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The Archaeology of Rock-Art

CAMBRIDGE
UNIVERSITY PRESS

PUBLISHED BY THE PRESS SYNDICATE OF THE UNIVERSITY OF CAMBRIDGE
The Pitt Building, Trumpington Street, Cambridge
CB2 1RP, United Kingdom

CAMBRIDGE UNIVERSITY PRESS
The Edinburgh Building, Cambridge, CB2 2RU,
United Kingdom http://www.cup.cam.ac.uk
40 West 20th Street, New York, NY 10011-4211, USA
http://www.cup.org
10 Stamford Road, Oakleigh, Melbourne 3166, Australia

First published 1998

Printed in the United Kingdom at the University Press, Cambridge

Typeset in Columbus 10/12.5pt [VN]

A catalogue record for this book is available from the British Library

Library of Congress Cataloguing in Publication data applied for

ISBN 0 521 57256 8 hardback
ISBN 0 521 57619 9 paperback

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1. An archaeology of rock-art through informed methods and formal methods

As the millennium draws to a close, the world is undergoing unparalleled change, affecting virtually every living creature on Earth. Human beings, the primary agents of change, also are intensely affected by it. In particular, over the past few hundred years indigenous peoples of every continent have undergone radical transformations to their ways of life. But with the dawning of the computer and space age so too have individuals from the more dominant cultures. One global response to this intense social, environmental and technological change has been a creative explosion, not only in technology but also in the arts, as contemporary artists draw on cultures the world over for inspiration. The result is an unrivalled fusion of form, aesthetics and subject-matter. Alongside this wondrous burst of creativity, and the embracing of all that is new, has been an increased interest in the past, the remote, the exotic, the 'other'. The western disciplines of archaeology and anthropology were born to chart, to describe and to tabulate the 'old' and 'new' peoples encountered through this exploration and conquering of 'other' lands; museums were established to assemble, curate and display the material culture and products of the peoples that populated those lands.

Rock-art

Nevertheless, there have been many periods of intense change in human history (see, for instance, Allen and O'Connell 1995) and many 'creative explosions' (Pfeiffer 1982). The post-glacial transformation of most of the globe – beginning 10,000 years ago – from the lands of mobile gatherer-hunters into the territories of farmers and kings is another in a series (but see Sherratt 1997). Evidence of those earlier revolutions may be scant in most places, and for some aspects – like the prehistory of song and music – we have scarcely no evidence. One record is enduring. The accumulations of ancient rock-paintings and engravings are testament to visual art as a medium of mediating, recording, recounting and a new means of more fully experiencing those profound human events and changes which have shaped our histories. Through what we now collectively refer to as 'rock-art', we see how different peoples, at various times of the past, represented or interpreted change *for themselves.* What is remarkable is not so much the particular images of certain regions but rather the widespread and truly global nature of this phenomenon. For at least 40,000 years (Chase and Dibble 1987; Davidson and Noble 1989; Lindly and Clark 1990; Mellars 1989, 1991; Taçon 1994), and perhaps for much longer (Bednarik 1994; Lorblanchet 1993; Fullagar *et al.* 1996; Taçon *et al.* 1997), human beings have increasingly marked landscapes in symbolic ways. A characteristically human trait, this is one of the ways we socialise landscapes. The result is a great and a scattered array of visually striking imagery as time and chance have let it survive to us at sites or within regions over vast periods of time.

The archaeology of rock-art

In this volume we explore some of that imagery. This exploration is not a complete one – there is too much to explore, too many ways to explore it. We do not here explore the inspiration these ancient images give to contemporary artists (Fig. 1.2), or the aesthetics of

