

Chapter 6. Exploring the long-range pre- and protohistory of element cosmologies: Steps in the unfolding of human thought faculties

6.1. Explorations into the Middle Palaeolithic prehistory of element cosmologies

Can we say something about the oldest forms of the transformation cycle of elements, and estimate their antiquity? Recent reconstructions in the field of comparative mythology allow us a glimpse into the remote past of human thought.

We have seen that the various element cosmologies studied above have often been used for divination. We shall now probe into the joint history of element cosmologies and divination, seeking to delve even deeper than the Upper Palaeolithic, if possible. Unexpected indications concerning the antiquity of element systems come to light when we manage to plausibly reconstruct some of the mythological contents of Pandora's Box.¹⁵¹ Starting with a sample of African cosmogonic myths recorded in historical times, I have presented a distributional argument tentatively identifying the mythemic nuclei ('Narrative Complexes') in these African myths, and attempted to trace their prehistoric trajectory through space and time after the Out-of-Africa Exodus; the reconstruction method is a form of argued distributional triangulation, and has so far been executed and written up entirely without any explicit or conscious reference to divination. If a Narrative Complex occurs in sub-Saharan Africa, New Guinea, Australia,

¹⁵¹ van Binsbergen 2006a, 2006b; Table 6.1 below, *cf.* Tables 2.1 and 2.2 above.

it is likely to have found itself in Pandora's Box, because for reasons of ecological adaptation Anatomically Modern Humans, in their first sallies Out of Africa, c. 60-80 ka BP, initially seem to have kept close to the Indian Ocean shores until reaching New Guinea and Australia (which before the Early Holocene global rise of the sea level by 200 m could have been completed with dry feet except for a 70 km patch of open sea South of Timor – proof of humans' early nautical abilities; cf. Bednarik 1997, 1999), but without populating the other continents yet. Meanwhile Table 6.1 suggests that divinatory patterns as recorded in historical times, and their implications in terms of element systems, so unmistakably echo the specific reconstructed contents of Pandora's Box, at the onset of the Middle Palaeolithic, that we may persuade ourselves to see continuity between the two periods, and thus acquire an inkling of what may have been a surprisingly rich divinatory life in the Middle to Upper Palaeolithic, in Africa as well as in other continents where Anatomically Modern Humans gradually took the, element-relevant, contents of Pandora's Box. This step is admittedly not without risks: even if the complex reconstruction underlying Table 6.1 was executed without any conscious thought of divination and element systems, still the same author who processed these data and compiled the Table has been so preoccupied with divination and element systems over the past quarter of a century, that it cannot be ruled out that that domain of empirical analysis inadvertently seeped into the comparative mythology domain, rendering the results somewhat dependent upon one another. However, that is a risk I am prepared to admit, and yet to take.

Narrative Complex (NC) (nuclear mytheme) reconstructed to have been in Pandora's Box	Narrative Complex no.	proposed use of this mytheme in Middle and Upper Palaeolithic proto-divination as suggested by divinatory patterns in historical times¹⁵²	proposed element in transformation cycle
The Lightning Bird (and the World Egg)	4	lightning as omen fowl as divinatory ani-	Air, Aether; Fire

¹⁵² The literature on the numerous forms of divination through space and time is enormous, and cannot be adequately represented here. I limit myself to a minimum selection per item. Rich source on the comparative study of divination are: Hastings 1908-1921: IV, 775-830; Le Scouézec *et al.* 1965.

¹⁵³ Hastings 1908-1921, II, 55, iv. 820-826 (Roman divination); III, 697 (cock omen).

		mal ¹⁵³	
The Stones (as Earth; in the Late Palaeolithic / proto-Neolithic probably revised to become 8a. The Stones / Meteorites as Connection between Heaven and Earth)	8	psephomancy (divination by pebbles); ¹⁵⁴ divination from stones and rocks ¹⁵⁵	Earth; Aether, Air; Metal (e.g. sidereal iron)
The Moon	9	Moon as omen, ¹⁵⁶ proto-astrology	?
The Earth as primary (apparently, NC 10 was subsequently revised towards 'The Earth as the Source of Cattle, in the Neolithic)	10	earth omens, proto-geomancy	Earth
From under the Tree (probably subsequently diversified into 12a 'The world and humanity from the tree', and 12c 'The Leg-Child')	12	divination by trees, branches, twigs; ¹⁵⁷ cleromancy with wooden tablets etc. ¹⁵⁸	Wood
The Cosmic / Rainbow Snake	13	snake as divinatory animal, snake omens ¹⁵⁹	Aether, Air; Earth
The Spider (probably subsequently transformed into 15a 'The Feminine Arts' in proto-Neolithic times)	15	spider as omen and divinatory animal ¹⁶⁰	? (Aether, Air)

Table 6.1. The divinatory and element-cosmological significance of the reconstructed mythological contents of Pandora's Box, Africa, 80-60 ka BP and earlier.

Apparently, the element-cosmological classification systems which exerted a major influence upon literate divination systems of the post-Neolithic period already had some detectable roots in Pandora's Box, at

¹⁵⁴ Horowitz & Hurowitz 1992.

¹⁵⁵ Hastings 1908-1921: XI, 866-867.

¹⁵⁶ Hastings 1908-1921: XII, 64-65.

¹⁵⁷ Hastings 1908-1921: II, 832, XII, 455b-457.

¹⁵⁸ See above, Chapter 2 and *passim*.

¹⁵⁹ Hastings 1908-1921: I, 526b-527, and XI, 406. Confusion with Earth possible because of homonymy: Starostin & Starostin 1998-2008, 'Indo-European etymology' note that proto-Indo-European: *dg'hem- 'earth' (Pokorny 1959-69: I 662 *f*.; Buck n.d.: 16) is '[h]ard to distinguish from the reflexes of *g'hem- #3258. All Italic forms (Lat[in] humus, etc.) may in fact belong there'; the reference is to proto-Indo-European *g'(h)em-, *g'(h)mēy- 'snake, worm' (Pokorny 1959-69: I, 790).

¹⁶⁰ Hastings 1908-1921: I, 528.

least 60 ka earlier.

The only major ‘element’ missing out in Table 6.1 is *Water*; and the only NarCom left without a suggested element association is the Moon. Realising that in many cosmologies, as well as in most astrologies of the Old World, the Moon tends to be associated with water, we may readily fill this gap. Needless to remind the reader of the prominent role water, and its mirroring surface, plays in divination through space and time (*cf.* Hastings 1908-1921: XII, 707). On distributional grounds (notably, consistent association of Flood myths with groups characterised by mtDNA Type B, which emerged in Central Asia c. 30 ka BP), I have tended (van Binsbergen 2006b, 2010a) to situate the emergence of a water-centred Narrative Complex (Flood myths!) much later than Pandora’s Box, but perhaps the systematics of Table 6.1 should bring us to reconsider such an argument now. Witzel (2010, 2012) suggests that Flood myths should be placed in Pandora’s Box.

Above I referred to my hypothesis of a succession of two distinct types of cosmogony in the Upper Palaeolithic:

- (a) revolving on the Separation of Water and Land;
- (b) revolving on the Separation of Heaven and Earth.

Here, too, we may detect indications of an incipient element cosmology. If conceived in that light, (a) would be about the emergence of the proposed primary (proto-)elements Water and Earth, whereas (b) could be revolving on the separation of the (proto-)elements Earth and Fire (\approx Sun) – after a transformation that resulted in a down-playing of the watery connotations of the Sky (as ‘Waters [Above]’), and, with the emergence of naked-eye astronomy, the luminaries’ growth into more important aspects of the Sky than the latter’s Water associations. Given the striking paucity of *Borean reconstructed lexical items for ‘Sky’ and ‘Moon’ (only: HVKMV and TVLKV, respectively) against as many as seven for ‘Sun’ (CVVVV, HVKV, KVMV, NVJV, NVRV, PVCV, TVNV), dating this transformation to post-*Borean times would put us on even more slippery ground than usual in the course of my admittedly conjectural argument.

Another advantage of operationalising the presence of element cosmologies through their use in divination is that element cosmologies in them-

selves patently do not leave any archaeological traces, whereas divination systems may, albeit infrequently. The archaeological case for *Upper Palaeolithic* divination is theoretically quite plausible, yet it has remained empirically thin – the only truly convincing case being two engraved bones from the Remouchamps caves in Belgium (Dewez 1974), to which we shall return below (Fig. 8.6). We have to proceed to the Neolithic period, less than 14 ka BP, in order to find archaeological evidence whose interpretation in terms of divination is likely to stand up to further scrutiny: the Early Neolithic of South Eastern Anatolia (from c. 14 ka BP) including the once prototypical Çatal Hüyük¹⁶¹ (now supplanted by much older finds in the region – Badisches Landesmuseum 2007); and China towards the end of the Neolithic (Nai 1963; Li *et al.* 2003).

6.2. Indications of a four-element cosmology in the painted cave at Lascaux, France, in the Upper Palaeolithic

6.2.1. Introduction

But archaeology does not totally leave us in the dark. One way of establishing the likely existence of a four-element system in the Upper Palaeolithic is by seeking to intersubjectively interpret the iconography which that period has left us abundantly.

