

Visions of Dynamic Power: Archaic Rock-paintings, Altered States of Consciousness and ‘Clever Men’ in Western Arnhem Land (NT), Australia

Christopher Chippindale, Benjamin Smith & Paul S.C. Taçon

The Dynamic figures are a distinctive component in the earlier rock-art of western Arnhem Land, north Australia. They include therianthropes (hybrid human–animal) images. Recent vision experience ethnographically known in the region, and the wider pattern of Altered States of Consciousness (ASC) in hunter-gatherer societies, are consistent with elements of the Dynamics. One key feature is the use of dots and dashes in the Dynamic images, explicable as a depiction of some intangible power, of a character comparable with that in the ‘clever men’s knowledge’ of modern Arnhem Land. Tropical Australia thereby is added to the number of regions where a visionary element is identified in rock-art; the specific circumstances in Arnhem Land, permitting the use together of formal and of informed methods, provide unusually strong evidence.

Within the celebrated and diverse range of painted rock-art in central and western Arnhem Land, in the ‘Top End’ of the Northern Territory (Fig. 1), the Dynamic Figures (Chaloupka 1984) make a distinct and distinctive group (Brandl 1973; Chaloupka 1993; Jelínek 1989; Lewis 1988; Taçon 1989). This is recognized by its subject-matter, by its manner of depiction, and by the painting techniques used (Chaloupka 1988–9). There is no decisive evidence that it was contemporary with any other class of paintings, so it may constitute a chronologically distinct unit.

The characteristic Dynamic figure (Fig. 2) is an animated human. The body, upright and short, leans forward; the legs are spread wide, one forward and one back in a runner’s moving pose; and an elaborate head-dress rises above and behind the head. The Dynamic figure is typically 20–30 cm high, and holds spears and/or boomerangs as weapons; sometimes a ‘bustle’ or skirt hangs down from the waist. Some Dynamics we see as clearly gendered female by their having breasts; a very few are gendered male by depicted male genitalia; the others we rather suppose to be male, thinking that, in respect of the convention for identifying gender, the Dynamics may follow characteristics of very recent Arnhem Land

paintings. Among the Dynamic animals are thylacines (Brandl 1972), the marsupial carnivore which went extinct in north Australia at some point subsequent to the arrival of the dingo about 3500 years ago (Corbett 1995, 14–17); its presence in the Dynamic repertoire is one of many proofs of the Dynamics’ antiquity (Chippindale & Taçon 1998b). There are some therianthropes — figures part-human, part-animal (Taçon & Chippindale in press). Commonly found near painted Dynamic Figures are stencils of boomerangs and stencils of hands made in a certain way, the three middle fingers pressed together, and separated from the thumb and little finger (the ‘3MF’ motif). By this co-occurrence, and by the shared subject of boomerangs, these stencils are thought to belong to the complex of Dynamic subjects (Chaloupka 1984).

Distinctive to, and defining of, Dynamic is a certain manner of human depiction: the body is made of a short, broad pair of lines, inclined a little forward from the upright; the legs are drawn with strong-curved thighs, narrowing at the calf to a single line, and often with the feet drawn distinct at an angle to the lower leg; the arms are drawn slender, sometimes narrowing at the forearm to a single line,

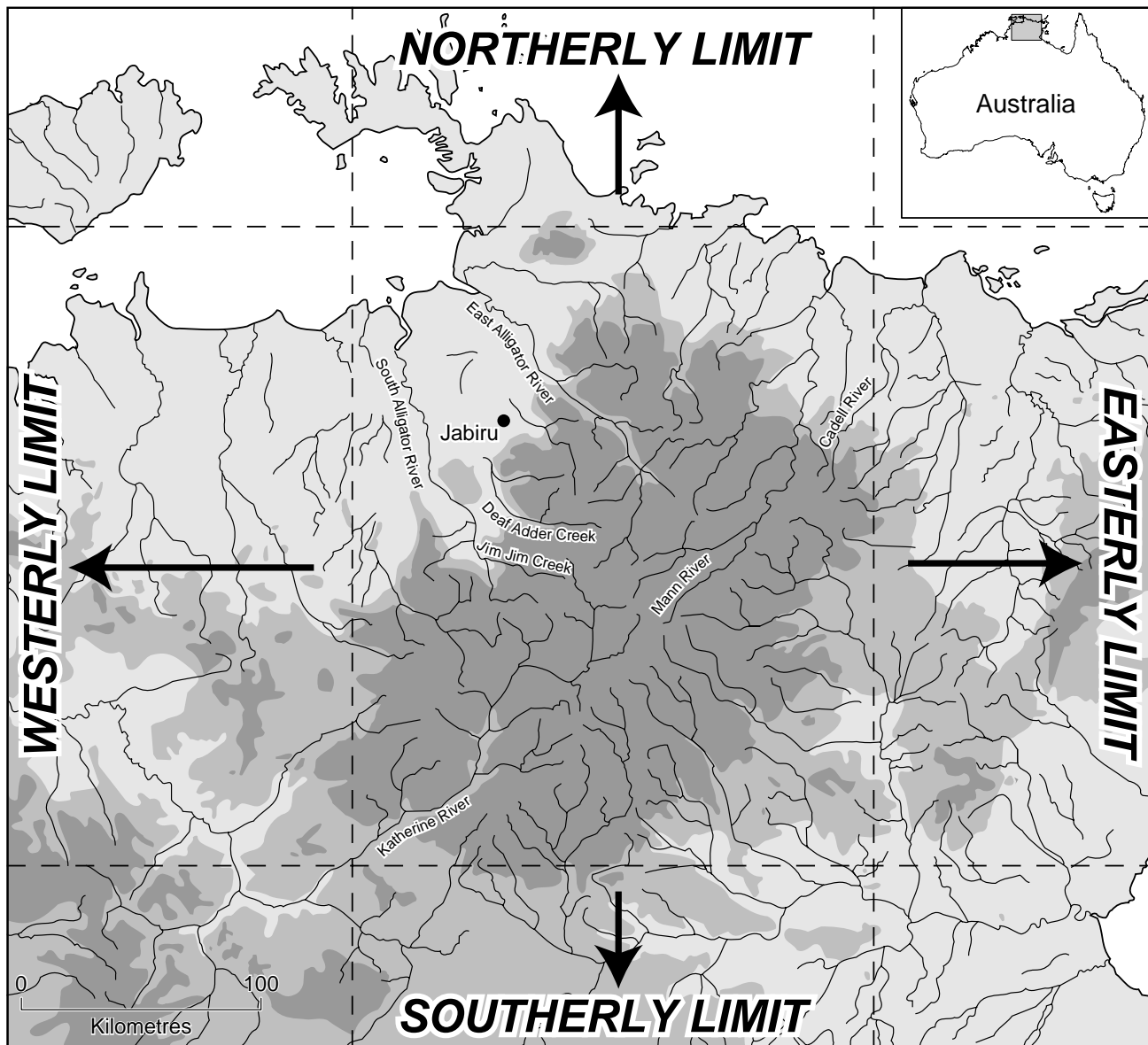


Figure 1. The Dynamic realm of western Arnhem Land, in the 'Top End' (northern coastal region) of the Northern Territory, Australia. The approximate positions of the most northerly, easterly, southerly and westerly sites reported in the Chaloupka corpus (1984) are indicated on the map as marking the known limits to the occurrence of Dynamic figures. This defined area is broadly that of the collected Arnhem Land rock-paintings sequence, although others of its several conventions are thought less widespread in their spatial occurrence than is Dynamic. Dynamic figures are known to be particularly numerous in the classic research zone, now largely in Kakadu National Park, that extends south and east from the modern town of Jabiru in the catchment of the South Alligator River; but there has been neither such a consistent and extensive survey nor comparative analysis of survey findings that one can conclude that this visible focus is indeed the decisive centre of Dynamic. The northern and western limits to the range approximate to the limits of rock outcrops likely to bear archaic art. The eastern and southern limits are more likely to move with new fieldwork. The exact locations of Dynamic sites are not provided since Aboriginal communities do not generally wish site locations to be published.

or with thickened musculature to lower or to upper arm; the treatment of shoulders and head is unusual, with a circle marking the shoulders where arms meet

upper torso, often with a distinct neck and head above; the figure is completed with an elaborate head-dress, often a composite of several distinct compo-

nents. Boomerangs, sticks and barbed spears are held singly in, or ready for, attack; or they are carried in pairs or bundles. Dynamic animals are also drawn in a distinctive way, with a rapid defining outline rather than with that full record of the bulk of the creature seen in other Arnhem Land paintings. The interior of human and animal Dynamics is sometimes left open, more often filled with lines, dashes or dots; dashes and dots sometimes emanate from Dynamics, or are scattered around them.

Within the fine-painted corpus of Arnhem Land art, Dynamic Figures are painted exceptionally well, with fine clear detail, and vigorous lines expressing a vivid sense of movement — hence the Chaloupka name ‘Dynamic’.¹

Dynamic figures occur both singly and in associated groups, small and large. A striking and repeated occurrence is a group of running figures, all facing the same direction, as if a mob of ten or twenty warriors were running together. Amongst the running humans there may be therianthropes.

Dynamic Figures often run, but other activities are depicted: standing; sitting; fighting in small groups (Taçon & Chipindale 1994); tumbling; holding leafed branches; busy at sexual relations; spearing a macropod or emu. In some groupings we do not recognize in what activity the Dynamics are engaged.

Arnhem Land field-workers find that Dynamic

— like other entities in Arnhem Land art — is sufficiently distinctive in subject, manner of depiction and the look of the line on the rock that they are

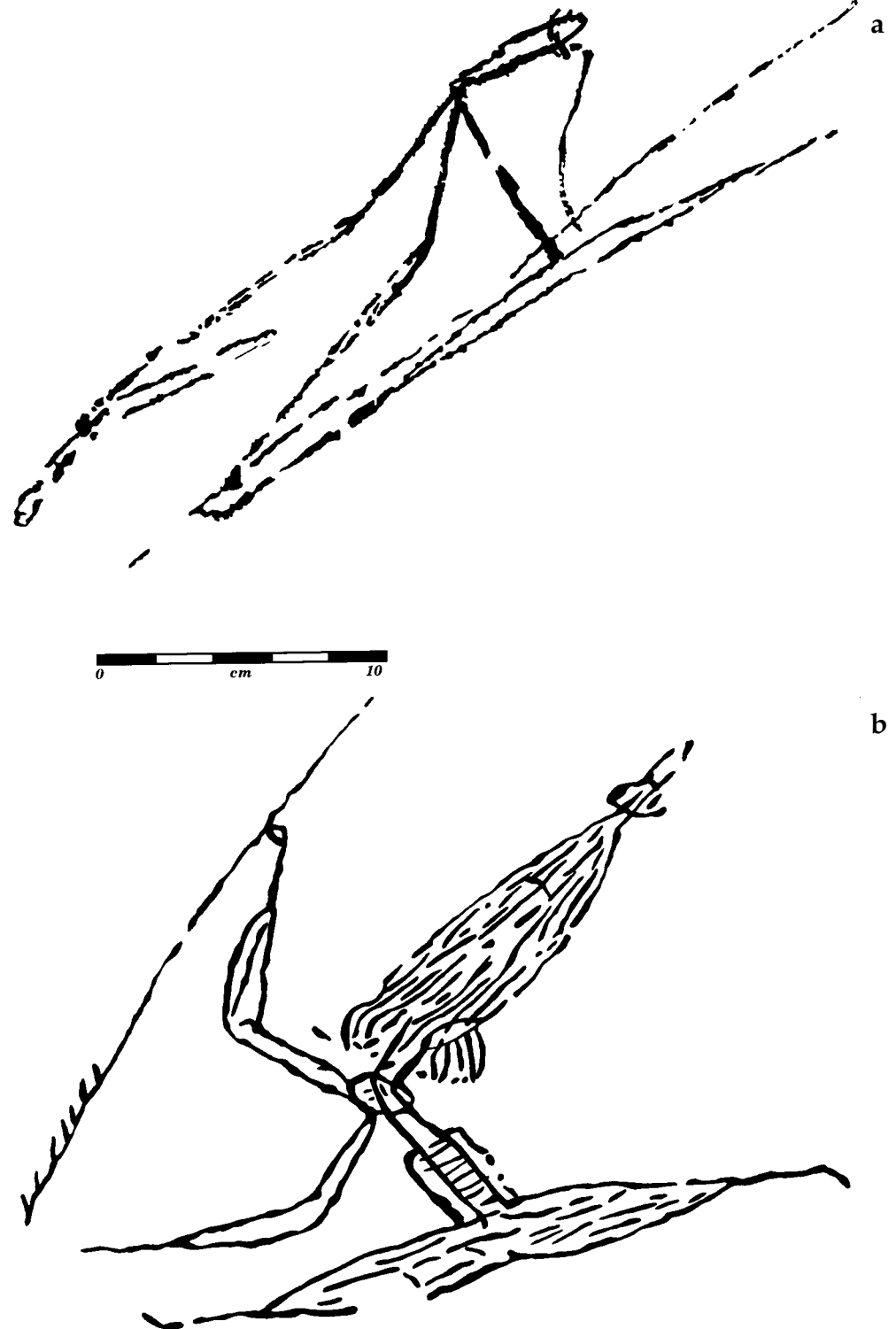


Figure 2. Dynamic figures. a) Running human, with small head-dress, holding boomerang and stick. b) Running human, with head-dress, and barbed spear.

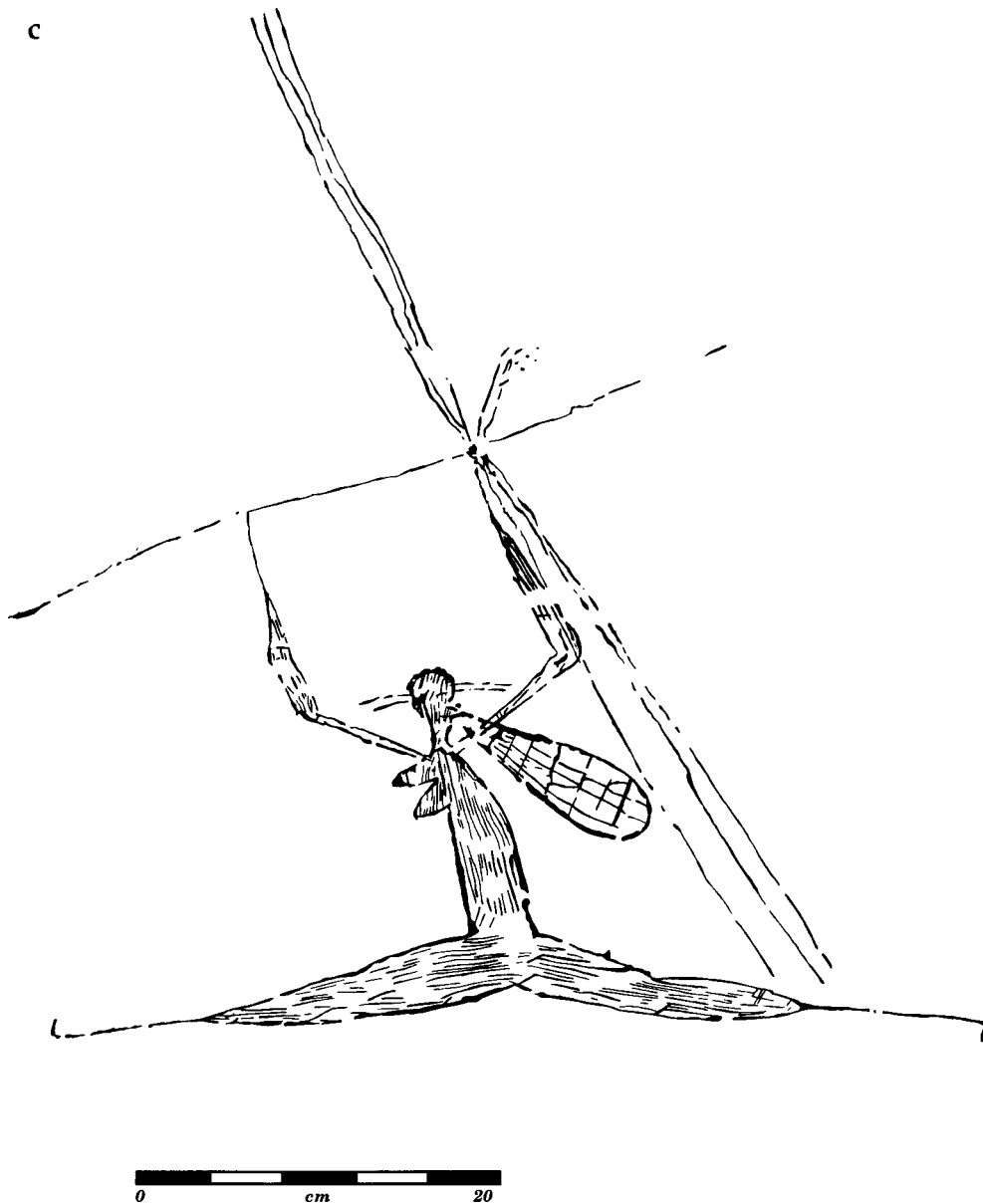


Figure 2. (cont.) *Dynamic figures. c) Running human, breasts gendering her female, with sticks.*

confident Dynamic can be discerned even from slight and fragmented traces. Like other old Arnhem Land paintings, their red colour appears bonded *into* the rock rather than sitting out *on* the rock surface; sometimes it has that pinky-bluish tinge which Walsh (1994) calls 'mulberry'.

Comparison has been made between the Dynamic Figures of Arnhem Land and the Bradshaw Figures of the Kimberley (northwest Western Australia), where the repertoire is also of animated and well-drawn figures, with elaborate kit and head-dresses, finely brush-drawn in pigments of mulberry

hue (Crawford 1968; Lewis 1984; Taçon 1998–99; Walsh 1994). At Laurie Creek, the Larrdurmaya rock-art site (Meehan 1995, 309) near the Fitzmaurice River, midway between Arnhem Land and the Kimberley, are archaic paintings of humans with head-dresses in those same pink and mulberry hues (Chippindale, unpublished field study).

Placing Dynamic Figures in space and in time

Chaloupka's Dynamic corpus (1984) lists 260 rock-art sites with Dynamic Figures then known to him, a number which could now be substantially increased.² Dynamics occur across the whole region of Arnhem Land rock-art. They extend from the Wellington Ranges in the north to El Sherana in the south, and from the Cadell and Mann rivers (Chaloupka 1984; Taçon 1994) in the east to the outliers of the Arnhem Land escarpment to the west. Overall this is an area about 200 km square. Dynamics are not known from the area of the upper Katherine River, the neighbouring rock-art zone to the south (Chaloupka

1991). When a class of ancient figures is sufficiently ancient, differential survival skews distributions. The rock-art sequence around Katherine, an area of softer rock, seems to lack both Dynamics and other archaic painted elements; there the geological conditions may offer no surfaces which endure since Dynamic times (David *et al.* 1994; David pers. comm.; Chippindale pers. observ.) and this taphonomic circumstance would explain their absence.

No distinctive traits have been identified that would partition the Dynamic Figures spatially into sub-regional groups.

