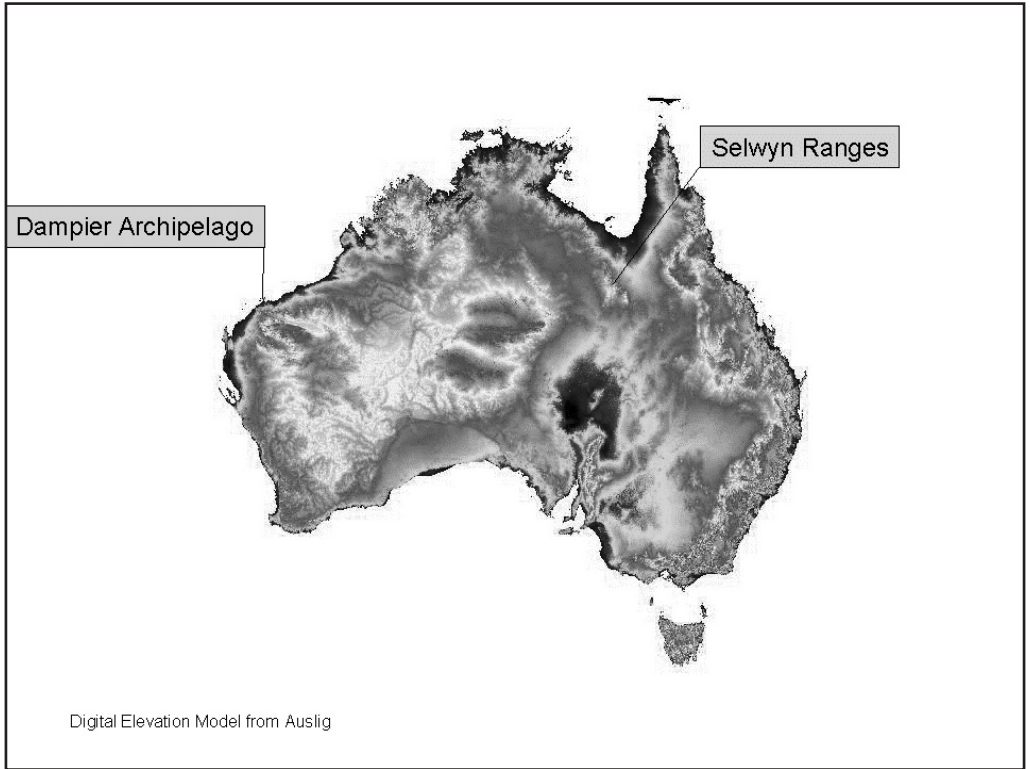


Figure 6: Digital elevation model showing the relative positions of the Dampier Archipelago and the Selwyn Ranges (Auslig). Incidentally, the map is another example of advantages and perils of new technologies – it is created as a millimetre accurate Digital Elevation Model from Satellite data using false colour to emphasise the contrasts – and was downloaded from the Internet, but the map now available (11 March 2008) at <https://www.ga.gov.au/map/> is not so detailed.

Over about ten years a team under my direction, funded by successive ARC grants,⁵ recorded large numbers of rock art sites in an archaeologically little known region of north-west central Queensland, particularly through the work of my student June Ross (Davidson et al. 2005, Ross 1997). Among the paintings are some magnificent and subtle but elaborate figures that are generally called anthropomorphic (Figure 7), though some

⁵ And others from AINSE, AIATSIS and UNE.

appear to have characteristics that make them less like humans than that label would imply. There are also other images, whose interpretation we can only dream of.