This takes us to the ‘painted caves’, notably those of the Franco-Cantabrian region in South-western France and Northern Spain.¹⁶² It is here that Leroi-Gourhan (1958) has found convincing indications, not so much of an element cosmology, but of a gendered cosmology, *i.e.* with male and female as the dominant opposition. Michael Rappenglück (1999), a German archaeoastronomer, interpreted one of the most famous scenes of the painted cave of Lascaux (Fig. 6.1) as an astronomical statement, in a splendidly documented and referenced comparative and struc-

¹⁶¹ Hodder 2007: 111, by analogy with belaboured skulls from Neolithic Palestine.

¹⁶² The literature on the Lascaux painted cave is enormous. For an introduction, see: Allain & Leroi-Gourhan 1979; Clottes & Lewis-Williams 1996. It would be very much in the spirit of the present argument to try and lend an African extension to my explorations in Palaeolithic iconography with a view of identifying element cosmologies; some possible elements towards such an extension will be adduced further down in this Chapter.

turalist argument which earned him a doctoral degree from Munich University in 1998.

Let us look closely at this scene. Apart from a short, apparently hooked, line below the, apparently, lying man and another, longer line crossing the behind of the large animal painted at the right side of the scene, it renders four items:

- an (apparently ithyphallic) man lying with extended arms
- a bird on a stick
- a woolly rhinoceros to the left, and
- a bison to the right.

Four items depicted in a dramatic scene which seems to involve the death of a human – it is not impossible that a four-element cosmology is being depicted here, but the number four in itself is hardly sufficient reason to jump to such a conclusion.¹⁶³



Communauté Montignac, Département Dordogne, Région Aquitaine, France.

Fig. 6.1. The famous 'dead man' scene from Le Puits, Grotte de Lascaux.

¹⁶³ There is also a horse depicted near the Lascaux picture (Rappenglück 1998: 61), but this is inconspicuous and at some distance; by an enormous stretch of the imagination, it might be interpreted as an evocation of 'Aether' – the horse is the most frequently depicted animal in Eurasian rock art, and (by anachronistic analogy with the horses of Poseidon, Helios, Demeter and Hades) often seems to have the connotation of 'Waters Above and Below', *i.e.* 'Heaven, Ocean, Underworld'.

If the scene does evoke a four-element cosmology, could we try to be more specific and identify the four elements, possibly retrieve their names across the seventeen millennia that separate us from the time of origin? Here we have nothing than informed conjecture to go by, but against the massive comparative proto- and prehistoric evidence adduced in the present book, the attempt is justified. The remarkable, global convergence in that evidence also seems to justify the idea that the most likely elements to be expected are Air-Water-Earth-Fire, so that our task would be, in the first place, to find grounds for attributing any of these four elements to the four items in the scene.

A hint as to which item represents Earth derives from a long debate concerning the etymology of the Greek theonym Ἀθήνη Athena, and of the Greek word ἄνθρωπος *ánthrōpos*, ‘man, in the sense of human’.¹⁶⁴ The converging evidence leads to a so-called *global etymology* (on this concept, cf. Bengtson & Ruhlen 1994) semantically revolving on ‘earth / bottom / human’, as if humans were primarily conceived as ‘those on the ground, those dwelling at the bottom’. Here we can benefit from the *Borean Hypothesis. In my recent analyses of African comparative mythology and Mediterranean Bronze Age ethnicity I have demonstrated the considerable heuristic power of Starostin’s and Fleming’s views, extensively using their *Borean Hypothesis and its proposed results. I have traced the ‘earth / bottom / human’ complex in the following terms:¹⁶⁵

The root *-ntu / -nto* ‘human, person’, although only one of hundreds of reconstructed proto-Bantu roots (cf. Guthrie 1948, 1967-1971: **-nto*, Guthrie no. 1789; Meeussen 1980: **-ntu*), is found in many or all languages of the large Bantu family (a division of the Niger-Congo or Niger-Kordofan phylum). It was so conspicuous in the eyes of Bleek (1851 – the first European linguist to subject these languages to thorough comparative study), that he named them “Bantu languages” after that root (*ba-* being a common form of the plural personal nominal prefix). However, *-ntu / -nto* is not exclusive to the Bantu family. This is already clear from proto-Austronesian **taw*, ‘human, raw’ (Adelaar 1995). Looking for an etymology of the puzzling Greek word *ánthrōpos* ‘human’, the Dutch linguist Ode (1927) had the felicitous inspiration to see this word as a reflex of what he claims to be proto-Indo-European **-nt*, ‘under’ (cf. the

¹⁶⁴ Ode 1927; Bernal 1987, 2001, 2006; Lefkowitz & McLean Rogers 1996; and references there.

¹⁶⁵ van Binsbergen 2010c; van Binsbergen & Woudhuizen 2011: 78 f.

more consensually established proto-Indo-European: **ndho* ‘under’, Pokorny 1959-69: I, 323) – thus proposing an underlying semantics of humans as ‘ground or underworld dwellers’. This, incidentally, also offered Ode an interesting etymology of the long contested Ancient Greek theonym Athena as an underworld goddess.¹⁶⁶ Along this line, many more possible (pseudo-?) cognates from many language phyla come into view. The background assumption in this kind of historical linguistic reconstruction is that standard methods of historical and comparative linguistics allow us, with intersubjective scientific plausibility, to reconstruct progressively older levels of parent forms, right up to the oldest possible reconstruction, *Borean; nearly all linguistic macrophyla spoken today contain, among an admixture of forms of unidentified provenance, also reflexes from *Borean. Against this background, (pseudo-?) cognates of Bantu *-ntu / -nto* seem to be proto-Afroasiatic **tVʔ*, ‘a kind of soil’ (cf. Old Egyptian *t / t3*, ‘earth’, e.g. *T3wy* ‘the Two Lands’ = Upper and Lower Egypt, with cognates in Central and East Chadic and in Low East Cushitic), from *Borean **TVHV*, ‘earth’; a reflex of this root is also found in Sino-Caucasian notably as Chinese *土 tǔ* (modern Beijing Chinese), *thā* (Classic Old Chinese), ‘land, soil’, Karlgren code: 0062 a-c, suggested to be of Austric origin: notably proto-Austronesian **buRtaq* ‘earth, soil’, proto-Austroasiatic **tej* ‘earth’, Proto-Miao-Yao **Ctau* (cf. Bengtson & Ruhlen 1994: 60, *tak*, however the latter two authors – according to Starostin & Starostin 1998-2008 ‘Long-range etymologies’ s.v. **TVHV*, ‘earth’ – seem to confuse the reflexes of *Borean **TVHV* with those of **TVKV*). Considering the incidental similarities between Southern and Eastern African Khoisan, and North Caucasian,¹⁶⁷ one should not be surprised that also some Khoisan language families seem to attach to the very old and very widespread earth / human complex which we have identified here: South Khoisan (Taa): **taʔ*, **tuʔ*, ‘person’; North Khoisan (proto-Zhu) **žu*, ‘person’ – Central Khoisan has **khoe*, etc. ‘person’, which might well be a transformation of **žu*. (Note that here, too, like in Bantu, it is the word for ‘human’ that produces the ethnonyms Taa, Zhu and Khoe / Khoi, or Khoekhoe / Khoikhoi) Further possibilities are contained in the reflexes of another *Borean root **TVHV*, ‘bottom’, which however is both semantically and phonologically so close to **TVHV* ‘earth’ (however, in *Borean reconstructions, the vowels, indicated by **-V-*, had to remain unspecified and therefore could differ) that we may well have to do with one and the same word: thus proto-Sino-Tibetan **diəH* ‘bottom’ (e.g. Chinese 底 **təjʔ* ‘bottom’ Karlgren code 0590 c; 抵 **təjʔ*, ‘root, base’, Karlgren code 0590 d) from proto-Sino-Caucasian **dVHV*, ‘bottom’; from the same *Borean root **TVHV*, ‘bottom’, also Afro-

¹⁶⁶ For alternative etymologies, of the name *Athena*, cf. Hrozný 1951: 228; Fauth 1979a; Bernal 1987 (contested by Jasanoff & Nussbaum 1996, Egberts 1997; van Binsbergen 1997c / 2010a); and Blažek 2007.

¹⁶⁷ Which the geneticists Cavalli-Sforza *et al.* 1994 have sought to explain by suggesting that today’s Khoisan speakers are a hybrid African-Asian population which had still ancestors in West Asia 10,000 years ago – they are another possible example of the Back-to-Africa movement. I will come back to this point in Chapter 7.

asiatic **duh-*, ‘low’ (e.g. Egyptian: *dḥ* (21) ‘low’, East Chadic: **dwaHdaH-* ‘down’) as well as proto-Austroasiatic **dʔ uj* (also **tuɔj* ‘tail, vagina’), proto-Miao-Yao **ʔoʃi.B* ‘tail’, Proto-Austronesian: **hudi* ‘buttocks’ (not in Proto-Austronesian B) (also **udehi* ‘last, behind’ – the latter, Austric forms being predicated on a semantics of ‘lower part of the rump’, cf. English ‘bottom’) (cf. Peiros 1998: 157, 165; Starostin & Starostin 1998-2008).

