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RAR DEBATE

Comment on
 THE EMERGENCE OF THE REPRESENTATION
 OF ANIMALS IN PALAEOART
 by Derek Hodgson and Patricia A. Helvenston, *RAR*
 23: 3–40.

Comment on Derek Hodgson and Patricia A. Helvenston's 'The emergence of the representation of animals in palaeoart'

By PAUL S. C. TAÇON

Hodgson and Helvenston provide an informative overview of many of the evolutionary steps that led to modern human behaviour, especially in terms of depiction capacity and ability. A very extensive discussion of brain evolution is followed by a summary of Donald's (1991, 1993, 1998) ideas about cognitive evolution and then further steps that the author's consider led to the rise of representation. We are shown how brain development led to mind development and how various evolutionary pressures may have shaped early behaviour in order to better survive. For instance it is argued that by mimicking and deceiving animals (with animal skins and so forth) early humans were able to get closer to prey, which in turn added more protein to diets. The extra protein enhanced brain development, which in turn affected behaviour so that new positive feedback systems developed. They then argue that 'hunting disguises eventually came to serve as an interface onto which other aspects of behaviour came to be projected' (2006: 16). Replicating tracks in sand or earth was one of the resulting behavioural steps, and this eventually led to depictions of animals, especially in Upper Palaeolithic Europe. Various other influences are also mentioned but essentially the argument is an evolutionary one, with an emphasis on anatomy, biology and ecology. I think this is very valuable but that we need to take their argument a few steps further, fleshing out their structure with other chains of evidence. As well, their discussion would have benefited from inclusion of some of Thomas Wynn and Frederick Coolidge's work on cognitive development in relation to human evolution, especially concerning memory (e.g. Coolidge and Wynn 2001, 2005; Wynn 2002; Wynn and Coolidge 2003, 2004 and others by one or both with other people).

In terms of other things to consider, one of the most important is the human hand, intimately linked to human

creativity and all manner of depiction. Human hand stencils and prints are the most common form of rock art found worldwide, figuring prominently in the oldest and most recent rock art. They are found throughout world rock art sequences, dating to most major periods, and human hands were also engraved into rock. Finger flutings, marks and designs made with hands and fingers in the soft cave walls are also found in various parts of the world and in most cases are extremely old (e.g. see Bednarik 1986). So besides an initial concern with animal tracks I argue there also was an early, almost obsessive, concern with the human hand and that this form of replication (as a stencil or print) was just as important as track replication in terms of a step toward depicting animals and other things. Indeed, the hand is so bound up with creativity that when Griffith University's School of Arts recently developed a new research program that focuses on creativity in the context of culture, community and communication, *The human question* (<http://www.griffith.edu.au/school/art/research/home.html>), the human hand, in various forms, was chosen as an iconic symbol. The logo of IFRAO is a human hand, and the hand has also been used by others in relation to creativity and the emergence of art over the past couple centuries, with a hand stencil motif today often used on maps around the world to flag the location of rock art sites.

In this regard it should also be noted that Hodgson and Helvenston are mistaken in their statement that in Australia 'innumerable drawings depict animal tracks, frequently those of the emu, often shown in stencil form along with stencilled human hand prints, animal limbs (butchered?) and hunting weapons' (2006: 13). This sentence actually confuses and conflates a few things. Hand stencils are pervasive across Australia but stencils of emu feet are not. Indeed, I know of only a few examples (one pair attached to legs in Kakadu National Park, a couple pairs in the Keep River region of the Northern Territory and one in the Blue Mountains of New South Wales). Secondly, hand stencils are distinct from hand prints and the expression 'stencilled human hand prints' confuses the two. Thirdly, depictions of animal limbs are rare; when they are found it is only in certain areas such as western Arnhem Land and their frequency is very low. Finally, depictions of weapons most often are associated with depictions of animals or humans, often in relation to some action but sometimes they are arranged next to figures. Hodgson and Helvenston are right to point out that there are innumerable examples of very ancient animal tracks but these are petroglyphs rather than drawings. Usually they are bird or macropod tracks and many species of each are represented in the Australia-wide track assemblage. As they point out, the 'emu track' is the most common bird represented in this way. In many parts

of the country both bird and macropod tracks were also painted or drawn but these mostly date to the Holocene, especially the mid- to late-Holocene.

