

## Symbolism and becoming a hunter-gatherer

---

Iain DAVIDSON\*

I dedicate this paper to the memory of Andrée Rosenfeld. From the time when, as an undergraduate, I read her book with Peter Ucko (Ucko & Rosenfeld 1967) that corrected the excesses of the structuralist approach to French cave “art” to the occasion of a visit to her home only months before she passed away, I found Andrée a model of good sense about all matters to do with all forms of rock “art”. She gave me and many others nothing but sound advice and managed to navigate between theory and data with more clear sight of her destination than most others. And she was, simply, one of the nicest people who ever became an archaeologist. She will be sorely missed.

### Pleistocene paintings and engravings are not art

From time to time, we all worry about the use of the word “art” in connection with what we study (see review in Bradley 2009, Ch. 1). The images on rock and other surfaces that concern us here have some visual similarity with some of what is called art in other contexts, particularly when they are of great beauty (e.g. Chauvet *et al.* 1995; Clottes 2001). Yet the associations of art –paintings, sculptures and other works– over the last six hundred years (see e.g. Gombrich 1995) (or perhaps only three hundred according to Shiner 2001), mean that it is highly unlikely that any paintings or engraved images on rocks or in caves relate to social, economic, and cultural circumstances similar in any way to those of art in the twenty-first century. Indeed it has been suggested that this problem, as it was manifest at the end of the nineteenth century, was part of the reason why it was so difficult for scholars of the Upper Palaeolithic to accept the prehistoric age of the cave paintings at Altamira (Moro Abadía 2006; Moro Abadía & Gonzáles Morales 2005).

Soffer and Conkey (1997) emphasised the importance of the context of image production (see also Bradley 2009, Ch. 2) for the materials we are concerned with, and this is true both if we consider that there is some continuity of social and cultural context between prehistoric and ethnographic image-making, and if we take into account the methodological options available for interpretation of the imagery of the late Pleistocene. We can only understand anything about late Pleistocene rock painting and engraving by considering the context of its production. It would be an option to base our study on the aesthetics of the imagery, but there are cultural constraints on aesthetics and, whatever the mastery of medium and skill in representation shown by image-makers from the distant past when compared with artists of the last millennium, we can learn almost nothing because of our culturally

---

\* Australia

limited visions (Nowell 2008). Lewis-Williams (2002, 52-53) wrote approvingly of Max Raphael who argued against those who denied that “Upper Palaeolithic people practised an art that was fundamentally ... similar to that of the mid-twentieth century”. Raphael, and implicitly Lewis-Williams, preferred to call it ‘art’ on the grounds that to do so avoided defining people of the past as being lesser than those of the present. But to ignore the contextual difference may be just as dangerous if we seek to understand the role of such practices in the emergence of behaviour to which we are all heirs. But there is no direct link between Lascaux and Lautrec, nor between Parpalló and Picasso.

My own previous approach (Davidson 1997) was to suggest that we refer to Paintings, Engravings, Drawings and Stencils (PEDS) but, although I still see merit in the suggestion, I am aware that there was no enthusiasm for it before, and there may be none now. At the same time, I suggested that we continue to use the word “art” because we all know what we mean. I would prefer not to defend that position now and will refer slightly awkwardly to “paintings and engravings”. Ingold (2000, Ch. 7) was emphatic that the word art was an impediment to understanding the way in which hunting and gathering peoples represent the world in images and preferred, instead, to refer to “depiction.” This just postpones the problem: for example, is it the case that all image making involves depiction? Would existing definitions of either “image”<sup>1</sup> or “depiction” allow for the varieties of marking seen in patterned non-iconic marks from Blombos (Henshilwood *et al.* 2009) or Diepkloof (Texier *et al.* 2010) as well as the paintings of iconic signs of animals either at Chauvet Cave (Clottes 2001) or among the petroglyphs of the Dampier Archipelago (Gunn & Mulvaney 2008)? The situation is made even more complicated when we consider how these practices may have emerged in evolution (e.g. Miller 2001a, 2001b), a topic that deserves separate treatment (Davidson *in prep*; Davis 1986).

In that separate treatment, it is necessary to separate the three famous classes of semiotic signs: indexical signs, iconic signs and symbolic signs (Peirce 1986). I argue that indexical signs are present everywhere the world is affected in consistent patterns by the behaviour of any creature, as in the bear scratch marks in Chauvet Cave (Clottes 2009). The consistency of that patterning becomes a sign of the past presence of that behaviour –the mark is an inevitable and hence non-arbitrary consequence of the behaviour. Some claims for early marking by human ancestors fall into this category (Davidson 1990).

The big distinction to be made in marking the environment is when the marks stand for something more than the repeated pattern of activity. There are circumstances which suggest that the patterning may indicate an intention to make the mark. These are called symbolic signs, where the relationship between the mark and the thing it is a sign for is not an inevitable product of an activity and may be related to it arbitrarily but by convention. I argue that the Aurignacian “groove and encirclement” signs from La Ferrassie and other sites (Delluc & Delluc 1978), because of the very difficulty people have in interpreting what, if anything, they signify (Bahn 1986), fall into this category of symbolic marks. It may be, as the celibate priest Breuil is supposed to have said, that they are depictions of human female

---

1 From Chambers’s Twentieth Century Dictionary 1961 Edinburgh, W. & R. Chambers: “Image, n. likeness: a statue: an idol: a representation in the mind, an idea: a picture or representation (not necessarily visual) in the imagination or memory: an appearance: that which very closely resembles anything...” “Depict, v.t. to paint carefully: to make a likeness of: to describe minutely.”

genitalia, in which case they would be iconic<sup>2</sup> signs. But as this example illustrates, even in cases where iconic signs resemble a referent (and in this case, so far as I know, no systematic comparison has been made), the selective use of particular markers of that referent means that all iconic signs are also symbolic signs –the relationship between the mark and the referent is arbitrary and conventional. Iconic signs, therefore, are a special class of symbolic signs in which the arbitrariness seems to be reduced through the resemblance to the referent.

For this and other reasons, I suggest that there is only one acceptable general definition of art: Art is the making and marking of surfaces. When wet or dry pigment is applied to a surface, it marks an existing surface –it also, of course, makes a new surface. This is as true for the painters of Chauvet Cave as for Rembrandt and Jackson Pollock. When petroglyphs or sculptures are made by the removal of material from the object that is created by that removal, new surfaces are made, though arguably some petroglyphs are little more than marking of the old surface. This is true for the people who pecked the images in the Dampier Archipelago as well as for Michaelangelo or Henry Moore. The definition is complete, and provides a sufficient set of criteria by which to recognise whether anything should be called “art” in this sense –it will identify all PEDS as art. There will still be argument about possible confusion with indexical signs (whether bear scratch marks are “made” or simply “happen” –whether the bear could recognise its own agency) but there should not be a danger of expecting that such marking, paintings and engravings, should always create signs that have iconicity. Neither resemblance nor reference are intrinsic to the marks, they are a product of the social context of production of the mark through the communication between the artist and the audience.

Once we have recognised from their patterning that marks were deliberately made as symbolic signs, and supposing we are willing to call them art, a whole series of other judgments happen which lead to all of the other specialist definitions of art. One of the common statements is that “art consists of deliberate communication through visual forms” (Layton 1992: 1). I argue that the communication is a consequence of the nature of the marks as symbolic signs, and occurs among those who share the understanding of the conventions, but Layton’s definition does not permit the recognition of something as being or not being art in any sense. The simpler definition does, and entails Layton’s definition as a consequence of its internal logic. Much of the argument about the relationships among paintings or engravings in relation to each other on a single surface, or in relation to particular places such as caves (e.g. Leroi-Gourhan n.d.), or in relation to paintings or engravings at other sites in a region (e.g. Davidson 1989), depends on the conditions established in my definition of such paintings or engravings as making or marking.