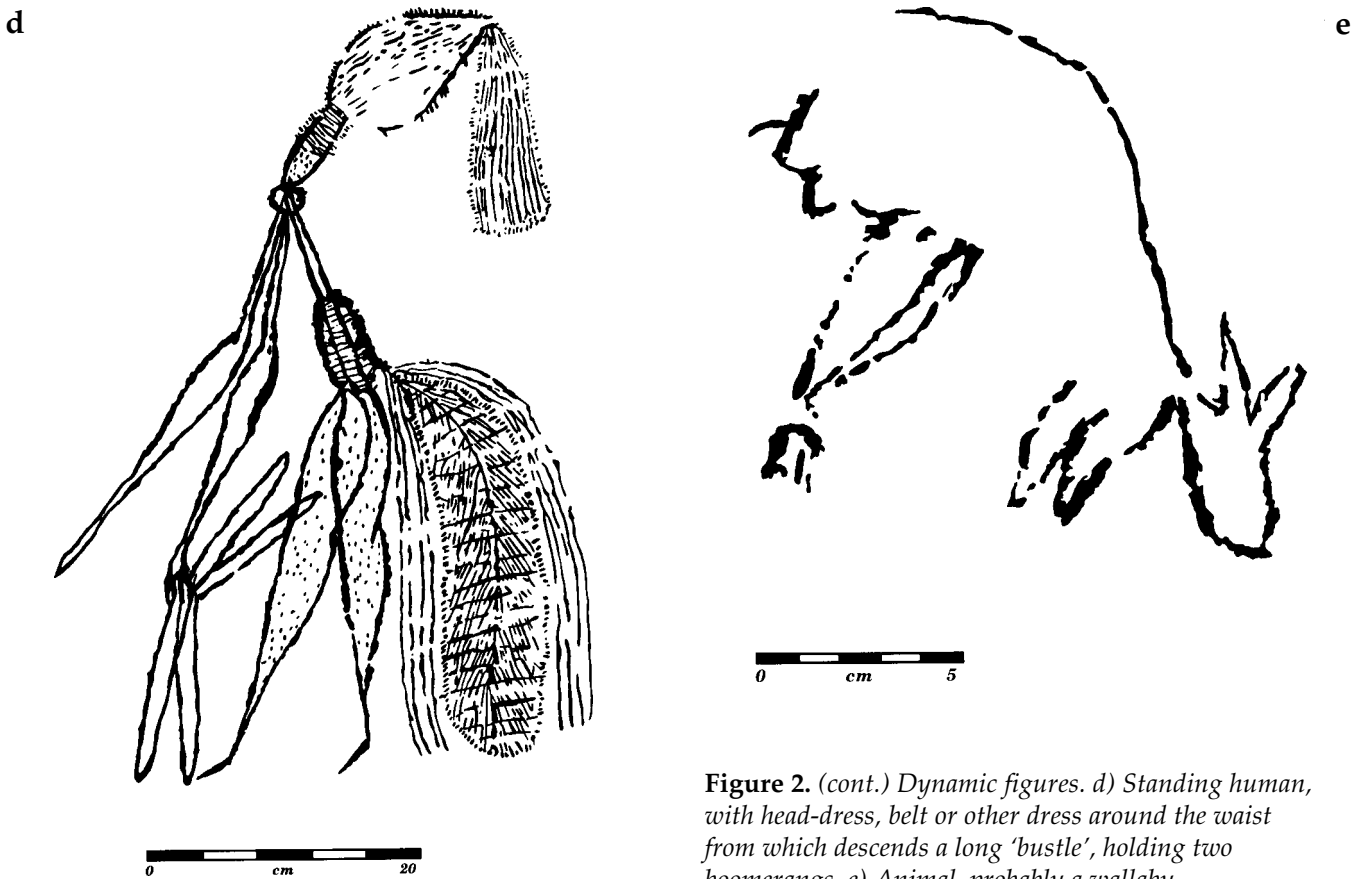


Figure 2. (cont.) Dynamic figures. *d) Standing human, with head-dress, belt or other dress around the waist from which descends a long 'bustle', holding two boomerangs. e) Animal, probably a wallaby.*

The several methods of relative dating applicable to Arnhem Land rock-art (Chippindale & Taçon 1998b) decisively place the Dynamics in an archaic era (Fig. 3), within Chaloupka's 'Pre-Estuarine' period, and preceding the Simple Figure/Yam Figure complex (Chippindale & Taçon 1993; and earlier studies).

In the Chaloupka scheme, the Dynamics precede 'Post-Dynamic Figures' which follow many Dynamic conventions, but are executed more simply, with broader line and cruder technique. It is by that decline in skill, by their association with the spear-thrower — not found with Dynamics³ but characteristic of the succeeding 'Simple Figures with Boomerangs' — and by some stratigraphic observations, that these figures are taken as subsequent; they seem to be not just variant Dynamics but a distinct class of 'Post-Dynamics'. Some may be contemporary — 'Sub-Dynamic' one could say, rather than sequential.

Preceding the Dynamics, and with a very different manner of depicting animals, is Chaloupka's 'Large Naturalistic' phase. Animal depictions that are securely dated to the Simple Figure/Yam Figure complex which follows the Dynamics present a puzzle; holding little in common with Dynamic animals,

they instead have much in common with the Large Naturalistic animals — as if there were a continuity of animal depiction that 'leapfrogs' over the other and temporally intermediate Dynamic convention.

The pattern of human figures is somewhat different. Chaloupka places some large human figures within the 'Large Naturalistic' group. Against that opinion, and in this instance agreeing with Haskovec (1992), we associate one type of large human figure — characteristically near life-size, and often painted horizontally across the rock-surface, as if falling with floppy limbs — with the Simple Figure/Yam Figure complex. We do not recognize human figures as a subject certain to occur in the 'Large Naturalistic' range of motifs.

These observations, and the mixture of continuity and break in the sequence that they posit, hint at further complications in the relation between chronology and distinctive aspects of art styles in old Arnhem Land.

The Simple Figure/Yam Figure complex is securely dated to between *c.* 6000 and *c.* 4000 years ago by links to the regional ecological and archaeological sequences (Chippindale & Taçon 1993; Chip-

	Nature	Years before present	
New	Rare rock-paintings + bark- and paper-paintings	present-day	
	'Complete Figure Complex' rock-paintings + some rock-engravings + beeswax figures	about 4000–3000 up to the 1960s AD	
Intermediate	'Simple Figures' + 'Yam Figures' + large human figures + some large fauna + 'Early X-ray' rock-paintings	about 6000	
	'Northern Running Figures' rock-paintings	'Simple Figures with Boomerangs' + some large fauna rock-paintings	unknown
	?	'Post-Dynamic Figures' rock-paintings	unknown
	'Dynamic Figures' rock-paintings + '3MF' stencils	?10,000 years	
	?break <hr/>		
Old	'Large Naturalistic' fauna rock-paintings	unknown	
	?break <hr/>		
	Panaramitee-like rock-engravings pigment in shelter deposits	unknown ≥ 30,000–50,000	

Figure 3. Elements in the chronology of Arnhem Land rock-art. The Dynamic figures fall early in the uncertainly-dated portion of a three-part chronology. Elements of subject (boomerangs, head-dresses) and manners of depiction (post-Dynamic conventions) link them closely to a following Intermediate period. (After Chippindale & Taçon 1998b, 107, table 6.1.)

pindale & Taçon 1998b). The Dynamics are older. Dates on mineral skins associated with Dynamics hint at an age of about 10,000 years ago (Watchman 1987, 190). Dynamics are not so different, in their state of survival and preservation, from paintings of the Simple Figure/Yam Figure complex as to suggest they are an order of magnitude older.

The placing of the Dynamic Figures at that point in the Arnhem Land rock-art sequence sets them decisively before the events recognized archaeologically by the 'Australian Small Tool Tradition', which in the Arnhem Land archaeological sites is uncertainly dated to the region of towards 5000 years ago (Jones & Johnson 1985, 211). Instead of a single and crisp horizon, in any case, Arnhem Land sees a series of lithic innovations involving quartz, the use of other raw materials and the making of stone points (Jones & Johnson 1985; Allen & Barton 1989). Evans & Jones (1997) link the coming of the 'Small Tools

Tradition' to the introduction into Arnhem Land of the Pama-Nyungan language-family, one of the two distinct groups to which Aboriginal Australian languages belong. If that language-group does equate with a distinct cultural identity, and if that cultural identity is correctly identified with the 'Small Tools Tradition', then the Dynamic Figures relate to an older cultural and spoken world of Arnhem Land than that which we know today.

Approaches to studying Dynamic Figures

Taçon (1991) has identified a certain symbolism of power — expressed in English in the word 'brilliance' — as a concept that ties together aspects of Arnhem Land rock-art and archaeology from the era of the Simple/Yam Figure complex, and he has linked them to modern Arnhem Land world-views. We see the establishment of that entity as related to the ris-

ing sea-level, which brought the salt water to about its present level some 6000 years ago, and the establishing of the present shore-line rather later. The form of the Rainbow Serpent — which first appears in the rock-paintings then — has now been shown to derive as much from a sea-water pipefish, a maritime subject, as from python snakes (Taçon *et al.* 1996). Rising water would have moved fast across the flat Arafura Plain, now submerged as the southern Arafura Sea, and it is reasonable to suppose substantial social change and disruption was a consequence of this flooding of so much land.

The demonstrated continuity in Arnhem Land iconography, and a matching continuity in the archaeological evidence (with its admitted uncertainties: Allen & Barton 1989, 100–137), justifies the interpretation of Arnhem Land rock-art from the era of the Simple/Yam figures, and the interpretation of the early images of Rainbow Serpents right up to the present, in frameworks drawn from contemporary ethnography and modern Arnhem-Landers knowledge. There is continuity into that era from the previous age of the Dynamics: many subjects are held in common (among them, hafted stone-axes), as well as some distinctive traits — figures in fighting groups, and leaning or horizontal human figures that seem to tumble, fall or ‘float’. There is also change, as the distinctive manner of Dynamic depiction ends. Some attributes cease: the most elaborate head-dresses are reduced and simplified; the dashes and dots associated with Dynamics are no longer seen. Some attributes begin: the traits and conventions that define ‘Yam’ figures, and the traits both of subject and of manner of depiction that are the mark of the Rainbow Serpent.

Arnhem-Landers know this from knowledge of their own history, when they set Dynamic and other archaic figures apart as ‘Mimi figures’ (Brandl 1973, 171–8) — those that were made by a first people who were in the land before the ancestors of today’s Arnhem-Landers, and who were clever in different ways.

A well-supported view, then, is held in common by Arnhem-Landers and by archaeologists. Dynamics pre-date the world of later rock-art, and illustrate a time of different technologies, of different modes of dress, of different manners of depiction. It is likely to have been an era with a significantly different environment in the region, and — importantly — a time *before* the era of the Rainbow Serpent when the human world-view of Arnhem Land was dissimilar. Accordingly, we think it right to approach the Dynamics with a combination of both *informed*

and *formal* methods (Taçon & Chippindale 1998).

We may expect aspects to reflect that deep continuity over the very long term which is characteristic of Arnhem Land and of Australian prehistory; these can be reached through an understanding informed by ethnographic insight. If Arnhem Land knowledge is less coherent and less continuous than we expect, then the methods we think of as *informed* are not so; they become instead *analogy*. This uncertainty is true for all aspects of remote Australian archaeology that are approached from some modern point of departure in the spirit of a ‘direct historical’ approach, since we never know how much may have changed (Frankel 1996, 654).

We should anticipate Dynamic elements will have disappeared — or have so much changed — that they are absent from, slight within, or unnoticed amongst traditional Arnhem Land knowledge of today; this is why we need to use formal knowledge derived from the Dynamic images themselves, and not to seek constantly the reassurance that an aspect must be congruent with present-day ethnography.

Which approaches — whether by formal methods or by analogy — are fitting to Dynamic images? Davidson (1994; 1999) cautions against having *any* confidence that we can figure out the meaning of *any* prehistoric pictures. Of a celebrated Dynamic picture on Mount Brockman (Fig. 8 below), where a Dynamic hunter spears an emu (Taçon & Chippindale 1994, 235), he asks:

My question as, in this context, I read again about the famous Kakadu figure of the supposed ‘hunting’ scene of a man spearing an emu was: ‘is this a painting of war on the emus?’ It is not such a silly idea, for who is to say that was a representation of a ‘real’ emu, rather than an emu representing people with some association with emus, perhaps through a totem? Who is to say that is a single hunter rather than a symbol of the political community or military organization opposed to the emu folk?

These are good questions. Dynamic figures are sufficiently distant and sufficiently different that one cannot *presume* the structures of the ethnographic present must apply.

The only physical objects that survive from the Dynamic world are in the archaeological deposits; given the acid sands of Arnhem Land, this means stone tools alone. Of the repertoire of stone tools, only the axe is seen in the Dynamic pictures. Its depicted shape and size are consistent with the archaeological evidence of its material form.⁴ The depicted size and shape of boomerangs and of spears is

broadly consistent with the indirect evidence of their material form, as that can be judged from the stencilled boomerangs (commonly) and spears (uncommonly) associated with the Dynamics; although the curves on the boomerangs painted do not always match closely the repertoire of profiles we see stencilled (Chaloupka 1993, 122–3). Other kit — dilly-bags, bustles, head-dresses, and so on — is made of soft materials and would leave no archaeological trace; one can only say of this — as one can of the macropods, fish, echidnas, birds and other creatures seen in the art — that much is depicted in a distinct form which is consistent with material reality as one tries to reconstruct it for archaic Arnhem Land. To Davidson's persistent question — what if a most careful and considered representation of an emu with all its real-world traits is nevertheless *not* a picture of the emu itself, but of the 'emu folk' as an abstracted entity? — we can imagine no decisive answer.

Like the Dynamic painters, the contemporary masters of western Arnhem Land art (who paint traditional subjects in traditional pigments on the traditional material of eucalyptus bark and now, also, on fine art paper) are accomplished in their techniques; like the Dynamic painters, they work creatively within distinct conventions which define how subjects are treated. Their work illustrates stories; and we can conjecture that Dynamic images relate also to some oral knowledge. The distinctive features of contemporary painting — its choice of pigments and colours, its repertoire of single and composite subjects, its ways of figuring subjects and drawing their attributes, its use of fine cross-hatching (*rarrk*) — are not haphazard traits, or singular aspects each independent of the other; rather, they are aspects of a single integrated whole, which Morphy (1991; see also 1982) rightly calls 'an Aboriginal system of knowledge'. We may expect a similar coherence in the social world of the Dynamics. We may expect the coherence to extend beyond the images alone, for it is integral to a wider understanding; if we are fortunate, we may also be able to discern it encoded somehow into the reticent archaeological traces, as the concept of 'brilliance' (Taçon 1991; also Morphy 1989; 1991, 193–6) can be seen in the archaeology from the later era of the Rainbow Serpent, as well as being visible in the pictures.

The modern painters' subjects include mythological and spirit-beings which by their depiction show themselves to belong in a world of the mind. The modern Rainbow Serpent combines attributes of different creatures into a single composite being,

head of crocodile with ears like a kangaroo (occasionally head of water-buffalo), body of snake, tail of crocodile or fish.⁵ Other mythological and spirit-beings the naïve observer would not recognize as belonging to that other world of meaning, for they are painted in the physical form they are known to take — in the form of humans as if humans, in the form of animals as if animals of the material world; it is only those who know the stories that explicate the images who are informed as to what they stand for. And the 'stories' have structured layers of knowledge: behind the 'outside' story, that seems plainly to say what the icons stand for, are 'inside stories' that tell of more and other meanings.

For the Dynamic pictures, we have no stories, for they are old Mimi paintings, not paintings from the world of contemporary stories. Instead, we search for regularities that make the defining pattern of the Dynamic pictures, and seek to see what unified world-view they present.

One element in the Dynamic repertoire may be decisive: this is the presence of therianthropic (part-animal, part-human) beings which appear alongside Dynamic humans and interact with them (Figs. 9 & 13). Therianthropes,⁶ absent from the material world, prove that aspects of the Dynamic *do* belong in a world of the mind.

By a tiresome asymmetry, there is nothing in the material world which *must* be absent from the world of the mind, so no trait *can* exist which would prove the tentative proposition, that some aspect of Dynamics *must* belong to the material world. We think it likely that many aspects do — so the pictured world is part-material, part-envisioned — but we do not see how this can be shown without ambiguity.

A Dynamic composition from Deaf Adder Creek

Figure 4 presents a Dynamic composition from Deaf Adder Creek, a region of western Arnhem Land where Dynamic figures are numerous. On the left we see a tall and elongated therianthropic figure; its thin body is human; it has human feet, a thin body and an elongated neck. Its head is not human; it has tall ears and a snout; its form is reminiscent of, though not exactly like, the wallabies commonly depicted in Arnhem Land rock-art.⁷ Seven spots are painted below its snout, as if drops of liquid falling away from it. In one hand it grasps objects which we interpret, by the example of many clearer Dynamic depictions, as two boomerangs grasped at the centre. On the right is a conventional Dynamic standing figure, the body and upper legs drawn as open areas of

some breadth and with scattered dots within. The human has a solid head-dress (much smaller than Dynamics commonly wear), or the black area stands for the head alone.⁸ The curving line that falls from the shoulder we interpret, again by reference to other and clearer Dynamic paintings, as a dilly-bag slung from neck or shoulder. One hand of the therianthrope reaches up to touch one hand of the human figure.

This Dynamic picture — and others — tells us decisively that we are in a supernatural world.

Ouzman (1998), sketching how rock-art provides an expression of world-understanding, underlines the influential view that South African researchers have come now to hold: how 'rock-art imagery is not "ordinary" but is somehow "extra-ordinary" though we do not fully understand the forces that drove these foraging communities to engrave, paint and sculpt'. This is why it is useful to consider forager cognition or world-understanding more closely (at the same time noticing, as Kelly (1995) underlines, that foraging life-ways have a diversity). One aspect to forager cognition is its frequent association with the forms of belief classed by anthropologists as 'shamanistic' (Halifax 1991; Winkelman 1986) where altered states of consciousness and experiences of visual and somatic hallucinations constitute the central truths of religion (Dobkin de Rios 1986; Eliade 1964; Lewis 1989). The elements we see in this, and in other Dynamic figures, are consistent with that form of imagery; and that common factor in forager cognition indi-



Figure 4. *Dynamic figures: therianthrope and human interaction. Height of figures c. 35 cm.*

cates this is a kind of knowledge which may reasonably be thought to lie behind the outer puzzle of Dynamic imagery.

In order to decide whether Dynamic art relates to altered states of consciousness we begin with the nature of ASC experience and the way ASC experience is perceived in Arnhem Land and, more broadly, in Aboriginal Australia.

Altered states of consciousness (ASC)

An altered state of consciousness (ASC) is one in which a person perceives visions and suffers experiences not of the usual state of consciousness but of an 'other', more hallucinatory nature. This state can be stimulated in many ways: by ingestion of psychoactive substances, hyperventilation, rhythmic movement, percussive sound, fatigue, sensory deprivation, intense concentration, dream incubation, schizophrenia and so on. Everyone is capable of attaining some form of ASC (Noll 1985, 447). Because the central human nervous system is thought common to all members of the species *Homo sapiens*, we can use the experiences of people entering ASCs today to inform us about those of people entering ASCs in even the remote past (Lewis-Williams & Dowson 1988). These experiences include particular aural, somatic (of the body) and mental (of the mind) sensations. In the past, as now, each will have been perceived and explained in terms of local cultural knowledge, but the neurological experience will have remained largely constant. This unifying factor is cited as the explanation for the remarkable correspondence in beliefs and practices between forager groups that are spatially and temporally separated (Ouzman 1998; Lewis 1989; Eliade 1964; and Vitebsky 1995 for shamanism). All, having utilized ASCs, shared and reacted to a common pool of experience.

The shared sensations of ASC are well documented in ethnographic literature; particularly that relating to foraging peoples. The great number of forager spirit-doctors, medicinal healers and clairvoyants who use ASCs have been grouped under the broad umbrella term 'shaman'; the shaman defined as the 'great master of ecstasy' (Eliade 1964, 4). In describing their experience of ASCs — so intense and so complex — people use metaphors to convey what they perceive (Eliade 1964; Lewis-Williams & Dowson 1989; Whitley 1994; Turpin 1994a). Analysis of these metaphors shows particular ones recurring repeatedly both across space and through time. Similar images are used to describe ASC experiences by shamans from all continents, by westerners who experiment with psychoactive substances, by schizophrenics, and so on; these images are used because they describe the common human experiences of ASC.⁹

A pervading ASC image, of flying, derives from the somatic sensation of weightlessness and the mental perception of departing from the physical body. San trancers in southern Africa describe how during trance their spirit exits from the top of their head

and flies away on a journey out of the body (Marshall 1969, 377–8). The Chumash of far western North America say that a bird carries the coyote (the metaphorical shaman) from the material world to the world of the sky (Blackburn 1975). Siberian shamans wear bird costumes to symbolize their particular association with these creatures; some even claim descent from birds (Ripinsky-Naxon 1993, 195). The visionary journey is an integral part of ASC for many people (Crookall 1961; Eliade 1964; Fischer 1975; Furst 1972; Goodman 1990; Green 1968; Halifax 1980; Mitchell 1981; Schultes 1972). While the images seen are culturally determined, the experience is consistent, and akin to flying; this is why flight is a recurrent metaphor, and association between trancers and birds is common.