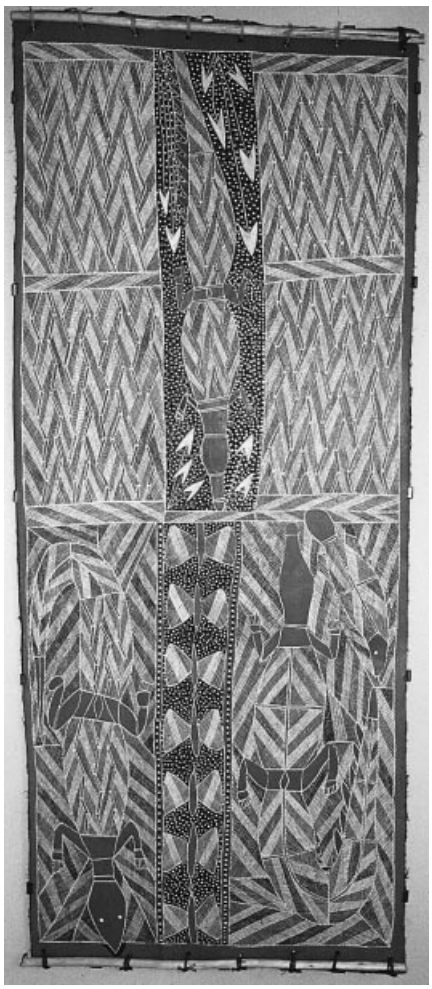

Fig. 1.1. Roger Yilarama, *Mardayin Dreaming: Water Dreamings of My Father's Country (Mardayin Djang)*, ochres and clay on stringy-bark tree bark, 1993.

Where most rock-art traditions – like all those of prehistoric Europe – have perished, a few continue, largely in other media.

In central Australia, the now-celebrated 'dot' paintings of the desert country, generally in acrylic on canvas, derive their iconography from the ancient traditions seen in the region's rock-engravings. The painting of central desert designs and images in synthetic materials on to portable surfaces is not at all ancient; it began at Papunya, about 200 km west of Alice Springs, in 1971 (Caruana 1993: 107).

On the central north coast of Australia, the long tradition of painting seen on the rocks and crags of Arnhem Land is lively today in portable paintings made on the bark of eucalyptus trees (Brody 1985) and, increasingly, on art paper (Dyer 1994), of which this is a fine recent example. The ochre and clay pigments are those used on the rocks; the subject and manners of depiction are equally in the same tradition. It is not just an illustration for its own sake, but derives from knowledge of the country, as related by the varied 'inside' and 'outside' stories the images stand for.

We mention these details to illustrate how pertinent modern traditions of depiction and iconography can hint at the real nature of the many traditions of rock-art we approach only by formal means.

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Photograph by Gwil Owen.

the ancient pictures – if those can be discerned from them (see Scarre 1994).

The sole subject of this book – which could have been much larger – is the *archaeology* of rock-art, where archaeology is the systematic study of past human lives as they can be discerned through a knowledge of their material traces. The special merit, and the special attraction, of rock-art as the subject of archaeological enquiry is its directness. These are images from ancient worlds as ancient human minds envisioned them; these are neither stray fragments of ancient garbage nor chance stumps of perished buildings. They are all direct material expressions of human concepts, of human thought. The directness carries a matching special obstacle. While one hopes speedily to deduce from the grubby old stones and bones reasonably secure facts about these ancient objects, the rock-art is a more immediate record, both easier to see and harder to make sense of. So interpretations of its nature and meaning have been famously eccentric: some still are.

A scholarly interest in rock-art is not new. It is often said that Europeans began their fascination with rock-art in 1879, after a young girl and her father investigated a large cave at Altamira, Spain, and were awed by the sight of majestic bulls on the ceiling above them (Grant 1967: 3), but serious study is now recognised to have begun at least by the 1860s (Bahn and Vertut 1988: 19). The study of rock-art in Central Asia, remarks Henri-Paul Francfort in Chapter 17, *Central Asian petroglyphs: between Indo-Iranian and shamanistic interpretations*,

Fig. 1.2. George Chaloupka, *Spirits in the Land*, oil on canvas, 1972.

This book is about the archaeology of rock-art, so other aspects to the images are not developed. Here is a picture inspired by rock-art to stand for what is missing.