---

2 Alas this word has moved away from its original semiotic meaning that ‘an icon represents its object mainly by its similarity’ (Pierce 1985:10) to describe objects, buildings or events that are of significance in present day culture. In semiotic terms what is meant is that such phenomena are indexical of the significance –but I fancy the academic purism I am talking about will never catch on.

## **Ritual painting and engraving in the west Mediterranean<sup>3</sup> region**

One other element of theoretical context is needed for understanding the behaviour associated with such marking –the recognition criteria for ritual, and the implications of ritual behaviour in understanding behaviour. Rappaport (1999) analysed the ethnographic literature and Ross (Ross 2003) worked out how to apply his conclusions to archaeological contexts of painting and engraving. The practice of ritual is characterised by “the performance of more or less invariant sequences of formal acts and utterances not entirely encoded by the performers” (Rappaport 1999: 24-26) from which we conclude that recognising ritual requires at least i) invariance and ii) repetition. Rappaport identifies five other key features of ritual in addition to these: iii) specialised time; iv) specialised place; v) stylised behaviour or stylised form; vi) performance and participation; and vii) a form which can hold and transfer a canonical message. Rappaport insists that all seven should be present for a behaviour to be classed as ritual. Some of these are more easily identified in archaeological contexts than others, but given the particular difficulty of identifying how the form of a ritual might carry a canonical message, and in the absence of all information about such a message, the goal might be said to be to identify the likelihood that a ritual identified through the first six criteria could have carried a canonical message.

Clottes (2009) recently suggested that there are three ways of getting at the meaning of Pleistocene marking/art: 1) “the art itself, its themes, its placement, the interrelations between the themes themselves and with the morphology of the cave” –such studies would include the studies by Clottes himself at Cosquer Cave (Clottes *et al.* 1992) and Chauvet Cave (Clottes 2001) or that of Malafouris (2007); 2) ethnographic analysis of the “beliefs and practices of hunter-gatherers elsewhere in the world” –for example, the domination of recent interpretations of Upper Palaeolithic cave paintings and engravings by attempts to show that there are indications of shamanic practices (Clottes & Lewis-Williams 1998; Davenport & Jochim 1988; Grosman *et al.* 2008; Lewis-Williams 2002; Whitley 2009) and our appeal to Rappaport’s work; 3) “the context of the art” –I would include Conkey’s pioneering analysis (1997; Conkey 1980), some of my own work (e.g. Davidson 1999) and that of Guthrie (Guthrie 2005) and many others who seek to put paintings and engravings in their local archaeological context. I suggest there are two more options, which are both about broader questions of context; 4) the situation of the marking in the evolution of behaviour of the people in the region –as I discussed in 1997– that is, the context of archaeological time scales; 5) the interpretation of behaviour in one region in relation to that in another –as discussed at greater length in this paper– that is the context of broad spatial scales.

In a previous paper in 1997 (Davidson 1997), I suggested that there were some hints of a common process in the late Pleistocene emergence of painting and

---

3 After delivery of my paper in Tarascón, a questioner disputed my attribution of the Franco-Cantabrian region to the “west Mediterranean”. The River Nalón, in Asturias province, is about 650km from the Pleistocene shore of the Mediterranean quite close to Parpalló. Parpalló is about the same distance from Cosquer Cave and further from Les Eyzies. The distance between Jericho and Göbekli Tepe is about 700km and between Çatalhöyük and Göbekli Tepe it is about 530km. By contrast the distance between Barcelona and Beirut is about 3000km. At these scales the contrast between the regions, despite variations within them, can be captured well by referring to the west and east Mediterranean. The point is that the variations within regions occur in ontological worlds that are different between regions.

engraving in different parts of the world, but that the outcomes were different in different regions: marking of individuals through beads etc (outlined in Davidson & Noble 1992); marking of segments of society in open social networks (derived from Gamble 1982; Strehlow 1970); marking of closed social networks through identification of a central place (a characteristic which coincided with Rosenfeld (1997) writing of “corporate identity of groups”); marking of the manner of corporate ownership. I suggested that the relative absence of “art” of all forms in the Upper Palaeolithic of the east Mediterranean region was not a coincidence, but represented a different ideology in relation to the environment; a difference related to the emergence of agriculture in the east, but not in the west, Mediterranean region (see also Davidson 2006). In the same volume, Bar-Yosef (1997) documented the few late Pleistocene artistic expressions in the Near East and argued that the scarcity was unlikely to be a product of lack of sites or of taphonomy. Rather, he suggested the reasons probably lay in the social realm. Socio-economic changes led to restructuring of social groups, and complex symbolic behaviours enhanced group cohesion and played a role in resolving conflict.

In this paper, as a variant of that view, I argue that people use symbolism to work out their social relations with each other –Conkey (1989) would have said that the art has a more active agency in the social changes. In the context of the cave paintings and engravings of the Upper Palaeolithic of western Europe, I suggest that the repeated production of paintings and engravings on stone plaquettes at the site of Parpalló, using the same conventions of iconicity over more than ten thousand years (see Davidson “What a carry on?” in this volume), probably guarantees that this example meets the first six of Rappaport’s criteria for ritual, and a similar case could be made for the production of paintings and engravings deep in caves in Cantabria and France. Intrinsic to this, therefore, is the argument that the production of paintings and engravings probably involved ritual, and the communication of meanings beyond those carried by the images themselves.

Elsewhere in this volume (Davidson ‘What a carry on?’), I argue that the painting and engraving of Parpalló shows that for France and Iberia:

- a) the relationship between symbolism and the environment changed through time (Davidson 1999). In particular, at Parpalló there was a marked change in the relations between the animals represented in the paintings and engravings on stone plaquettes found stratified in the site and the animals whose bones were found in the same layers. This change took place at about 20.4ka cal BP at precisely the boundary between the layers related to the Solutrean stone industries and those related to the Magdalenian stone and antler industries. I argue, therefore, that, despite my general reservations about giving the name “culture” to the entities defined principally by the variations in the stone (and antler) industries (e.g. Davidson 1991) this break probably does represent a cultural change because it involved not just the technology but also the ideology of the people involved.
- b) the relationship between symbolism and the environment varied across space (Davidson 2005). It is commonplace to acknowledge that the animals painted or engraved on walls or objects do not correspond directly to the species whose bones are found at the site –this is most commonly mentioned in relation to the abundance of reindeer bones and the scarcity of reindeer images. Altuna (1983, 1984, 1994) demonstrated for the Vasco-Cantabrian region that the principle applied to a wider range of species. Others have summarised the evidence for SW

France and northern Spain (Rice & Paterson 1985, 1986). More detailed analysis of the data assembled by Rice and Patterson shows that the pattern of over- and under-representation varies both within regions and between regions, and varies according to the species being considered (Davidson 1999).

- c) the relationships between people and their environments changed through time and space (Davidson 1989). Before the change at about 20,000 years ago at Parpalló, there were relatively few sites with paintings and engravings on plaquettes. After that date there were many more. It seems to be that whatever the ideological change that took place at that time also corresponded either with an increase in population, or at least a spread of the associated ideology. There are arguments that these events correspond with population expansion (Bocquet-Appel & Demars 2000; Gamble *et al.* 2004), but the evidence from Parpalló suggests that it was more than just that (Davidson 2006).