Table 6.2. Example of a global etymology: The complex ‘earth / bottom / human’.

Against this elaborate background the identification of the reclining human in our Lascaux scene with a putative element ‘Earth’ seems not too far-fetched.

This identification (to which the Underworld aspect of death lends further credibility – e.g., the Neolithic Mother goddess, and her apparent descendants Athena and the latter’s Egyptian counterpart Neith, have been extensively discussed as *death* goddesses; cf. Gimbutas 1981, 1991, Bernal 1987; Ode 1927) reinforces our suspicion that the scene is a depiction of the four familiar elements. So our next step would be to recognise the bird on a stick as a possible evocation of the element ‘Air’. This leaves the other items, the bison and the woolly rhinoceros, to be identified as evocations of Water / Fire, not necessarily in that order.

In the last few years, in my approaches to prehistoric meaning I have tended to rely on semantic reconstructions based on Starostin and Fleming’s *Borean Hypothesis, and this approach I will apply again in order to try and throw light on the intriguing Lascaux scene. But research is an intersubjective undertaking. So just like we let ourselves be guided by existing scholarly literature which suggested to us the interpretation of the reclining man in terms of the proto-element Earth, let us have a brief glance at the literature on the bison in Palaeolithic contexts, before applying our own idiosyncratic method.

After the horse, the bison is about the most frequently depicted animal in Upper Palaeolithic iconography, which suggests that it was important both as food and as symbol. Some of the oldest three-dimensional sculptures in the history of art were in fact figures of bisons (from mammoth ivory, at Vogelherd, Germany; from clay, at Tuc d’Audoubert – Charet 1948; moreover bison representations feature on spear throwers). Perhaps bison imagery even predated Anatomically Modern Humans in Europe:

the life-long explorer of prehistoric thought James Harrod (2010) suggested that the stone block that covers the burial of a Neanderthal child at La Ferrassie, c. 60 ka BP (*cf.* van Binsbergen 2000c with extensive references), had been deliberately given the specific shape of a bison calf. The suggestion is appealing, considering that the first professionally excavated and published Neanderthal skeleton (from La-Chapelle-aux-Saints; Farizy & Vandermeersch 1997 with references) was surrounded with broken bones of both bison and woolly rhinoceros – two animals in our Lascaux image.

The popular mythographer Joseph Campbell (1992: 73 *f.*) somewhat over-confidently claims continuity between the bison myths and rites of Plains Native Americans in historical times, and the bison images of the European Upper Palaeolithic. Yet a plausible case could be made for continuity, through space and time, between the bison astragals used for gambling and divination among Native Americans (Dewez 1974; Culin 1898: 828 *f.*), the symbolic significance of bison in Upper Palaeolithic Europe, and the reliance on astragals for divination both in Graeco-Roman Antiquity, East and Central Asia, and Southern Africa.

Breuil (1909) has suggested a zodiacal analogy between the bisons depicted in the Upper Palaeolithic (although the stupendous Lascaux cave was only to be discovered, decades later, in 1940), and the oldest documented constellations from the Ancient Near East. And in fact, both in Ancient Mesopotamia and in Ancient Egypt was Heaven represented by bovines, *e.g.* the celestial cow in the Gilgamesh Epic, and numerous Egyptian representations from Early Dynastic times on rendering Heaven as a cow.¹⁶⁸ But – to the limited extent to which we may identify the dots as prehistoric representations of stars – there are also other suggestions of the stellar connotations of Upper Palaeolithic bisons: they are surprisingly often associated with dots, in one case (the Marsoulas cave, France) even entirely made up of dots. Peyrony (1934: 76 *f.*, with references) cites several more specific cases from the Franco-Cantabrian region (the caves of Font de Gaume, Pindal, Castillo, Niaux) of the same bison / dots association. Above, reference was made to my hypothesis of an Upper Pa-

¹⁶⁸ Houlihan 1996; Germond 2001; Hendrickx 2002; de Liagre Böhl 1958; Kovacs 1985; Nrmr palette. Also in the Archaic Greek context, with Homer (*e.g.* *Odyssey*, I, 8), the Sun god / Sky owns *cattle*, to the detriment of Odysseus' companions.

laeolithic Mother Goddess as Mother of the Waters, parthenogenetically producing Land and being subsequently fertilised by the latter; in this respect she may have been the Mother of the Waters Above, in other words mistress of a still dimly conceptualised Heaven. This may explain why so many Upper Palaeolithic bison representations involve *women*: the Venus of Laussel holding a bison horn calibrated for thirteen lunar months; and representations of pregnant women or women giving birth near or on bisons (the sites of La Madeleine, Angles-sur-l'Anglin, and L'Abri du Facteur at Tursac; Delporte 1968; Straffon 2007; Soetens 2008). Palaeolithic bison / Goddess connections were also recognised by Kelley Hays-Gilpin (2003: her Fig. 3.4). We will soon see how excellently all this tallies with the interpretation of the prehistoric bison as emanating from my *Borean-inspired linguistic approach to the Lascaux scene: as the element Water.

Although called to question by Conkey (1984), who rejects the idea of a standard and repetitive 'mythogram' allegedly reflecting regionally wide-spread cultural premises, and by Groenen (*e.g.* 1990), who chides Leroi-Gourhan for inconsistency and incompleteness, yet our present perspective is greatly reinforced by what Bouissac (2006) summarises as

'Leroi-Gourhan's theory (1967) according to which Pyrenean hand configurations [hand contours stencilled on the rock face – WvB] would encode *the four basic animal symbols (bison, horse, ibex and deer)* and recreate, in a sort of hand language, the distinctive collocations of these zoomorphs in other caves in the same broad cultural area.' [italics added – WvB]

In other words, already nearly half a century ago a leading prehistorian recognised the bison as one of a foursome with widespread symbolic significance – which implies an element cosmology although the other members of the foursome were defined differently from what we seem to find at Lascaux.

Let us now try and use the same state-of-the-art, long-range, comparative linguistics which led us to identify the reclining human as Earth, in order to determine which of the pair bison / woolly rhinoceros might be Water and which Fire, and add further credibility to our identification of the bird on a stick as Air. Given the fact that no direct speech material has been transmitted to us from the Upper Palaeolithic, our tentative answer to this

virtually unanswerable¹⁶⁹ question will have to be in stages.

- In the first stage, and merely for the sake of the argument and in our groping for a method, we will act on the basis of the simplifying, not to say erroneous, assumption that the language of the Lascaux Upper Palaeolithic environment was identical with *Borean, reconstructed for Central Asia perhaps 8 ka earlier in the Upper Palaeolithic, around 25 ka BP. This heuristic point of departure will prove fruitful in that it brings out a number of unexpected linguistic aspects of the Lascaux scene which can hardly be attributed to chance¹⁷⁰ – suggesting, on the contrary, that it is certainly a felicitous guess to approach the Lascaux scene with the idea of an element cosmology, and attributing to it a linguistic environment akin to that reconstructed for *Borean. These linguistic results, however preliminary and based on somewhat anachronistic assumptions, will be listed and analysed in Table 6.3.
- In the second stage we will correct the reductive artificiality of the first step with the more realistic assumption that, c. 17 ka BP, we find ourselves in a linguistic environment characterised by the early disintegration of *Borean, which, in Western Eurasia at the

¹⁶⁹ Provided we do not lose sight of the great uncertainty implied in the word ‘conjecture’, we will let ourselves be led by Thomas Browne’s (1658) adage which also inspired Graves (1988 / 1948) in his visionary though un-methodological and controversial reconstruction of several millennia of poetic myth:

‘what song the Sirens sang, or what name Achilles assumed when he hid himself among women, though puzzling questions are not beyond all conjecture’.

¹⁷⁰ Not to chance, yet perhaps there is an inherent circularity built into my method here: hoping to find a familiar four-element system, that is what I set out to find, and what, predictably given my experience in the handling of the *Borean vocabulary, I do find... A similar circularity might be said to underlie Table 6.1. This does not greatly alarm me, since methodological problems of this nature are the rule rather than the exception in the humanities and social sciences – to which also the study of pre- and protohistorical thought systems belongs. In learning a foreign life world, one initially blunders into a fragmentary and partial understanding of one small symbolic complex, then erroneously one generalises its putative meaning for much larger complexes and for the life world as a whole, and then in a painful process of trial and error in constant feed-back from the raw data at hand (which is why nothing can beat participatory fieldwork as a heuristic strategy, despite all its limitations: then the host population constantly offers feedback that cannot be ignored, often in the form of ridicule and rejection), through constant re-triangulation, one gets nearer to a proper understanding and to the proper scope of that understanding.

time, is likely to have led to the dominance of *proto-Sino-Caucasian as one of the proposed offshoots of *Borean.¹⁷¹ The Sino-Caucasian linguistic macrophylum today has its region of concentration in East Asia (the Sino-Tibetan phylum), but besides has been proposed to include North Caucasian (in the Caucasus region of Western Central Eurasia), Yenisseian (Northern Eurasia), and the small surviving language isolates of Basque (Franco-Cantabrian region) and Burushaski (Pakistan) – whereas the Na-Denē languages of North America (Tlingit, Athabascan-Eyak, the latter including Southern Athabascan languages such as Navaho and Apache) are generally considered to be close to Sino-Caucasian. It is the Sino-Caucasian macrophylum, particularly, that has been proposed for the artists of the Franco-Cantabrian archaeological complex of the painted caves (*cf.* Bertranpetit & Cavalli-Sforza 1991; Cavalli-Sforza *et al.* 1994). Our above application of the *Borean linguistic reconstruction implied a distortion of c. 8 ka off in time and thousands of kilometres too far to the West, in space. Meanwhile, however, the erroneous *Borean possible identifications of the names of the proposed four elements at the Lascaux scene, hint at more plausible, but related, names from *proto-Sino-Caucasian.