George Chaloupka, the senior researcher on Australian rock-art, is himself an artist. He painted this image at a time when Arnhem Land was being presented as a desert, which deserved development if that was financially advantageous, and otherwise had no merit. In its subject and its manner of depiction, Chaloupka was inspired by the rock-art images, especially those which had been painted not many years before by Najolbombi, last of the famous rock-painters, in western Arnhem Land. This is one of about twenty paintings that were exhibited in Canberra and largely sold there. The last of those left over from the exhibition, it survived the destruction of Chaloupka's home in Darwin by Cyclone Tracy in 1977. The whereabouts of those sold in 1972 is not known.

We mention these details to illustrate – again, and in another context – how particular can be the reasons for which images are created, and how capricious can be their survival and our access to knowledge of them.

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began in the seventeenth century and has never ceased. The ancient little figures pecked into the ice-smoothed rocks of Valcamonica, in Alpine north Italy, were known to its country people, who had a dialect word for them. And in Arnhem Land, north Australia, Aboriginal people know the old art of the Mimi – the other kind of human being who were in their stone country long long before them and who still live there as frail-bodied spirits, sheltered within the cracks in the ancient rocks (Brandl 1973; Chaloupka 1993; Lewis 1988; Taçon 1989; Taçon and Brockwell 1995; Taçon and Chippindale 1994).

Much of the apparatus with which archaeologists approach rock-art (Whitley 1997) is the usual kit of the archaeologist's trade: the drawing, photographic, recording and survey gear is standard. So are some of the methods, increasingly science-based, and their technical languages – direct AMS dating, stratigraphic sequence, co-variation, taphonomy. And so are many frames of ideas. Rock-art is seen as structured by distinct, distinctive and distinguishable style, so amenable to stylistic studies (e.g. Francis in press, *contra* Lorblanchet and Bahn 1993). And the images of rock-art lend themselves to contemporary research interest in ancient meanings and their social expression (e.g. Tilley 1991). But rock-art research remains distanced from other special interests within archaeology; and the special circumstances of survival and study mean the methods developed for studying art in other contexts may not transfer across either. Some

Fig. 1.3. Eric Gill, *Crocodile*, carved into exterior brick wall, Mond Laboratory, Free School Lane, Cambridge, 1930–1.

Rock-engravings are rare in the artificial landscapes of the world's contemporary cities. This is in a built surface of brick, fittingly a synthetic rock, as it is in a humanly created city-scape.

The celebrated engraver and illustrator carved the image, about 1.8 metres high, to a subject chosen by the Russian physicist Peter Kapitsa. It is Russian in its symbolism: the crocodile as the 'great unknown' in created things. (There are crocodiles of two types, freshwater and saltwater, in Roger Yilarama's bark-painting, Fig. 1.1: in his Australian country, the two beasts are vital creatures, important in the land and in the stories – not alien curiosities in the zoological garden!) Gill's own comment on his image of the crocodile – refined by visits to London Zoo to see and draw the real creatures – was, 'What should we know of reptiles who only reptiles know?' (MacCarthy 1989: 273).

The Mond Building now houses the Cambridge University collection of air photographs, a unit within the University much concerned with archaeology. Staff there think of their crocodile as a fierce beast that stands guardian at the door to their precious archive.

We mention these details to illustrate – yet again, and in yet another context – how the meanings of images are varied and shifting.

Photograph by Christopher Chippindale.

methods and many frames of ideas translate uncertainly into the different language of pictures on the rocks. Researchers use an eclectic mix of approaches, some of them new (if any approach in twentieth-century research can wholly be called new), some of them borrowed (and adapted in or after the borrowing to the circumstance of studying rock-art).