Thus, although there is a case for the use of ritual that involved invariance and repetition in particular places, it seems very likely that the messages that were communicated through the ritual were not unchanging. As I have suggested with respect to the ritual belief systems in Australia (Davidson 2010), in societies dependent on oral transmission of knowledge, the production of permanent marks on the environment may allow those marks to be used as mnemonics, but it does not prevent change in the knowledge associated with them. The performance of the ritual may provide the legitimization of the information imparted through the marks, but it does not guarantee the faithful transmission of information from one episode to another. This flexibility is part of the distinctive adaptation of modern humans, and the west Mediterranean evidence seems to suggest that the production of paintings and engravings was part of the way people adjusted their social interactions in the context of changing environmental conditions. We know about the way in which people worked out their symbolic relationships with their environments and with each other in much detail for the western end of the Mediterranean but we know very little about the way in which people worked out the symbolic side of such relationships for the eastern end of the Mediterranean.

There is a persisting notion that the Upper Palaeolithic lasted until the end of the Pleistocene at 10,000 years ago (e.g. [http://en.wikipedia.org/wiki/Upper\\_Paleolithic](http://en.wikipedia.org/wiki/Upper_Paleolithic) downloaded 27 December 2010 3.31pm AEDST) (for the persistence in the more professional literature see e.g. Pettit 2005: 126). Both the direct dating of the paintings (e.g. González Sainz 2007) and the dates from sites with reindeer bones and Magdalenian stone industries (e.g. Kuntz & Costamagno 2010) suggest that the phenomena generally included in the Upper Palaeolithic in western Europe did not survive the abrupt cooling of the Younger Dryas (Steffensen *et al.* 2008). Both ended shortly after 13ka cal BP. Everything was different after that event in the west Mediterranean, where the practice of making paintings and engravings almost disappeared (for a discussion of some of the issues this raises see González Morales 1991).

## **Pleistocene painting, engraving and ritual in the east Mediterranean**

In the east Mediterranean, the terminology in current use has the Upper Palaeolithic ending about 24ka cal BP and replaced by the Epipalaeolithic (Kebaran and Natufian) which lasted until about 11.5ka cal BP (chronology derived from

Goring-Morris & Belfer-Cohen 2010). The comparison between the Pleistocene paintings and engravings of east and west Mediterranean regions, therefore, involves more than just the Upper Palaeolithic. The archaeology of the Upper Pleistocene in the east Mediterranean has yielded few examples of engraving and none of painting (summarised in Bar-Yosef 1997), though there are some objects which may (or may not) be symbolic that pre-date the Upper Palaeolithic, such as the Middle Pleistocene carved stone from the Acheulean site of Berekhat Ram (D'Errico & Nowell 2000), and the Upper Pleistocene engraved flint from the Mousterian site of Quneitra (Marshack 1996). All of the engravings are on portable objects: animal bones with multiple parallel notches from the Mousterian of Kebara and the Aurignacian of Hayonim (Davis 1974) and a similar object from Ksar 'Akil (Tixier 1974) dating to about 33.5ka cal BP (Mellars & Tixier 1989); a single iconic image, possibly representing an equid, from the Aurignacian of Hayonim (Marshack 1997) dating 30-33ka cal BP (Anna Belfer-Cohen personal communication and see Bar-Yosef *et al.* 2005); a bone fragment with multiple parallel incised lines from Ohalo II dated about 23ka cal BP (Nadel 1994). My experience looking at material from sites such as Klasies River in South Africa suggests that among marked bone objects, there are two categories, those with notches such as the Kebara, Hayonim and Ksar 'Akil pieces and those with incised lines such as the piece from Ohalo.

In the later period, there is a limestone pebble with finely incised lines in geometric patterns including some in "ladders", from Urkan e-Rub, a site with early Kebaran stone industries but a radiocarbon date of 17.6ka cal BP said to be too recent for the assemblage (Hovers 1990). There is also a group of finds from the early excavations at the cave site of Öküzini in Turkey, which appear to lack stratigraphic attribution (Otte *et al.* 1995) such that the suggested date of about 14.75ka cal BP (Marshack 1997) is difficult to justify. One pebble has a series of "ladder"-like engravings, similar to those from Urkan e-Rub, but also to those from the pebble from Hayonim Terrace and slight similarity to a limestone slab from Hayonim which are both attributed to the Natufian, which is now agreed to date from about 15ka cal BP to 11.5ka cal BP (using the chronology given by Goring-Morris & Belfer-Cohen 2010).

It is often commented that this evidence for painting or engraving in the region during the Palaeolithic is very poor compared to other regions (Bar-Yosef 1997; Hovers 1990). And the fact that bones were marked as well as stones means that it is unlikely that archaeologists have failed to notice many examples or that there has been differential destruction of painted or engraved objects. This makes it very difficult to argue for a role for such creations in ritual activities. There is some invariance, and a little repetition, but it is difficult to see how these can be construed to fit with the specialised time or place. Nor are they particularly stylised in their form or their implied behaviour and it is difficult to construct an argument that they involve both performance and participation. Up to the beginning of the Natufian, then, it seems likely that there was a fundamental difference between the east and west Mediterranean regions in ritual activities, with much ritual related to the symbolic representation of resources in the west and little in the east and, what there was, unrelated to resources.

But, from the first identification of an archaeological assemblage with the name Natufian (Garrod 1932), it has been clear that it included a substantial presence of symbolic objects both in terms of carved and engraved objects and in other ways (Bar-Yosef 1998; Bar-Yosef & Belfer-Cohen 1999; Belfer-Cohen 1991; Garrod 1930). One of the distinctive differences from what came before was the presence of burials

in groups (Belfer-Cohen & Hovers 1992), sometimes with substantial grave goods (e.g. with dentalium shell head-dress from Mugharet el-Wad in Garrod 1932), including burial with dogs as grave goods (Davis & Valla 1978). Sometimes there was sufficient care shown in the interment to allow interpretation of the special status of the individual (Grosman *et al.* 2008), but on other occasions there was little except the archaeological context to suggest that the bodies were actually buried (see how this point is used in a different sense by Belfer-Cohen & Hovers 1992). Most importantly the Natufian was the context in which settlements with built structures first indicated a strong sedentary component to living patterns. Within those settlements such as Wadi Hammeh (Edwards 2008), there were both visual markings, such as engraved slabs (with almost identical designs from Shukbah and Eynan –Noy 1991: 563) and mortars, and also patterns of association of material culture items that suggest at least routinized behaviour if not ritual disposal. Whatever the interpretation of the significance of beads (Balme & Morse 2006; Davidson & Noble 1992; Kuhn *et al.* 2001), relative to earlier periods, the early Natufian saw a great increase in the presence of beads, although it decreased in the late Natufian (Bar-Yosef Mayer 2005).

A new imagery emerged in the Pre-Pottery Neolithic A (PPNA) at sites such as Göbekli Tepe (Peters & Schmidt 2004) and Mureybit (Cauvin 1977), which is complex in a variety of different ways, including figurines which for the first time in the region were made in clay (Rollefson 2008) (but for earlier use of ceramics to make figurines see Soffer *et al.* 1989). There is no sign of the emergence of agriculture or related practices in the western region, but it was out of this new symbolic environment that agriculture emerged in the east (cf. Cauvin 2000). The symbolic relationships that developed in the west Mediterranean region related people and their resources and relate people with each other. Such relationships made it unlikely that people would move towards agriculture. But the broader point of this argument is to suggest that there may be important processes operating in past human behaviour that can be understood by recognising the significance of variation in symbolic behaviour across broad geographic regions.

## **Ontology and ritual behaviour**

In order to move further in such arguments, it is necessary to have an understanding of the sorts of theoretical contexts in which artistic systems interact with human belief systems. I have suggested that there is strong evidence of ritual related to the production of painted and engraved images in the west Mediterranean region, but that before about 15,000 years ago there is relatively little evidence of rituals in the east Mediterranean. Ritual behaviour, of course, frequently involves intangible behaviours such as singing or dancing so that may have been there in abundance. The point is, though, that without the enduring material presence, the character of the ritual is likely to have been different.