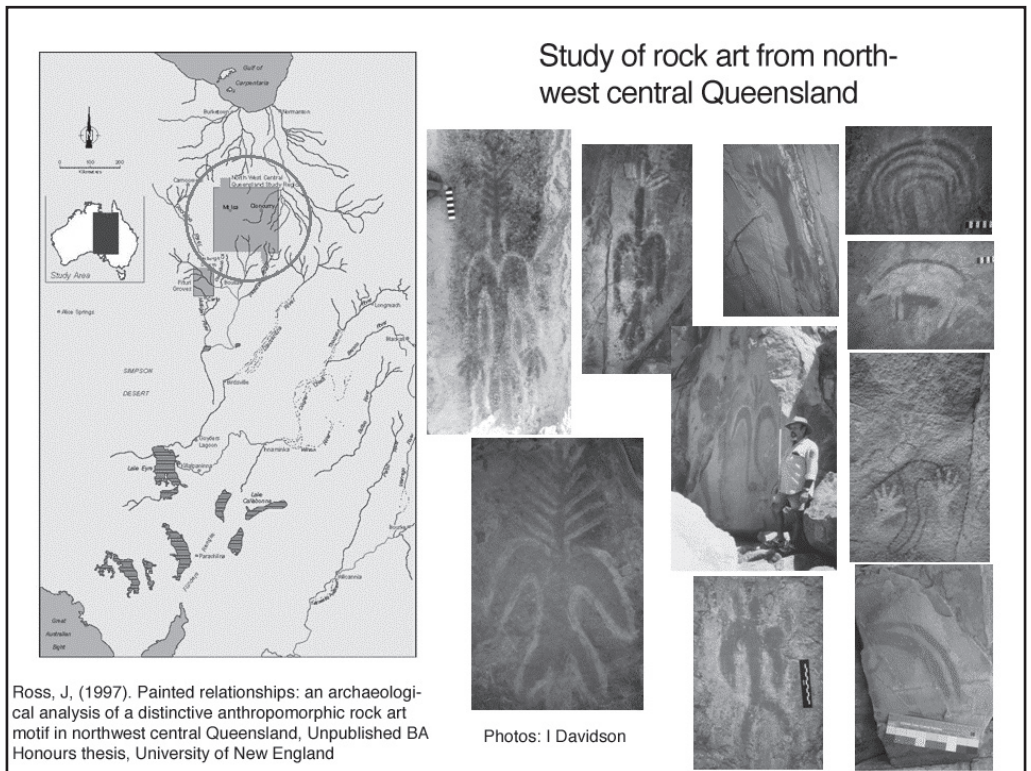


Figure 7: Location of Selwyn Ranges with selection of rock paintings from the region (Photo © Iain Davidson).

In addition to the elaborate anthropomorphic motifs there are many simpler ones. The sites are dispersed over about 150 kilometres of the Selwyn Ranges south-east from Mount Isa, in country of the Kalkadoon, Mitakoodi and Yulluna people – and the pictures, and archaeological sites, document their history, connections and separations over the last 1,000 years (Ridges, Davidson and Tucker 2000).

A famous photograph (Figure 8) taken in 1895 shows Kalkadoon men dressed for ceremony at Boulia south of this art (Davidson 2008a, Roth 1910). It seems plausible that, in the combination of arched shoulders, shortened legs, featureless heads and fancy head dresses, the men dressed for ceremony and the elaborate figures in the art somehow refer to the same things. But we do not know what these things are, and must rely on archaeological analysis to understand more about the art.

I began to compare aspects of the motifs that I knew were similar between sites – such as

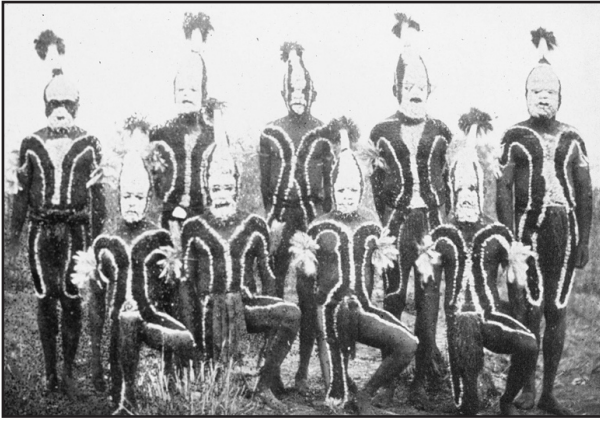


Figure 8: Men dressed for the Molonga ceremony at Boulia about 1895. From Roth, W E, Decoration, deformation, and clothing, 1910. Records of the Australian Museum 8: Plate X.