In Valcamonica – as in other parts of the world – the tradition of marking the rocks tellingly stops as its sheltered communities were overwhelmed by an outside world of commanding people whose culture was a literate one of reading and writing (Anati 1976: 153–6): for those communities, the swallowing power of the growing Roman Empire. In a great many regions, it was the first fleets of the European expansion and their landing passengers who closed down the world in which the rock-art had been made; the regions are not numerous where we have good ethnohistorical accounts of the rock-painters and very few where the painting traditions are still strong (for one, western Arnhem Land, see e.g. Chaloupka 1993; West 1995). The worlds of texts and the world of written words are different in fundamental ways, as Sven Ouzman, *Towards a mindscape of landscape: rock-art as expression of world-understanding*, shows in Chapter 3. Even the rock-arts of our culture in our own day – among which one should include the inscriptions monumentally engraved into and the graffiti sprayed on to the artificial rock surfaces of buildings in our urban landscapes – often offer words alongside or instead of pictures (Figs. 1.3, 1.4).

Inasmuch as rock-art is rather an archaeological subject apart, so will the methods of its study be set rather apart. Many of them will have novelty. Since no settled or standard approach has emerged – Whitley (in press) will be the first general handbook on the archaeological study of rock-art to be published – this is the time to explore the diversity of fruitful approaches, and to recognise their unities. Rock-art has been a subject-matter of archaeology for centuries, at least in Scandinavia – yet the title of this book, *The archaeology of rock-art*, seems not to have

Fig. 1.4. Artist unknown, graffiti piece, spray-paint on brick bridge abutment, Cambridge (Long Road railway bridge, old Bedford line archway), *c.* 1995.

Images officially set on walls in the contemporary urban environment are primarily directional signs, in words alone, or in words treated with graphic care, sometimes in pictures alone: 'This is the way out', 'This is the way to the aeroplane.' Distinctive 'rock'-paintings on artificial hard-rock surfaces of our own culture include the spray-painted graffiti, said to have originated in New York in the 1970s (Castleman 1982; Cooper and Chalfant 1984), then seen in cities across the world (Stahl 1990).

Individual graffiti artists declare their identity with small 'tags' contrived from their initials or nicknames. Often they make a 'piece', a large and ambitious composition; the word 'piece' derives from 'masterpiece' and echoes the original meaning of that word, as denoting the grand project with which an apprentice craftsman proves his skill and is thereby made a master.

Imagery in 'pieces' has many forms. Often central, as in this piece, is an elaborated polychrome geometrical form, again a kind of lettering – nicknames, initials, or favoured word – treated with such graphic force that the letters are barely or not recognised. We find it striking, and telling of late twentieth-century values, that spray-graffiti artists – the famous marginals who make a special iconography in our society – nevertheless make their graphics on the model of those words which define the power of the controlling literates against them.

We mention these details to illustrate – yet again, and in yet another context – how varied can be the ways in which images derive from a society, and relate to its values.

Artist unknown, therefore reproduced without permission of the artist. Photograph by Christopher Chippindale.

been used before. Rock-art is old, but this kind of study seems perhaps young.

The diversity is represented by the eighteen remarkable essays that make up this book, by researchers whose academic standing runs from senior professors to graduate students, and whose immediate subject-matter spans the world. The unity is given by a deep structure both to the book and to individual papers. Since doubt surrounds just what best to *do* in studying rock-art, the group emphasises considered and rigorous *methods.* Since methods do not exist in the abstract, they show themselves in application by effective case-studies that begin with the *essentials*:

- what the stuff is;
- what date it is;
- how it is studied with informed methods;
- how it is studied with formal methods;
- how it is studied by analogy.

The group has not attempted a specific definition of 'rock-art'. We hold it to refer to human-made marks on natural, non-portable rocky surfaces; the more common being those which are either applied *upon* the rock and called *pictographs* – including paintings, drawings, daubings, stencils, prints, beeswax motifs – or which are cut *into* the rock and called *petroglyphs* – engravings, incisings, peckings, gougings, symbolic grindings, etchings, and so forth. 'Rock' will do as a term for the surface that bears them, although sometimes the rock is a geological surface as soft as mud (Bednarik 1986; Faulkner 1986). 'Art' is a less happy term, because art has a rather specific meaning in recent western societies, not suited to those many societies where the crafty making of images and pictures was a business centrally integrated with other concerns. In the absence of a better term – 'rock image', 'rock picture', 'rock marking', 'rock trace', 'rock glyph', and so on are also unhappy – we stay with rock-art. (In consequence we have to tolerate the confusion by which the term 'rock-art' also refers to the iconography of rock-and-roll music!) We hyphenate 'rock-art', against common modern habit, in a slight attempt to make this term into a portmanteau.