Recent discussion of the beliefs associated with Upper Palaeolithic cave paintings and engravings has tended to concentrate on the possibility of shamanism associated with altered states of consciousness (Bradley 1997, Ch. 4; Chippindale *et al.* 2000; Lewis-Williams 2004; Lewis-Williams & Dowson 1988) –a view that has also been subjected to substantial critique (e.g. McCall 2007; Noble & Davidson 1993; VanPool 2009). VanPool, in particular, identified Shamanism and Priesthood as different ends of a continuum of ritual practices and of the social roles in such rituals. It is ritual that transforms the personal experiences of shamans into a social role –



without the ritual there would be no expression in paintings and engravings of the phenomena associated with the experiences of shamans, such as the supposed entoptic signs or the blood flowing from the noses of eland.

In several recent papers, Layton and colleagues have adopted a comparative approach that seeks to put Upper Palaeolithic assemblages of paintings and engravings into a context of similar assemblages around the world (see Sauvet *et al.* this CD<sup>4</sup>; Sauvet *et al.* 2009; Sauvet *et al.* 2000). These attempts depend on an argument of Layton's (2000) that there are structural differences between the assemblages of rock paintings associated with shamanism and those associated with totemism on one hand or unrelated to particular religious systems on the other. This is not the place to critique those attempts but simply to note that they have demonstrated that there are more possibilities for interpretation than just shamanism.

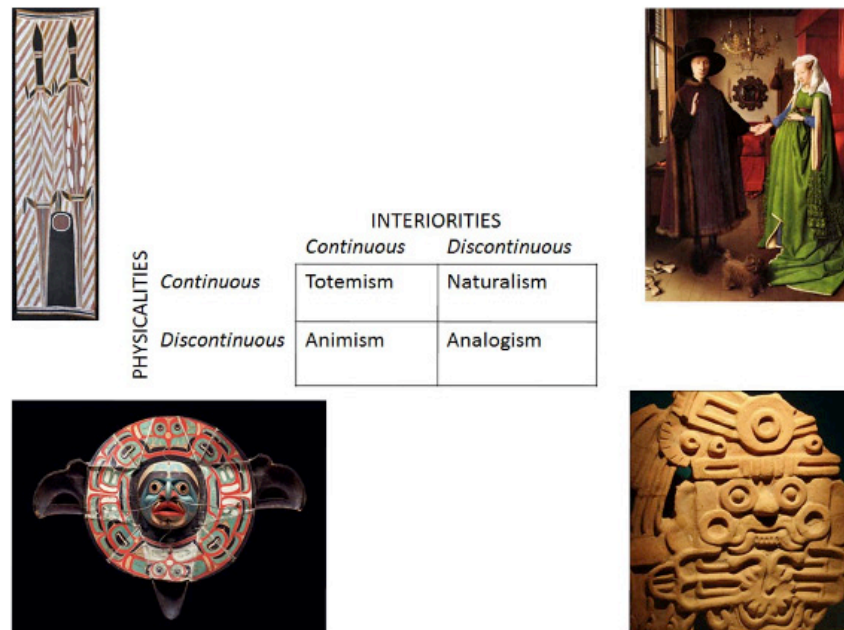
In another approach, Whitehouse and his co-authors (e.g. Atkinson & Whitehouse 2011; Whitehouse 2002) have pointed out that there are two extremes of religious experience: one involves frequent repetitions of doctrinal utterances, often involving religious leaders (priests) and generally low arousal of the faithful during religious experiences; the second involves infrequent repetitions, lack of dynamic leadership but high arousal during religious experiences. The first will be familiar to anyone who has endured church services or other examples from the major established religions; the second draws its examples from the ethnographies of Australia and New Guinea, Mbuti, and Navaho (Whitehouse 2002). The concentration on these two extremes has recently been explored through an analysis of 74 cultures around the world (Atkinson & Whitehouse 2011). On this basis, and my suggestion about the lack of ritual in the east Mediterranean, I would be inclined to suggest that there was relatively little arousal in whatever religious practices may have been typical in that region, and that the west Mediterranean may have been in the high arousal mode.

Finally in this review of the associations of different ritual and symbolic experiences, I refer to the work of Descola (2006). He has associated generalisations about the production of art with the patterns of belief about physical form and cognition in naturalism (as in the Western world), Totemism (as in some Australian Aboriginal societies), Animism (as in certain native South American tribes), and Analogism (as in some Central American peoples) (see also Descola 2010). Each of these ontologies (as Descola calls them) reflects in its representations of the world people's beliefs about the relationship between humans and the rest of animate or inanimate nature (see Fig. 1) –whether the people recognise their similarity or difference from the rest of the world in their physical nature or their mental (interior) nature. Unfortunately, it is much more difficult to infer the ontology from the traces of those representations alone –the images will not allow us simply to attach a label to

---

4 Sauvet *et al.*, De l'iconographie d'un art rupestre à son interprétation anthropologique. I have argued elsewhere in this volume (Davidson 'What a carry on?') that it is also possible for there to be different world views within a single iconic tradition. This is an example of just how difficult it is to infer particular patterns of religious behaviour on the basis of the archaeological evidence. Nevertheless, I would argue that all of these discussions support the proposition that in seeking to understand the different outcomes at the end of the Pleistocene in the economies of the societies at different ends of the Mediterranean, we have tended to pay too little attention to the symbolic context of those societies as it evolved over the millennia. In my opinion, new light will be shed on the emergence of hunting and gathering in Europe and of agriculture in the east Mediterranean by paying more attention to the regional differences in the symbolism and ritual of painting and engraving practices between the two regions. What this discussion has shown is that among non-agricultural peoples in different parts of the Mediterranean basin, the behaviour associated with painting and engraving was quite different, probably involving different ontologies, different ritual intensities, and different religious modes.

prehistoric ontologies. Nevertheless, the important point for this argument is that fundamental ruptures in the way in which the world is represented probably correspond to different world views.



**Fig. 1.** The four ontologies described by Descola in terms of whether people recognise their similarity or difference from the rest of the world in their physical nature or their mental (interior) nature. Images clockwise from top left: **1.** Bark painting of Djanda–Goanna by Fred Nanganarralil of the Ramangining Arts Community purchased by Iain Davidson (*photo Iain Davidson*); **2.** Jan van Eyck’s portrayal of the wealthy merchant Giovanni Arnolfini’s marriage 1434 (e.g. <[http://en.wikipedia.org/wiki/Arnolfini\\_Portrait](http://en.wikipedia.org/wiki/Arnolfini_Portrait)> – accessed 2012/04/15); **3.** Classic period image of Tlaloc from Teotihuacan, Mexico (*photo Iain Davidson*); **4.** Nineteenth century Nuxalk transformation mask from Bella Coota, British Columbia, Canada. (*From Stuttgart, Linden Museum reproduced from Descola 2010, Fig. 1, p. 12.*)

## Australia

I conclude with a brief discussion of the situation in Australia. It has long been known that there is considerable variation in the paintings and engravings on rock of the more recent period in Australia (David & Chant 1995; Davidson *et al.* 2005; Layton 1992; McDonald & Haskovec 1992; McDonald & Veth 2006; Taçon 1993). What is slightly more contentious is the argument that regional differentiation of painting and engraving styles has very ancient roots, with a good case to be made that the distinctive styles of the Dampier Archipelago (Mulvaney 2009), Kimberley (Watchman *et al.* 1997), Kakadu (Chaloupka 1993; Chippindale & Taçon 1998), Cape York (Cole & Watchman 2005) and the Nullarbor Plain (Wright 1971) were present at least in the Pleistocene (Balme *et al.* 2009) as was painting in East Timor (Aubert *et al.* 2007). In addition, there is widespread and diverse evidence from the

earliest times onwards of symbolic marking in a variety of other ways including the use of ochre (Bowler & Thorne 1976) in the earliest open-air burials in the world (Bowler *et al.* 2003), and personal ornaments (Balme & Morse 2006). The populations who initially colonised must inevitably have been small, since at least 10 water crossings were needed to make it to the enlarged continent, Sahul, composed of Australia (including Tasmania) and New Guinea. Despite this, by the time Europeans arrived there were more than 1200 different languages spoken in the Australia and New Guinea (see discussion in e.g. Evans 2010). This differentiation, I argue, is largely a symbolic marking of difference, and it seems highly likely that the same forces that created differentiation by language contributed to the increased variation in rock paintings and engravings (Davidson 2010). We have argued, elsewhere, that the different symbolic markers played different roles in the establishment and maintenance of human populations in different parts of Sahul (Veth *et al.* in press).