similar fern head dresses among the anatomical design elements of the anthropomorphs – but another of my students, Malcolm Ridges, took on the task of making a systematic comparison using June’s database and the power of the Geographic Information System he had developed for all of the Selwyn data (Ridges 2003, 2006) (Figure 9). Such systematic analysis would not be contemplated without modern information technology. The calculations were formidable

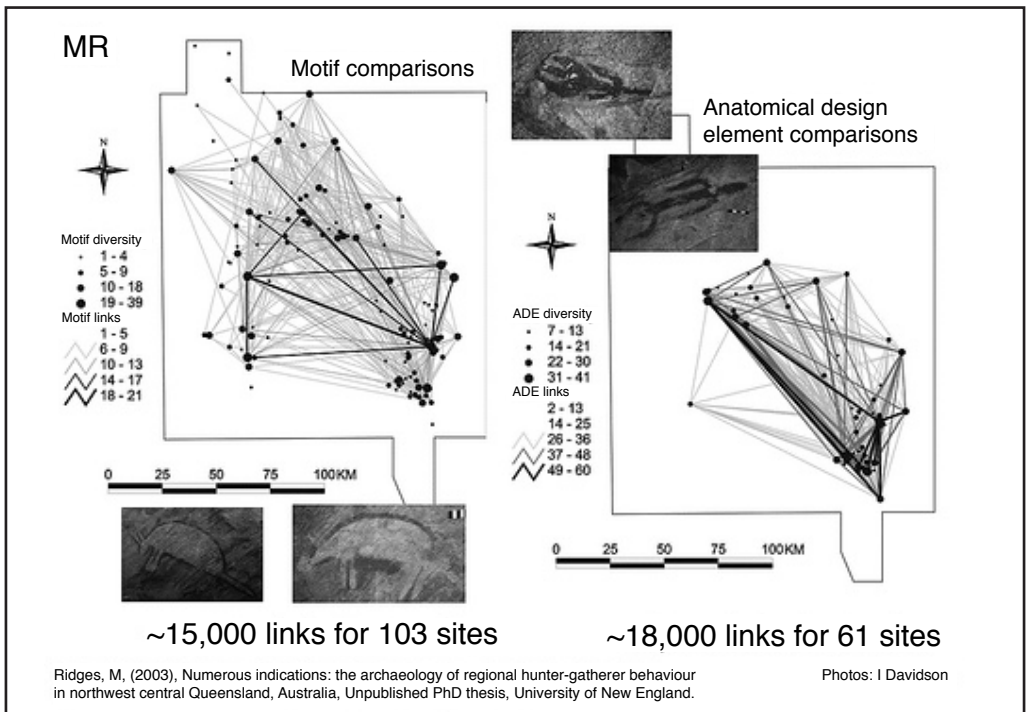


Figure 9: Links between sites based on anatomical design elements of anthropomorphic figure (right) and non-anthropomorphic motifs (left) for Selwyn region (maps from Ridges, M, 'Scale and its effects on understanding regional behavioural systems: an Australian case study', in G Lock and B L Molyneaux (eds), *Confronting scale in archaeology*, 2006, 145–161). (Photos © Iain Davidson).

involving 33,000 links, and produced a highly patterned outcome, or rather two patterns, one for the anthropomorphs and one for the other motifs.

Spatially, the distribution patterns for motif types and anthropomorph forms were diametrically opposed; the form of anthropomorphs probably served to reinforce social cohesion as well as represent group identity; motif representation was connected to the movement of people and not just to their site locations (there is further discussion of these issues in Davidson et al. 2005). From the patterns of linkage along the ranges with complementary links along stream channels, we could construct an interpretation in terms of the social function of the use of rock art in the region, movements of people and the directions of the relationships between different groups. For the purposes of the argument here, we need to understand that to achieve that interpretation we needed to have a more or less comprehensive inventory of the sites and the motifs at them, and powerful technology to make sure that all of the comparisons were made systematically but we also needed a well-established basis for interpreting rock art and other behaviour in the same narrative.