Dating

Chronology has always been important to rock-art studies, and remains generally difficult.

Carbon is present usually in minute traces only, and it is generally supposed rather than known that the 'carbon event' which will be measured by radiocarbon is actually to be equated reliably with the 'art event', the subject of study for which we would like a date. Accordingly carbon dating of rock-art is a new field of endeavour, made possible only by the AMS radiocarbon method with its scanty sample size, and still at an experimental stage (Nelson 1993). The disputes of 1995–6 over the age of the Foz Côa petroglyphs engravings, for which dates are argued that run from the later Palaeolithic (Zilhão 1995) to the eighteenth century or later of our own era (Bednarik 1995), shows how large the uncertainties can be.

Dating is here addressed by Jean Clottes, *The 'Three Cs': fresh avenues towards European Palaeolithic art*, Chapter 7. The material available from the European Palaeolithic often charcoal safely preserved in deep and still caves, is far more satisfactory for trustworthy carbon-dating than are the materials of such exposed surface imagery as Jo McDonald studies in *Shelter rock-art in the Sydney Basin – a space–time continuum: exploring different influences on change*, Chapter 18. Our own Chapter 6, Christopher Chippindale and Paul S. C. Taçon *The many ways of dating Arnhem Land rock-art, north Australia*, takes dating as its central theme, for a region with exceptional and fortunate opportunities for varied dating methods.

Informed methods

By *informed methods* we mean those that depend on some source of insight passed on directly or indirectly from those who made and used the rock-art – through ethnography, through ethnohistory, through the historical record, or through modern understanding known with good cause to perpetuate ancient knowledge; then, one can hope to explore the pictures from the inside, as it were. In Arnhem Land, for instance, the recent rock-painting tradition continues in fine paintings on bark and paper, full of layered and

intricate meaning (Fig. 1.1); so the image of a crocodile in Thompson Nganjmirra's painting *Crocodile Dreaming* (1992) relates not to a mere beast, but to 'the first Crocodile Ancestor, who was a man before he turned into a crocodile with large jaws and gnawed through the Liverpool Ranges to see what lay beyond' (Dyer 1994: 54). The 'hybrid' creature in another of the same artist's paintings, with snake body and crocodile head, we know to represent the Rainbow Serpent, one of the creator-beings who in the founding days passed through the country, making its water-holes and creeks, filling it with creatures, and peopling it with its several clans, each in its proper place in the land. And we know there is not just one Rainbow Serpent, for in the Dreamtime Yingarna, the Mother Rainbow Serpent, grew two eggs in her body and gave birth to a son, Ngalyod, and a daughter, Ngalkunburriyaymi (Taylor 1990: 330). By their common traits we – both Aboriginal Arnhem Landers and western researchers who have been give that knowledge – can recognise late Rainbow Serpents in the rock-art, and then trace this distinctive subject back in the long dated sequence. In this way, we come to see how the Rainbow Serpent starts as a motif in Arnhem Land rock-art when the rising sea-level of the post-glacial brings the ocean across settled land; and an element in its founding ethnography is a creature of the sea – a pipefish rather than a land snake (Taçon, Wilson and Chippindale 1996).