In the end, of course, the painting traditions of Arnhem Land have become well known through the animal paintings on barks surrounded by cross hatched diamond designs (Morphy 1991), while the sand drawings of Central Australia have been converted into a rich painting tradition known colloquially as “dotty paintings” (Myers 2002). Ingold (2000: 115-121) has discussed how the enigmatic complementarity of these (and other) Australian painting traditions can be construed as different interpretations of the totemic rituals and mythology about the relations between people and the creatures and places of their environments. We have, therefore, much evidence of the relationship between different forms of symbolic construction of identity through the making and marking of surfaces, and how those forms of marking establish how people marked their difference from others. Investigating how such processes worked out in the long history of people in Australia is a project yet to be achieved. But the answers will come from recognising the variation at particular times and the variation in space and the variations in time and space within these continuing and differentiating societies of fisher-gatherer-hunters through the same sorts of insights as we need to apply to the same sorts of variation among the non-agricultural peoples of the Mediterranean basin.

## Conclusion

This argument leads to a number of important conclusions.

1. The history of painting and engraving and ritual in the Late Pleistocene is complex and variable between regions.
2. The paintings and engravings of the European Upper Palaeolithic are only one manifestation of the several different symbolic worlds of the late Pleistocene.
3. The differences between the uses of painting and engraving in the east and west Mediterranean regions probably reflect ontological, ritual and religious differences between the societies in those regions.
4. The differences between these two ontologies may be related to the emergence of agriculture in the east but not in the west.
5. People without agriculture may have had a variety of different ontological systems which changed as they worked out their relationships with each other

and with their environments, as shown by Australian archaeology (Balme *et al.* 2009; Veth *et al.* in press).

6. Changes in ontology through time may be the key to understanding how some people so altered their relationship with the resources of the environment that they became agriculturalists and pastoralists.

The further implication of the symbolic relationships worked out through painting and engraving is that such ritual, probably religious, behaviour may have been a significant factor in some peoples continuing to live without agriculture and pastoralism, as in Australia the “continent of hunter-gatherers”. Although there are similarities in the intensity of ritual activity between Australia and New Guinea (see e.g. Atkinson & Whitehouse 2011), the form of these symbolic activities seems to have been quite different between the two regions, and may have played a significant role in the lack of movement of agricultural activities across Torres Strait, and the lack of significant penetration by the Austronesians (see e.g. Reesink *et al.* 2009).

Painting and engraving, including painting and engraving in caves, on plaquettes and on rocks, is a key to understanding these differences in time and space because it marks difference and makes identity for individuals and groups.

## Acknowledgments

I would like to thank the following people who discussed these ideas with me, provided pdfs or otherwise assisted in the preparation of the paper: Jane Balme, Daniela Bar-Yosef Mayer, Anna Belfer-Cohen, Simon Davis, Philip Edwards, Manuel Gandara, Erella Hovers, Bob Layton, Jo McDonald, April Nowell, Nikki Stern, Peter Veth. I am responsible for the final form of the arguments.

## BIBLIOGRAPHY

- ALTUNA J. 1983. — On the relationship between archaeofaunas and parietal art in the Cantabrian region. *In*: CLUTTON-BROCK J. & GRIGSON C. (eds.), *Animals and archaeology 1: hunters and their prey*, p. 227-238. Oxford: Archaeopress. (BAR International Series; 163).
- ALTUNA J. 1984. — Relación entre la fauna cazada por los pobladores del yacimiento y las figuras representadas en el santuario. *In*: ALTUNA J. & MERINO J.M. (eds.), *El yacimiento prehistórico de la Cueva de Ekain (Deba, Guipuzcoa)*, p. 281-286. San Sebastian: Eusko Ikaskuntza.
- ALTUNA J. 1994. — La relación fauna consumida-fauna representada en el Paleolítico Superior Cantábrico. *Complutum*, 5, p. 303-311.
- ATKINSON Q.D. & WHITEHOUSE H. 2011. — The cultural morphospace of ritual form: Examining modes of religiosity cross-culturally. *Evolution and Human Behavior*, 32(1), p. 50-62.
- AUBERT M., O'CONNOR S., McCULLOCH M., MORTIMER G., WATCHMAN A., RICHER-LAFLECHE M. 2007. — Uranium-series dating rock art in East Timor. *Journal of Archaeological Science*, 34 (6), p. 991-996.
- BAHN P. 1986. — No sex please, we're Aurignacians. *Rock Art Research*, 3, p. 99-120.
- BALME J., DAVIDSON I., McDONALD J., STERN N., VETH P. 2009. — Symbolic behaviour and the peopling of the southern arc route to Australia. *Quaternary International*, 202 (1-2), p. 59-68.
- BALME J. & MORSE K. 2006. — Shell beads and social behaviour in Pleistocene. *Antiquity*, 80 (310), p. 799-811.
- BAR-YOSEF MAYER D.E. 2005. — The exploitation of shells as beads in the Palaeolithic and Neolithic of the Levant. *Paléorient*, 31 (1), p. 176-185.