The sense of being out of the physical body is fundamental. The mind or spirit 'flies away', leaving the physical body in a collapsed state. The common experience of perceiving the innate body left behind as one leaves on the visionary journey (Turpin 1994b, 78) causes a metaphorical association between ASC and dying. Southern San stated that they died in trance and likened their experience to the death of an animal (Lewis-Williams 1981, 91ff.; 1983, 45ff.). In Chumash myths the coyote (the metaphorical shaman) begins many adventures by dying (Whitley 1994, 12). Sometimes this death may be likened to drowning because of the somatic sense of floating and the common ASC condition where the shaman struggles for breath. The Siberian shamans describe how they are transformed into aquatic species, swim in the lakes and commute with water creatures (Ripinsky-Naxon 1993, 50). Southern San informants told of men dying and swimming in rivers (Orpen 1874, 2, 10; Bleek 1935, 28, 32). A Kalahari San informant explained it thus: 'Kauha made the waters climb, and I lay my body in the direction they were flowing . . . My feet were behind, and my head was in front. That's how I lay. Then I entered the stream and began to move forward' (Biesele, in Halifax 1980, 55). For the Chumash the coyote is frequently killed by drowning (Blackburn 1975, 85–6, 97, 163, 234, 289). The Kawaiisu of North America describe leaving ASC as emerging from a pool of water but without getting wet (Zigmond 1977, 77–9).

These metaphors of flying and being under water are complementary; they derive from the same 'floating' sensation. Each image shows differing aspects of the vision experience. Use of the two images together gives a fuller account than use of just one. Adding other images would bring even greater depth. The need for various images to allow thor-

ough account causes much mixing of metaphors within ASC descriptions. A well-documented example is the rich collage of images used by the San (Katz 1982; Biesele 1993), identified as the same collage as is visible in the imagery of southern African rock-art (Lewis-Williams 1981; 1983; Garlake 1995). We can expect other ASC-related art traditions to contain parallel collections of metaphors — those relevant to the local artists of the time. The common metaphors have no natural association within everyday material life; the odd association of flying with drowning only takes on an internal logic and consistency within the context of ASC experience. This is why associations lead us to identify art as related to ASC experience even for traditions where we have no informed knowledge.

How may these striking human experiences find expression in distinctive, even diagnostic rock-art imagery?

The presence of therianthropic figures is a strong indicator of a link to altered states of consciousness. Creatures that are part human, part animal must by their nature be of the mind. Therianthropes arise within literature and art relating to ASC because people commonly feel that they take on an animal form during out-of-body journeys. A western laboratory subject explained, 'I thought of a fox, and instantly I was transformed into that animal. I could distinctly feel myself a fox, could see my long ears and bushy tail, and by a sort of introversion felt that my complete anatomy was that of a fox' (Lewis-Williams & Dowson 1989, 68). The San, in associating entrance to trance with the death of an animal, describe how in trance-death they become one with a particular creature. An informant thus told Katz how 'just yesterday the giraffe came and took me' (Katz 1982). The Chumash, as we have seen, associate shamans with the coyote. A Siberian shaman, talking of his envisioned spirit wife, explained 'sometimes she comes under the aspect of an old woman, and sometimes under that of a wolf . . . Sometimes she comes as a winged tiger' (Halifax 1980, 121). Here we see again the association with flying; from western experience come the much-reported stories of people who try to fly from windows after taking LSD.

A recurring aural sensation experienced in ASC is that of oscillating noise. Among the southern San this was perceived as the buzzing of bees (Lewis-Williams 1983, 46). For the San, particular trance power is thus attained by dancing when bees are swarming. Among North American peoples the noise is often described as the sound of the bull-roarer

(Whitley 1994, 12; but see also Steward (1941) on the regions where that was so), an instrument of special importance in the induction of altered states. Among the Yakut of Siberia it is said that 'the drum is our horse' (Halifax 1980, 15), the vehicle that carries the shaman up to the sky world (Thorpe 1993, 33). The use of controlled sounds to stimulate entrance to ASC is well documented (Ripinsky-Naxon 1993, 49). These sounds, continued and embodied within the conditioned aural sensations of ASC, become a key and memorable part of the experience.

Typical somatic experiences include tingling of the skin, stabbing muscular pains and the feeling of being stretched. For the southern San the tingling was hair growing and the muscular pains were the stabbing of thorns or arrow-points (Lewis-Williams 1981). To describe his experience of 'being stretched', a Kalahari !Kung San man pointed to a tree and explained how he 'was as tall as that when in trance' (Lewis-Williams & Dowson 1989, 77). Although mental experiences are more culturally determined, it is thought that in the early stages of ASC all people may sense similar swirling luminous geometric forms. Sometimes known as entoptic phenomena, these mental sensations have been discussed at length elsewhere (see Lewis-Williams & Dowson 1988; Dronfield 1993). The occurrence of 'endogenous diagnostic shapes' (Dronfield 1995b) in art traditions provides a useful indicator of a relationship to ASC, but the absence of those forms is inconclusive. In the later stages of ASC the geometric forms are overtaken by iconic images. While they are largely culturally determined, if these images are transposed into art, an ASC relationship should provoke a suite of elements in the imagery that derive from the known aural and somatic experiences of ASC along with the common metaphors used to describe them.

Some of these metaphors and experiences lend themselves to pictorial expression: flying and swimming can be depicted by choosing certain postures for the human body form (though the two may look rather similar). A shaman travelling out-of-body in lion form may be depicted either as a natural lion or as part-lion, part-human. To be expressed in imagery, sounds and feelings have to be given a visual form. A swarm of bees could stand for aural buzzing, or needles piercing the back might represent pains in the spine. The apparatus of entry to ASC could be suitable for depiction, such as the clapsticks of rhythm used to induce ASC, or the relevant hallucinogenic substances that take one into visionary experience. But there may be good cultural reasons why this physical apparatus, though suited to

depiction, was not painted. Other means of entry to ASC — sensory deprivation or sleeplessness or lack of food — may not be amenable to visual depiction.

Alongside the varied degrees to which ASC metaphors lend themselves to being made visual, an archaeological study must take into account their ambiguities. Bees, the honey and wax they offer, are important in Arnhem Land bush life as they are for many hunter-gatherer societies; there is other good cause to paint them. How is one to distinguish the image of bees that is the metaphor for the aural sensation of ASC from the image of bees as the provider of valued sweet substances? To answer this, we need to look for particular elements that *must* be envisioned — such as flying humans and therianthropes — as well as collections of juxtaposed elements that only hold consistency within the context of ASC, such as bees painted in an under-water scene alongside humans and fish.

San rock-art of southern Africa as imagery of ASC

The San art of southern Africa offers a useful research precedent since it is a hunter-gatherer rock-painting tradition proven, to the conviction of most researchers, to relate ASC experience. It is thus an example of how ASC experience and metaphors have been made visual within rock-art. We should emphasize that we neither propose direct links between southern Africa and Australia nor imply that any representation of ASC in Australian paintings should replicate what we see in San art. An appreciation of San art is valuable because it allows us to examine the way in which one group tackled the common problem: of transposing complex aural, somatic and mental ASC sensations into rock-art.

A section of San art depicts the actions and objects associated with the rhythmic dancing that San use as their mode of entry to ASC; many scenes contain lines of dancing figures (e.g. Lewis-Williams & Dowson 1989, figs. 14, 15, 28; Lewis-Williams 1981, figs. 10, 19, 40). The figures can be recognized by a characteristic posture in which they bend forward as they dance. They wear and carry dancing paraphernalia: dancing sticks, fly whisks, rattles tied to the ankles, and so on. Entrance to trance can be a dramatic experience for the San and the physical traits exhibited are commonly featured within the art. Dancers sweat profusely; they bleed from the nose and their hair stands on end, sometimes the entire body is flipped over in a somersault.

Another section of San art is composed of metaphors which describe the experiences of ASC. The

dancer collapsing into trance is depicted part-human part-animal, as animal form is taken on ready for the out-of-body journey. Typically, trancers are given animal heads and cloven hooves. There are scenes in which therianthropes flying away from lines of dancing figures are still joined to the dancers by trailing lines (e.g. Lewis-Williams 1981, fig. 31). The flying metaphor is repeated in scenes where therianthropes hold their arms back like wings; the arms may even be feathered (e.g. Lewis-Williams & Dowson 1989, figs. 32:a, b, c, d & 33:a, b, c). The underwater metaphor is also common; eels and fish-like creatures are attached to or swim around trance figures (e.g. Lewis-Williams & Dowson 1989, figs. 22, 39:a, 40). Certain figures are depicted enormously elongated, in fidelity to the stretching sensation experienced by those entering trance (e.g. Lewis-Williams & Dowson 1989, fig. 34:a, b).

Bees are commonly painted amongst dancing and trance figures to represent the aural ASC experience of buzzing; their sting reminds of the pain of the trancer. ASC pain is sometimes more graphically depicted by arrows flying around wildly, uncontrolled, peppering the bodies of trance figures (e.g. Lewis-Williams & Dowson 1989, fig. 17). The arrows enhance the metaphor of death; figures shot repeatedly lie in collapsed states, pouring blood and sweat. The great power believed by the San to be harnessed during ASC is known to them as *n/um*. This is gained in ASC from the creature which plays host to the trancer during out-of-body travel. In the art *n/um* appears as dotted, often zigzagging lines which flash across the rock face like lightning. These lines join dying animals to trance figures, illustrating the envisioned flow of *n/um* power from one to the other (e.g. Lewis-Williams & Dowson 1989, figs. 22, 29, 41:a,b). Other geometric forms such as lines, grids, U-shapes and filigrees are also depicted. These derive directly from the neuropsychological experience of 'entoptic' forms sensed in the early stages of trance (Lewis-Williams & Dowson 1988). As in actual vision experience, the geometric forms depicted in San art are integrated within culturally-determined iconic images.

Much within San art has nothing to suggest connection to ASC; men fight each other with bows and arrows, women collect tubers, men march, animals just stand or walk. One can expect a trance-related explanation where figures are surrounded by recognizable dancing figures, dancing paraphernalia and ASC metaphors — but one cannot be *certain*; and one is more uncertain where there are no such associations. While we are able to recognize

some elements — such as the dancing sticks — because we know them from the ethnography, these are local cultural adaptations which we could not have associated with ASC had this informed knowledge been missing. There may be other trance-related San-specific items and metaphors which we see in the art but which we fail to connect to ASC because they are absent from the ethnographic material. There is no reason to expect that all we see in San art will relate to ASC. Our understanding of San art and its relationship to ASC is particularly detailed because San ethnography tells us much about cultural elements in the art. Even without the ethnography, we could still relate to ASC many scenes which depict physical experiences known to occur at entrance to ASC and metaphors known universally to explain the things perceived during ASC.

Vision experience in Australia

Vision experiences have been anticipated and valued by the people of Arnhem Land for as long as there is memory or record. The landscape is described as full of many things (such as supernatural animal, spirit and ghost characters) which belonged to other times and places and are therefore largely unseen, but which nonetheless are relevant and active today. Most Arnhem-Landers do not expect to see such things. They are aware of their presence and know that sometimes one may encounter them in dreams and visions. ‘Clever men’ in particular encounter and interact with them. ‘Clever men’ or ‘men of high degree’ are terms used by Elkin (1945)¹⁰ to describe the renowned traditional practitioners found throughout Australia. Usually, but not exclusively men, they ‘live ordinary family and social life, and take part in the regular ritual and ceremonial life of their tribe, like any other initiated man’ (Elkin 1945, 23). They are valued members of society because of their gift of particularly heightened power. The power is received on a particular occasion when spirit creatures (named spirit familiars by Elkin) visit and attach to the person; this can be both a traumatic and unwanted experience. The power can be lost subsequently by wrong behaviour or increased by the attachment of additional spirit familiars.

The power of ‘clever men’ ensures that ‘satisfactory relations [are maintained] with the unseen — with the spirits of the dead and of the bush, with the rainbow-serpent and the sky-being, and with the sorcerers in strange places’ (Elkin 1945, 22). This contact with the supernatural is of great value as it provides ‘clever men’ with insight and knowledge

so that they can foretell coming events, offer advice, cure the sick, make rain, uncover wrongdoers, counteract alien magic and so on. Power can also be used for malicious ends to hurt or kill. There were until very recently ‘clever men’ practising within Arnhem Land, and the names and actions of them are still remembered. In east Arnhem Land and the territory east of the Crocodile Islands the common term is *marrnggijt* (Webb 1935; Reid 1983)¹¹ or *marrnggijtmirri* (Thomson 1961); in western Arnhem Land a common term is *marrkidjbu* (Berndt & Berndt 1992; White pers. comm.). These terms all signify the person with *marr* — strong power that is spiritually derived, rather than political, economic, or ‘natural’ physical power.¹²

In this article we are interested in the visionary aspects of ‘clever men’ experience because these provide insight into the ways in which ASC experience is perceived and described in the Arnhem Land cultural context. We have preferred a cautious approach, principally using local Arnhem Land knowledge. Knowledge from neighbouring areas may be equally pertinent, given the antiquity of Dynamic art. The knowledge we discuss is therefore regionally specific but we do not expect it to be regionally confined; indeed we consider it of particular value when it is not.

Webb (1935) has recorded two tales from eastern Arnhem Land which narrate the episodes at which two men were given *marr* and became *marrnggijt*. We reproduce part of the tale as told by Moinyerenyer (of the Dua Moiety) (Webb 1935, 339–40):

After eating he lay down to sleep and dreamed of *morkwoi* [ghosts]. As he awakened he heard the *marrnggijt* slapping their sides with their wings. One was close behind his head and the second was up in the tree above him. Opening his eyes he saw the one in the tree, in appearance like a *jabiru* [a large bird of the region, a species of stork] but with eyes like an owl. Almost immediately the one behind him hit him on the head with a stick and half stunned him, while the one in the tree jumped on his chest and stood there. The *marrnggijt* on the ground was a female and the one in the tree a male. Moinyerenyer, in his distress, called for his father, mother, brothers and other relatives, but the female *marrnggijt* took sand and filled his mouth so that he could call no more. The *marrnggijt* then proceeded to thrust all manner of pointed objects into his body — bones of animals, claws, talons, teeth, splinters of wood and the like. While doing this they spoke in Moinyerenyer’s own dialect, saying ‘We are doing this to let you know that from now on you will be a *marrnggijt*.’ Then they flew

away, but presently returned, bringing with them two younger *marrnggijt*. The four *marrnggijt* lifted Moinyerenyer and threw him into a water hole. As he began to drown they seized him by the legs, and with his head hanging down into the water brought him ashore. The two older *marrnggijt* then extracted all the *brin-gal* [sharp pointed objects] from his body and soon he felt well again. Showing the extracted objects to him, they said 'You see all these? You will now be able to take all such things away from sick people.' Moinyerenyer observed that the *marrnggijt* were covered with *raman* [wild kapok or similar substance used for ceremonial decoration] but he could tell by their noses that they were real persons. The two young *marrnggijt* then took up their positions one on either shoulder, while as he commenced to walk away the two older ones walked the one on either side of him.

The physical condition of being in an altered state of conscious is explicit in the tale. Moinyerenyer had this vision experience when awaking from dream-state; in addition he was 'half-stunned' by a strong blow to the head. A number of common ASC metaphors can be seen used by Moinyerenyer to describe his experience. The sharp stabbing pains of ASC are represented by the pointed objects that are thrust into his body. The metaphors of being under water and dying appear in his submersion and near drowning in the waterhole. The drowning element is more explicit in a second telling of the same story (Warner 1937, 215):¹³

I went down to a creek to get some water to drink. I leaned over and drank out of the waterhole. When I did that a doctor soul caught my nose and made me sink down in the water. I was in a coma and fell in the water. The doctors, they were two boys and a girl, took my hand and put it in a dry place [to help him up]. They took out something from inside my body when I was sick after falling in the water and they opened my eyes and nose and mouth and made me well. They blew in my mouth. I got up and took my stone axe. I hit one of those doctor souls on the nose and I hit the others, too. They looked like opossums. When I caught them, one of the men doctors souls said, 'You make us well now'.

Here the altered state is described as a coma. As well as the recognizable universal ASC metaphors there are a number of important cultural elements to this tale. We have a good description of the spirit familiars which in Arnhem Land hold the key to the power of the 'clever man'. They take varying animal forms, but at the same time are human. They are said to sit on the shoulders of the 'clever man', and in other tales one hears that they may reside in his dilly bag.

While not visible to ordinary people, these spirit familiars can sometimes be heard by anyone. Referring to a young 'clever man', an old man noted: 'he is a true doctor all right. He has things sitting on his shoulders' (Warner 1937, 214). Clever men can take the physical form of their spirit familiar to observe or play pranks on other people. Elkin (1945, 65) records how:

J.K. was about to doze off one morning while the 'billy' was boiling, when he was awakened by an iguana touching his foot. Looking at it, he noticed that it turned its head round in the direction of some trees. So he sang out to his two brothers who were nearby, 'that old fellow [M.D.] must be about here', for he knew that M.D. had an iguana inside him [that is, as a familiar]. Standing up, he looked at the iguana, which suddenly ran back to the tree and disappeared. From this he knew that M.D. must be inside that tree. Then they heard M.D. call out in a low voice, 'can you see me?' But they could not, until he gradually came out of the tree, which closed up without leaving a mark. He then walked up to them and said that he had sent out his spirit helper to see whether they would recognize it.

The blowing into the mouth described by Moinyerenyer is a typical way in which *marr* is transferred. In Western Arnhem Land the Kunwinjku description of the passing on of power is notably similar (Berndt 1964, 269):

The man falls to the ground as if dead. The ghost proceeds to insert into his head a length of very thin bamboo, *gunrong*, sometimes identified with a spirit snake. Then he blows in the man's ears (according to other accounts, into all the other body apertures as well), giving him 'breath' (*gunngole*), equivalent in this case to 'spirit' or 'power'. The man, reviving, stands up. He is a *marrkidjbu* now, a 'powerful man'.

Again we see the explicit likening to death. Here a spirit snake is inserted into the body as part of the gift of power; often rock crystals are inserted as well. This is a cultural feature common both in Arnhem Land and throughout Australia (Elkin 1945).

In the second tale recorded alongside that of Moinyerenyer (Webb 1935) the vision experience begins with the appearance of a wasp: 'as he lay, the *marrnggijt* came, in form similar to the large black and yellow mason wasp, and with a loud buzzing sound circled round his head' (Webb 1935, 338). This image would seem to have been prompted by the aural buzzing sensation integral to most ASC experience. A western Arnhem Land story of Gulinj's two sons likewise begins with a buzzing sound, described as similar to that made by the rock-nesting

bees. The Rainbow Serpent, the all-powerful water creature, then made a large water-pool around the boys and swallowed them up (Chaloupka 1993; Chaloupka *et al.* 1985; Taçon *et al.* 1996). Berndt (1964) has noted how, for the *Kunwinjku* of western Arnhem Land, 'the postulant is swallowed by the Rainbow Snake, vomited in the shape of a newly born infant, and ritually restored to adult status as a *marrkidjbu*'. This is very similar to tales from other parts of Australia (see Elkin 1945); in the Great Victoria basin, large waterholes are associated with the making of 'clever men'. A trainee goes to the waterhole with his teacher. He is mourned by his friends and relatives as if he had recently died. The trainee is left blindfolded at the water's edge and is then swallowed up by the Rainbow Serpent. Later, food is left near the waterhole to feed the Rainbow Serpent who then regurgitates the trainee as a baby. A 'clever man' will find the baby and fly back with it to the camp. The baby is placed in the centre of a ring of fires which makes it grow back to adult size. This man is then clever. Among Birrundudu of Northern Territory much the same is reported, except that the trainee and the clever man fly through the air astride the Rainbow Serpent (Berndt & Berndt 1992, 310).

The themes of all these vision experiences revolve around the images of being sucked down to death and coming back up to be reborn. The men drown within the waterhole or are consumed by the great water beast but are then regurgitated, given new life and heightened power. Other vision experiences are concerned with a separate ASC metaphor: flying. In Arnhem Land this is often perceived as rising up to the sky world. Amongst many peoples throughout Australia, visiting the sky world forms an integral part of the making of a clever man (Elkin 1945; Berndt & Berndt 1992, 308ff.); the initiate, growing feathers and wings, may be taught to fly on journeys. Among the Dieri and Ngadjuri the initiate is taken to visit the 'sky world' and is then reborn (Berndt & Berndt 1992, 308). In Arnhem Land, visits to the sky world are rarely described during the episode of the creation of *marrkidjbu* but they are important in other vision experiences. Among the *Kunwinjku* 'a man heavy with power can heal a sick person by following his spirit in a dream, catching it and returning it to his body . . . Or he may take the patient in a dream to the land above the clouds and heal him there' (Berndt & Berndt 1992, 311). The power to fly is key to many practices carried out by the *marrkidjbu*; this term itself in *Kunwinjku* means men who have magical powers, without the term itself encompassing flying (White pers. comm.). Some

people acknowledged as being 'a little bit' *marrkidjbu* may have healing knowledge but not the power to do other things.