Importantly, because iconographic meanings seem to be variable and historically idiosyncratic – rather than standardised and accessible by some generalising rules in an anthropology of art – that ethnographic insight into an informed knowledge is essential to that kind of understanding. Without it, one might *suppose* this snaky creature, because of its non-natural combination of limbs and traits, might not be of the everyday, mundane world – but one would not *know* just what it stood for, with just what meaning and just what power. The crocodile as a picture, because natural in its traits, one could think is wholly a subject from the natural world; nothing in the image itself tells the ignorant outsider that it is not only a beast but Crocodile Ancestor, a man before he turned into a crocodile. The cross-hatching that fills the creatures' bodies one might suppose mere decorative infill, whilst in truth it is *rarrk,* a design that carries strong meaning and is particular to the individual artist's clan. Equally, in the Coso Range of California one would not have immediate cause to suppose, from the pictures of bighorn sheep and of rattlesnakes, that these images of everyday creatures in the Mojave drylands stood for different and deep meanings – as the old ethnohistoric records show (see Whitley's *Finding rain in the desert: landscape, gender and far western North American rock-art*, Chapter 2).

There are practically no rock-art traditions that continue into the present, and precious few of which there is a good ethnographic or ethnohistoric record available. Even the rich records of San knowledge, on which an understanding of South African rock-paintings has been built (e.g. Lewis-Williams 1981 and subsequent work), come from Bushmen who were not themselves painters and whose country was far removed from that region of the Drakensberg where a compelling account of the rock-art has now been made through treating their knowledge as informed about that art's meaning. For some regions, the relevance of potentially informed sources is uncertain: are the rock-engravings of the later prehistoric Alps to be comprehended through seeing in them Indo-European structures of religious knowledge as these have later been discerned (Masson 1995)? Or are those understandings no kind of true knowledge when it comes to the ancient Alpine panels (de Lumley *et al.* 1995)?

Formal methods

For much prehistoric art, beginning with the Palaeolithic art of the deep European caves, we have no basis for informed knowledge. There we must work with *formal methods*, those that depend on no inside knowledge, but which work when one comes to the stuff 'cold', as a prehistorian does. The information available is then restricted to that which is immanent in the images themselves, or which we can discern

from their relations to each other and to the landscape, or by relation to whatever archaeological context is available. This includes inference by location in landscape (Richard Bradley, *Daggers drawn: depictions of Bronze Age weapons in Atlantic Europe*, Chapter 8; Sven Ouzman, *Towards a mindscape of landscape: rock-art as expression of world-understanding*, Chapter 3), the figuring out of what a picture shows by the geometry of its shape (Benjamin Smith, *The tale of the chameleon and the platypus: limited and likely choices in making pictures*, Chapter 12), inference from a mathematical measure of information content and from site location (Ralph Hartley and Anne M. Wolly Vawser, *Spatial behaviour and learning in the prehistoric environment of the Colorado River drainage (south-eastern Utah), western North America*, Chapter 11), and the relationship of similar but widely separated forms through the use of multivariate analyses (Meredith Wilson, *Pacific rock-art and cultural genesis: a multivariate exploration*, Chapter 10) or by other techniques.

Even where there is informed knowledge, the formal methods can be useful, just as one can study the geometry of pictures from any cultural context as an interest separate from their meaning, or as one can usefully find kinds of modern understanding in aspects of paintings in the western tradition which in their own time were not a concern (see, e.g., Carrier 1991).

Analogy

Finally, *analogy* relates to, but does not duplicate, the formal methods: when we cannot observe *x* but we can *y*, which is sufficiently like it, we can hope to infer things about *x* based on observations of *y*. Aspects are necessarily particular to the distinctive nature of rock-art as a class of archaeological materials, but the issues of method that arise are the difficult and well-known ones that concern archaeological reasoning by analogy in general.