- BAR-YOSEF O. 1997. — Symbolic expression in later prehistory of the Levant: why are there so few? In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond art: Pleistocene image and symbol.*, p. 161-187. San Francisco: California Academy of the Sciences.
- BAR-YOSEF O. 1998. — The Natufian culture in the Levant, threshold to the origins of agriculture. *Evolutionary Anthropology: Issues, News, and Reviews*, 6 (5), p. 159-177.
- BAR-YOSEF O. & BELFER-COHEN A. 1999. — Encoding information: unique Natufian objects from Hayonim Cave, Western Galilee, Israel. *Antiquity*, 73, p. 402-410.
- BAR-YOSEF O., BELFER-COHEN A., GOLDBERG P., KUHN S.L., MEIGNEN L., VANDERMEERSCH B., WEINER S. 2005. — Archaeological background to Hayonim Cave and Meged Rockshelter. In: STINER M.C. (ed.), *The faunas of Hayonim Cave, Israel. A 200,000-year record of Paleolithic diet, demography, and society*, p. 17-38. Cambridge, MA: Peabody Museum of Archaeology and Ethnology. (American School of Prehistoric Research Bulletin; 48).
- BELFER-COHEN A. 1991. — The Natufian in the Levant. *Annual Review of Anthropology*, 20 (1), p. 167-186.
- BELFER-COHEN A. & HOVERS E. 1992. — In the eye of the beholder: Mousterian and Natufian burials in the Levant. *Current Anthropology*, 33 (4), p. 463-471.
- BOCQUET-APPEL J.-P. & DEMARS P.-Y. 2000. — Population kinetics in the Upper Palaeolithic in Western Europe. *Journal of Archaeological Science*, 27 (7), p. 551-570.
- BOWLER J.M., JOHNSTON H., OLLEY J.M., PRESCOTT J.R., ROBERTS R.G., SHAWCROSS W., SPOONER N.A. 2003. — New ages for human occupation and climatic change at Lake Mungo, Australia. *Nature*, 421 (6925), p. 837-840.
- BOWLER J.M. & THORNE A. 1976. — Human remains from Lake Mungo: discovery and excavation of Lake Mungo III. In: KIRK R.L. & THORNE A.G. (eds.), *The Origin of the Australians*, p. 127-138. Canberra: Australian Institute of Aboriginal Studies.
- BRADLEY R. 1997. — *Rock art and the prehistory of Atlantic Europe. Signing the land*. London: Routledge.
- BRADLEY R. 2009. — *Image and audience. Rethinking prehistoric art*. Oxford: Oxford University Press.
- CAUVIN J. 1977. — Les fouilles de Mureybet (1971-1974) et leur signification pour les origines de la sédentarisation au Proche-Orient. *American Schools of Oriental Research, Annual* 44, p. 19-48.
- CAUVIN J. 2000. — *The beginnings of agriculture in the Near East: a symbolic interpretation*. Cambridge: Cambridge University Press.
- CHALOUPKA G. 1993. — *Journey in time. The world's longest continuing art tradition. The 50, 000-year story of the Australian Aboriginal rock art of Arnhem Land*. Chatswood, Australia: Reed.
- CHAUVET J.-M., BRUNEL-DESCHAMPS É, HILLAIRE C. 1995. — *La grotte Chauvet à Vallon-Pont-d'Arc*. Paris: Éditions du Seuil.
- CHIPPINDALE C., SMITH B., TAÇON P.S.C. 2000. — Visions of dynamic power: Archaic rock-paintings, altered states of consciousness and 'clever men' in Western Arnhem Land (NT), Australia. *Cambridge Archaeological Journal*, 10 (1), p. 63-101.
- CHIPPINDALE C. & TAÇON P.S.C. 1998. — The many ways of dating Arnhem Land rock-art, north Australia. In: CHIPPINDALE C. & TAÇON P.S.C. (eds.), *The archaeology of rock-art*, p. 90-111. Cambridge: Cambridge University Press.
- CLOTTE J. (ed.) 2001. — *La Grotte Chauvet. L'art des origines*. Paris: Éditions du Seuil.
- CLOTTE J. 2009. — Sticking bones into cracks in the Upper Palaeolithic. In: RENFREW C. & MORLEY I. (eds.), *Becoming human: innovation in prehistoric material and spiritual culture*, p. 195-211. Cambridge: Cambridge University Press.
- CLOTTE J., BELTRÁN A., COURTIN J., COSQUER H. 1992. — The Cosquer Cave on Cape Morgiou, Marseilles. *Antiquity*, 66, p. 583-598.
- CLOTTE J. & LEWIS-WILLIAMS J.D. 1998. — *The shamans of prehistory. Trance and magic in the painted caves*. New York: Harry N. Abrams.
- COLE N. & WATCHMAN A. 2005. — AMS dating of rock art in the Laura region, Cape York Peninsula, Australia—protocols and results of recent research. *Antiquity*, 79, p. 661-678.
- CONKEY M. 1997. — Beyond art and between the caves: thinking about context in the interpretive process. In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond art: Pleistocene image and symbol*, p. 343-367. San Francisco: The California Academy of Sciences.
- CONKEY M.W. 1980. — The identification of prehistoric hunter-gatherer aggregation sites: the case of Altamira. *Current Anthropology*, 21 (5), p. 609-630.
- CONKEY M.W. 1989. — The structural analysis of Paleolithic art. In: LAMBERG-KARLOVSKY C.C. (ed.), *Archaeological thought in America*, p. 135-154. Cambridge: Cambridge University Press.

- D'ERRICO F. & NOWELL A. 2000. — A new look at the Berekhat Ram figurine: Implications for the origins of symbolism. *Cambridge Archaeological Journal*, 10 (1), p. 123-167.
- DAVENPORT D. & JOCHIM M.A. 1988. — The scene in the shaft at Lascaux. *Antiquity*, 62, p. 558-562.
- DAVID B. & CHANT D. 1995. — Rock art and regionalisation in North Queensland prehistory. *Memoirs of the Queensland Museum* 37 (2), p. 357-528.
- DAVIDSON I. 1989. — Freedom of information: aspects of art and society in western Europe during the last ice age. In: MORPHY H. (ed.), *Animals into art*, p. 440-456. London: Unwin Hyman.
- DAVIDSON I. 1990. — Bilzingsleben and early marking. *Rock Art Research*, 7, p. 52-56.
- DAVIDSON I. 1991. — "A great thick cloud of dust": Naming and dating in the interpretation of behavior in the Late Paleolithic of Spain. In: CLARK G.A. (ed.), *Perspectives on the past. Theoretical biases in Mediterranean hunter-gatherer research*, p. 194-203. Philadelphia: University of Pennsylvania Press.
- DAVIDSON I. 1997. — The power of pictures. In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond art: Pleistocene image and symbol*, p. 128-158. San Francisco: The California Academy of Sciences.
- 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, p. 121-131.
- DAVIDSON I. 2005. — The painting and the tree: symbolism in the Upper Palaeolithic. A tribute to a great Basque scholar. *Munibe (Antropologia-Arkeologia)*, 57, p. 197-205.
- DAVIDSON I. 2006. — *Getting power from old bones: some mediterranean museums and their importance. 10<sup>th</sup> Maurice Kelly Lecture*. Armidale: University of New England.
- DAVIDSON I. 2010. — Australian Archaeology as a historical science. *Journal of Australian Studies*, 34 (3), p. 377-398.
- DAVIDSON I. *in prep.* — How art emerged from the incidental making of signs of hominin activity to become self-conscious human making of meaning through signs. A paper for the conference "Origins of Pictures – Anthropological Discourses In Picture Science" Chemnitz, Germany March 30 – April 1, 2011.
- DAVIDSON I., COOK N.D.J., FISCHER M., RIDGES M., ROSS J., SUTTON S.A. 2005. — Archaeology in another country: exchange and symbols in North West Central Queensland. In: MACFARLANE I., MOUNTAIN M.J., PATON R. (eds.), *Many exchanges: archaeology, history, community and the work of Isabel McBryde*, p. 101-128. Canberra: Aboriginal History Inc. (Aboriginal History Monographs; 11.).
- DAVIDSON I. & NOBLE W. 1992. — Why the first colonisation of the Australian region is the earliest evidence of modern human behaviour. *Archaeology in Oceania*, 27, p. 135-142.
- DAVIS S.J.M. 1974. — Incised bones from the Mousterian of Kebara cave (Mount Carmel) and the Aurignacian of Ha-Yonim cave (Western Galilee), Israel. *Paléorient*, 2 (1), p. 181-182.
- DAVIS S.J.M. & VALLA F.R. 1978. — Evidence for domestication of the dog 12,000 years ago in the Natufian of Israel. *Nature*, 276, p. 608-610.
- DAVIS W. 1986. — The origins of image making. *Current Anthropology*, 27, p. 193-215.
- DELLUC B. & DELLUC G. 1978. — Les manifestations graphiques aurignaciennes sur support rocheux de environs des Eyzies (Dordogne). *Gallia Préhistoire*, 21, p. 213-438.
- DESCOLA P. 2006. — La fabrique des images. *Anthropologie et Sociétés*, 30 (2), p. 167-182.
- DESCOLA P. (ed.) 2010. — *La fabrique des images. Visions du monde et formes de la représentation*. Paris: Somogy Éditions d'art et Musée du Quai Branly.
- EDWARDS P.C. 2008. — The symbolic dimensions of material culture at Wadi Hammeh 27. In: CÓRDOBA J.M., MOLIST M., PÉREZ M.C., RUBIO I., MARTÍNEZ S. (eds.), *Actas del V congreso internacional de arqueología del oriente próximo antiguo*. Vol. III, p. 507-520. Madrid: Universidad Autónoma de Madrid, Centro Superior de Estudios sobre el Oriente Próximo y Egipto.
- EVANS N. 2010. — *Dying words: endangered languages and what they have to tell us*. Malden, MA: Wiley-Blackwell.
- GAMBLE C.S. 1982. — Interaction and alliance in Palaeolithic society. *Man: Journal of the Royal Anthropological Institute*, 17, p. 92-107.
- GAMBLE C.S., DAVIES W., PETTITT P., RICHARDS M. 2004. — Climate change and evolving human diversity in Europe during the last glacial. *Philosophical transactions of the Royal Society of London Series B—Biological Sciences*, 359, p. 243-254.
- GARROD D.A.E. 1930. — Note on three objects of Mesolithic age from a cave in Palestine. *Man*, 30, p. 77-78.
- GARROD D.A.E. 1932. — A new Mesolithic industry: the Natufian of Palestine. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland*, 62, p. 257-269.
- GOMBRICH E.H. 1995. — *The story of art*. London: Phaidon, 16<sup>th</sup> ed.