Dampier Archipelago

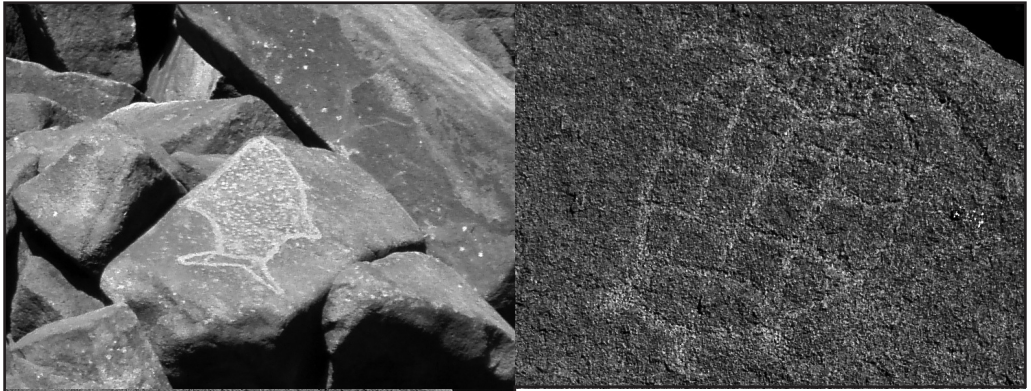
These points are relevant to the cultural heritage of the Dampier Archipelago – where the task of developing a comprehensive inventory is enormous and the possibility of analysing it without powerful technology is inconceivable.

There are other issues of the politics of heritage. These issues are complex so let us state some minimal facts. There are on the islands of the Dampier Archipelago, including that known as the Burrup, a very large number of petroglyphs consisting of marks and images made by removing the surfaces of boulders by pounding, pecking, flaking or abrading (Figure 10).



*Figure 10: Engraved kangaroo from Dampier Archipelago.
(Photo © Iain Davidson).*

The rock art is abundant (it is a very easy calculation to arrive at the estimate of a million petroglyphs), beautiful (I tell my students never to make such value judgements, but make exception for Dampier and Chauvet), old (though we are uncertain exactly how old), variable (there seems to be some tendency for marine subjects – fish, dugong and turtles [Figure 11] – to be have been made predominantly in more recent



*Figure 11: Marine images from Dampier Archipelago.
Clockwise from bottom left: dugongs, fish, turtle.
(Photos © Iain Davidson).*

periods) and distinctive (for example, it has many images of thylacines [Figure 12]).

The density of known sites is particularly high in those areas that have been surveyed as a result of the industrial developments. Each dot on Figure 13 represents a site and each may have many

images. But we might appreciate the density more easily when we compare this map at the same scale as the map of the Selwyn region we have just been discussing.

The point is that although Selwyn is one of the respectably rich art regions, by comparison the Dampier Archipelago is extreme.

Nevertheless a succession of modern heavy industries has been established which adversely impact the rock art, directly and indirectly (the most authoritative account of how this came about can be found in Vinnicombe 2002). In the 1960s heavy industries were established in the area – particularly Hammersley



Figure 12: Ken Mulvaney (standing) and Trinidad Martinez at image of thylacine, Dampier Archipelago. (Photo © Iain Davidson).



Figure 16: 'Climbing Man' panel, Dampier Archipelago. (Photos © Iain Davidson).



Figure 17: 'Archaic face' from Dampier Archipelago. (Photos © Iain Davidson).