The studies in this book, and the book's structure

Some of this book's authors can say little or nothing by informed methods: when enigmatic images come from a remote prehistory, we can have no inside knowledge of them; study must proceed by formal methods and/or analogy. Most authors touch upon more than one aspect, and do so with more than one method; a diversity of approaches to studying rock-art is evident. Four chapters primarily approach their subject-matters from informed perspectives: David Whitley, *Finding rain in the desert: landscape, gender and far western North American rock-art*, Sven Ouzman, *Towards a mindscape of landscape: rock-art as expression of world-understanding*, Michael A. Klassen, *Icon and narrative in transition: contact-period rock-art at Writing-On-Stone, southern Alberta, Canada*, Chapter 4, and Thomas A. Dowson, *Rain in Bushman belief, politics and history: the rock-art of rain-making in the south-eastern mountains, southern Africa*, Chapter 5. One concentrates on different strands of dating evidence: Christopher Chippindale and Paul S. C. Taçon, *The many ways of dating Arnhem Land rock-art, north Australia*. Two rely on dating and formal methods: Jean Clottes, *The 'Three Cs': fresh avenues towards European Palaeolithic art* and Richard Bradley, *Daggers drawn: depictions of Bronze Age weapons in Atlantic Europe*. Three focus on the formal: Kalle Sognnes, *Symbols in a changing world: rock-art and the transition from hunting to farming in mid Norway*; Chapter 9, Meredith Wilson, *Pacific rock-art and cultural genesis: a multivariate exploration* and Benjamin Smith, *The tale of the chameleon and the platypus: limited and likely choices in making pictures*. Five use a combination of formal methods and analogy: Carolyn E. Boyd, *Pictographic evidence of peyotism in the Lower Pecos, Texas Archaic*, Chapter 13, Pieter Jolly, *Modelling change in the contact art of the south-eastern San, southern Africa*, Chapter 14, Anne Solomon, *Ethnography and method in southern African rock-art research*, Chapter 15, Eva M. Walderhaug, *Changing art in a changing society: the hunters' rock-art of western Norway*, Chapter 16, and Henri-Paul Francfort, *Central Asian petroglyphs: between Indo-Iranian and shamanistic interpretations*. Then Jo McDonald's *Shelter rock-art in the Sydney Basin (Australia) – a space–time continuum: exploring different influences on*

diachronic change weaves dating, formal methods and analogy. We close with a Chapter 19 that combines aspects of dating, formal methods and analogy with flashes of insight, inspiration and exasperation: John Clegg, *Making sense of obscure pictures from our own history: exotic images from Callan Park, Australia.* His chapter humbles us too, in showing how mysterious figures can be that are from our own culture, and nearly from our own time.

These case-studies explore a wide range of petroglyphs and pictographs from seven key regions of the world: Australia (three-and-a-half chapters), southern Africa (three-and-a-half), North America (three), Scandinavia (two), western Europe (two), continental Asia (one) and the Pacific Islands (one). The chapters are not ordered by geographical location but rather by the primary methods researchers employed, moving from informed towards formal, and then to analogy. Interestingly, five of the chapters – Whitley, Ouzman, Klassen, Boyd, Francfort – focus on aspects of shamanism for interpretation.

Celebrating rock-art, learning from rock-art

Rock-art represents a great and shared legacy: a visual, illustrated history of human endeavour, aggression, co-operation, experience and accomplishment. As Australian Aboriginal colleagues of ours in Kakadu National Park and Arnhem Land are fond of pointing out to us, these sites are history; these are history books that tell of pasts more varied and more diverse than what declares itself in the written record. They give insight into the present – a theme not developed in this book – as well as into the past. Ultimately, the lessons of the past do help to shape our futures: this is one of the reasons human ancestors the world over recorded their experiences on such durable media as stone and rock. They explored, fought over, farmed and marked places with aspects of their cultural, group or individual identities. In so doing, they made statements to themselves and to others about the nature of *place.* They also made statements about themselves, defining landscapes for future use. We continue this process on a daily basis: in our cities, our parks, our gardens, our homes. We map, mark and immortalise places. We journey; we remember. Already our species has sent contrived objects out of the solar system, and left traces upon the rocks of the moon. The legacy of the first artists will continue in unimagined new ways. But through books such as this one the accomplishments of some of the earliest creators, our original artists, poets and story-tellers, will not be forgotten! Read, reflect, relax and rejoice. Embark with us on a journey through time and space that explores the visually creative essence of early humanity.

Paul S. C. Taçon and Christopher Chippindale
Sydney and Cambridge
1997

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