Maddock (1978) has noted the dichotomy in Arnhem Land cognition between water and sky, below and above, downward movement and upward movement. The two great personalities in local mythology are part of this dichotomy, the Rainbow Serpent is of the water-below-down, the flying fox is of the sky-above-up. In the middle, human life is played out (Maddock 1978, 7). As noted by Eliade, the *marrkidjbu* has the unique power to transcend this division in the cosmos: 'he is the only one who is *really* able to recover the glorious conditions of the mythical Ancestors, the only one who can do what the ancestors did, for instance, fly through the air, ascend to heaven (the sky world), travel underground, disappear and reappear' (Eliade 1973, 129). This power derives from his particular ability to explore, use and manipulate the envisioned world he experiences during ASC.

If aspects of Dynamic art are related to altered states of consciousness we can thus expect to see evidence of the sensations and metaphors common to all ASC-derived art forms (see Fig. 5, part 1). In Australia and Arnhem Land we can expect in addition to see imagery relating to 'clever men' and their business (see Fig. 5, part 2).

All this ethnographic reporting from Arnhem Land is decidedly of this century. Why may it be relevant at all to the Dynamic figures, removed from the present by several thousand years? An unstated premise, since the very beginning of anthropology and archaeology in Australia, has often been a supposed stasis, a timeless Aboriginality. South African researchers see traits in the art from the Apollo XI cave, dated to over 26,000 years ago (Wendt 1976), which they find congruent with a model derived from the ethnohistory of the last century. We would be most surprised were imagery to remain fixed over such a time-span. Fortunately, there is material evidence in Arnhem Land for a continuing tradition over a long term of many millennia — where tradition is understood, as it should be, as encompassing not a static lack of change but both continuity *and* change (Akerman 1995). An instance of change is the history of the spear-thrower (Lewis 1988), where successive eras comprise spear-hunting without a spear-thrower (see note above); a simple hooked-stick spearthrower; and the later spear-thrower as known in Arnhem Land in modern times. The changing history of fighting is another instance (Taçon & Chippindale 1994). When it comes to human con-

1 Attributes of Altered States of Consciousness*Universal experiences*

- Seeing geometric forms
- Breathlessness
- Weightlessness
- Rising up from the body
- Incapacitation of the body
- Taking on a new material form
- Oscillating noise
- Tingling of the skin
- Muscular pains
- Feeling of being stretched

Common metaphors

- Being underwater
- Flying
- Death
- Transforming into an animal
- Insects buzzing or rhythm of instrument
- Stabbed by weapons

2 Aspects Specific to Australia and to Arnhem Land

- Spirit familiars perhaps sitting on shoulders or in dilly bags
- Insects buzzing
- *Marr* being given to or used by 'clever men'
- Travel in the water world where the great water creature lives
- Travel to the sky world of the flying fox
- Clever men travelling in the material world but in animal form

Figure 5. Attributes of altered states of consciousness and aspects specific to Australia and to Arnhem Land.

cepts, we have the example of the Rainbow Serpent, traceable from modern times back to the Yam/Simple figures (which post-date the Dynamic figures) but demonstrably different in that early form (Taçon *et al.* 1996). Namarrgon the Lightning Man, a common subject in contemporary bark- and paper-painting, is found in the later rock-art; where he is painted squatting with stone axes tied to his limbs — at elbows, wrists, knees, ankles — axes which he brings together to make the lightning and thunder. We know of no such unambiguous a figure in Dynamic style. There is one Dynamic human figure, however, which appears plainly to have one stone axe attached to, or immediately by, its ankle; this is a tantalizing hint that Namarrgon may extend from even the Dynamic era up to modern times.

ASC imagery in the Dynamic world

Our list of elements that should be expected in ASC-related art traditions, together with those deriving from pan-Australian and from Arnhem-Land-specific knowledge, provides the means to assess the relationship between Dynamic art and ASC. Not every element should be expected; some that are Arnhem-Land-specific may not have the time depth

of Dynamic art (e.g. the Rainbow Serpent: see Taçon *et al.* 1996). Some that are universal may not have been important or relevant in the Arnhem Land particular. The presence of any one element does not prove the link to ASC. We therefore make no attempt to look for examples of each element; rather we look for those features that provide strong indication of the depiction of an envisioned world (such as flying humans and therianthropes), and individual attributes that when collected together hold consistency within ASC and 'clever man' experience. Each image in a scene is considered to be one of a collection of strands available for making a cable; many strands make a strong cable in spite of weaknesses in individual strands. In any one scene some figures will not suggest ASC and are thus strands not tied firmly within the cable. Since no image can be diagnostically non-envisioned, however, loose strands do not lessen the strength of the cable.

ASC imagery and dashes in the Dynamic world

Let us start by examining one particular strand of evidence — the varying uses of dashes and dots in and around animals, people and objects (Fig. 6). The way these are drawn varies, as the illustrations to

this article indicate. Commonly they are dashes, little lines longer than they are broad, sometimes longer and sometimes shorter; when at their shortest, they become dots or small irregular blobs; in Central Arnhem Land only, they are painted as distinct small closed circles. Collectively, they are here called 'dashes'. They are commonly aligned in what appears to be a direction of movement, or as radiating from a zone or place of origin.

1 Dashes projected from the face of a therianthrope (Figs. 4 & 7)

As a relatively common addition to therianthropes, a scatter of dashes is painted around the area of the mouth. They are either projected horizontally outwards or curving downwards and their extent is similar to the width of the head. Possible explanations include speech, breath, spit, vomit, and blood.

2 Dashes beside running legs of therianthrope (also beside arms) (Fig. 6)

A horizontal line of dashes is painted under the running legs of a therianthrope. These could depict 'speed tracks' on the model of western contemporary cartoons — or dust, sweat, blood, etc.

3 Dashes projected from face of an animal or bird (Fig. 6; see emu in Fig. 8)

These dashes are depicted in the same manner as the dashes which project from the face of therianthropes. Possible explanations again include noise, breath, blood of a wounded animal, and vomit.

4 Dashes around the body of an animal or bird (see bird in Fig. 9, animal in Fig. 14)

Some birds and animals are surrounded by dashes, as if the dashes 'fizz' out from all parts of the body. There are few obvious material-world explanations for these; one

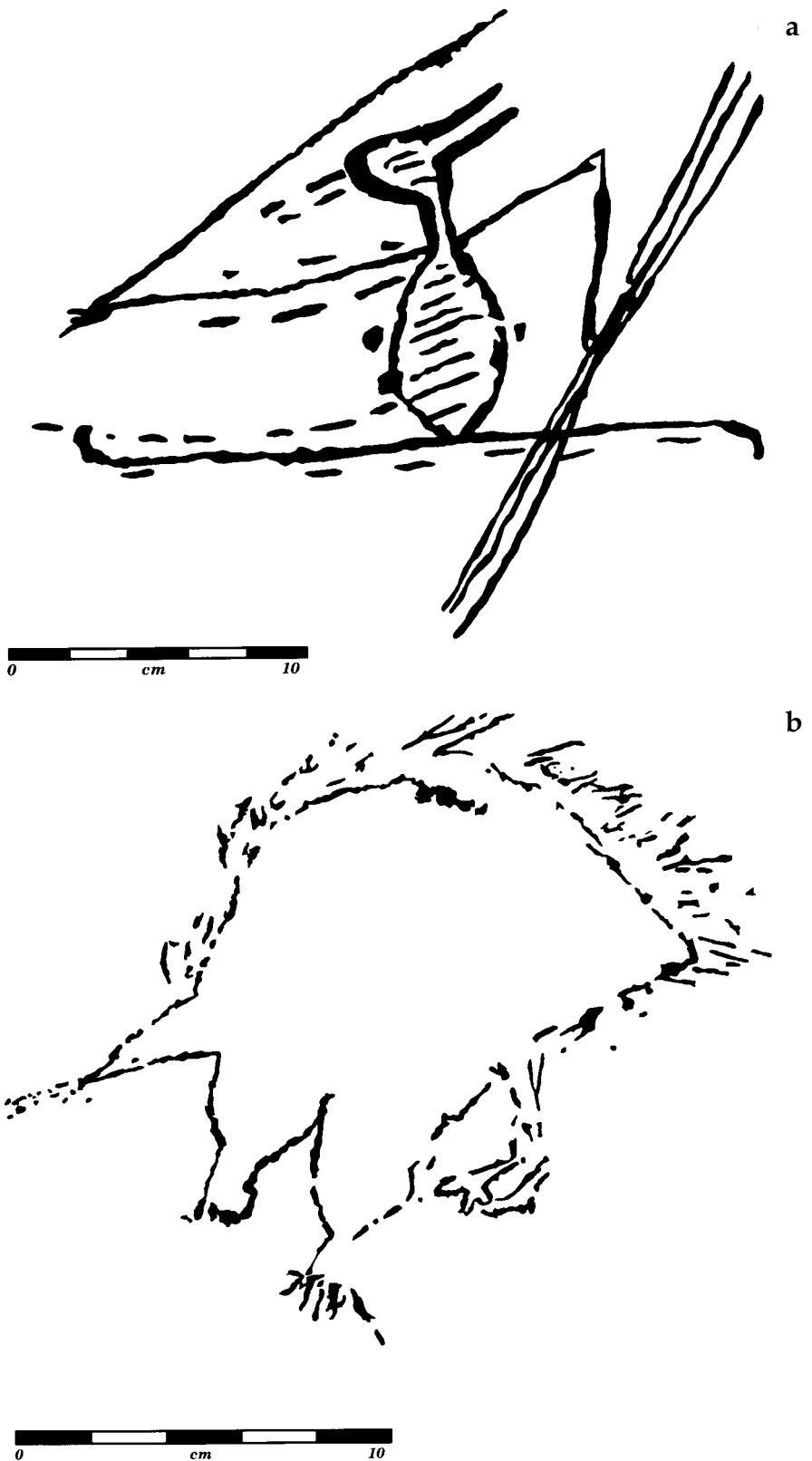
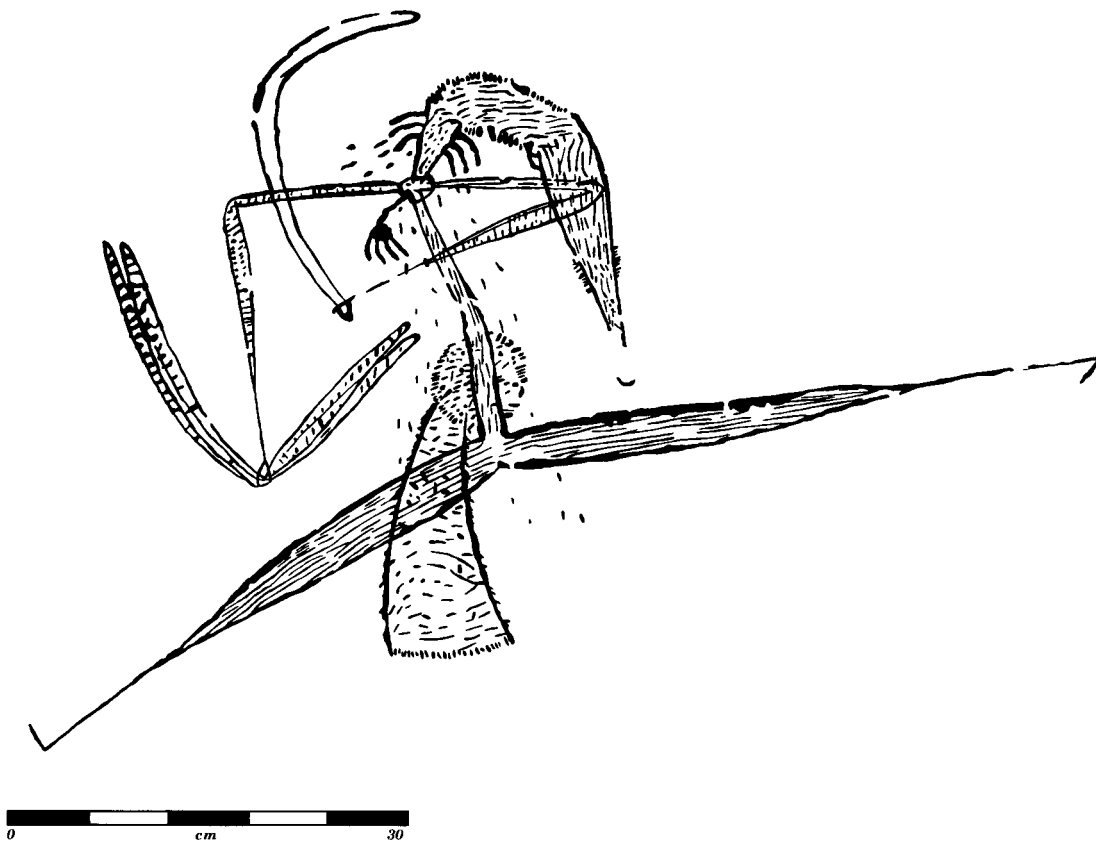


Figure 6. Occurrences of dashes in Dynamic figures. a) Therianthrope, running. b) Echidna.

c



d

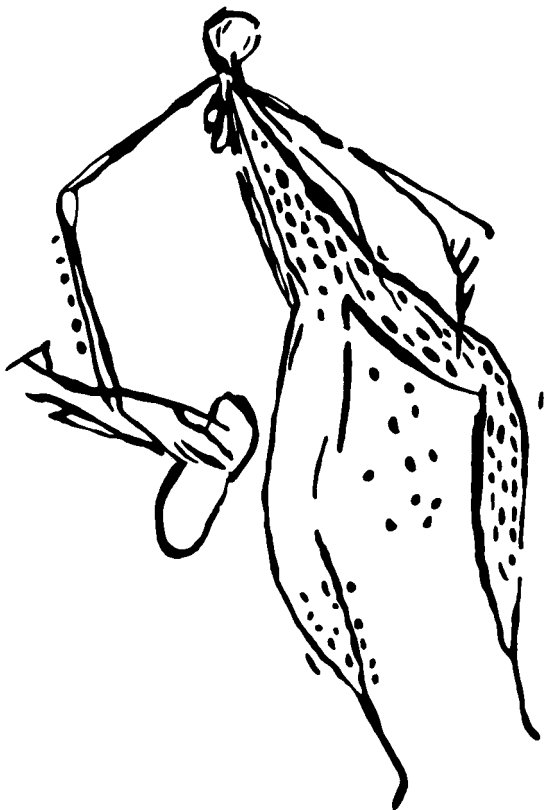


Figure 6. (cont.) Occurrences of dashes in Dynamic figures. c) Human, running, head-dress, waist-belt and bustle or skirt, one boomerang raised, two boomerangs carried. d) Human, standing or lying, female (breasts to left of body), holding hafted axe.

might think of fleas, of smell or the quality of being 'alive'.¹⁴

5 Dashes around animal tracks

There are a few instances of animal tracks painted with dashes radiating out around them. This could signify their freshness (Chaloupka 1984, 178).

6 Dashes projecting from the face of a person (Fig. 6; see man in Fig. 8, woman in Fig. 15)

These dashes are depicted in the same manner as the dashes which project from the faces of therianthropes, animals and birds. As in the other cases, explanations include speech, breath, spit, vomit, and blood.

7 Dashes falling from the armpits of a person (Fig. 6; see man in Fig. 9)

Sometimes there is a trail of dashes that falls from the armpits. This convention is different in the way it is painted from the dashes that are projected from

e



Figure 6. (cont.) Occurrences of dashes in Dynamic figures. e) Group of Dynamic figures, in slightly differing colours of pigment, and perhaps therefore not all painted together. Lower left, two macropods, one incomplete. Centre-left, human figure, with boomerang grasped at the tip in one hand, and two spears and bag carried in the other. The extra two legs and feet to the right may be the remnants of another figure, otherwise lost; or perhaps extra feet — since feeling one has extra feet is another attribute of ASC experience. Centre-right, therianthrope holding two spears in one hand, boomerang (and perhaps bag) in other. Dots, dashes, blobs occur in small numbers amongst the figures, neither so numerous nor so concentrated that one can identify them in a distinctive way.

the face; the trail from the armpits is longer and narrower. This feature occurs in addition to dashes projected from the face (e.g. Fig. 6). An explanation would be sweating from the armpits.

8 Dashes around and below the penis

Male Dynamic figures are usually depicted clothed; but in a few circumstances they are naked, as in copulation scenes. Dashes below the penis could be

urine or semen.

9 *Dashes around the body of a person* (Fig. 6)

These are set in the same manner as dashes around the body of an animal or bird. Again it is hard to assign them a material-world explanation; smell or heat are possibilities.

10 *Dashes around spears or other artefacts* (Figs. 7 & 8)

Some artefacts, usually weaponry, may be depicted with dashed features. Each instance is open to vary-

ing explanations. Dashes around a spear embedded in the chest of a woman might be blood. A line of dashes under a spear hurled into an emu might show the path of the spear.

11 *Dashes scattered within a scene* (Fig. 15)

In some scenes all the figures 'fizz', creating an entire scene scattered with dashes. This is hard to explain directly from the material world; were it not that the dashes seem to 'fizz' from the figures themselves, one might think of rain.

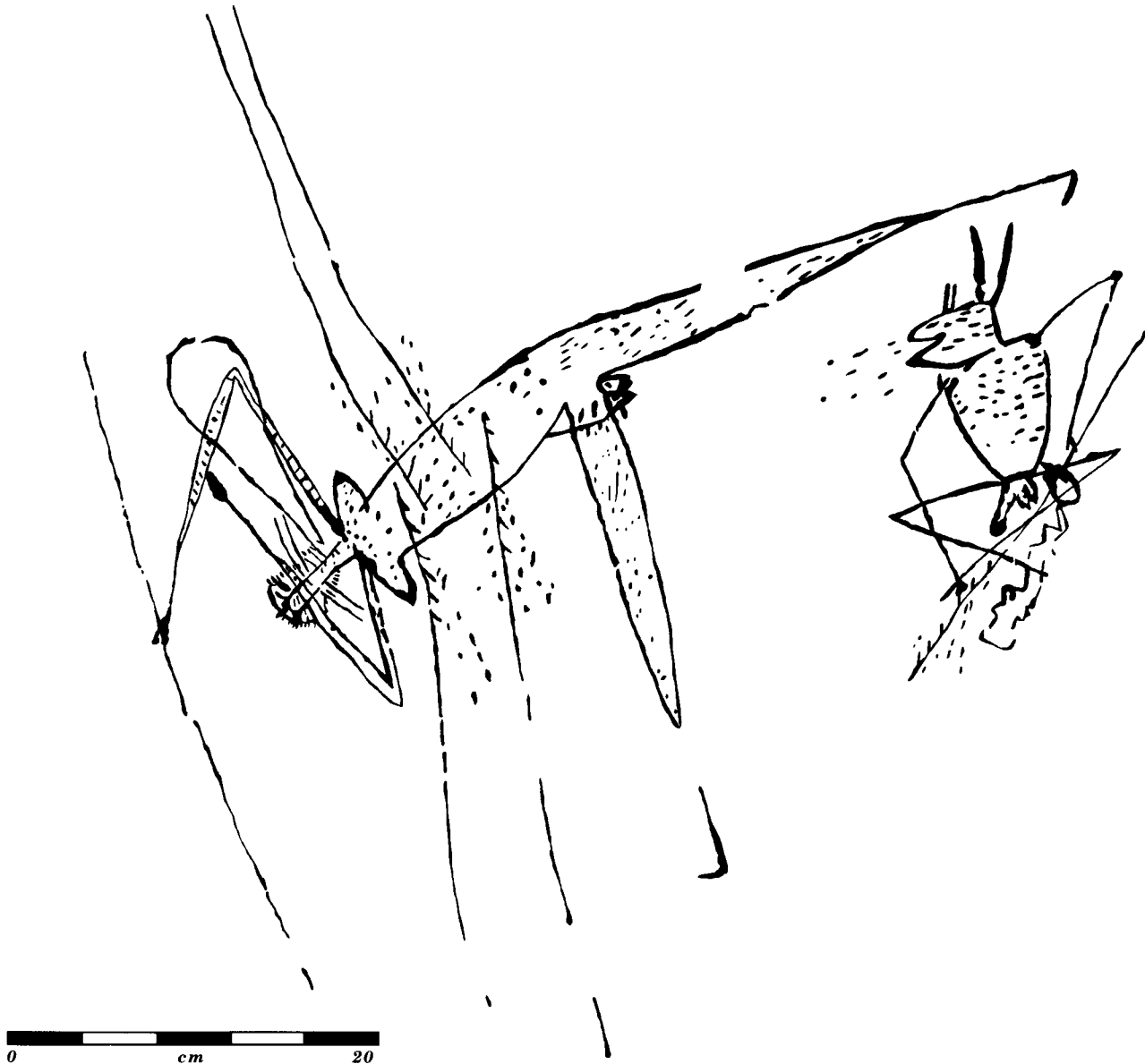


Figure 7. *Dynamic figures: speared woman, and therianthrope with spear. The several lines below the therianthrope resolve themselves as its bent legs (sitting cross-legged), its lower arms, and one spear held in one hand. Below and right, a less distinct shape, maybe a dilly bag.*

Lines, dashes, dots and circles within Dynamic figures

The textured filling of the body and limbs of therianthropes, animals, birds and people often takes the form of dashes and dots. This may be part of the same business as other forms of dashes or it may be a different matter, to do with modes of depiction to show the bulk or form of the physical body, or what is inside it. For this reason, we set this use of dashes aside from those that are external. We notice in some figures, e.g. the therianthrope associated with a speared woman (Fig. 7), that the dashes within the body take just the same form as those outside — as if the internal and the external phenomena are the same.