One interpretation of this panel is that it consists of images representing things individuals appear to be seeing when experiencing altered states of consciousness (Sales 1992), such as those experiences by shamans in some parts of the world. There are several questions that arise here: What importance do you attach to an image that may be very old (Ken Mulvaney, personal communication)? What

importance does anyone else attach to it? Is there any threat to the image from the emissions from the Woodside plant that is less than one kilometre from the art? Is there any other threat due to the presence of heavy industry so close? How would you balance the financial benefits of the industry against the importance attached by any of the interested parties? Is this image more or less important because there may be a million petroglyphs in the Archipelago? What value would you put on any individual image or all of the images? Is it possible that this can be taken as evidence for shamanic practices at some time in the past in Australia?

The contrasts are stark.

Many of us – most of us who are archaeologists – would wish the industry had not been established there. Certainly we would prefer that no more damage be done. But

how can we achieve that? And is there any basis for this wish except a romantic dream of a world of the past unaffected by the dirty business of the non-Aboriginal world?

One element, certainly, is the traditional Aboriginal association with the area. There are complications and I am not the person to discuss these. But I have my doubts about the ability of Aboriginal interests to overturn State Government policy and to challenge the power of two of Australia's most powerful companies – Woodside Energy and Rio Tinto – even in a situation in which other sites, such as arrays of standing stones (figure 18), suggest that the significance of the region was very high.

The major objective, it seems to me, must be to get Australian people generally to know and love the place and its art so that no one could conceive of further damage. But for that to happen, two things are needed – not without their own problems: the images must be more generally known; the art must be related to stories that everyone wants to know. Only then will public opinion prevent or minimise further damage to the art. The key to this, I believe, is the analysis of the information so that the totality tells a story that can be comprehended. It is difficult to get our heads around the idea that there are a million images – if the art is only 20,000 years old that means fifty images were made for every one of those years.



*Figure 18: Standing stones erected on Dampier Archipelago.
(Photos © Iain Davidson).*

During the Symposium, when speaking on heritage futures, Paul Arthur spoke of the project recording oral histories along Route 66, which runs across the United States. The question that arose was whether any of that history would be more powerful than the song ‘I get my kicks on Route 66’ – and the question ‘how do you get kicks from oral history on Route 66?’. For the Dampier Archipelago, how do you find a slogan that has the same impact as ‘I get my kicks ...’?

The challenge then is how to get information to people – which is why I am talking about this here. But it is also about how to make people care about that information, and that is a more difficult problem. How many images do people need to demonstrate their caring? Why do we protect heritage at all? The image of a dolphin in the desert moves me (Figure 19), but I do not expect it to move everyone and I do not expect that that emotion is an important part of an argument about the politics of industry

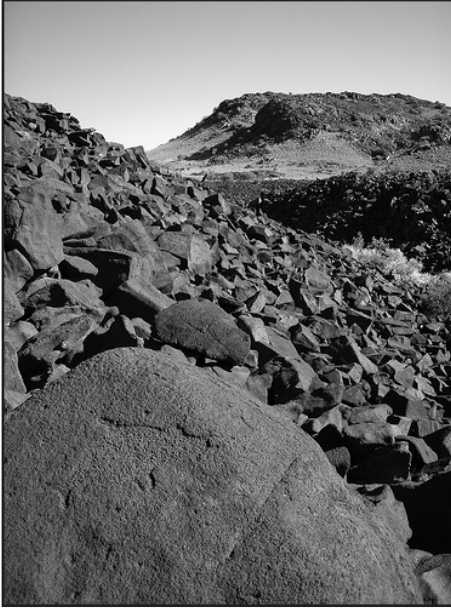


Figure 19: Image of Dolphin on the rocks (foreground), Dampier Archipelago. (Photos © Iain Davidson).

on the Dampier Archipelago. Australian and Chinese people want cheap gas more than either you or they want such images.

Who really cares about the past?

This line of questioning evokes another statement from my first years in the discipline that really got us talking about the value of archaeology – or indeed any historical or heritage studies. In a review of a major work of synthesis on the archaeology of *Ancient Europe* (Piggott 1965), Grahame Clark wrote: ‘[I]t may ... turn out that with increasing affluence and leisure the social role of archaeology may be to provide brain-games for the more intellectual members of the meritocracy’ (1967). Is the material I have been talking about only a ‘brain-game for the more intellectual members of the meritocracy’? This is not the forum in which to discuss the question, given that the Australian Academy of Humanities has a certain bias towards intellectuals. But I

think we should discuss it, for without doing so, archaeology can come to be no more than the source of authentic imagery for computer games, movies or theme parks.