- GONZÁLEZ MORALES M.R. 1991. — From hunter-gatherers to food producers in northern Spain: smooth adaptive shifts or revolutionary change in the Mesolithic. In: CLARK G.A. (ed.), *Perspectives on the past. Theoretical biases in Mediterranean hunter-gatherer research*, p. 204-216. Philadelphia: University of Pennsylvania Press.
- GONZÁLEZ SAINZ C. 2007. — Dating Magdalenian art in North Spain: the current situation. In: BAHN P. & RIPOLL S. (eds.), *Palaeolithic Cave Art at Creswell Crags in European Context.*, p. 247-262. Oxford: Oxford University Press.
- GORING-MORRIS A.N. & BELFER-COHEN A. 2010. — Different ways of being, different ways of seeing... changing worldviews in the Near East. In: FINLAYSON B. & WARREN G. (eds.), *Landscapes in transition: understanding hunter-gatherer and farming landscapes in the Early Holocene of Europe and the Levant*, p. 9-22. Oxford, UK: Council for British Research in the Levant and Oxbow Books. (Levant Supplementary Series; 8).
- GROSMAN L., MUNRO N.D., BELFER-COHEN A. 2008. — A 12,000-year-old Shaman burial from the southern Levant (Israel). *Proceedings of the National Academy of Sciences*, 105 (46), p. 17665-17669.
- GUNN R.G. & MULVANEY K. 2008. — Of turtles in particular: a distributional study of an archaeological landscape in southern Murujuga. *Rock Art Research*, 25 (2), p. 147-164.
- GUTHRIE R.D. 2005. — *The nature of Paleolithic art*. Chicago: The University of Chicago Press.
- HENSHILWOOD C.S., D'ERRICO F., WATTS I. 2009. — Engraved ochres from the Middle Stone Age levels at Blombos Cave, South Africa. *Journal of Human Evolution*, 57 (1), p. 27-47.
- HOVERS E. 1990. — Art in the Levantine Epi-Palaeolithic: an engraved pebble from a Kebaran site in the Lower Jordan Valley. *Current Anthropology*, 31 (3), p. 317-322.
- INGOLD T. 2000. — *Perception of the environment: essays on livelihood, dwelling and skill*. London: Routledge.
- KUHN S.L., STINER M.C., REESE D.S., GULEC E. 2001. — Ornaments of the earliest Upper Paleolithic: New insights from the Levant. *Proceedings of the National Academy of Sciences of the United States of America*, 98 (13), p. 7641-7646.
- KUNTZ D. & COSTAMAGNO S. 2010, *in press*. — Relationships between reindeer and man in southwestern France during the Magdalenian. *Quaternary International*.
- LAYTON R. 1992. — *Australian rock art. A new synthesis*. Melbourne: Cambridge University Press.
- LAYTON R. 2000. — Shamanism, totemism and rock art: Les Chamanes de la Préhistoire in the context of rock art research. *Cambridge Archaeological Journal*, 10 (01), p. 169-186.
- LEROI-GOURHAN A. n.d. — *Treasures of prehistoric art*. New York: Harry N. Abrams.
- LEWIS-WILLIAMS J.D. 2002. — *The mind in the cave*. London: Thames and Hudson.
- LEWIS-WILLIAMS J.D. 2004. — Neuropsychology and Upper Palaeolithic art: observations on the progress of altered states of consciousness. *Cambridge Archaeological Journal*, 14 (1), p. 107-111.
- LEWIS-WILLIAMS, J.D. & DOWSON T.A. 1988. — The signs of all times: entoptic phenomena in Upper Palaeolithic art. *Current Anthropology*, 29, p. 201-245.
- MALAFOURIS L. 2007. — Before and beyond representation: towards an enactive conception of the palaeolithic image. In: R.C. & MORLEY I. (eds.), *Image and imagination: a global history of figurative representation*, p. 287-300. Cambridge: The McDonald Institute.
- MARSHACK A. 1996. — A Middle Paleolithic symbolic composition from the Golan Heights: The earliest known depictive image. *Current Anthropology*, 37 (2), p. 357-365.
- MARSHACK A. 1997. — Paleolithic image making and symboling in Europe and the Middle East: a comparative review. In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond art: Pleistocene image and symbol*, p. 53-91. San Francisco: The California Academy of Sciences.
- MCCALL G.S. 2007. — Add shamans and stir? A critical review of the shamanism model of forager rock art production. *Journal of Anthropological Archaeology*, 26 (2), p. 224-233.
- MCDONALD J. & HASKOVEC I.P. (eds.) 1992. — *State of the art: regional rock art studies in Australia and Melanesia*. Melbourne: Australian Rock Art Research, Association.
- MCDONALD J. & VETH P. 2006. — Rock art and social identity: a comparison of Holocene graphic systems in arid and fertile environments. In: LILLEY I. (ed.), *Archaeology of Oceania: Australia and the Pacific Islands*, p. 96-115. Carlton, Vic: Blackwell Publishing.
- MELLARS P. & TIXIER J. 1989. — Radiocarbon-accelerator dating of Ksar 'Aqil (Lebanon) and the chronology of the Upper Palaeolithic sequence in the Middle East. *Antiquity*, 63, p. 761-68.
- MILLER G. 2001a. — *The mating mind. How sexual choice shaped the evolution of human nature*. New York: Anchor Books.
- MILLER G.F. 2001b. — Aesthetic fitness: How sexual selection shaped artistic virtuosity as a fitness indicator and aesthetic preferences as mate choice criteria. *Bulletin of Psychology and the Arts* 2(1), p. 20-25.
- MORO ABADIA O. 2006. — Arts, craft and prehistoric art. *Journal of Social Archaeology*, 6, p. 119-141.