- After these steps, which will occupy the rest of this Chapter, we can conclude that there is considerable and converging evidence to suggest that, indeed, a four-element cosmology existed in the Upper Palaeolithic Western Eurasian and can be seen to be depicted at Lascaux.

6.2.2. Analytical step 1. Assuming, for heuristic purposes only, that the Lascaux scene belonged to a *Borean-speaking environment

As a first step, let us peruse the reconstructed vocabulary of *Borean

¹⁷¹ *Cf.* McCall & Fleming 1999; Starostin 1989. In van Binsbergen & Woudhuizen 2011: 77 *f.* a statistical analysis is presented (based on van Binsbergen, in press (b) and reproduced here as Fig. 8.2) that suggests this disintegration to begin by 25 ka BP, first leading to a split between a Central group with Eurasiatic / Nostratic, Afro-Asiatic and Sino-Caucasian, and a Peripheral group consisting of African languages except Afro-Asiatic, Amerind (probably without the Na-Denē cluster), and Austric.

(Starostin & Starostin 1998-2008), and list all reconstructed *Borean terms that could be applied to any of the four proposed elements, Earth / Air / Water / Fire. What determines the eligibility of any of the 1153 reconstructed *Borean lexical items for such application? In principle, we are looking for the intersection between two sets of *Borean lexical items:

1. those that on purely semantic grounds could correspond to Earth / Air / Water / Fire;
2. those that would apply semantically to the four depicted items human / bison / bird / woolly rhinoceros.

Let us realise, once more, that the link between any of the four items in (1) and any of the four items in (2) is by and large arbitrary and not intrinsic. Durkheim's (1912) famous thesis of the arbitrary nature of (religious and cosmological) symbols should guide us here, even though Peter Worsley (1967) has already reminded us, above – rightly, but not devastatingly – that the abstract, Kantian / Cartesian rationalism that underlies Durkheim's and Lévi-Strauss' approach does not quite take into account the economic and nutritional value of the totemic animals for the Australian Aboriginals whose ethnography inspired these two French authors. We are dealing here with 'primitive' (in the sense of 'early') forms of 'classification' (*cf.* Durkheim & Mauss 1901), where items in the natural, especially animal, world are pressed into symbolic service not for any intrinsic features which these items may have, *but for their ability to guide our thought*, and ultimately – once human thought has already reached the level of systematic, consistent binary opposition, beyond 'range semantics' and recursion (van Binsbergen & Woudhuizen 2011: 147 *f.*; and below, pp. 204 *f.*) – to serve as pegs on which to hang the binary oppositions that together constitute a cosmology. Just like in our analysis of Nkoya clan nomenclature in Chapter 2, we ought to heed Lévi-Strauss's (1962a, 1962b) famous words, reiterating Durkheim's view on the arbitrary, superimposed nature of symbols: *animals are used as symbols not because they are good to eat, but because they are 'good to think'.*

The juxtaposition of human and animal, in the Lascaux scene, can be said to revolve in the first place on the binary opposition of spatial freedom / spatial boundedness: birds can move in three dimensions and be free from

the earth, and thus move in the Air – humans can move in only two dimensions, remaining (at least by Palaeolithic technological conditions prevailing until Early Modern times brought the Montgolfier air balloon) tied to the Earth.

The juxtaposition between bison and woolly rhinoceros is less directly apparent to our Modern thought, preconditioned as the latter is by the scientific classifications of universalist-orientated, global biological science. Both species can be said to be ‘horned’ – the bison head having two horns perpendicularly straddling the length axis of its body, the woolly rhinoceros having likewise two horns but situated along the length axis, and closer to the mouth. By Modern scientific classification, both bison and woolly rhinoceros are ungulates, but the bison’s slender legs and feet, and its general bovine appearance, convey its ungulate / hoofed nature much more clearly than the woolly rhinoceros does. Why bison and woolly rhinoceros should be symbolically associated with Water and Fire is not immediately clear from their natural features, feeding habits and habitat – both are herbivores at home in the relatively dry savannah, and while both are huge, formidable and intimidating by human standards hence qualify as evocations of Fire, neither lives in or near the Water. Perhaps their elemental association depends on an aetiological myth to which we have no longer access, or which if surviving among mythical materials recorded and published in historical times would be very hard to recognise as stemming from Upper Palaeolithic element mythology.


Another possibility, which we can to some extent explore with the reconstructed prehistoric lexical material at our disposal, lies in the apparent polysemy of *Borean lexical items. While comparative historical linguistics now claims to be able to reconstruct the consonant structure of words, resulting in the extensive reconstructed *Borean vocabulary as revolving on two or sometimes three consonants (C_1, C_2, C_3), it is still impossible to reconstruct the vowel structure. Since many combinations of vowels (V_1, V_2, \dots, V_n) can fill the same skeletal consonant structure $C_1[V]C_2[V]$, *Borean words that look unitary on paper, e.g. *T[V]K[V], in fact imply a whole series of what we could call ‘consonantal homonyms’: *T[V₁]K[V₁], *T[V₁]K[V₂], *T[V₁]K[V₃], *T[V₁]K[V₄], *T[V₂]K[V₁], *T[V₂]K[V₂], etc. – in short: *T[V_{1...n}]K[V_{1...n}], each with its specific vowel structure and semantics (here

T and K are actual, specific consonants, and V is an unspecified vowel). If the structural opposition between bison and woolly rhinoceros remains minor and if we lack any aetiological myth to elucidate that opposition, we might still act on the assumption that bison and woolly rhinoceros have been selected as animal symbols not in their own right but because of *punning*, *i.e.* because some ‘consonantal homonyms’ of the *Borean words directly applicable to bison and woolly rhinoceros, in fact have a specific association with either Fire or Water. In the light of the comparative evidence of how early cosmologies are composed and work, this is a weak but acceptable assumption, and, with all the unmistakable uncertainties attached, it will yet prove very productive.

It is simple to scan the list of *Borean lexical reconstructions for Earth-related lexical items. We should cast our net fairly widely, so as to include in our analysis items in which the ‘earth’ semantics is merely implied, *e.g.* *HVMGV, ‘dust, earth’ and *PVNV, ‘clay, mud’.

For Air the situation already becomes more complicated. In the reconstructed vocabulary of *Borean, only one lexical item has been identified that could be equated with Air: *HVKMV, ‘Sky, cloud’. This should not greatly surprise us: the high tide of *Borean can be argued to coincide with the period of the earliest emergence of shamanism and of naked-eye astronomy – Heaven was still in the process of being ‘discovered’ (Mulisch 1992), *invented*, and therefore the dominant cosmogony, as far as we can make out through the mists of time, was still that of the Separation of Land and Water, and not yet that of the Separation of Heaven and Earth. Of course this is ultimately a reason to leave Step 1 behind and proceed to Step 2 which is *c.* 8 ka more recent. However, as long as we pretend to dwell at Step 1, we will have to make shift with other lexical items whose semantics comes close enough to ‘Air’. This is in the first place *NVPV, ‘smoke / cloud’. Further the *Borean terms for ‘bird’ (/ ‘fly’) or for specific birds.¹⁷² From the bird vocabulary it is only a small

¹⁷² Few *Borean bird names can be identified by family or even species: only crane, goose, duck, and gallinaceous birds (such as partridge, quail, and hen, which are heavy-bodied, feed on the ground, and scarcely given to flying). Here it is remarkable that goose and duck, especially if white-feathered, appear in the Bronze Age as symbols of a postulated mythical female creator for which I have proposed the generic term ‘Mother of the Waters’ and which probably goes as far back as the Upper

step to ‘feather’, which also in other context (e.g. Ancient Egypt:  Šw / Shu) represented Air. And finally we could look at a cluster of words with the semantics ‘to blow, winnow’ and ‘to stand, rise up’.