Piecemeal explanations for Dynamic dashes and a unitary account

Each instance of dashes is explicable in a piecemeal manner as a separate element seen in the material world; but this leads to laboured explanations. Is it likely that so distinctive a convention should be used in so many different ways, each time having a different purpose?

We find a unitary explanation more satisfactory, one in which there is a decided consistency of subject behind the varied contexts in which dashes appear. The dashed features often exist not in isolation, but in very telling combinations of images. Animals that ‘fizz’ are usually in close relationship to people — they may be sitting on a man’s arm or in another’s head-dress. Those scenes scattered with dashes are ones which contain ‘supernatural’ elements such as therianthropes or people clinging to a

giant snake. One can thus demonstrate that at least some uses of dashes are peculiar to vision experience. This led us to examine the possibility that dashes represent various ways in which *marr* — spiritually derived power — expresses itself.

Confidence in this explanation came to us when it helped to explain many features that were unsatisfactory in the piecemeal approach. In Figure 7, the therianthrope has thrown spears into the women; the suggested explanation is that the dashes by the spears represent the blood they draw out from the body (Chaloupka 1984, 310). Yet the spear held by the therianthrope also has dashes around it: the quality expressed by the dashes was in or on the spears *even before* they were thrown. Reading the dashes around the spears as *marr* allows one to explain this; it is also consistent with the fact that similar dashes are depicted both within and projecting from the user of *marr*: the therianthrope. In the famous ‘Emu Hunter’ scene (Fig. 8) we are uneasy about the conventional explanation of the dashes as the path of the spear. On close study, the dashes do not *follow* the line taken by the spear; they run *below* and *parallel* to the spear, not behind it. We find it more satisfactory to see the dashes as *marr* — power accompanying the spear, or which is ‘thrown’ alongside or in addition to the spear. The spear-man likewise has the dashes projecting from his face; he has *marr* himself. For those scenes with obviously envisioned elements in which dashes ‘fizz’ from animals and people, spreading in a wide scatter, it is hard to propose a satisfactory alternative to *marr*.

We therefore prefer the single, simple and uni-

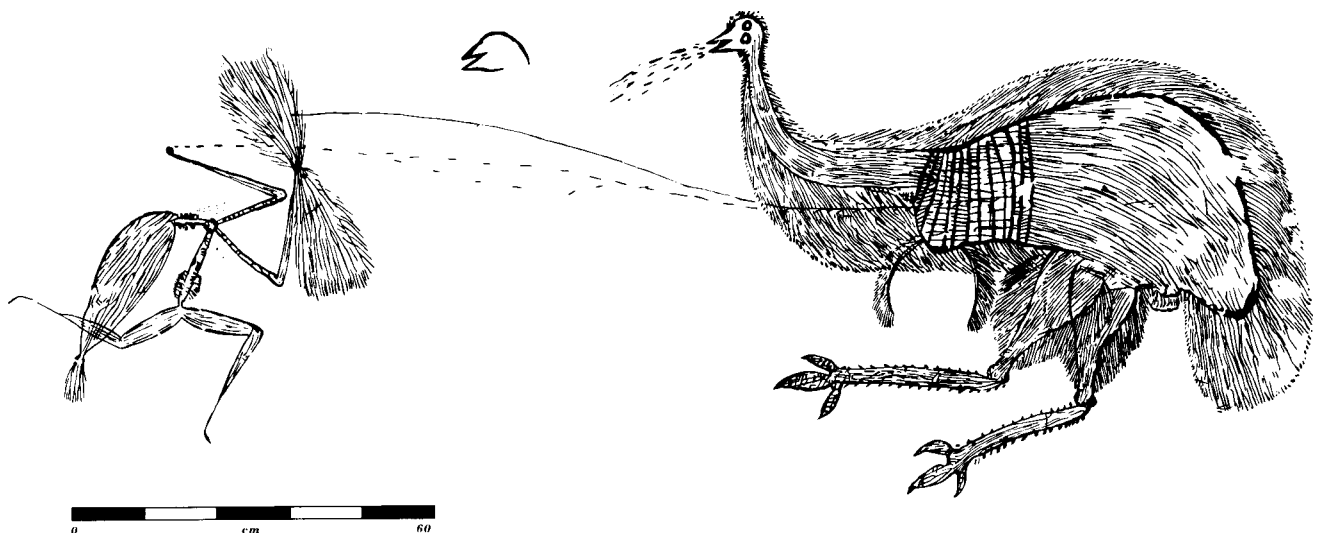


Figure 8. Emu-hunter and speared emu. Dashes and dots, each of a different character: from the open beak of the emu; joining the hunter’s hand to the emu’s breast by the spear; above the hunter’s head; (a very few) below the hunter’s arm.

fying explanation of dashes as standing for *marr*: spiritually-derived power. This does not mean that all dashes represent things entirely envisioned: sweat, spit or nasal blood may be ways in which *marr* is made physically manifest. Dashes are merely one strand of evidence; they are not diagnostic. We do not place great weight on any one example of their use. There may be instances — the dashes that seem to depict animal fur or feathers — where particular dashed features have a different purpose in the painting. Confidence that a scene relates to ASC and ‘clever men’ is gained therefore not just from the occurrence of dashes, but from the juxtaposition of multiple separate suggestive features.

Dashes and dots are a distinctive feature of southern African rock-art, interpreted by Dowson (1989) in terms of ‘cracking the entoptic code’ where its usual contexts are for the most part unlike those in Arnhem Land, as ‘microdots’ (beads?) on large human figures and as ‘finger dots’ outlining or emphasizing iconic images. Scatters of flecks (e.g. Dowson 1989, figs. 14–16) near groups of human figures more resemble the dashes in Arnhem Land in their placing. Dotted lines are another feature of southern African rock-painting. Dowson (1989, 90) sees some of these dots as representing the ‘somatic hallucinations of boiling, prickling and constriction which the Kalahari Bushmen ascribe to *n/um*’. We do not see any direct connection between the dots in this African rock-art and the Australian Dynamics, but simply report this parallel.

Other ASC aspects to imagery in the Dynamic world

In Figure 9 we see varying uses of dashes: projecting from armpits; around a bird; as body infill. Except for the dotted body infill which is characteristic of many Dynamic figures, the dashed features in this scene are concentrated around the second figure from the left. Reading the dashes as *marr* implies that this is a man of particular power: a clever man. A bird is perched on his arm; it reminds of the words used by an informant of Warner: ‘he is a true doctor (*clever man*) all right. He has things sitting on his shoulders’ (Warner 1937, 214). The bird is ‘fizzing’ with *marr* as would be expected of a spirit familiar: the provider of *marr*. Behind the man is an animal carrying a barbed spear and boomerang, and wearing a dilly-bag and grass or hair belt — further evidence of the envisioned nature of this scene. The creature may be a second spirit familiar belonging to the ‘clever

man’: he has minutely delicate ‘bobbling’ drawn into the profile of his forearms. Such bobbles may depict scarification, a practice for which we have much evidence in the ethnographic record, but their exclusive use on the clever man suggests they relate particularly to his experience, perhaps to the tingling sensation of ASC. Of the various separate strands that link this scene to ASC and ‘clever men’, the bird (spirit familiar) on the arm is a particularly strong strand, since it is hard to explain in another way.

Creatures appear in other scenes, which from their placement and manner are equally strongly suggestive of spirit familiars. In Figure 10 a winged creature resembling a large flying fox (fruit-bat) perches upon the head-dress of a running figure. The scene, that would otherwise seem entirely of the material world, is proven by this one feature to be at least partly envisioned. There are no dashes in the scene — which shows us that dashes are not essential to depiction of the envisioned. The ‘clever man’ and the figure below are differentiated from the other figures by prickling on their arms, a detail encountered before. Covering the entire arm, and significant in size, this feature seems even less likely to be scarification than the bobbles in Figure 12. Again it is found in a telling combination: alongside what appears to be a spirit familiar. This feature, like the dashes, is a strand we can use to assist identification of ASC states and ‘clever man’ experience.

Another and common form of ‘bobbling’, large bumps on the lower arm, can be seen in Figure 11. Again it appears among a rich combination of features suggesting an ASC vision. The figure on the right, as noted by Chaloupka (1984, 130), has a head-dress that is enormously exaggerated. Too tall to be a physical object at this size, it reminds us of the somatic experience of being stretched during ASC and the perception that the spirit is rising up out of the body from the top of the head. To the left of this man are three other men who appear to be in distress as they are swooped upon by a supernatural ‘sky creature’. The swooping ‘creature’, with vague open body, human head, arms, neck ring and spear, must be envisioned. Its body imitates the form of the exaggerated head-dress of the man on the right and, while the tops of both are now washed out, the two are angled so as to meet. Perhaps we are looking at the spirit of the ‘clever man’ on the right as it rises up from his body, flying on an out-of-body journey, and swoops down on the frightened group to the left. He seems to be grabbing the figure on the far left; consistent with this man being taken away in ASC, his arms are starting to bobble. The next man

along, defending himself with his boomerangs, has been spiked repeatedly in the head-dress — by *marr*? (Notice that even in describing the pictures, one begins to offer interpretation and narrative.)

Stretching can also be seen in Figure 12 where a man wears an equally exaggerated head-dress. His

posture could be that of flying or floating; an ambiguity added to by other elements in the scene. He holds the tail of a macropod; the impression is of a man flying. All around are depictions of large fish, suggesting instead that the scene is underwater. Flying through air and being underwater are clearly

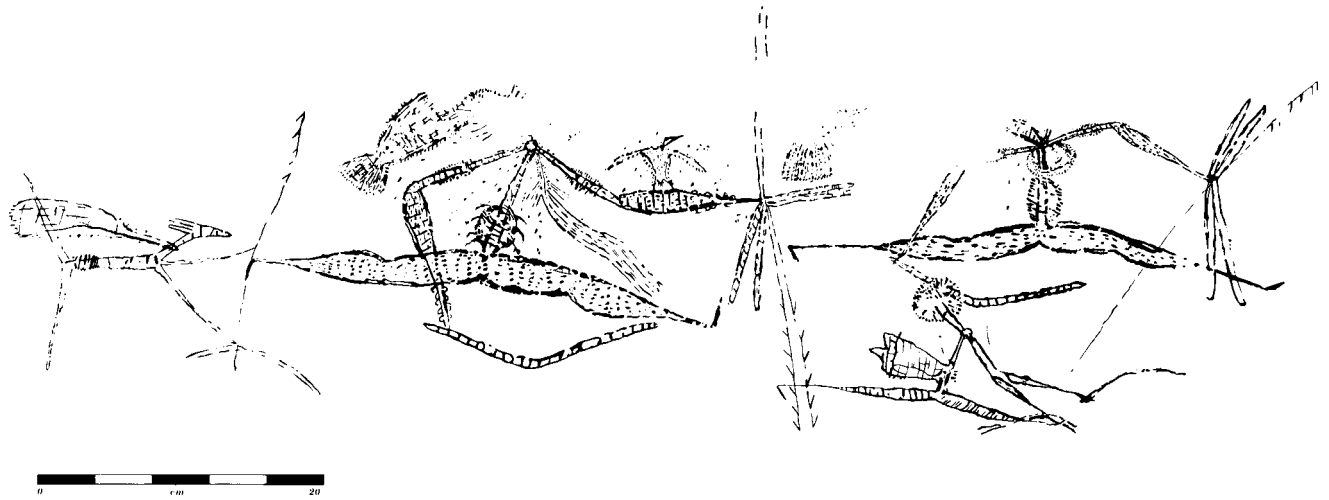


Figure 9. *Dynamic figure group. Centre, bird perches on human figure's outstretched arm. Left, therianthrope.*

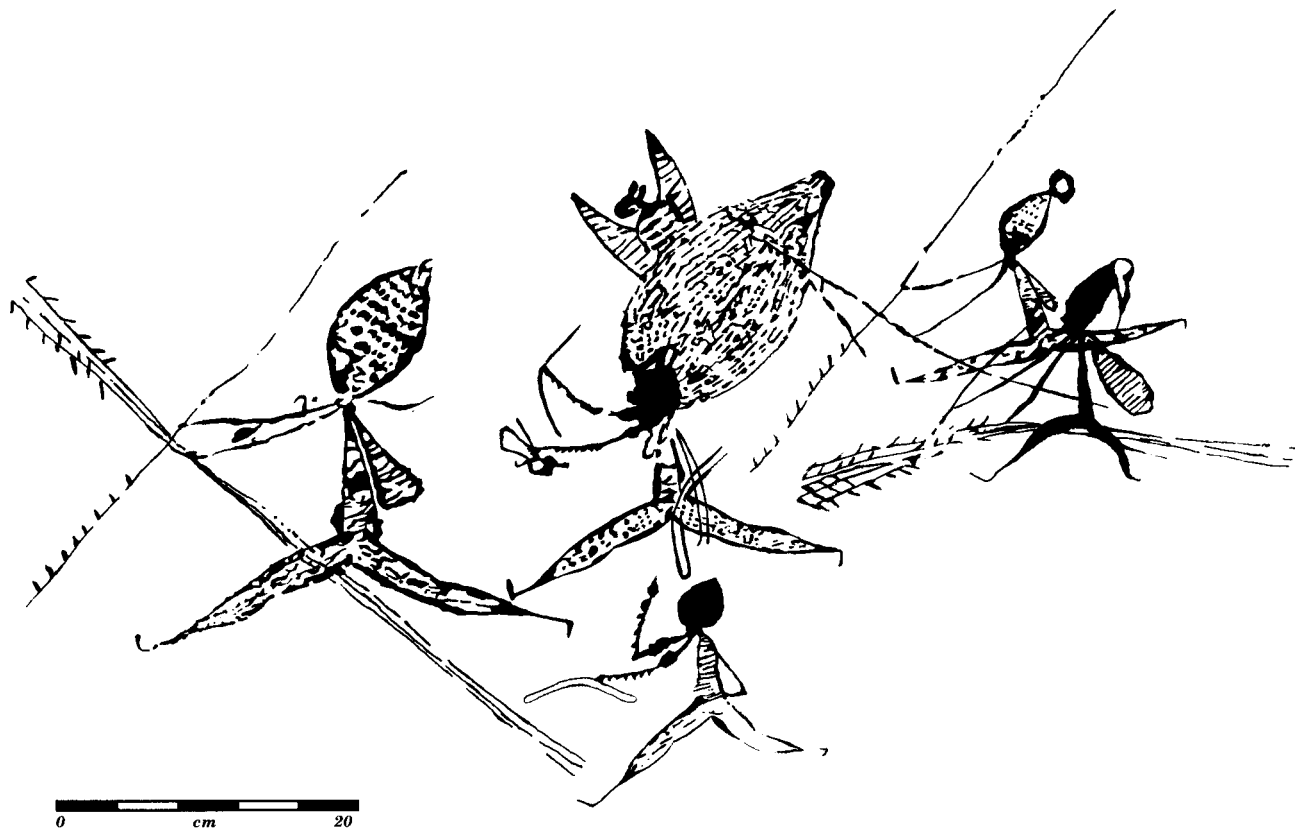


Figure 10. *Flying fox (or other winged creature) on head-dress of Dynamic human figure. Conspicuous large 'bobbling' on arms of central human figures.*



Figure 11. Group of Dynamic figures occupying panel, largely outlined by irregular line. Right, figure with elongated head-dress; centre, figure curves down from above with broad body. 'Bobbling' on arms, both by filled solid and by unfilled 'bobbles'.

incompatible in the material world: it is impossible to do both at once. The two activities only become compatible when used as metaphors for the experience of ASC; the two are then complementary. Hence, while we only see three strands cabled at this site, the ASC link is made strong by the mixture of images used: a mixture impossible in the material world.

A Dynamic frieze with complex compositions seen in ASC terms

The final panel we present is a large and well-preserved frieze in the Upper Deaf Adder valley (see sketch of whole frieze: Fig. 13). Here, a great many of the predicted ASC and Arnhem-Land-specific elements occur in close and clear juxtaposition. In composition 1 (Fig. 14), a small animal perches in the right-hand man's head-dress, seemingly another spirit familiar similar to those seen in Figures 9 and 10. Both its positioning and its wearing a dilly-bag demonstrate that it is envisioned. The animal fizzes with dashes, in accordance with our interpretation of dashes as *marr*. To the left of the composition are two fish which fizz in a similar manner. Out of place in this above-ground scene, the fish must be envisioned; it echoes the underwater metaphor used to describe ASC experience both in Arnhem Land and around the world. Two of the men wear head-dresses of exceptional size, in keeping with the stretching experienced in ASC; they also have prickling on their upper arms. In the middle of the group stands a

smaller, slighter man whose stature is suggestive of youth; unusually, he wears no head-dress. The two larger men hold each other and the boy by the arms. Although somewhat damaged, dashes can be seen passing between the three faces. We are reminded of the modern-day descriptions of 'clever men' breathing *marr* into young initiates. Two boomerangs lie to the right, perhaps the symbols of stature that await this initiate; men with head-dresses commonly hold and throw boomerangs, or have boomerangs by their waists. Not held or attached to any figure, a large boomerang passes through the spine of all three men, perhaps a symbol of the three men joining in the pain of ASC, a pain often felt most severely in the spine (Lewis-Williams & Dowson 1989, 70). Also to the right is a long object; examined with care, it can be understood as a head-dress. Although now open

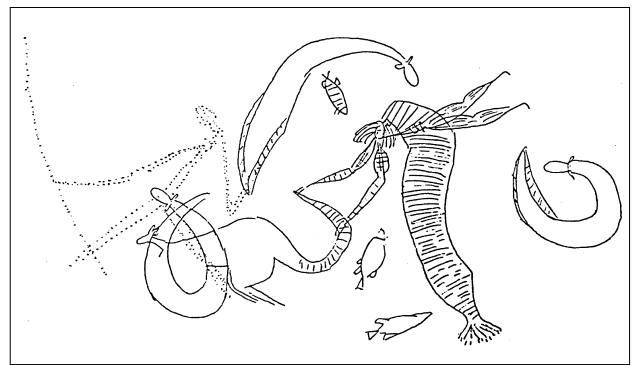


Figure 12. Dynamic figures: watery elements.