- MORO ABADIA, O. & GONZALES MORALES, M.R. 2005. — Analogy and representation of primitive art at the end of the nineteenth century. *L'Anthropologie*, 109, p. 703-721.
- MORPHY H. 1991. — *Ancestral Connections: art and an Aboriginal system of knowledge*. Chicago: The University of Chicago Press.
- MULVANEY K. 2009. — Dating the Dreaming: extinct fauna in the petroglyphs of the Pilbara region, Western Australia. *Archaeology in Oceania*, p. 40-48.
- MUERS F.R. 2002. — *Painting culture. The making of an Aboriginal High Art*. Durham, NC: Duke University Press.
- NADEL D. 1994. — Levantine Upper Palaeolithic - Early Epipalaeolithic burial customs: Ohalo II as a case study. *Paléorient*, 20 (1), p. 113-121.
- NOBLE W. & DAVIDSON I. 1993. — Tracing the emergence of modern human behaviour: Methodological pitfalls, and a theoretical path. *Journal of Anthropological Archaeology*, 12, p. 121-149.
- NOWELL A. 2008. — Is there a place for aesthetics in the study of Pleistocene visual cultures? In: HEYD T. & CLEGG J. (eds.), *Aesthetics and rock art III Symposium*, p. 99-102. Oxford: Archaeopress. (BAR International Series; 1818).
- NOY T. 1991. — Art and decoration of the Natufian at Nahal Oren. In: BAR-YOSEF O. & VALLA F.R. (eds.), *The Natufian culture in the Levant*, p. 557-568. Ann Arbor, MI: International Monographs in Prehistory.
- OTTE M., YALCINKAYA I., LÉOTARD J., KARTAL M., BAR-YOSEF O., KOZLOWSKI J., BAYON I., MARSHACK A. 1995. — The Epi-Palaeolithic of Okuzini cave (SW Anatolia) and its mobiliary art. *Antiquity*, 69, p. 931-944.
- PEIRCE C.S. 1986. — Logic as semiotic: the theory of signs. In: INNIS R.E. (ed.), *Semiotics. An introductory anthology*, p. 1-23. London: Hutchinson.
- PETERS J. & SCHMIDT K. 2004. — Animals in the symbolic world of Pre-Pottery Neolithic Göbekli Tepe, south-eastern Turkey: a preliminary assessment. *Anthropozoologica*, 39 (1), p. 179-218.
- PETTIT P. 2005. — The rise of modern humans. In: SCARRE C. (ed.), *The human past. World prehistory and the development of human societies*, p. 124-173. London: Thames and Hudson.
- RAPPAPORT R.A. 1999. — *Ritual and religion in the making of humanity*. Cambridge, UK: Cambridge University Press.
- REESINK G., SINGER R., DUNN M. 2009. — Explaining the linguistic diversity of Sahul using population models. *PLoS Biology* 7 (11), e1000241.
- RICE P.C. & PATERSON A.L. 1985. — Cave art and bones: exploring the interrelationships. *American Anthropologist*, 87, p. 94-100.
- RICE P.C. & PATERSON A.L. 1986. — Validating the cave art - archeofaunal relationship in Cantabrian Spain. *American Anthropologist*, 88, p. 658-667.
- ROLLEFSON G.O. 2008. — Charming lives: human and animal figurines in the late Epipaleolithic and early Neolithic periods in the greater Levant and eastern Anatolia. In: BOCQUET-APPEL J.-P. & BAR-YOSEF O. (eds.), *The Neolithic demographic transition and its consequences*, p.387-416. New York: Springer.
- ROSENFELD A. 1997. — Archaeological signatures of the social context of rock art production. In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond art: Pleistocene image and symbol*, p. 289-300. San Francisco: The California Academy of Sciences.
- ROSS J. 2003. — *Rock Art, Ritual and Relationships. An archaeological analysis of rock art from the central Australian arid zone*. Armidale University of New England. (Unpublished PhD thesis, Archaeology and Palaeoanthropology).
- SAUVET G., LAYTON R., LENSSEN-ERZ T., TAÇON P., WLODARCZYK A. 2009. — Thinking with Animals in Upper Palaeolithic Rock Art. *Cambridge Archaeological Journal*, 19 (03):319-336.
- SAUVET G., LAYTON R.H., LENSSEN-ERZ T., TAÇON P., WLODARCZYK A. 2000. — La structure iconographique d'un art rupestre est-elle une clef pour son interprétation ?. *Zephyrus*, 59, p. 97-110.
- SHINER L. 2001. — *The invention of art: cultural history*. Chicago: The University of Chicago Press.
- SOFFER O. & CONKEY M.W. 1997. — Studying ancient visual cultures In: CONKEY M., SOFFER O., STRATMANN D., JABLONSKI N.G. (eds.), *Beyond Art: Pleistocene Image and Symbol*, p. 1-16. San Francisco: California Academy of the Sciences.
- SOFFER O., VANDIVER P., KLIMA B., SVOBODA J. 1989. — The origins of ceramic technology at Dolni Vestonice, Czechoslovakia. *Science*, 246, p. 1002-1008.
- STEFFENSEN J.P., ANDERSEN K.K., BIGLER M., CLAUSEN H.B., DAHL-JENSEN D., FISCHER H., GOTO-AZUMA K., HANSSON M., JOHNSEN S.J., JOUZEL J., MASSON-DELMOTTE V., POPP T., RASMUSSEN S.O., ROTHLISBERGER R., RUTH U., STAUFFER B., SIGGAARD-ANDERSEN M.L., SVEINBJORNSDOTTIR A.E., SVENSSON A., WHITE J.W.C. 2008. — High-resolution Greenland ice core data show abrupt climate change happens in few years. *Science*, 321 (5889), p. 680-684.



- STREHLOW T.G.H. 1970. — Geography and the totemic landscape in Central Australia. In: BERNDT R.M. (ed.), *Australian Aboriginal Anthropology*. Perth: University of Western Australia Press.
- TAÇON P.S.C. 1993. — Regionalism in the recent rock art of western Arnhem Land, Northern Territory. *Archaeology in Oceania*, 28, p. 112-120.
- TEXIER P.-J., PORRAZ G., PARKINGTON J., RIGAUD J.-P., POGGENPOEL C., MILLER C., TRIBOLO C., CARTWRIGHT C., COUDENNEAU A., KLEIN R., STEELE T., VERNA C. 2010. — From the Cover: A Howiesons Poort tradition of engraving ostrich eggshell containers dated to 60,000 years ago at Diepkloof Rock Shelter, South Africa. *Proceedings of the National Academy of Sciences*, 107 (14), p. 6180-6185.
- TIXIER J. 1974. — Poinçon décoré du Paléolithique supérieur à Ksar' Aqil (Liban). *Paléorient*, 2 (1), p. 187-192.
- UCKO P.J. & ROSENFELD A. 1967. — *Palaeolithic cave art*. London: Weidenfeld and Nicolson.
- VAN POOL C.S. 2009. — The signs of the sacred: identifying shamans using archaeological evidence. *Journal of Anthropological Archaeology*, 28, p. 177-190.
- VETH P., STERN N., McDONALD J., BALME J., DAVIDSON I. *in press*. — The role of information exchange in the colonisation of Sahul. In: WHALLON R., LOVIS W.A., HITCHCOCK R.K. (eds.), *Information and its role in hunter-gatherer bands*. Los Angeles: Cotsen Institute of Archaeology Press.
- WATCHMAN A.L., WALSH G.L., MORWOOD M.J., TUNIZ C. 1997. — AMS radiocarbon age estimates for early rock paintings in the Kimberley, NW Australia: preliminary results. *Rock Art Research*, 14:18-25.
- WHITEHOUSE H. 2002. — Modes of religiosity: Towards a cognitive explanation of the sociopolitical dynamics of religion. *Method and Theory in the Study of Religion*, 14, p. 293-315.
- WHITLEY D.S. 2009. — *Cave paintings and the human spirit: the origin of creativity and belief*. New York: Prometheus Books.
- WRIGHT R.V.S. (ed.) 1971. — *Archaeology of the Gallus Site, Koonalda Cave*. Canberra: Australian Institute of Aboriginal Studies.

## Quote this article

- DAVIDSON I. 2012. — Symbolism and becoming a hunter-gatherer. In: CLOTTE J. (dir.), *L'art pléistocène dans le monde / Pleistocene art of the world / Arte pleistoceno en el mundo*, Actes du Congrès IFRAO, Tarascon-sur-Ariège, septembre 2010, Symposium « Signes, symboles, mythes et idéologie... ». N° spécial de *Préhistoire, Art et Sociétés, Bulletin de la Société Préhistorique Ariège-Pyrénées*, LXV-LXVI, 2010-2011, CD: p. 1689-1705.