Returning to the human hand, it is important to note the ways in which finger dexterity, hand and finger muscle strength, eye-hand-coordination and other aspects of human hands changed over the past few million years. Obviously many changes correspond with those outlined for the brain, mind and body but also the hand was refined by way of material culture. Artefact production, from rudimentary stone tools 2.4 million years ago to stone, bone and wooden tool kits (including hafted objects) from about 300 000 years ago (e.g. see Barham 2001, 2002), to the sophisticated range of artefacts made by hunter-gatherers of the past 50 000 years must have helped prepare the hand for its primary role in controlled line and infill-making, so essential for the creation of representations of things. Indeed, human hand development must have been linked to hominin brain expansion and the production of stone tools 2.5 million – 1.8 million years ago. Human hands also were very involved with pigment use from about 300 000 years ago, especially in parts of Africa and Europe (Barham 2002; Bednarik 2003; Taçon 1999, in press). Body art, drawing on objects, painting on rock and other aspects of hand-pigment use may have become regular practice since then and this is a crucial turn on the road to depicting and representing animals. Thus I contend human hand development occurred ‘hand-in-hand’ (excuse the pun) with all of the other changes Hodgson and Helvenston detail.

The human hand is also a common symbol of human identity, individual identity certainly and obviously but sometimes group identity as well. It is a key communication device and some hand stencils may be signs. It is a part of the body frequently adorned with forms of body art or symbolic association — painting, mutilation and rings are the more common — but it also is the part of the body used to most intimately connect with other humans (touching, caressing etc.), landscapes (hand stencils and prints on rock walls; hands on trees, rocks when climbing, etc.) and other creatures (hands are used to kill animals either directly or with artefacts/weapons, invariably at some point hand held; hands bring food to the mouth, either directly or via artefacts; some animals humans like are petted/stroked with human hands). It may well be that the human hand was recognised as both a symbol and sign very early on, its replication more important than that of human tracks, i.e. footprints, which are no where near as common in engraved, painted, drawn, stencilled or printed rock art.

This leads into a discussion of identity and identification, as well as other aspects of culture, community and communication. Again, this is an area that can also be explored in relation to Hodgson and Helvenston’s work. There is an extensive worldwide literature on the ways in which humans identify with or have identity shaped by landscape, animals and other humans. Identity may have emerged as a powerful force shaping human destiny as much as 250 000 – 300 000 years ago (Barham 2001; McBrearty and Brooks 2000). Animals figure very prominently in many cultures’ symbolic systems and composite creatures, with supernatural anatomies that sometimes

combine human and animal elements, are among the most potent. Although Hodgson and Helvenston discuss therianthropes in the context of mimicking, deceiving and hunting animals, composite creatures actually play many more roles. An exhaustive and useful study they may wish to consult identified six types of supernatural creature in world oral history, art and literature, as well as Australian rock art (Taçon and Chippindale 2001: 176–9). These are (a) animal-human combinations; (b) composite animals; (c) double-headed animals; (d) creatures with different animal body parts; (e) animals with artefacts; and (f) distorted-deformed human-like creatures. It was also found that humans, past and present the world over, have used such imagery in similar ways — to illustrate, tell stories about and represent other forms of reality, religious belief and what Westerners more generally call the supernatural:

Animal-headed beings also denote another world, another dimension of time and space that humans can sometimes tap into, through trance, ritual, ingestion of certain drugs or in other special contexts. Composite creature can be guides, messengers, helpers, friends, ancestors, gods, fools, villains, enemies, beings of great evil, symbols of the greater good. In a clinical, scientific sense they are symbols and tools used for teaching history, laws, lessons, norms of conduct and the rules of society. But they are also creatures of the Dreamtime — not the Australian Aboriginal Dreamtime but the Dreamtime of humanity, that rich ancestral world of times long ago that every so often penetrates the present to provide insight and other-world experience (Taçon and Chippindale 2001: 176).

As Hodgson and Helvenston point out, composite creatures are among the oldest dated painted images and sculptured forms surviving at some European sites but they appear alongside old rock art of other continents as well, suggesting they were first made in association with what appear to us to be the first animal and human representations from various parts of the world. This is an area that would be fruitful to further explore. Another question that arises is whether Neanderthal used animal skins to mimic, deceive and hunt large game given their heavy reliance on animal flesh in their diet. They also should have been skilled at identifying, ‘reading’ and following animal tracks in order to have survived so long in areas of harsh climate. Why did similar forces, anatomical, biological, ecological, behavioural, not lead them to represent and depict animals? In this regard, it also is curious the oldest surviving palaeoart of Asia and some other areas is geometric, and that depictions of animals and humans are relatively recent phenomena (e.g. see Bednarik 1994). Perhaps there is something else going on with animals and the development of animal representations in Upper Palaeolithic Europe, related to cultural pressures or the cultivation of social identity that ultimately became important for survival (e.g. see Gamble 1999).