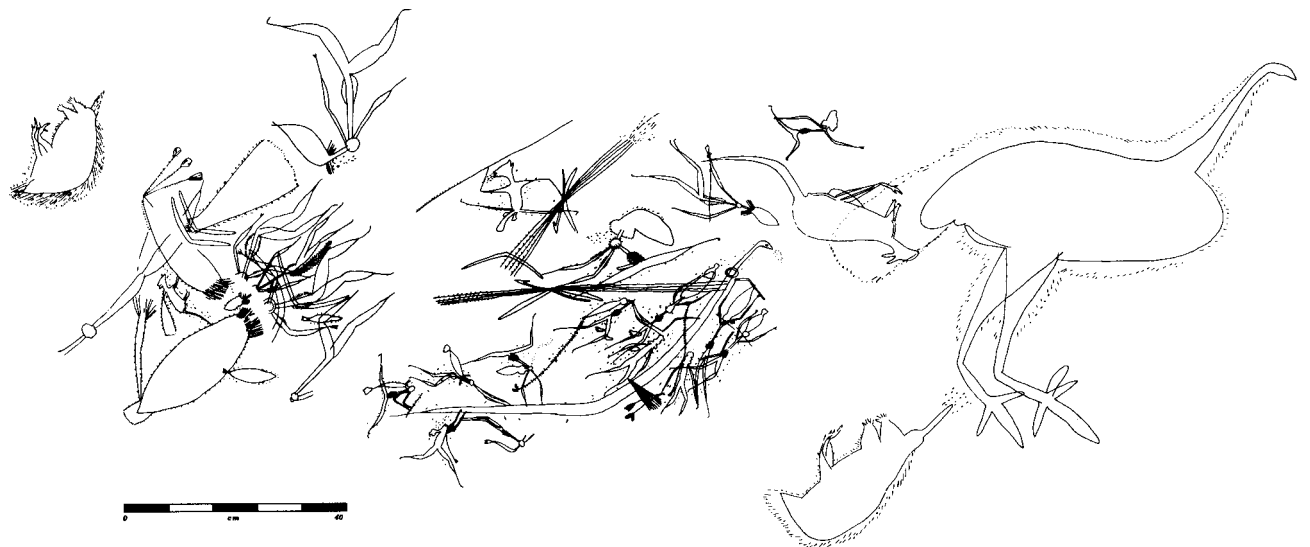


Figure 13. Large group of Dynamic human, animal and therianthropomorphic figures, varied occurrence of varied dashes. Lower right, echidna with extra-long snout, with dashes around its mouth. For left detail, see Figure 14. For central detail, see Figure 15.

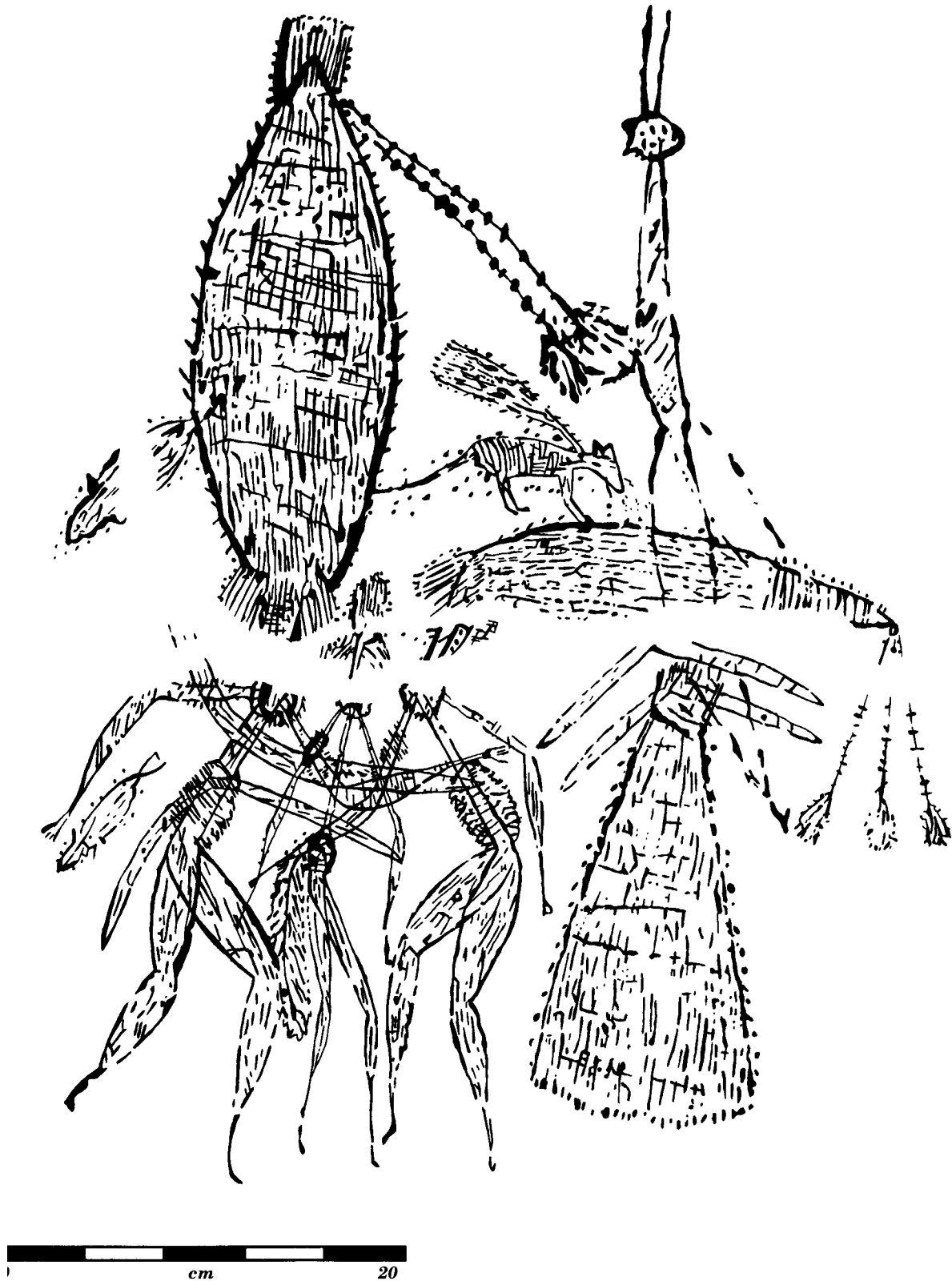


Figure 14. *Composition 1: detail of Figure 13, oriented so that the human figures stand upright. See Figure 13 for adjacent human figures omitted.*



Figure 15. *Composition 2: detail of Figure 13. See Figure 13 for adjacent human figures.*

at one end, it will be tied when placed on the wearer's head to make the habitual form as worn and as familiar on Dynamic paintings. Is this the head-dress which will crown the initiate in proclamation of his new status? Does the 'bustle' worn around or behind the legs of some Dynamics make a matching statement?

In composition 2 (see Fig. 15) we have another scene that may likewise be envisioned. At the centre is a huge snake; this is the country of the Oenpelli python, a very large species with distinctive spots; and there are large spotted snakes amongst the other 'Large Naturalistic Animals' of the archaic art (Chippindale & Taçon 1993). But this snake, if painted in naturalistic proportion to the human figures, would seem too large to be of the material world. Perhaps to emphasize its envisioned nature, it is depicted wearing a neck ring like those worn by Dynamic men.¹⁵ It has dashes projected from its face and body. A number of men and women hold the creature and appear pulled forwards; others float or fly alongside. Whether this scene is aerial or under-

water is ambiguous, an ambiguity shared in common perceptions of ASC; or it combines both experiences, both metaphors. The long trailers that hang off the arms and head-dresses of some of the people evoke the aerial rope cords used by 'clever people' to climb up to the sky world or down to the under world (Elkin 1945).¹⁶ The people, as should be expected in such a scene, exude what we interpret as *marr*. Between compositions 1 and 2 is a running man, prickling at the arm and projecting dashes from his face. Beside him is a therianthrope, dashes projecting from his face and fizzing wildly with dashes. Both carry an armory of weapons.

Returning to the list of expected ASC traits, both those that are general and those specific to Arnhem Land (see Fig. 5), we note that of the sixteen points listed, all but three (geometric forms, oscillating noise, insect buzzing) may be represented at this site. So many strands have cabled themselves here that we have much confidence in the ASC interpretation. By a piecemeal approach, explanations can be

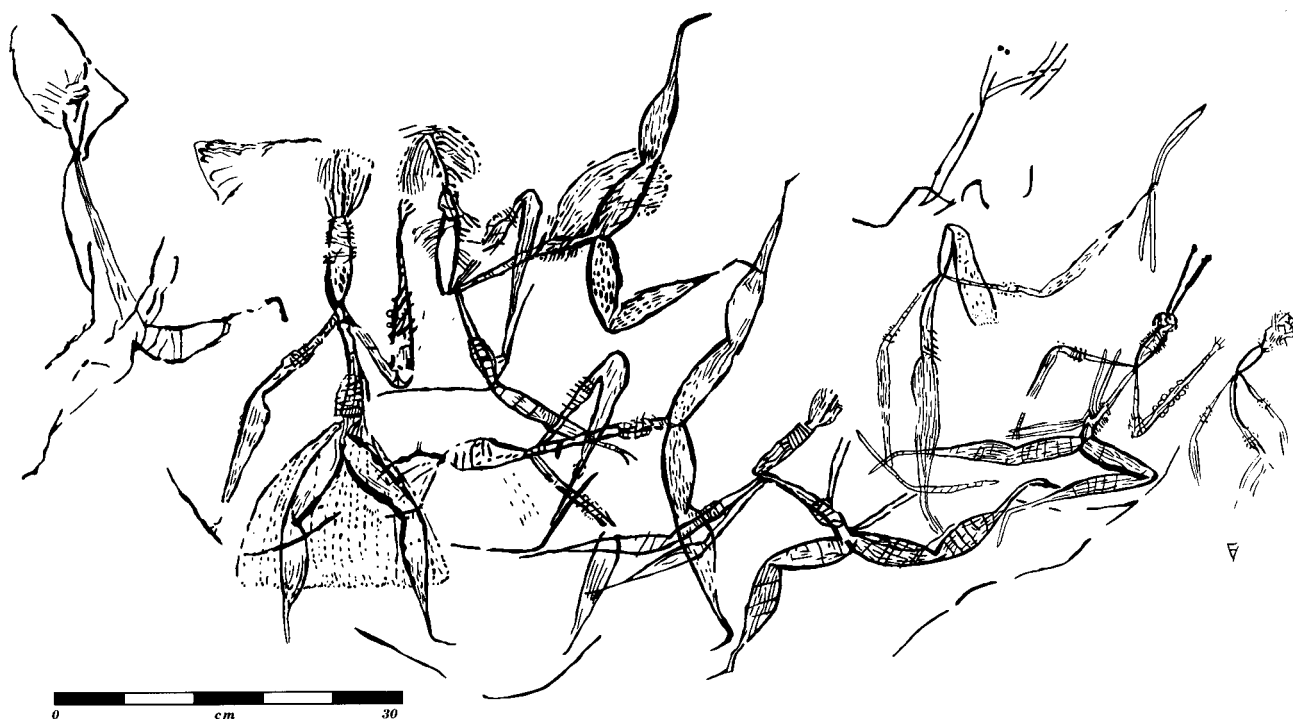


Figure 16. *Dynamic figures: tumbling group.*

devised for any one feature — but that approach does not explain why such varied, and at times seemingly conflicting, images are collected within a single frieze. Reading the scene in terms of the experiences of ASC and ‘clever men’ allows one to see a consistency in the varied images depicted. Equally it provides a satisfactory explanation for many curious features that defy piecemeal interpretation — an explanatory cabling-together.

Dynamic visions and the Arnhem Land rock-art sequence

The study presented here finds a coherence in the association of dots, dashes and circles with Dynamic figures, and a further coherence in other striking aspects of Dynamic imagery. We propose a unity in the diversity based on ASCs and on clever men’s business (or some ancient body of knowledge closely resembling clever men’s knowledge), rather than piecemeal explanations. By comparison with studies of other bodies of ancient art that follow this approach, we think the evidence for Dynamic Arnhem Land is better than any, in the strands of evidence and their several strengths.

If some Dynamic imagery is concerned with visions, is it all? Some or most remains ambiguous,

taking into account the ‘Davidson question’ (above, p. 67) and the asymmetry in the answer. The proportion of Dynamic which is regarded as decisively or diagnostically visionary depends on the criterion preferred. Therianthropes, and imagery of water and flying, appear at a few per cent of Dynamic panels only; tumbling and falling figures (not easy to identify with certainty) occur at a few per cent more. Dashes occur in about one-fifth of Dynamic panels. Figures with large intricate head-dresses, of the kind worn by the ‘initiated’ but not by the ‘initiate’ of Figure 14 (if we discern that scene correctly), are the characteristic Dynamic figure, and occur on nearly all Dynamic panels. The choice of criterion will decide: if visionary imagery is to be diagnosed from therianthropes, it occurs at a few per cent of Dynamic sites; if the elaborate head-dresses suffice, it occurs at all *but* a few per cent of Dynamic sites.

Our earlier study of fighting as it is depicted in Dynamic paintings was prompted by our asking ourselves in the field, below a panel with a maze of tumbling figures (Fig. 16), ‘Why do Dynamic figures tumble?’ Our then reply was, ‘They tumble because they are fighting.’ Looking again at images of fighting, one notices that some appear to be unambiguous in depicting conflict. Figure 17 we see with confidence as a picture of conflict (whether real, sup-

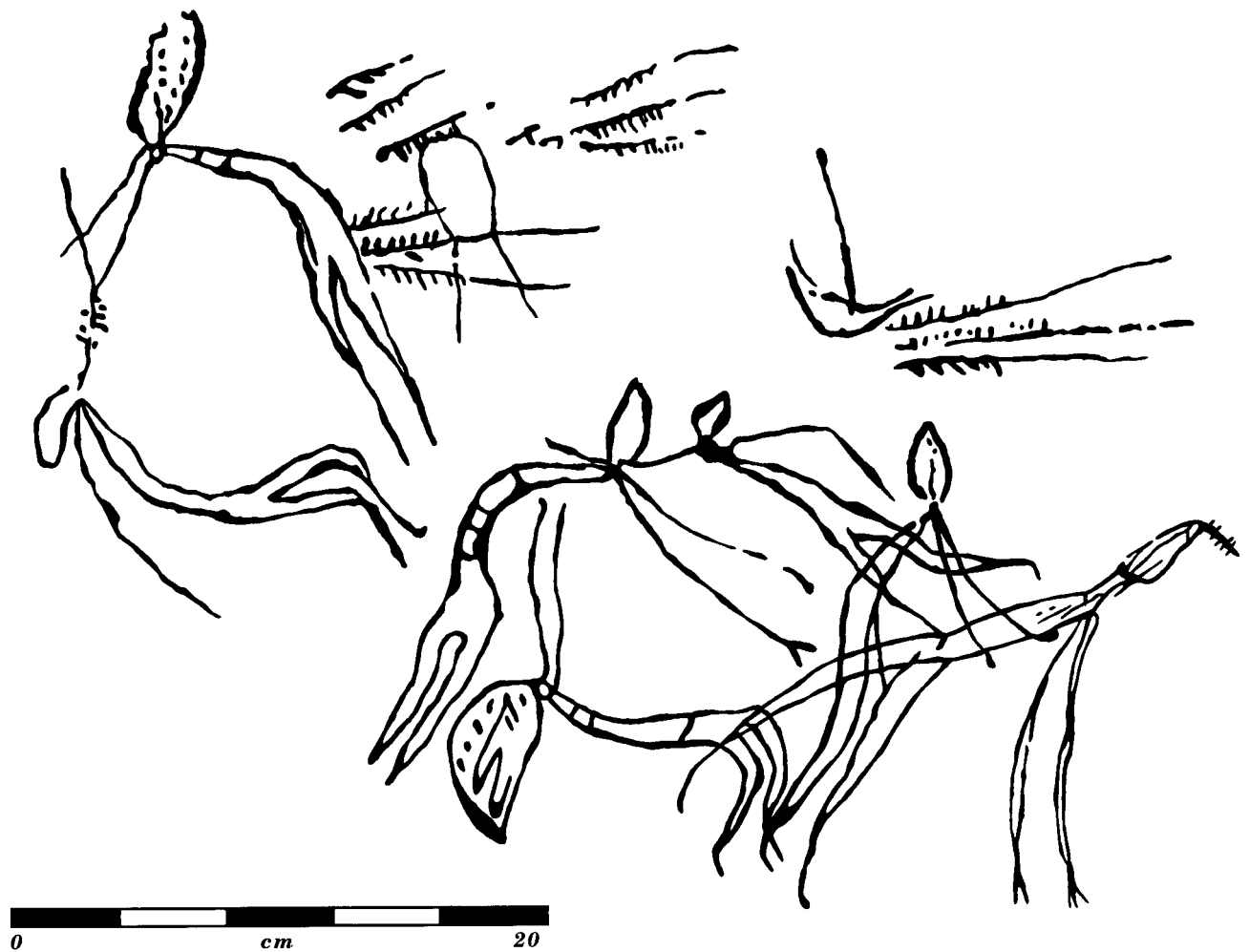


Figure 17. *Dynamic figures: fighting group.* These are drawn in a broader line and with less detail than many *Dynamics*, but the usual essentials of the manner of depiction apply.

posed, or imagined), for we note the fighters crouched low to dodge the spears, those that are falling, and the one hit on the hip. But may tumbling figures tumble also because they float and fly? And must fighting be — if there is fighting — in some secular world distinct from the envisioned? Tumbling figures illustrated in Figure 16 have bobbling, and one has dots projecting from its face. There is clearly more to investigate here in the systematics of Dynamic figures. Southern African San rock-art contains conflict scenes with ASC features. ASC visions commonly have great emotional content, and fighting is included in that; in the African context, Lewis-Williams contends, depictions of fighting are themselves metaphors of trance.

We have not yet recognized in the Dynamic imagery an artefact or subject indicating how ASC was achieved: there are no figures unambiguously

dancing — as there are in San art, where trance is achieved by rhythmic sound and by dance. *Didgeridu* and clap-sticks, an infrequent motif in recent Arnhem Land rock-art, are not part of the much older Dynamic repertoire. There seem to be no hallucinogenic plants depicted — as there are in Pecos River rock-art, where the same hallucinogenic plants occur in the archaeological deposits of the same era (Boyd & Dering 1996).

There are both important differences and important continuities between the Dynamic Figures and the Simple/Yam Figures which follow them in the Arnhem Land sequence. The same is true of relations between the Simple/Yam manners and the varied paintings of recent times. Boomerangs and spears continue; the spear-thrower appears in its archaic form as a hooked stick. Head-dresses continue, less large and less elaborate; and quite new



Figure 18. *Rainbow Serpent, in the Yam manner, with characteristic features and associations. Features include: head with long flaring snout and large ears; trailers hanging from the head; long and smoothly tapering neck; small hooks, one each side of the body at the base of the neck; curved baggy body; parallel lines in the body and cross-hatching towards the tail; pointed tail. Associations include: oval 'yam' (upper right) connected to Rainbow Serpent by trailer; 'spoked wheel' (centre right); curved object or creature with triple lines (centre); flying fox on a trailer (below). To the left, further examples and a human figure in the distinctive Yam manner, with: 'yam' head; triple trailers from neck; long body with 'bobbles'; thin fragmentary legs.*

conventions for depicting the human head appear. The Simple Figures and the Yam Figures, demonstrably contemporary, are distinctive in their suite of subjects: Simple Figures fight in small and large groups, for example, but Yam figures do not. Some

Simple human figures are drawn nearly life-size, horizontally across the surface, with loose bent legs, as if floating or falling. Dots and dashes around figures disappear. A defining feature of the Yam Style is the depiction of 'yams' (if such they be) —

round and oval tuber-like objects, covered with 'bobbles', on the end of and adorned with trailing strands. These may be incorporated into a human figure, where a 'yam' often takes the place of the human head; and the bobbles and trailers are applied to birds, to humans and to other subjects. Striking among the subjects drawn in the Yam manner (but absent from the Simple Figure repertoire) are Rainbow Serpents, their first appearance in Arnhem Land rock-art. Rainbow Serpents are associated with water. Characteristically associated with pictures of Rainbow Serpents are flying foxes that sit on or hang from trailers attached to the Serpents (Fig. 18) (Taçon *et al.* 1996). As in the Dynamics, and as one comes to expect for ASC imagery, watery and aerial metaphors are combined. The iconography of the Yam/Simple Figure complex is a large subject not entered into here beyond three pertinent points: some elements of Dynamics that can be related to vision cease; some elements continue; and some new ones begin. Whether the subject-matter of Yam/Simple figures is demonstrably visionary remains to be explored; clearly many elements *may* be interpreted in these terms, with the 'Yam' itself a candidate for the agent by which trance is initiated. The twin and complement to the present essay is a diachronic study of the animal-headed being, over the long term in Arnhem Land art, from the Dynamic figures of about 10,000 years ago to the present (Taçon & Chippindale *in press*). There are earlier manners of depiction than Dynamic in the Arnhem Land sequence, but we know of no animal-headed beings depicted in them, so the Dynamic manner marks the start of the motif.