The reconstructed *Borean vocabulary does not contain specific lexical items for ‘bison’ and ‘woolly rhinoceros’. Again we have to approximate the possible *Borean term by taking semantically akin words such as ‘bovine’, ‘hoof’, ‘ungulate’ – the first two of which at least distinguish the bison from the woolly rhinoceros. At Lascaux the bison’s horns are emphatically depicted, aiming at the reclining man, but – unless the Upper Palaeolithic perception of the rhinoceros is completely different from our Modern one – ‘horn’ or ‘horned’ is also a concept applicable to the rhinoceros, *i.e.* ‘the animal that carries a horn on its nose’. Here the *Borean lexicon hints, through a series of ‘consonantal homonyms’, at an association of the bison with Water, and – in the same indirect and conjectural way – of the woolly rhinoceros with Fire. For, of the *Borean terms applicable to the bison in terms of above discussion, as many as three combine a bison-semantic aspect (‘hoof, ungulate’) with a liquid semantic aspect (‘liquid, wet’): *CVTV, *LVVV, *MVRV. Only two potentially bison-applicable terms also contain a Fire aspect among their consonantal homonyms (*HVRV, with ‘light, burn’; *PVRV, with ‘burn’), whereas the semantics of some of the ‘consonantal homonyms’ of *TVKV, potentially apply to bison / Water, but also to Fire, Earth and Air. In regard to the woolly rhinoceros the same situation obtains: the semantics of the potentially applicable *Borean terms turn to a combination of rhinoceros features (horn) with ‘burn’, with some but little overlap with the bison / Water semantics. While realising that applying *Borean to Lascaux is an anachronism, we end up with a cosmology in which the four items of our Lascaux scene can be fairly unequivocally be interpreted as follows:

(continued p. 197)

Palaeolithic; whereas the gallinaceous birds have all the characteristics to qualify as symbols of the Land or Earth (van Binsbergen & Woudhuizen 2011: 354*f.*), where I propose that a major Upper Palaeolithic cosmogonic myth started out with a virgin Mother of the Waters who gave birth to her only son, the Land, and then was impregnated by the latter so as to produce all other aspects of reality. The *Borean bird vocabulary, selectively specifying only a few birds that are relevant in terms of this cosmogonic myth, suggests that that myth was already building up in *Borean times.

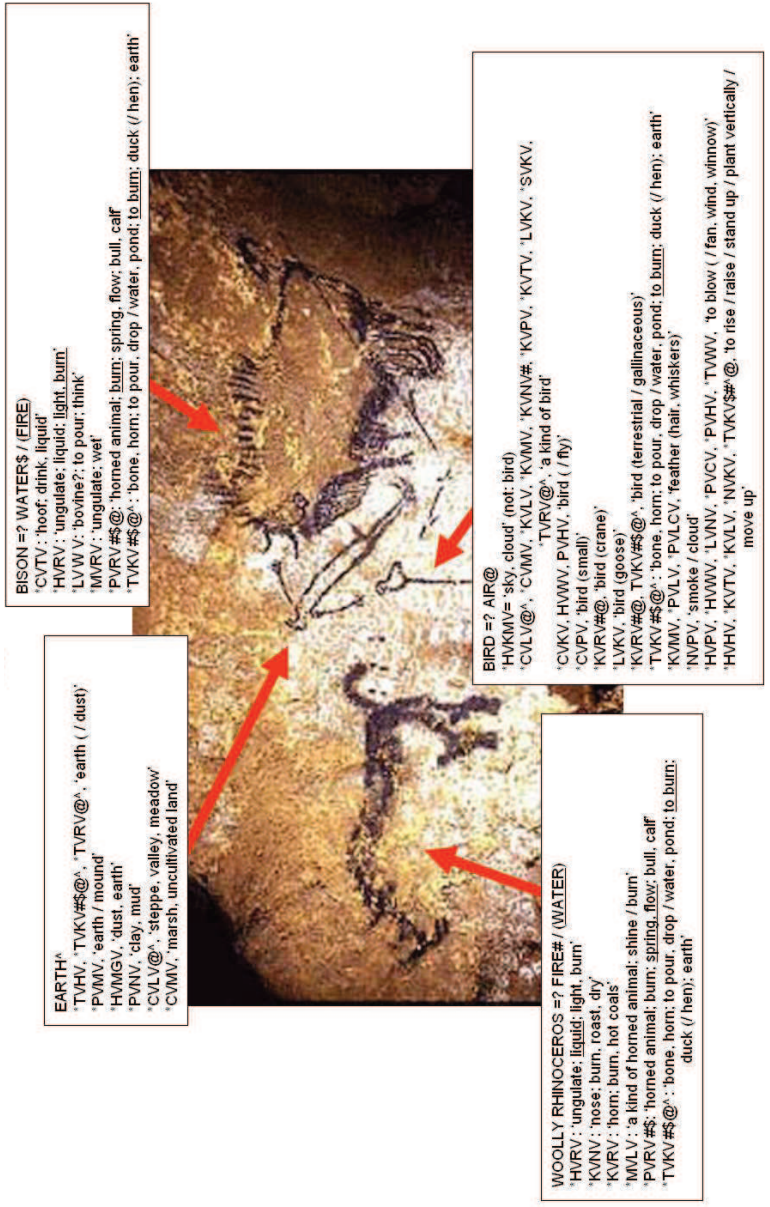


Fig. 6.2. Analytical Step 1: *Borean applied to Lascaux.

- Earth: human
- Air: bird
- Fire: woolly rhinoceros,
- Water: bison.

These provisional, admittedly somewhat anachronistic identifications are displayed in Fig. 6.2.

6.2.3. Analytical step 2. Situating the Lascaux scene in a proto-Sino-Caucasian environment

If we now correct the anachronism and dislocation on which Step 1 was predicated, and return to the Franco-Cantabrian region c. 17 ka BP, we may use the provisional results of Step 1 and transfer them to the proto-Sino-Caucasian environment that supposedly existed at that place and time. We do this by ascertaining whether the *Borean etymons identified (with enormous uncertainty, I cannot repeat it too often) in Step 1, have any detectable reflexes in proto-Sino-Caucasian. If they do not, we are up a dead alley, and should retrace our steps. If they do, and if the attending semantics are still compatible with a four-element cosmology, that would be encouraging, although nothing more than that. The results of Step 2 are listed in Table 6.3. They may be summarised as follows:

- in a proto-Sino-Caucasian reflex environment, *TVRV loses its bird / Air nature and in Step 2 could only apply to Earth;
- in a proto-Sino-Caucasian reflex environment, *CVLV may retain its combined Earth / Air connotations, as in Step 1;
- in a proto-Sino-Caucasian reflex environment, *KVRV loses its Fire nature, as well as that of a gallinaceous bird (with implied Earth connotations), but its general bird / Air connotations may be retained in Step 2;
- in a proto-Sino-Caucasian reflex environment, *HVRV loses its ‘ungulate’ nature (presumably associated with Water), yet retains its ‘liquid’ / Water nature as well as its ‘light, burn’ / Fire nature – the polysemic ambiguity of Step 1 is retained;
- in a proto-Sino-Caucasian reflex environment, *PVRV may retain its ‘horned animal’, ‘calf, bull’ and ‘spring, flow’ / Water nature, but loses its ‘burn’ / Fire nature – *in other words, the association with Water / bison as found in Step 1 is confirmed for Step 2.*

- in a proto-Sino-Caucasian reflex environment, *TVKV loses the connotation ‘bone, horn’, but it retains all other connotations which makes it potentially an overarching name for all four elements Earth / Air / Water / Fire.