Archaeology has more to offer than authentic context for entertainments – though we should not despise that role. After all, our media are full of entertainments derived from archaeology or history. By my rough estimate, every average week there are two television programmes about archaeology, many of them about Egypt; and similarly there are dozens of programmes about the Holocaust, and books and television programmes about the Great War. Every two years, it seems there is a film or a television series about the English Queen Elizabeth the First. The restricted range of topics addressed by such media indicates a lack of imagination on the part of the creative artists, but also reveals a failure on our part, as humanities scholars, to make our segment of the humanities more marketable to the public. Historical themes are marketable but not all equally so. We simply have to find a way to broaden the range of choices for that market. It can be done as we have seen with the recent elevation of Gallipoli from an unimportant defeat to a glorious defining moment and the conversion of Anzac Day from ‘The One Day of the Year’ to a celebration of nationalism.

Archaeology and sustainable ways of life.

I have redrawn the earlier graph of climate change to show the variations on a

sixty-year time scale, so that you can see the range of climates within a human life span (Figure 20). Clearly people lived through variations much greater than any we have so far experienced in global warming. Clearly the changes up and down and up again between 15,000 and 10,000 years ago were of an order of magnitude greater than is predicted for Global Warming and people survived. Well, actually, there is an emerging argument that they had a hard time and that one of the outcomes, in some parts of the world, was that agriculture emerged as a totally new way of life – but that is another, and much more complex, story.

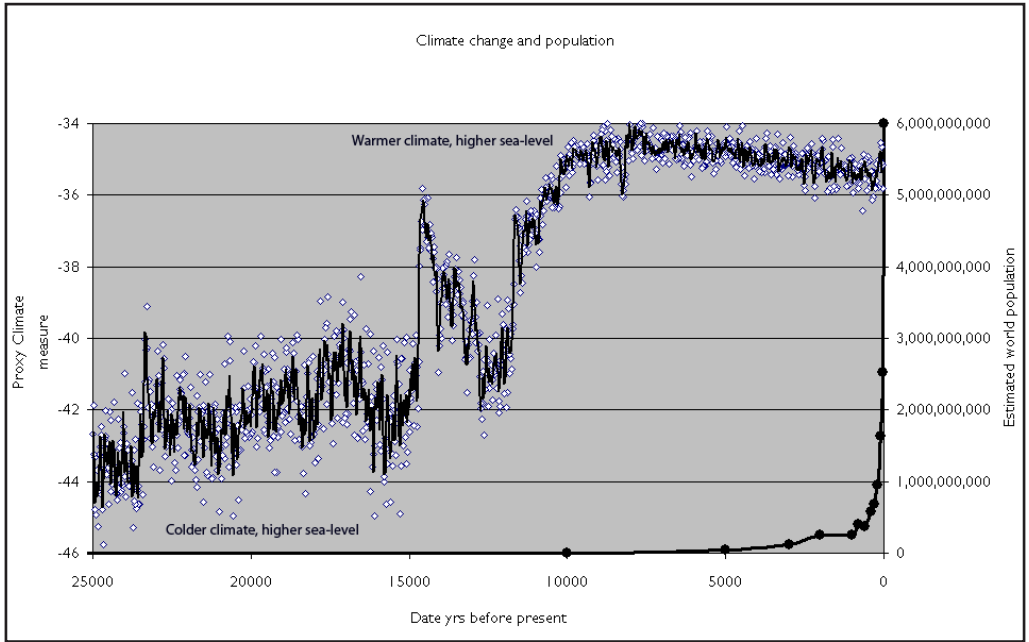


Figure 20: Variation in climate over last 25,000 years with sixty-year moving average (data as for Figure 2). Also shown with large circles and thick line is an estimate of population change over the same time period. (© Iain Davidson).