There is a comparable break in the regional sequence from the Kimberley (north Western Australia) after the 'Bradshaw' figures (regarded as broadly equivalent to Arnhem Land Dynamics). Walsh (1994) finds the differences so great that he supposes the Bradshaws must be 'pre-Aboriginal'. In the matching move from old towards new in Arnhem Land, we see instead a transforming transition with elements of continuity and of disruption — at a time coincident with the advance of the Arafura Sea to its approximate present coast-line. We have shown (Taçon *et al.* 1996) that the image of the Rainbow Serpent, the great creator-being in modern Arnhem Land knowledge, derives primarily from the pipefish, a marine fish of the seahorse family, a creature that with the coming of the ocean would have been seen in this country for the first time.

In looking to clever men's knowledge today, both *marr* from Arnhem Land, and visionary knowledge from a broader Australia, we are linking traits

of contemporary Aboriginal society to an older Aboriginal society of over 6000 years ago. There are profound changes within that time-span. The Dynamics pre-date the modern coast-line. They pre-date all that sequence of geomorphological and vegetational change which created the present regime of freshwater swamps, meandering rivers, eucalypt woodland, and scattered vine-forest thickets. They pre-date the archaeological transformation marked by the development of stone points (Allen & Barton 1989) — those key archaeological markers whose significance in terms of human behaviour and human meanings is quite unclear. They pre-date — if Evans & Jones' (1997) equating of those lithic transformations with the language changes is correct — the language division which today separates the two great groups of Australian languages, the Pama-Nyungan and the non-Pama-Nyungan (Dixon 1980, map 3). They pre-date depictions of the Rainbow Serpent.

The characteristics of the Dynamics by which we associate them with clever men's business (above) are in large measure those related to altered states of consciousness, as experienced under varied conditions — characteristics known because they derive from a neurological basis and therefore have the potential to apply very generally or even universally to hunter-gathering humans. Given that, we do not presently see a means to show whether the congruence of the archaic Dynamic vision with modern 'clever' knowledge must be by a direct historical continuity; we think it is likely.

A persistent obstacle in studying the archaeology of Arnhem Land, and of nearly all Australia, is the imbalance between a rich record of ethnographic knowledge and a thin archaeological record of reticent lithics. Arnhem Land painted rock-art plainly demonstrates this, for the rich and varied material culture vividly depicted in Dynamic and other images is of perishable materials — save for infrequent stone axes and very rare stone chisels (Taçon & Brockwell 1995, 687, 689). For the rest of the Dynamic world, nothing material survives. It is equally hard to reconstruct with confidence the millennia of transformative changes and interactions by which there came about the present-day pan-Australian patterns of language and kinship, of story and country, of the land and its making. For decades, scholars have sought to reconstruct Australian prehistories by inference from modern distributions — but more for lack of alternative strategy than through any convincing cause to think the approach is reliable.

Taken with its precursors, we hope the work reported here marks an advance in Arnhem Land

studies that sets a precedent in Australia in its giving a time depth and a rationale to issues normally addressed without historical depth:

- The Rainbow Serpent as a subject in Arnhem Land rock-art is shown to have great antiquity, extending back to the Yam period of Chaloupka's chronology over a time-span of some 4000–6000 years; we see no older images that we recognize as depicting the Rainbow Serpent.¹⁷
- The form of the Rainbow Serpent is shown to derive primarily from a pipefish, a creature in the natural world which would have made its appearance with the rising sea-level at about the time it first appears in the iconography; thereafter, its form lost the close naturalism with that initial subject (Taçon *et al.* 1996).
- The Dynamics, known to pre-date the Yam / Simple Figure period, and therefore decisively to precede the iconography of the Rainbow Serpent, are here shown to relate to ASC experience, as that is evident in clever men's knowledge in modern Arnhem Land and wider Australian experience.
- The chronology and the nature of the iconography demonstrates a distinct 'layering' of modern knowledge as known in Arnhem Land as a unity today, in which different aspects have different demonstrably different origins and natures.

Discussion: identifying visionary figures in ancient rock-art as evidence of ASC

This study is not the first to identify a visionary element in Australian rock-art. An important precursor is Sales (1992), identifying shamanistic visions in the imagery of a Western Australian rock-engraving. The present study endeavours to go beyond that single example, by identifying a coherent suite of traits repeatedly present in a tolerably well-dated body of ancient Australian rock-art that covers a large region. In this work, we have been aware of issues of method, sufficiently numerous and substantial as to deserve notice in closing the article. Many of these have arisen, and have or have not been explicitly addressed, in other studies of ancient imagery in which a visionary element is discerned — the San rock-paintings of southern Africa (a large literature, among the essentials: Dowson 1998; Lewis-Williams 1981; Lewis-Williams & Dowson 1989; Vinnicombe 1976); the rock-engravings of far western North America (Whitley 1992; 1994; 1998; *in press* a,b,c); and the rock-paintings of the Lower Pecos, on the Texas–Mexico border (Boyd & Dering 1996; Boyd

1998; *in press*). For the hunters' cave art of the European Upper Palaeolithic, this is a new theme (Lewis-Williams & Dowson 1988; Lewis-Williams 1997; Clottes & Lewis-Williams 1997), as older interpretations which looked in their time towards Australian Aboriginal exemplars did not involve shamanism in any aspect (Ucko & Rosenfeld 1967, 123–37). In Central Asia, the shamanistic approach is an established research tradition in studying the rock-engravings (Francfort 1998; Martynov 1991, 14–43; Novgorodova 1984; 1989), regarded as the work of hunter-gatherer and pastoralist societies. In north Norway, the imagery of late prehistoric rock-engravings, specifically that related to drums, is linked to the modern shamanistic knowledge of Saami hunting–pastoralist people (Helskog 1987), and the placing of Scandinavian rock-engravings on rocks immediately above the sea-shore is tellingly congruent with them having a shamanistic meaning (Helskog 1999). From temperate farming societies, the Neolithic imagery engraved on Irish megalithic monuments is being interpreted in visionary terms (Bradley 1989; Patton 1990; Dronfield 1995a,b; 1997), and related to a broader interest in drugs and vision in later prehistoric Europe (Sherratt 1991; Goodman *et al.* 1995). The issues of method are at present being debated in strong language (e.g. Bahn 1997; Quinlan *in press*).

Our study combines the two approaches to rock-art which Taçon & Chippindale (1998) distinguish as the 'informed' and the 'formal'. Where the *informed* depends on some basis of insight (in this study the ethnographic reports, and clever men's business as it remains in modern traditional Arnhem Land) by which to look at the imagery as if from the inside, the *formal* seeks order in what is manifest in the images themselves. Our informed view — if so it is — comes in place from the immediate region and in time from the modern period; we are applying it to images of the order of some 8000 years old, a large remove in time. We are encouraged in doing this by the deep continuities evident in Arnhem Land rock-art, and by the persistence with which aspects of the 'clever man' and his knowledge recur across Australia, within and without the Arnhem Land zone of monsoon climate, eucalypt woodland and Pama-Nyungan languages.

Much the same distinction is expressed by Gould (1974) who calls the equivalent of our *informed* a 'continuous' analogy and our *formal* a 'discontinuous' analogy. That formulation is a reminder that *continuity* over a long time-span is a constant issue, and once more the great Australian questions about long-term continuity and change in the tradi-

tions of its Aboriginal societies (Akerman 1995; and see above).

Figure 19 summarizes time-periods and sources of insight for this body of research. The Arnhem Land study stands out in terms of continuity; the iconography of the Rainbow Serpent shows that the ethnographic sources, immediate to the region rather than being removed at a distance, derive from a system of knowledge with a fundamental continuity that runs over several thousand years. And, in our view, the array of Dynamic traits addressed here is more telling in its congruence with ASC phenomena than in the other case-studies from other rock-art regions of the world. The dashes are a notable help, for they allow two stages of ‘cabling’: first a cabling-together of the varying contexts of the dashes; then a cabling-together of that united strand with the therianthropes, the swimming and floating, and the other ASC traits. Still, we are dealing with long time-spans, so long that we think they likely extend over great changes in technology (as visible in stone tools) and in language groups; when it comes to *informed* methods, we cannot expect always a very particular match.

Does this amount to a proof that ASC structures the Dynamic depicted world? Are we dealing with ASC as a consistent and repeated feature of the hunters’ vision, comparable with the way much southern African research sees it (Ouzman 1998)? Or is the particular visual impact of ASC such that its visionary imagery is a consistent and repeated feature of hunters’ rock-art — but far beyond its actual frequency in varied hunter-gatherer experience? Or are we being deceived by the ambiguities in which the metaphors for ASC find visual expression, so that we deceive ourselves in finding aspects to ancient images characteristic of ASC? Or is it the case that ancient rock-art is beyond modern understanding, so that any study which attempts to reach towards its meaning by these or any other methods of uniformitarian science is an absurdity? All those are important issues of method, and we have tried to take note of them in this study.

In some previous studies, three kinds of trait have been identified in particular bodies of rock-art. These are distinctive graphic patterns that can be matched with three identified stages in the neuropsychology of vision-experience. There seems to be

Region	Time-period of figures (BP)	Basis of insight
Arnhem Land Dynamics	?10,000 BP	modern local/ pan-Australian ethnography of ‘clever men’ and their knowledge
Formal methods & ethnography		
South African Bushman	some recent; many unknown	19-century ethnographies of Bushmen who, mostly, did not paint
Texas Archaic	?4000–3000 BP	17th–20th century ethnographies for broad region; relevant hallucinogenic plants in the archaeological deposits
Far western North America (Great Basin/ California)	some recent, some archaic {?to Clovis times}	19th–20th century ethnographies of shamans’ knowledge
Central Asian rock-engraving	?6000–3000 BP	19th–20th century ethnographies of shamans’ knowledge
North Norwegian rock-engravings	?4000–3000 BP	19th–20th century ethnographies of shamans’ knowledge?
Formal methods alone		
Palaeolithic European cave art	mostly 25,000–11,000 BP	?no directly pertinent ethnography
Neolithic European megalithic art	5500–4000 BP	?no directly pertinent ethnography

Figure 19. Bodies of rock-art interpreted in terms of ASC by recent scholarship.

no geometrical element in Dynamic figures which can be so referred.

Another precursor in Australia to our study is that by Bullen (1998; see also 1993), which asks, 'Do shamanic portals occur in Australian rock art?' The 'shamanic portals' Bullen envisages were the routes which gave access to that underground world the shamans know, and her identified shamanic portals are the concentric circles found as a motif in Panaramittee and other Australian rock-art groups. Maybe. But why will a 'shamanic portal' (if such exists in Australian Aboriginal knowledge) predictably have the form of a circle? And what about the many other possible subjects of these images — sun or moon, spreading ripples on water, pebbles from the river gravels — that are also round? What about the groups of monuments and objects in which round forms recur, such as the later Neolithic monuments of Stonehenge and the Avebury region (Darvill 1997; Whittle 1997a,b), for which we have no cause to expect 'shamanic portals'? Propositions compatible or weakly congruent with too many varied ancient circumstances are not useful ways towards secure knowledge.

In three respects, Arnhem Land and its neighbouring regions of northern Australia offer remarkable evidence and a remarkable opportunity. First, the informed understanding available to us from Arnhem-Landers' own knowledge, though much reduced and transformed by recent history and social change, has a telling richness and variety. Second, the good chronological grasp (by rock-art standards) that we have of the Arnhem Land sequence allows an account with a strong time-element, not just a demonstration that present-day patterns inform about the immediate past, but a sequence over time: of earliest periods without visionary imagery, then the era of Dynamic vision, then a transformation of the iconography as the Rainbow Serpent took her commanding place in the country which continues, and continues to develop, to this day. Third, a developing research issue is emerging: if some rock-art imagery is visionary and some is not, and if the criteria for distinguishing visionary imagery have certain ambiguities, where is the line to be drawn? What traits would have to be present in a rock-art tradition in order to show it was *not* the product of a visionary world-view? Debate is already somewhat polarized, with some researchers inclined to think visionary imagery is very widespread in rock-art, and the sceptics in turn calling those so-persuaded 'shamaniacs'. Arnhem Land — with its diversity, its change over time, and the reliable knowledge of its recent art — is an important case-study.

Acknowledgements

We thank the Aboriginal people of Kakadu National Park and adjoining areas of western Arnhem Land for hospitality, access to sites, field assistance, and permission to conduct research; in particular, Peter McLevitt, Colin Moore, Mick Alderson, Sandy Baraway, Yvonne Margurula, Jonathon Nadji, Jacob Nayingal, Big Bill Neidjie, and others who have passed away so that it is not courteous to refer to them by name. Field research was conducted 1991–95 under permits issued by ANCA (ANPWS) and the Northern Land Council. Funding and support was provided by The Australian Museum, The Australian National University and its North Australian Research Unit, The British Academy, The University of Cambridge and its McDonald Institute for Archaeological Research, the NSW Aboriginal Land Councils, The Society of Antiquaries, and The Ian Potter Foundation. We thank Sue McPherson, Andrew McWilliam, Belinda Pulvertaft, Maija Vanags, Meredith Wilson, Ivan Haskovec, Hilary Sullivan, Marika Behr, Sally Brockwell, George Chaloupka, Kim Akerman, Andrew Wellings, Peter Hiscock, Dave Lindner, Alison Gascoigne, David Lewis-Williams, Robert Layton, Piers Vitebsky and others for varied assistance. Ian White gave valuable guidance in anticipation of his own study of clever men. Referees and colleagues who read earlier versions or heard a preliminary version as a conference paper guided our revisions.

Figure 1 is by Owen Tucker; Figure 12 is after a sketch by George Chaloupka. The other figures are drawn by Alison Gascoigne after field records by the authors. In using the name 'San' for the southern African people, we mean no pejorative connotation.

Notes

1. This defining sense of 'Dynamic' for a certain body of figures is to be distinguished from the general use by e.g. Jelínek (1989) of 'dynamic' to characterize any of the Arnhem Land figures, however early or late, which convey a sense of animated movement. Among those 'dynamic' figures are the distinctive and late figures of hunters with spear-throwers that are more particularly defined by Taçon's name of 'Energetic Figures' (Taçon 1989).
2. A fuller record for the large portion of the Dynamic realm that falls within Kakadu National Park should exist on the Park's data base of rock-art sites, to which we do not have access.
3. Save for a single instance of a Dynamic which *may* hold a simple spear-thrower. One of us sees in this painting the form of the distinctive hook-ended stick

associated with the human figure — the simple spear-thrower known from the succeeding ‘post-Dynamic’ manner. The other does not see this sufficiently clearly as to make the identification.

4. A distinctive form of hafting with two handles lashed together, seen in the Dynamic pictures, is characteristic also of hafted axes in recent Arnhem Land; this is how axes are depicted today on Arnhem Land bark- and paper-paintings (e.g. Garry Djorlom’s painting, ‘Mimi spirits’ (1991–2) reproduced as Dyer 1994, pl. 30). The large archaic axes of the Huon Peninsula, northwest New Guinea, dated up towards 40,000 BP, are waisted (it is thought to secure a haft) and of proportions comparable with those of Arnhem Land; this method of hafting may be older in the larger region than we know it to be in Arnhem Land (Jones & Johnson 1985, 216–18; also Schrire 1982, 248).
5. For some reproductions of Rainbow Serpent images by contemporary Arnhem Land artists, see e.g. West (1995, pls. 2, 11, 15), Dyer (1994, pls. 8, 13, 14, 17, 23), Brody (1984, pls. 27–34), Caruana (1993, pls. 16, 19, 21, 26).
6. Our further work in progress (Taçon & Chippindale in press) identifies five classes of therianthropes, two of the more common being the ‘flying-fox-like’ and the ‘macropod-like’. We have not, at this point in the study, identified regularities here to affect the work reported in this article.
7. And the manner of its depiction is not that commonly found for animal-subjects in the Dynamic repertoire (contrast the animal in Fig. 2).
8. The paint is worn here, and the figure may have extended upwards and to the right; what we can see and draw is not all there once was.
9. There are growing confusions in the literature over terminology. The word ‘shaman’ (and with it ‘shamanism’) comes from the language of the Evenk, a Tungus-speaking group in Siberia (Vitebsky 1995, 10), meaning a certain kind of religious specialist: in a narrow definition, that is the only proper meaning. Anthropologists have used the term for comparable roles, especially involving trance, widely across the Asian and American regions, and beyond. Archaeologists have used it in relation to ancient societies where a similar pattern of knowledge is discernible. At its broadest, it now begins to be used in New Age thought for any person in contact with spirits. Shamanism, visionary experience, and ASC are related notions which authors do not use with distinct and broadly agreed meanings.
10. The word ‘shaman’ is used infrequently in the anthropological literature of Australia (examples are Mathews 1904; Warner 1937; Eliade 1973; Kolig 1981; Sales 1992; Lommel & Mowaljarlai 1994), although — as we show — the distinctive skills of ‘clever men’ are those of the individuals called shamans in the specific context of Siberian and North American ethnography and in comparative anthropology. Eliade’s celebrated book on shamanism (Eliade 1964) drew heavily on the Australian evidence, as collated by Elkin, and he wrote further in his ‘Introduction to Australian religions’ (1973). To keep

faithful with our Arnhem Land subject, and to avoid opening issues which may lead to misunderstanding, we use local Arnhem Land words when discussing Arnhem Land and the term habitual in Australian anthropology, ‘clever man’, when talking more broadly within Australia. Clearly the ‘clever man’ as we discern him in the Dynamic figures has the characteristics of a shaman in the general sense of that term.

11. In the Webb original *marrnggijt* was written as *marrngit*. To avoid the confusion of multiple spellings of the same word occurring in the article we have standardized throughout. Likewise Thomson’s *marrngitmirri* has thus been changed to *marrnggijtmirri*. Direct citations, while otherwise exactly faithful, may therefore have had these spellings altered.
12. For a detailed discussion of the complex concept of *marr* see Thomson 1975.
13. This appears to be a re-telling collected on a separate occasion (Elkin 1945, footnote 133).
14. We class differently cases where short lines are used in making the form of an animal or bird, often to mark the outline of a creature, which we see as a way of depicting fur or feathers.
15. But Chaloupka reads this ‘ring’ as the skin of the snake being rubbed off in its sloughing.
16. But this is not a feature of contemporary Arnhem Land ‘clever’ knowledge and, in the accounts known ethnographically, the cords came out of the stomach or testicle region of the body. On consequences of the time-span elapsing between ethnographic sources and the Dynamic paintings, see below.
17. The large Dynamic snake discussed in Composition 2 was included in the multivariate analysis of Rainbow Serpents (Taçon *et al.* 1996); as a control there, it fell decisively outside the range of Rainbow Serpents, and is thereby shown to belong to a different class.