<p>1. Borean *TVRV as etymon of a proposed Sino-Caucasian name for proto-elements EARTH or AIR</p>	<p>No reflexes in Sino-Caucasian; only in Proto-Eurasianic : *KVwrV</p>
<p>1.1. ‘earth, dust, powder’ Proto-Sino-Caucasian: *tVrV, ‘dust, dirt, powder’ Comments and references : (...) different in Starostin 1991: 30, Starostin n.d.: 19. 1.2. ‘a kind of bird’ No reflexes in Sino-Caucasian. Only in: Proto-Eurasianic : *tVrV / *tVrVrV Proto-Afroasiatic : *ʔayr-</p>	<p>Proto-Afroasiatic : *kwVr- ‘partridge, hen’ (Sem[itic], Chad[ic]) Proto-African (misc.) : Cf. Bantu *-kódj ‘kind of hawk’, *-küädí ‘kind of partridge’. San. karure ‘duck’. Reference : Dolgopolski n.d.: 933, 1201.</p>
<p>2. Borean *CVLV as etymon of a proposed Sino-Caucasian name for proto-elements EARTH or AIR</p>	<p>4. Borean *HVRV as etymon of a proposed Sino-Caucasian name for proto-elements FIRE or WATER</p>
<p>2.1. ‘a kind of bird’ Proto-Sino-Caucasian : E[ast]C[aucasian] *ʔVms_wəlʔē (~ -ʔ-) (cf. also *čHWlV) Reference : Dolgopolski n.d.: 2199. Also reflexes in: Proto-Eurasianic : *SVlWV Proto-Afroasiatic : *šVlVw ‘quail, fowl’ (Sem[itic], Chad[ic]) [+ Sem[itic] *šVlšVl-] 2.2. ‘steppe, valley, meadow’ [≈ earth] Proto-Sino-Caucasian : *sdə[ʃ] Also in: Proto-Eurasianic : *ColV</p>	<p>4.1. ‘ungulate’ No reflexes in Proto-Sino-Caucasian; only in Proto-Eurasianic : *ʔirV Proto-Afroasiatic : *ʔay/wr- (also Sem[itic] *yVr- ‘kid, calf, goat’, see Dolgopolski n.d.: 2646) Reference : Dolgopolski n.d.: 143, 2646. 4.2. ‘liquid’ Proto-Sino-Caucasian : *hwīr Also reflexes in: Proto-Eurasianic : *GurV Proto-Afroasiatic : *rūw- (see Dolgopolski n.d.: 2002 *rVw/y-), *wVr- (Dolgopolski n.d.: 2509) Proto-Austrianic : *hV7r Proto-Amerind (misc.) : *re ‘water’ (Ruhlen n.d.: 824) (...) Reference : Illich-Svitych 1967: 341; Dolgopolski n.d.: 2509; Peiros 1989: 127. 4.3. ‘light, burn’</p>
<p>3. Borean *KVRV as etymon of a proposed Sino-Caucasian name for proto-elements AIR or FIRE</p>	<p>Proto-Sino-Caucasian : *VhwV, *Hvrv, *hwēri (perhaps two roots) Also reflexes in: Proto-Eurasianic : *Howri</p>
<p>3.1. ‘horn’ Proto-Sino-Caucasian : *χqwrhV Also reflexes in: Proto-Eurasianic : *kirV Proto-Afroasiatic : *kar- Reference : Dolgopolski n.d.: 1130. 3.2. ‘burn, hot coals’ No reflexes in Sino-Caucasian; only in: Proto-Eurasianic : *gUrV Proto-Afroasiatic : *gur- (also *gir- 1287, 2055) Proto-African (misc.) : Bantu *-kādā ‘embers, charcoal’. Reference : Illich-Svitych 1976: 1, 239, Dolgopolski n.d.: 686. 3.3. ‘a kind of gallinaceous bird’</p>	<p>Proto-Afroasiatic : *ʔur- (also *ʔur- ‘burn, be hot’); Sem[itic] *hVwr- ‘bright, white’; S[outh]Sem[itic] *ʔary- ‘moon’ (also S[tandard]H[ausa] *hīr- ‘star’, Berb[er] *jur- ‘moon’), Sem[itic] *warx-/ *yaryx- ‘moon’, Eg[yp]tian i[ʃ]id[em] Proto-Austrianic : P[roto]A[ustro]N[esian] *waRi ‘day, sun, dry in the sun’; P[roto]Austro]A[siatic] *hiej ‘moon’ Notes : Cf. [*Borean *]HVRV ‘early, morning’.</p>

<p>Reference : Dolgopolski n.d.: 74, 2603. A lot of confusion that has to be sorted out (in Austric cf. also *ʔrVw dry, P[roto]Austro]A[siatic] *ʔur ‘warm’).</p> <p>5. Borean *PVRV as etymon of a proposed Sino-Caucasian name for proto-elements FIRE or WATER</p> <p>5.1. ‘horned animal’</p> <p>Proto-Sino-Caucasian : S[inno-]T[ibetan] *bhVr (?) ‘goat, sheep’, N[orth]C[aucasian] *bħəŋc_wV (~-ŋ-) ‘cattle’?</p> <p>Also reflexes in:</p> <p>Proto-Eurasiatic : *bVrV</p> <p>Proto-Afroasiatic : *(ʔa-)bVr(Vy/w)- (cf. also *birk-)</p> <p>Reference : Dolgopolski n.d.: 225a.</p> <p>5.2. ‘burn’</p> <p>No reflexes in Proto-Sino-Caucasian, only in:</p> <p>Proto-Eurasiatic : *pVrV</p> <p>Proto-Afroasiatic : *biʔar- ?</p> <p>Notes : ? Same root as *PVRV ‘shine, bright’.</p> <p>5.3. ‘calf, bull’</p> <p>Proto-Sino-Caucasian : ? S[inno]T[ibetan] *bħrōŋ ‘cattle’</p> <p>also reflexes in:</p> <p>Proto-Eurasiatic : *pVrV (~ p-)</p> <p>Proto-Afroasiatic : *ʔa-pVr-</p> <p>Reference : Dolgopolski n.d.: 1783.</p> <p>5.4. ‘spring, flow’</p> <p>Proto-Sino-Caucasian : ? P[roto]S[inno]T[ibetan] *P[ü]r ‘gush forth, jet’</p> <p>Also reflexes in:</p> <p>Proto-Eurasiatic : *bira (*bujra)</p> <p>Proto-Afroasiatic : *bVʔr- (but also *bVħr-?)</p> <p>Reference : Illich-Svitych 1967: 369, Dolgopolski n.d.: 225, 253.</p> <p>6. Borean *PVRV as etymon of proposed Sino-Caucasian names for proto-elements FIRE, WATER, EARTH, AIR</p> <p>6.1. ‘earth’</p> <p>Proto-Sino-Caucasian : *ʔ[V]QV</p> <p>also reflexes in:</p> <p>Proto-Eurasiatic : *DVG-</p> <p>Proto-Afroasiatic : daʔk-</p>	<p>Proto-Austric : P[roto]A[ustro]N[esian] *bitak, *-tak, *litek ‘mud; earth, ground’, ?P[roto]A[ustro]A[siatic] *tVk ‘sticky’</p> <p>Proto-Amerind (misc.) : *tVk- ‘dirt’ (Bengtson & Ruhlen 1994: 42)</p> <p>Proto-African (misc.) : Bantu *-tākà ‘soil’.</p> <p>Reference : Illich-Svitych 1967: 342; Bengtson & Ruhlen, 1994: 42 *tika (+ ?N[orth]C[aucasian], ?N[ilo]S[aharan]).</p> <p>6.2. ‘bone, horn’</p> <p>No reflexes in Proto-Sino-Caucasian, only in:</p> <p>Proto-Austric : *dUk</p> <p>6.3. ‘to pour, drop’</p> <p>Proto-Sino-Caucasian : *ʔ[H]Hänkō</p> <p>also reflexes in:</p> <p>Proto-Eurasiatic : *tUKV</p> <p>Proto-Austric : P[roto]A[ustro]N[esian] *itik, P[roto]A[ustro]A[siatic] *tVk ‘drop’</p> <p>Proto-Amerind (misc.) : *tokʔ ‘saliva; spit’ (Ruhlen n.d.: 590) (...)</p> <p>Reference : Peiros 1989: 128.</p> <p>6.4. ‘water, pond’</p> <p>Proto-Sino-Caucasian : *dVgV</p> <p>also reflexes in:</p> <p>Proto-Austric : P[roto]A[ustro]A[siatic] *dʔiak ‘water’, Tai ʔdik ‘swim’</p> <p>6.5. ‘to burn’</p> <p>Proto-Sino-Caucasian : *dVʔkV</p> <p>also reflexes in:</p> <p>Proto-Eurasiatic : *dekO</p> <p>Proto-Afroasiatic : *tukaʔ- ??</p> <p>Proto-Amerind (misc.) : *tuk ‘burn’ (Ruhlen n.d.: 99) (...); *toki ‘day, sun’ (Ruhlen n.d.: 706)</p> <p>Reference : Illich-Svitych 1967: 337; Bengtson & Ruhlen, 1994: 114 *toka.</p> <p>6.6. ‘a k[ind] of duck or hen’</p> <p>Proto-Sino-Caucasian : *dVʔG(w)V</p> <p>also reflexes in:</p> <p>Proto-Eurasiatic : *ʔVʔV</p> <p>Proto-Austric : *tVʔk</p> <p>Proto-Amerind (misc.) : ?? *tuku ‘owl’ (Ruhlen n.d.: 536); rather *takaka ‘quail’ (Ruhlen n.d.: 563)</p>
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Table 6.3. Searching for Sino-Caucasian reflexes of the *Borean roots indicated in Fig. 6.2.



Source: Lucas 2006

Fig. 6.3. Lascaux 'unicorn'.

It is my contention that by these two steps, however stumbling, the presence of a four-element cosmology at Lascaux is rendered highly plausible.¹⁷³

6.3. Element systems in the African Palaeolithic?

Although it is a legitimate and obvious question, in the context of the present book, to ask if there is any prehistoric iconographic evidence from sub-Saharan Africa that could be convincingly interpreted in terms of an element cosmology, I am not ready at this time to try and provide an answer. Some of the iconographic material may be at hand. What we would be looking for is

¹⁷³ Another image from Lascaux possibly relevant from a point of view of element cosmology and transformation cycle, is displayed in Fig. 6.3. The prominent French prehistorian Rigaud (1988) described it in the following terms:

‘creature of imagination has the hind end of a bison, the belly of a pregnant mare, the front paws of a feline, a “mottled” [speckled!] hide, and two straight horns...the profile of a bearded man’

- a fairly compact arrangement involving a *series*, *i.e.* a limited number of systematically different items (or clusters of identical items) shown in some kind of order or interaction
- against the background of an reasonably well document iconographic, linguistic, mythical and archaeological material that would make the interpretation in terms of an element system more than simple wishful thinking.