The human story involves not only the pattern of interaction with a fluctuating environment. That is reflected in the rock art of Dampier in the absence of images of turtles and fish in the early stages, when the sea level was low and far away, followed by their appearance later when the sea moved closer to the hills.

On the same time scale we can consider what the pattern of changes in human population was. I have taken some statistics from the book by David Christian (2005), a previous Academy Lecturer, whose talk inspired in me the need for archaeologists to take hold of the storytelling that historians, and physiologists such as Jared Diamond (2005), have begun to appropriate. In these statistics we see that the rise in human

population has been exponential and it seems almost completely unrelated to the curve of climate change. But that is not the point.

The really important point is this: many archaeological explanations suggest that in major transitions in human history one of the key factors was population pressure – at least this is true of the emergence of agriculture and the rise of urban civilisations and state formation. Both of these transitions occurred when human populations were very low and the options for dealing with the constraints of the environment were greater. After all, the classic response when the going gets tough has always been for the surplus population, tough or not, to migrate – though the song says it more neatly – that is why *Homo erectus* occupied Europe, Asia and Java. That is why modern humans did the same.

But the graph shows that world populations have fewer options if the present pattern of climate and environment changes. Read the Global Environment Outlook 4 report released on 25 October (available from http://www.unep.org/geo/geo4/report/GEO-4_Report_Full_en.pdf) and see that humanity's footprint for each person is almost exactly twice the world's biological capacity to sustain us.

Resource crises are certainly about the absolute availability of resources – but more importantly they are about the availability of resources in relation to need and that is a population question. The former Australian Treasurer, Peter Costello, was fond of advocating the need for more children to provide a future growth in both labour and consumers – but that is a recipe for disaster because the urgent need is for population reduction.

Conclusion

So let me draw together some of the strands of what I have been saying.

There have been at least six information revolutions and archaeology deals with the recovery of lost information – the fact that it was once lost and now is found makes it a profoundly political activity. We create newly minted memories that are fundamental to the histories of peoples, and we do this over timescales that most people do not even imagine. To do this we need to understand the social, cultural and environmental contexts of human behaviour.

For us, as Ian Johnston demonstrated in his talk at the Symposium, the new information technologies are tools to be used – though Ian's own work demonstrates that archaeologists may, nevertheless, be at the cutting edge of those technologies. We should not, therefore, lose sight of the point that David Clarke made forty years ago: the new technologies require us to make explicit the theories and problems we want to address, and, if we do, archaeology has the capacity to make itself important. In doing this we will understand how our societies have been filtered and dredged through past cultures to become as they are today.

These theories and problems need to be applied to the particularistic situations of local and regional histories, cultures and societies, but they can also be extended to broader theorising and problem definition on longer timescales and wider geographies.

Such analysis and interpretation lie at the core of the importance of cultural heritage still surviving from those remote pasts. The beauty or the traditional values are important aspects of the materials of cultural heritage, but faced with conflict with alternative land uses and real choices about financial impacts of decisions, those may not be enough. They can be documented (at some cost) using new technologies, but as David Clarke and Gordon Childe saw so clearly, what is important is the use to which the information is put and the stories that we tell.

And, in some circumstances, particularly at the global scale and the longest timescales, the stories will need to be known and understood by everyone. Bill Shankley, the then manager of Liverpool Football Club in England, was once asked if the next football match was a matter of life and death. 'No,' he replied, 'it is much more important than that.' And I say, archaeology is more important than football.

I could go on, but let me end with the beautiful words of Oodgeroo Noonuccal, from Stradbroke Island, in her poem 'The Past':

Let no one say the past is dead
The past is all about us and within.
Haunted by tribal memories, I know
This little now, this accidental present
Is not the all of me, whose long making
Is so much of the past.

...

But a thousand thousand campfires in the forest
Are in my blood
Let no one tell me the past is wholly gone
Now is so small a part of time, so small a part
Of all the race years that have moulded me.

Culturally, socially, ecologically we ignore at our peril the long making of this little now.

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