Finally, the statement that ‘the human relationship with animals is a deep-seated neuro-biopsychosocial contingency that often influences behaviour and culture in ways that are not always obvious’ (2006: 16) is true but not profound as so is most everything else involving human relationships. Indeed, as in Australian Aboriginal culture, understanding the nature of relationships may be the more

rewarding way in which to best understand humans past and present. Among Australian Aboriginal peoples relationships between people and land/landscapes, people and other creatures (both animals and plants), people and other people, people and the past and people and Ancestral Beings (who created everything and commonly have composite or therianthrope form) guide most aspects of behaviour, including diet. These relationships define the world for traditional and many contemporary Australian Aboriginal people and they are expressed in ceremony, song, dance and visual art. Significantly, what appear to us to be straightforward depictions of animals are sometimes in fact depictions of Ancestral Beings, according to Aboriginal people. Furthermore, when actual animals were depicted at rock art sites in recent times it was more often after the catch rather than before (Taçon 1989 for western Arnhem Land but this pertains to some other areas as well). The images were subsequently used in story telling in many ways, from the secular related to actual experience (e.g. this is the huge barramundi I caught last year) to various levels of the sacred (it is taboo for young men of certain clans or moieties to eat these parts of the barramundi; the barramundi ancestor created that nearby river system; barramundi has restricted symbolic associations expressed in certain restricted ceremonies). Whether multiple levels of association, relationship and meaning pertains to Upper Palaeolithic representations of animals is important to consider, even without direct access to informed individuals of those ancient cultures. Certainly as Hodgson and Helvenston point out, broad explanatory theories such as 'shamanism' are unsatisfactory explanatory tools as there were likely many motivations behind the production of Upper Palaeolithic art, especially representations of animals.

In summary, although Hodgson and Helvenston have made a brilliant start in terms of explaining the rise of animal representation in early rock art, the next step would be to expand their theory to include two major areas of related human development: (a) the human hand and (b) the rise of social identity, culture and community in the context of relationships and creativity. Some exploration of the role of visual art in symbolic and other forms of communication would also be worthwhile. Of course, this is something much larger than can be presented in one journal article but the result would be a grand synthesis that would emphasise the interrelationships between anatomy/biology, ecology/diet, mind, behaviour, material culture, identity and representation, with an emphasis on creativity and creative thinking. Indeed, although all creatures can be creative it is the nature of human creativity that ultimately is the key feature that sets us apart from other animals and archaic ancestors.

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Further thoughts on comments by Chippindale and a reply to Taçon

By PATRICIA A. HELVENSTON
 and DEREK HODGSON

In a critical response to our paper 'The emergence of the representation of animals in palaeoart: insights from evolution and the cognitive, limbic and visual systems of the human brain', Chippindale (2006: 17–18) pointed out that exceptions to the common pattern that plants have minimal representation in rock art are few. He referred to the 'yam' figures of Australia, stating '[I]n the singular "yam figures" in the rock art of western Arnhem Land, Australia — if their motifs *are* rightly identified as depicting yams, and therefore a vegetable domain — we seem to see hybrid figures, largely of human or quasi-human traits but with the human head replaced by a yam' (Chippindale 2006: 18). What he failed to note, as others have emphasised, is that the 'yam' figures include both human and animal-like 'yams' (Taçon and Brockwell 1995).

Chippindale *appears* to be implying that animal depictions were not common in the earliest art of Arnhem Land, thus raising a challenge to our hypotheses, which stimulated us to look into the subject in more detail. Interestingly, the 'yam' figures are found in the third chronological style of art from this region. The first style is dated to the late Pleistocene and the earliest art appears to be petroglyphs, followed by the earliest paintings according to Chaloupka (1977, 1984a, 1993a, 1993b). Indeed, Taçon and Chippindale (1994) argue that the earliest surviving art forms in Arnhem Land are petroglyphs of bird, macropod and human tracks, cup-like depressions, grooves and, occasionally, circles. These possible Pleistocene sites are rare, but when found in association with rock paintings they consistently underlie them (Sullivan 1988). Chaloupka argued that the earliest paintings consist of hand and object prints, followed by large naturalistic depictions of animals and humans. Taçon and Chippindale (1994) have argued that depictions of humans are extremely rare in this early painted style and that animals predominate. This evidence of the earliest petroglyphs and paintings depicting a large predominance of animal figures certainly supports our hypotheses regarding the European Palaeolithic.

In his comments in this issue of *RAR*, Taçon stresses the importance of the human hand, as evidenced in stencils and prints common in rock art from Australia and worldwide. Hodgson (2006: 27–37) pointed out that hand prints or stencils seem to predate the depictions of animals because they are relatively easy to produce. We certainly agree that the evolution of the human hand and hand/eye co-ordination are crucial adaptations necessary for executing visual depictions of human and animal tracks, hands, animals and humans. In our original paper we stressed the importance of the parietal lobes with their increasing connections to the frontal lobes, thus comprising a sensorimotor system. We indicated that the evolution of this system was critical to the ability to construct tools,