A number of candidates come to mind for further exploration (but that will have to be outside the present book), four of which I present in Fig. 6.4:

1. The incised Blombos Cave red ochre block, South Africa, Middle Palaeolithic (c. 70 ka BP),¹⁷⁴ which although not quite meeting the above minimum specifications still offers about the oldest attestation world-wide of a systematically varying repetitive geometrical arrangement; elsewhere (van Binsbergen 2011f) I have interpreted, with reference to extensive circumstantial evidence, the pattern as an evocation of the rainbow or rainbow snake, which in itself is a natural phenomenon meeting our above requirements (seven distinct colours constituting a series), while colour symbolism of the elements is widespread in historical periods. (In this connection it is worth remarking that in a cave at Tsodilo Hills, North-western Botswana, a giant three-dimensional, pocked snake representation was found from the same period; Coulson *et al.* 2011).
2. A richly worked Middle Palaeolithic engraved stone plaque from the Kalinien (*cf.* Chavaillon 1997) archaeological complex, Angola. Janmart (1946) describes this small plaque and its signs in the following terms:

‘...La pierre perforée. La perforation a été faite avant la gravure, comme le prouvent certains traits du dessin qui y pénètrent. L’orifice a été fait par piquetage. Seule la partie la plus étroite a été égalisée en y faisant tourner un morceau de bois ou une pierre allongée.

La fig. (...) montre la nature des dessins, qui semblent avoir été exécutés au moyen d’un éclat tranchant de roche dure. J’y distingue: une figure humaine à couvre-chef empenné (1) une vulve (2), une figure

¹⁷⁴ *Cf.* Henshilwood *et al.* 2001, 2002; Watts 2009. Image:
<http://cogweb.ucla.edu/ep/Art/BlombosOchre.jpg>, with thanks .

oblongue à allure géométrique (3), un phallus (4) en partie creusé dans la plaque, un schéma d'homme assis (5) à côté d'une personne de sexe non indiqué (le graveur s'est amusé à creuser la partie du zig-zag qui touche à l'orifice), un zig-zag multiple (6), dont les éléments ne sont pas très rectilignes, figure que l'on interprète habituellement comme un groupe de femmes assises, un petit ovale auquel sont accolées des lignes droites (7), figure que j'interprète comme un homme debout, un poing sur la hanche et, enfin, diverges lignes droites et courbes s'intersectant pour créer des dessins divers.'

One must suppress, at this stage, the temptation to try and assign element connotations to these seven items and to critique Janmart's interpretation; without elaborately constructed context that would be futile.

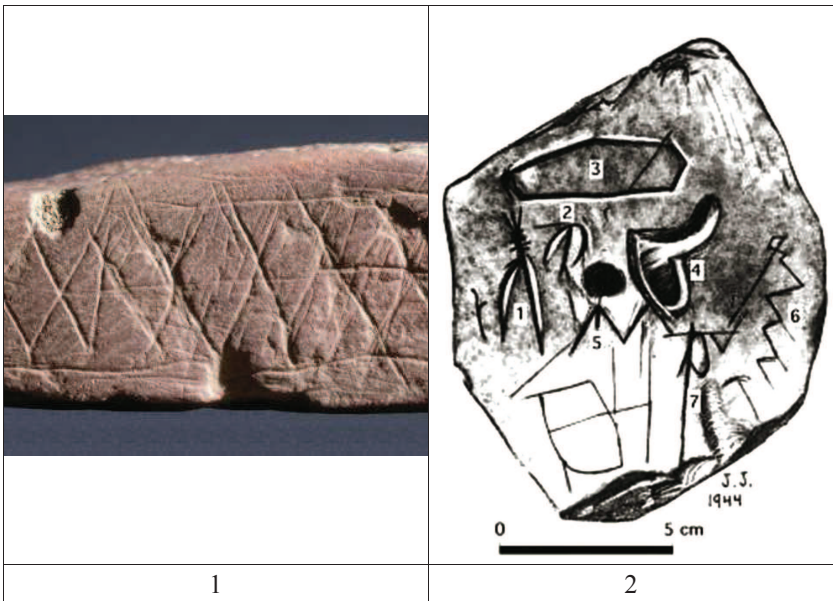
3. A rock painting near Harare, Zimbabwe, which meets our above requirements but is much younger than the other two examples, – probably only a few ka BP (Frobenius 1931: Fig. 31, p. 315). Against an impressive review of Bantu-speaking astronomical myths, von Sicard (1968) interprets this image in terms of a Bantu-speakers' astronomical myth: the hero (marked by crescents in his hair) and two companions cross Ntande's bridge [equated with the celestial axis]; the eared elongated creature in the upper right-hand quadrant is interpreted as the Milky Way, *gwara raKuruvi*, 'the Path of Luwe' – Luwe is a name for the widespread unilateral mythical character we have encountered *passim* in the present book (von Sicard 1968; van Binsbergen 2010a). Such a reading assumes that realistic (river crossing) and symbolic elements (Milky Way as snake) mix freely in this kind of representation. It also assumes that, across more than 1000 km the Luba (Congo) spider-like mythical character Ntande, with his legendary bridge, may be invoked to explain a rock painting in Zimbabwe. Considering the emphasis, in recent decades, on the trance interpretation of Southern African and Franco-Cantabrian rock art,¹⁷⁵ we might drop the idea of a river crossing and interpret the figures' progress, on all fours, along 'Ntande's bridge' as standard shamanic progress along the celestial axis. But even so, the arrangement of seven or eight (2ⁿ) anthropomorphic figures bottom left, a snakelike image top right, specifically hatched fields reminiscent of a bee swarm,

¹⁷⁵ Cf. Lewis-Williams & Dowson 1988, 1989; Clottes & Lewis-Williams 1996.

water etc., and the vague parallels with more recent iconography which we have considered in the course of our argument, makes further exploration of this image promising.

4. One of the most elaborate and best preserved painted panels of San rock art in Zimbabwe is to be found at Makoni, and has probably a similar age as (3). Garlake, the specialist on Zimbabwe rock art, to whom we owe this figure, interprets (1995) the large reclining figure as an archetypal trancer, his body full of white dots marking potency. His face has the markings of a sable antelope (elsewhere in Garlake's work this suggests a divine, rather than human nature). The vertical emphasis in the image has shamanic overtones, as is the case in (3). But whatever the merits of these interpretations, the complexity of the scene and the clusters of various types of characters make it a candidate for a future analysis of African prehistoric element systems.

Further than this we cannot go at present as far as the African prehistoric indications of element systems are concerned.



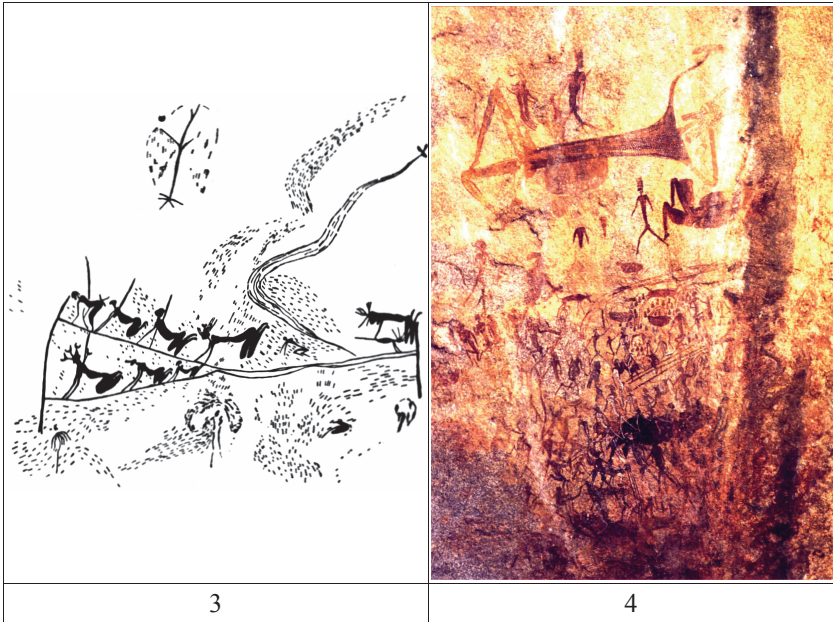


Fig. 6.4. Possible candidates from African prehistory for an iconographic analysis in terms of element cosmology.

After this exploration in the Upper Palaeolithic, let us return to Bronze Age Eurasia, and see if we can cast more light upon the history of correlative systems in that period.

6.4. Between the *Borean-speaking Upper-Palaeolithic and the Late Bronze Age: The transformation cycle of elements as a mode of thought

Although we have no direct documentary evidence on prehistoric modes of thought, comparative linguistics, archaeology, comparative mythology and comparative ethnography offer us increasingly perceptive methods to retrieve ancient thought from pre-literate contexts. In a recent attempt to reconstruct, in space, time and modes of thought, the (probably remotely prehistoric) contexts (probably going back to remote prehistory) to which the mythology of the Flood hero Noah and his sons belongs (*Genesis* 5 to 11), I have extensively used such methods, and forged some new ones

(van Binsbergen & Woudhuizen 2011: 142-153). I cannot reiterate here the data and analysis for limitations of space, but let me summarise the main results.