Christopher Chippindale
Cambridge University Museum of Archaeology &
Anthropology
Downing Street
Cambridge
CB2 3DZ

Benjamin Smith
Rock Art Research Institute
University of the Witwatersrand
Private Bag 3
PO WITS 2050
South Africa

Paul S.C. Taçon
Division of Anthropology
Australian Museum
6 College Street
Sydney NSW 2010
Australia

References

- Akerman, K., 1995. Tradition and change in aspects of contemporary Australian Aboriginal religious objects, in *Politics of the Secret*, ed. Christopher Anderson. (Oceania Monograph 45.) Sydney: Oceania Publications, 43–50.
- Allen, H. & G. Barton, 1989. *Ngarradj Warde Djobkeng: White Cockatoo Dreaming and the Prehistory of Kakadu*. (Oceania Monograph 37.) Sydney (NSW): Oceania Publications.
- Allen, J. & J.F. O'Connell (ed.), 1995. Pleistocene to Holocene in Australia & Papua New Guinea. *Transitions: Antiquity* special number 265, 676–95.
- Bahn, P., 1997. Membrane and numb brain: a close look at a recent claim for shamanism in Palaeolithic art. *Rock Art Research* 14, 62–8.
- Berndt, C.H., 1964. The role of native doctors in Aboriginal Australia, in *Magic, Faith, and Healing*, ed. A. Kiev. New York (NY): Free Press, 264–82.
- Berndt, M. & C.H. Berndt, 1992. *The World of the First Australians: Aboriginal Traditional Life: Past and Present*. 5th edition. Canberra: Aboriginal Studies Press.
- Biesele, M., 1993. *Women like Meat*. Johannesburg: Witwatersrand University Press.
- Blackburn, T.C., 1975. *December's Child: a Book of Chumash Oral Narratives*. Berkeley (CA): University of California Press.
- Bleek, D.F., 1935. Beliefs and customs of the /Xam Bushmen, part VII: sorcerers. *Bantu Studies* 9, 1–47.
- Boyd, C.E., 1998. Pictographic evidence of peyotism in the Lower Pecos, Texas Archaic, in Chippindale & Taçon 1998a, 229–46.
- Boyd, C.E., in press. Datura, peyote, and their animal counterparts identified in the pictographs of the Lower Pecos, Texas Archaic, in Whitley in press b.
- Boyd, C.E. & J.P. Dering, 1996. Medicinal and hallucinogenic plants identified in the pictographs and sediments of the Lower Pecos, Texas Archaic. *Antiquity* 70, 256–75.
- Bradley, R., 1989. Deaths and entrances: a contextual analysis of megalithic art. *Current Anthropology* 30(1), 68–75.
- Brandl, E.J., 1972. Thylacine designs in Arnhem Land rock paintings. *Archaeology and Physical Anthropology in Oceania* 7(1), 24–30.
- Brandl, E.J., 1973. *Australian Aboriginal Paintings in Western and Central Arnhem Land: Temporal Sequences and Elements of Style in Cadell River and Deaf Adder Creek Art*. (Australian Aboriginal Studies 52; Prehistory and Material Culture series 9.) Canberra (ACT): Australian Institute of Aboriginal Studies.
- Brody, A., 1984. *Kunwinjku bin: Western Arnhem Land Paintings from the Collection of the Aboriginal Arts Board*. Melbourne: National Gallery of Victoria.
- Buchler, I.R. & K. Maddock (ed.), 1978. *The Rainbow Serpent: a Chromatic Piece*. The Hague: Mouton.
- Bullen, M., 1993. Why people draw circles. *Rock Art Research* 120(1), 51–4.
- Bullen, M., 1998. Shamanic portals: do they occur in Australian rock art? *American Indian Rock Art* 22, 103–10.
- Caruana, W., 1993. *Aboriginal Art*. London: Thames & Hudson.
- Chaloupka, G., 1984. *Rock Art of the Arnhem Land Plateau: Paintings of the Dynamic Figures Style*. Darwin: Northern Territory Museum of Arts and Sciences.
- Chaloupka, G., 1988–9. Rock paintings of the Dynamic Figure Style, Arnhem Land plateau region, NT, Australia. *Ars Prehistorica* 7–8, 329–37.
- Chaloupka, G., 1991. *Jawoyn Rock Art: Nitmiluk – Katherine Gorge National Park and the Surrounding Region: Survey: Report to the Conservation Commission of the Northern Territory*. Darwin (NT): Northern Territory Museum of Arts and Sciences.
- Chaloupka, G., 1993. *Journey in Time: the World's Longest Continuing Art Tradition*. Chatswood (NSW): Reed.
- Chaloupka, G., N. Kapirigi, B. Nayidji & G. Namingum. 1985. *A Cultural Survey of Balawurru, Deaf Adder Creek, Amarrkananga, Cannon Hill and the Northern Corridor*. Darwin: Museum and Art Galleries Board of the Northern Territory.
- Chippindale, C. & P.S.C. Taçon, 1993. Two old painted panels from Kakadu: variation and sequence in Arnhem Land rock art, in *Time and Space: Dating and Spatial Considerations in Rock Art Research (Papers of Symposia F and E, AURA Congress Cairns 1992)*, eds. J. Steinbring, A. Watchman, P. Faulstich & P. Taçon. (Occasional AURA Publication 8.) Melbourne (Vic.): Australian Rock Art Research Association, 32–56.
- Chippindale, C. & P.S.C. Taçon (ed.), 1998a. *The Archaeology of Rock-art*. Cambridge: Cambridge University Press.
- Chippindale, C. & P.S.C. Taçon, 1998b. The many ways of dating Arnhem Land rock-art, north Australia, in Chippindale & Taçon 1998a, 90–111.
- Clottes, J. & J.D. Lewis-Williams, 1997. *Les Chamanes de la préhistoire: transe et magie dans les grottes ornées*. Paris: Éditions Seuil.
- Corbett, L., 1995. *The Dingo in Australia and Asia*. Sydney: University of New South Wales Press.
- Crawford, I.M., 1968. *Art of the Wandjina*. London: Oxford University Press.
- Crookall, R., 1961. *The Study and Practice of Astral Projection*. London: Aquarian Press.
- Cunliffe, B. & C. Renfrew (eds.), 1997. *Science and Stonehenge*. (Proceedings of the British Academy 92.) Oxford: Oxford University Press.
- Darvill, T., 1997. Ever increasing circles: the sacred geographies of Stonehenge and its landscape, in Cunliffe & Renfrew (eds.), 167–202.
- David, B., I. McNiven, V. Attenbrow & J. Flood. 1994. Of Lightning Brothers and White Cockatoos: dating the antiquity of signifying systems in the Northern Territory, Australia. *Antiquity* 68, 241–51.
- Davidson, I., 1994. [Comment on and in Taçon & Chippindale (1994)].
- Davidson, I., 1999. Symbols by nature: animal frequencies in the Upper Palaeolithic of western Europe and the nature of symbolic representation. *Archaeology in*

- Oceania* 34(3), 121–31.
- Dixon, R.M.W., 1980. *The Languages of Australia*. Cambridge: Cambridge University Press.
- Dobkin de Rios, M., 1986. Enigma of drug-induced altered states of consciousness among the !Kung Bushmen of the Kalahari Desert. *Journal of Ethnopharmacology* 15, 297–304.
- Dowson, T.A., 1989. Dots and dashes: cracking the entoptic code in Bushman rock paintings. *South African Archaeological Society, Goodwin Series* 6, 84–94.
- Dowson, T.A., 1998. Rain in Bushman belief, politics and history: the rock art of rain-making in the south-eastern mountains, southern Africa, in Chippindale & Taçon 1998a, 73–89.
- Dronfield, J., 1993. Ways of seeing, ways of telling: Irish passage tomb art, style and the universality of vision, in *Rock Art Studies: the Post-stylistic Era or Where Do We Go from Here*, eds. M. Lorblanchet & P.G. Bahn. (Monograph 35.) Oxford: Oxbow Books, 179–93.
- Dronfield, J., 1995a. Migraine, light and hallucinogens: the neurocognitive basis of Irish megalithic art. *Oxford Journal of Archaeology* 14, 261–75.
- Dronfield, J., 1995b. Subjective vision and the source of Irish megalithic art. *Antiquity* 69, 539–49.
- Dronfield, J., 1997. Entering alternative realities: cognition, art and architecture in Irish passage tombs. *Cambridge Archaeological Journal* 6(1), 37–72.
- Dyer, C.A. (ed.), 1994. *Kunwinjku Art from Injalak 1991–1992: the John W. Kluge Commission*. North Adelaide (SA): Museum Art International.
- Eliade, M., 1964. *Shamanism: Archaic Techniques of Ecstasy*. New York (NY): Pantheon Books.
- Eliade, M., 1973. *Australian Religions: an Introduction*. Ithaca (NY): Cornell University Press.
- Elkin, A.P., 1945. *Aboriginal Men of High Degree*. Sydney: Australasian Publishing.
- Evans, M. & R. Jones, 1997. The cradle of the Pama-Nyungan: archaeological and linguistic speculations, in *Archaeology and Linguistics: Aboriginal Australia in Global Perspective*, eds. P. McConvell & N. Evans. Melbourne: Oxford University Press, 385–417.
- Fischer, R., 1975. Cartography of inner space, in *Hallucinations: Behavior, Experience and Theory*, eds. R.K. Siegel & L.J. West. New York (NY): John Wiley, 197–240.
- Francfort, H.P., 1998. Central Asian petroglyphs: working between Indo-Iranian and Shamanistic interpretations, in Chippindale & Taçon 1998a, 302–18.
- Frankel, D., 1996. The Australian transition: real and perceived boundaries, in Pleistocene to Holocene in Australia & Papua New Guinea, eds. J. Allen & J.F. O'Connell. *Transitions: Antiquity* 69 (Special number 265), 649–55.
- Furst, P.T., 1972. To find our life: peyote among the Huichol Indians of Mexico, in *Flesh of the Gods*, ed. P.T. Furst. New York (NY): Praeger, 136–84.
- Garlake, P., 1995. *The Hunter's Vision*. London: British Museum Press.
- Goodman, D., 1990. *Where Spirits Ride the Wind*. Bloomington (IN): Indiana University Press.
- Goodman, J., P.E. Lovejoy & A. Sherratt (eds.), 1995. *Consuming Habits: Drugs in History and Anthropology*. London: Routledge.
- Gould, R.A., 1974. Some current problems in ethnoarchaeology, in *Ethnoarchaeology*, eds. C. Donnan & C.W. Clewlow, Jr. (UCLA Monograph 4.) Los Angeles (CA): Institute of Archaeology, 29–48.
- Green, C., 1968. *Out of Body Experiences*. Oxford: Institute of Psychological Research.
- Halifax, J., 1980. *Shamanic Voices: a Survey of Visionary Narratives*. Harmondsworth: Penguin.
- Halifax, J., 1991. *Shamanic Voices*. New York (NY): Arkana.
- Haskovec, I.P., 1992. Mt Gilruth revisited. *Archaeology in Oceania* 27, 61–74.
- Helskog, K., 1987. Selective depictions: a study of 3500 years of rock carvings from Arctic Norway and their relation to Saami drums, in *Archaeology as Long-term History*, ed. I. Hodder. Cambridge: Cambridge University Press, 17–30.
- Helskog, K., 1999. The shore connection: cognitive landscape and communication with rock carvings in northernmost Europe. *Norwegian Archaeological Review* 32(2), 73–94.
- Jelínek, J., 1989. *The Great Art of the Early Australians*. (Anthropos 25.) Brno: Moravian Museum - Anthropos Institute.
- Jones, R. & I. Johnson, 1985. Deaf Adder Gorge: Lindner Site, Nauwalabila I, in *Archaeological Research in Kakadu National Park*, ed. R. Jones. (Special Publication 13.) Canberra (ACT): Australia National Parks and Wildlife Service, 165–227.
- Katz, R., 1982. *Boiling Energy*. Cambridge (MA): Harvard University Press.
- Kelly, R.L. (ed.), 1995. *The Foraging Spectrum: Diversity in Hunter-gatherer Lifeways*. Washington (DC): Smithsonian Institution Press.
- Kolig, E., 1981. The Rainbow Serpent in the Aboriginal pantheon: a review article. *Oceania* 51, 312–16.
- Lewis, D.J., 1984. Mimi on Bradshaw. *Australian Aboriginal Studies* 2, 58–61.
- Lewis, D.J., 1988. *The Rock Paintings of Arnhem Land, Australia: Social, Ecological and Material Culture Change in the Post-Glacial Period*. (British Archaeological Reports. International Series S415.) Oxford: BAR.
- Lewis, I.M., 1989. *Ecstatic Religion: a Study of Shamanism and Spirit Possession*. 2nd edition. London: Routledge.
- Lewis-Williams, J.D., 1981. *Believing and Seeing: Symbolic Meaning in Southern San Rock Paintings*. London: Academic Press.
- Lewis-Williams, J.D., 1983. *The Rock Art of Southern Africa*. Cambridge: Cambridge University Press.
- Lewis-Williams, J.D., 1997. Agency, art and altered consciousness: a motif in French (Quercy) parietal art. *Antiquity* 71, 810–30.
- Lewis-Williams, J.D. & T. Dowson, 1988. The signs of all times: entoptic phenomena in Upper Palaeolithic art. *Current Anthropology* 29(2), 201–45.
- Lewis-Williams, J.D. & T. Dowson, 1989. *Images of Power:*

- Understanding Bushman Rock Art*. Johannesburg: Southern Book Publishers.
- Lommel, A. & D. Mowaljarlai, 1994. Shamanism in north-west Australia. *Oceania* 64, 277–88.
- Maddock, K., 1978. Introduction, in Buchler & Maddock (eds.), 1–21.
- Marshall, L., 1969. The medicine dance of the !Kung Bushmen. *Africa* 39, 347–81.
- Martynov, A.I., 1991. *The Ancient Art of Northern Asia*. Urbana (IL): University of Illinois Press.
- Mathews, R.H., 1904. Ethnological notes about Aboriginal tribes of Western Australia. *Queensland Geographical Journal* 19, 45–72.
- Meehan, B., 1995. Aboriginal views on the management of rock art sites in Australia, in *Perceiving Rock Art: Social and Political Perspectives*, eds. K. Helskog & B. Olsen. (Instituttet for sammenlignende kulturforskning Serie B: Skrifter XCII.) Oslo: Novus forlag, 295–316.
- Mitchell, J.L., 1981. *Out-of-body Experiences*. London: McFarland.
- Morphy, H., 1982. Artists and artisans in Gunwinggu society, in *Aboriginal Art at the Top*, eds. P. Cooke & J. Altman. Maningrida (NT): Maningrida Arts and Crafts, 12–16.
- Morphy, H., 1989. From dull to brilliant: the aesthetics of spiritual power among the Yolngu. *Man* 24(1), 21–40.
- Morphy, H., 1991. *Ancestral Connections: Art and an Aboriginal System of Knowledge*. Chicago (IL): Chicago University Press.
- Noll, R., 1985. Mental imagery cultivation as a cultural phenomenon: the role of visions in shamanism. *Current Anthropology* 26(4), 443–61.
- Novgorodova, E.A., 1984. *Mir petroglifov Mongolii*. Moscow: Nauka.
- Novgorodova, E.A., 1989. *Drevnjaja Mongolija*. Moscow: Nauka.
- Orpen, J., 1874. A glimpse into the mythology of the Maluti Bushmen. *Cape Monthly Magazine* 9, 1–13.
- Ouzman, S., 1998. Towards a mindscape of landscape: rock art as expression of world-understanding, in Chippindale & Taçon 1998a, 30–41.
- Patton, M., 1990. On entoptic images in context: art, monuments and society in Neolithic Brittany. *Current Anthropology* 31(5), 554–8.
- Quinlan, A.R., in press. Shamanism and the rock art of far western North America: a critical review. *Journal of California and Great Basin Anthropology*.
- Reid, J., 1983. *Sorcerers and Healing Spirits: Continuity and Change in an Aboriginal Medical System*. Canberra: Australian National University Press.
- Ripinsky-Naxon, M., 1993. *The Nature of Shamanism: Substance and Function of a Religious Metaphor*. Albany (NY): State University of New York Press.
- Sales, K., 1992. Ascent to the sky: a shamanic initiatory engraving from the Burrup Peninsula, northwest Western Australia. *Archaeology in Oceania* 27, 22–35.
- Schrire, C., 1982. *The Alligator Rivers: Prehistory and Ecology in Western Arnhem Land*. (Terra Australis 7.) Canberra (ACT): Department of Prehistory, Research School of Pacific Studies, Australian National University.
- Schultes, R.E., 1972. An overview of hallucinogens in the Western Hemisphere', in Furst (ed.), 3–54.
- Sherratt, A., 1991. Sacred and profane substances: the ritual use of narcotics in later Neolithic Europe, in *Sacred and Profane: Proceedings of a Conference on Archaeology, Ritual and Religion*, ed. P. Garwood. (Monograph 32.) Oxford: Oxford University Committee for Archaeology, 50–64.
- Steward, J.H., 1941. Culture element distributions: XIII, Nevada Shoshoni. *University of California Anthropological Records* 4(2), 209–359.
- Taçon, P.S.C., 1989. From Rainbow Snakes to 'x-ray' fish: the nature of the recent rock painting tradition of western Arnhem Land, Australia. Unpublished Ph.D thesis, Australian National University.
- Taçon, P.S.C., 1991. The power of stone: symbolic aspects of stone use and tool development in western Arnhem Land, Australia. *Antiquity* 65, 192–207.
- Taçon, P.S.C., 1994. *Kuninjku Kunwarde Bim: results of the 1994 Mann River Rock Art Recording Project field season: a report to the Bawinanga Aboriginal Corporation and the Djomi Museum*. Unpublished report. Sydney: Australian Museum.
- Taçon, P.S.C., 1998–99. Magical paintings of the Kimberley. *Nature Australia* 26(3), 40–44.
- Taçon, P.S.C. & S. Brockwell, 1995. Arnhem Land prehistory in landscape, stone and paint, in Allen & O'Connell (eds.), 676–95.
- Taçon, P.S.C. & C. Chippindale, 1994. Australia's ancient warriors: changing depictions of fighting in the rock art of Arnhem Land, N.T. *Cambridge Archaeological Journal* 4(2), 211–48.
- Taçon, P.S.C. & C. Chippindale, 1998. Introduction: an archaeology of rock-art through informed methods and formal methods, in Chippindale & Taçon 1998a, 1–10.
- Taçon, P.S.C. & C. Chippindale, in press. Animal-headed beings in the rock-art of western Arnhem Land (NT), Australia, in *Theory and Rock Art: Proceedings of the ACRA 2 Conference*, ed. K. Helskog.
- Taçon, P.S.C., M. Wilson & C. Chippindale, 1996. Birth of the Rainbow Serpent in Arnhem Land rock art and oral history. *Archaeology in Oceania* 31, 103–24.
- Thomson, D.F., 1961. *Marrngitmirri and Kalka* — medicine-man and sorcerer — in Arnhem Land. *Man* 61, 97–102.
- Thomson, D.F., 1975. The concept of *marr* in Arnhem Land. *Mankind* 10, 1–10.
- Thorpe, S.A., 1993. *Shamans Medicine Men and Traditional Healers: a Comparative Study of Shamanism in Siberian Asia, Southern Africa and North America*. Pretoria: University of South Africa.
- Turpin, S.A. (ed.), 1994a. *Shamanism and Rock Art in North America*. (Special publication 1.) San Antonio (TX): Rock Art Foundation.

- Turpin, S.A., 1994b. On a wing and a prayer: flight metaphors in Pecos River art, in Turpin (ed.), 73–102.
- Ucko, P.J. & A. Rosenfeld, 1967. *Palaeolithic Cave Art*. London: Weidenfeld & Nicolson.
- Vinnicombe, P., 1976. *People of the Eland*. Pietermaritzburg: Natal University Press.
- Vitebsky, P., 1995. *The Shaman*. London: Macmillan.
- Walsh, G.L., 1994. *Bradshaws: Ancient Rock Paintings of North-west Australia*. Carouge-Geneva: Edition Limitée.
- Warner, W.L., 1937. *A Black Civilisation*. New York (NY): Harper & Brothers.
- Watchman, A., 1987. Preliminary determinations of the age and composition of mineral salts on rock art surfaces in the Kakadu National Park, in *Archaeometry: Further Australasian Studies*, eds. W. Ambrose & J. Mummery. Canberra (ACT): Australian National University, Department of Prehistory, Research School of Pacific Studies, 36–42.
- Webb, T.T., 1935. The making of a Marrngit. *Oceania* 6, 336–41.
- Wendt, W.E., 1976. 'Art mobilier' from the Apollo 11 Cave, South West Africa: Africa's oldest dated works of art. *South African Archaeological Bulletin* 31, 5–11.
- West, M., 1995. *Rainbow Sugarbag and Moon: Two Artists of the Stone Country: Bardayal Nadjamerrek and Mick Kubarkku*. Darwin (NT): Museum & Art Gallery of the Northern Territory.
- Whitley, D.S., 1992. Shamanism and rock art in far western North America. *Cambridge Archaeological Journal* 2(1), 89–113.
- Whitley, D.S., 1994. Shamanism, natural modeling and the rock art of far western North American hunter-gatherers, in Turpin (ed.), 1–43.
- Whitley, D.S. 1998. Finding rain in the desert: landscape, gender and far western North American rock art, in Chippindale & Taçon 1998a, 11–29.
- Whitley, D.S., in press a. *L'Art de chamanes: art rupestre en Californie*. Paris: Edition du Seuil.
- Whitley, D.S. (ed.), in press b. *Ethnography and Western North American Rock Art*. Albuquerque (NM): University of New Mexico Press.
- Whitley, D.S., in press c. The Numic vision quest: ritual and rock art in the Great Basin, in Whitley in press b.
- Whittle, A., 1997a. Remembered and imagined belongings: Stonehenge in its traditions and structures of meaning, in Cunliffe & Renfrew (eds.), 145–66.
- Whittle, A., 1997b. *Sacred Mound, Holy Rings: Silbury Hill and the West Kennet Palisade Enclosures: a Later Neolithic Complex in North Wiltshire*. Oxford: Oxbow Books.
- Winkelman, M., 1986. Trance states: a theoretical model and cross-cultural analysis. *Ethos* 14, 174–203.
- Zigmond, M., 1977. The supernatural world of the Kawaiisu, in *Flowers of the Wind: Papers on Ritual, Myth and Symbolism in California and the Southwest*, ed. T.C. Blackburn. Socorro (CA): Ballena Press, 59–95.