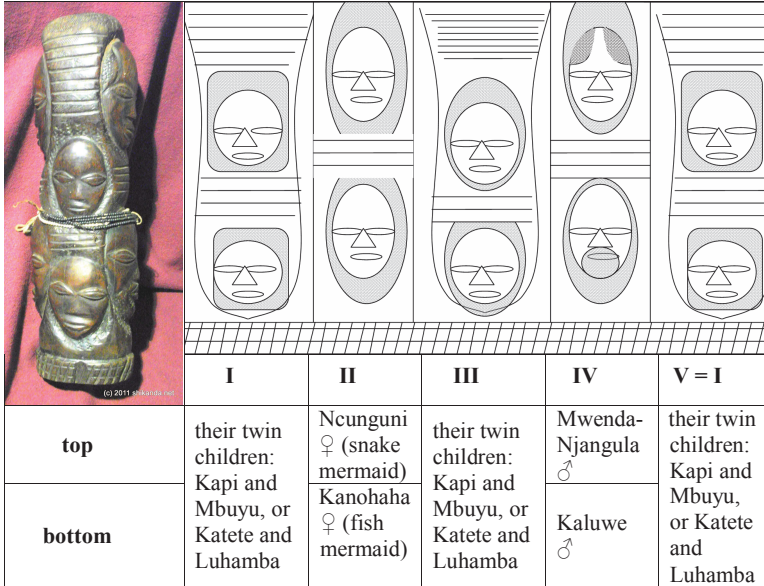
In the first place, close scrutiny of the more than thousand reconstructed lexical roots for *Borean enabled me to identify, for Eurasia in the Upper Palaeolithic, a peculiar mode of thought which I have termed ‘range semantics’:

*Borean reconstructed roots are mainly of the form *CVCV, where C is a specifically reconstructed consonant, V an unspecifiable vowel. Now looking at the *Borean repertoire for ‘wet’ and ‘dry’, we see to our amazement that many reconstructed words which have the same specific consonantal structure (although, admittedly, the underlying vowel structure remains undefined), in their semantics relate to both ‘wet’, ‘intermediate, swampy’, and ‘dry’. It is as if the *Borean words (or, to be more precise, the vowel-unspecified word cluster with the same consonantal structure) had a meaning that is not calibrated at one specific point in the semantic range between ‘wet’ and ‘dry’, but that indicates the entire range, leaving it to context to determine which position on this range is meant. Such ‘range semantics’, as a general characteristic of *Borean, reveals a mode of thought that is very different from the triadic mode often found in the literate Eurasian civilisations from the Bronze Age on, and even (because of the fluid range semantics which implies an absence of firm juxtaposition) from the dyadic, binary oppositions which Lévi-Strauss (1962a, 1962b, 1969-78) thought [apparently erroneously] to be a human universal and even the very basis of human culture.’ (van Binsbergen & Woudhuizen 2011: 142).

Thus in *Borean, a particular lexical root may indicate not so much either ‘wet’ or ‘dry’, ‘penis’ or ‘vulva’, ‘dark’ or ‘light’, but *any* specific variable value in the ranges ‘degree of wetness / dryness’, ‘genital of either genders’, ‘degree of lightness / darkness’. *Firm, sustained, consistent, absolute* logical distinctions would thus appear to be post-*Borean. Their emergence and installation, ultimately to become standard, should in the first place be regarded as a result of intensified use of articulate language¹⁷⁶ (and of the socio-organisational, productive and ritual practices facilitated by, and engendering, articulate language) since the Upper Palaeolithic. It might then be correct to say that the subsequent, increas-

¹⁷⁶ Articulate language can be claimed to have been humans’ principal context, and tool, for learning to generate and to handle immensely subtle and complex distinctions – by the phonological principle of *distinctive features* (Jakobson *et al.* 1952), the distinction and use of phonemes and other language elements entirely depends on the dextrous management of binary oppositions.

ing dominance of such binary distinctions in human culture was largely brought about by the pivotal role of increasingly precise and technical language in the context of the *post-Neolithic package of writing, the state, the money economy, proto-science, and organised religion.*



Cf. van Binsbergen 2011e

Fig. 6.5. Recursion in a Nkoya statuette used in a cult of affliction.

Clearly, it was difficult for Upper Palaeolithic thinkers speaking *Borean to make the kind of clear-cut binary oppositions out of which, under the Aristotelian logic of the excluded middle (Aristotle, *Metaphysics*, 4.4), our formal, and especially our scientific, discourse consists in modern times. Even so, the *Borean-speaker's approach to reality was a strongly dyadic one: the only *Borean numerals convincingly reconstructed were 2, 4 and 8 – for it were the names of these numbers only that left traces in the (likewise reconstructed) proto-vocabularies of historic language families. Handicapped in her or his binary thinking, the *Borean speaker's approach to the world's complexity appears to have been in terms of *recursion*, in other words:

'...the situation in which a class of objects or methods [is] defined by a simple basic case and where specific rules derive from, and reduce to, this basic case all other cases. In iconography, repetitive patterns of ornamentation (...) [notably accumulations or concatenations of two twosomes] constitute examples of recursion. In social organisation, segmentation, the segmentary lineage, and the genealogy represented as a dendrogram also amount to recursion.' (van Binsbergen & Woudhuizen 2011: 147n).¹⁷⁷



This large room-dividing screen from the Tlingit of Alaska offers, in its repetition and nesting of the 'eye' motif, excellent examples of recursion (Haberland 1965: Fig. 14)

Fig. 6.6. Large room-dividing screen from the Tlingit of Alaska.

¹⁷⁷ Thus the complementary opposition model applied above in Section 3.2 in order to tackle Nkoya clan nomenclature, is a recursive model; little wonder that it does not satisfy, for the transformative element cycle that I show to be the key of the Nkoya clan system in Section 2.3 operates at a far more advanced and recent level of triadic logic – which, towards the end of this book, will be a reason to consider this triadic model among the Nkoya a recent transcontinental intrusion.

It is the ethnomathematician Ron Eglash (1997, 1998, 2005; *cf.* Fitting 1981) who in his studies of African formal systems of divination and ornamentation, following common mathematical usage, has discussed, under this heading of *recursion*, the endless repetition, through bifurcation of the same phenomenon at successive levels, like a binary dendrogram unfolding infinitely – fractalwise. Here the *apparent* (and structuralists following Lévi-Strauss should heed this point) binary opposition is not a genuine one, because it is neither conclusive nor stable in itself but – as if for fear of the absolute difference implied in the real binary opposition – it keeps endlessly repeating itself, it is merely an invitation to further and further bifurcation.

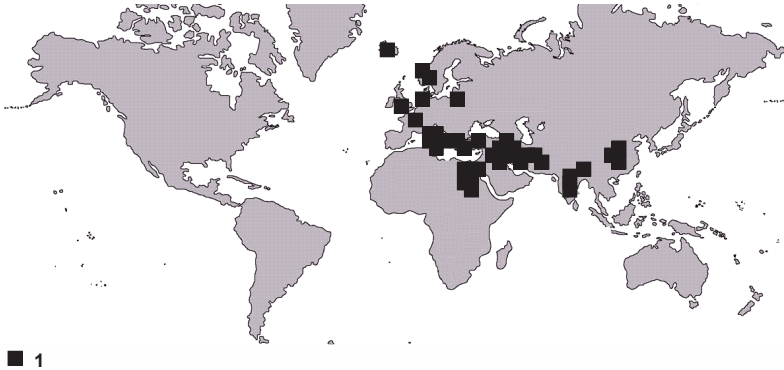
However, out of modes of thought like ‘range semantics’ and recursion, more complex and precise modes must have evolved, for towards the end of the Bronze Age we find, in a narrow belt stretching from Iceland to South Asia and China (our Fig. 6.7), cosmologies, pantheons, socio-political arrangements (Dumézil 1958, 1969) and other formal systems organised in terms, not of more or less thwarted binary opposition, but of *triads*.

‘The triadic format therefore stands out as a regional Neolithic or Bronze Age innovation, underneath of which apparently much older twosomes and four-somes persist. One can hardly overestimate the revolution that a triadic system constitutes as compared to a classification system based on powers of 2 and therefore on recursion: whereas recursion reproduces, fractal-wise, the same set of relationships over and over again at an ever increasing or decreasing scale, triads introduce the Heraclitean / Hegelian dynamics of dialectics, where the relationship between each two components is essentially shifting and unstable, and informed by the third component; on a formal logical level one can very well understand why a cultural setting dominated by triads has become, from the Neolithic onward, the main growth region for the revolutionary package of writing, state, organised religion, and (proto-)science. The ‘Triadic Revolution’ consists in the acknowledgement of a third element in addition to the two that had hitherto constituted the two poles between which the worldview was organised. Typically, therefore, that third element takes the form of a mediator or connection between Heaven and Earth, such as the aether, air, a demiurge, a Child from Heaven descending on Earth (*e.g.* in the form of food crops: Osiris, Dionysus, Jesus), the celestial pole, lightning, rain, etc. One might also look for intermediate forms between Land and Water (the mythically charged ‘Flood land’ Boeotia seems to be a case in point.), but the worldview informed by the cosmogony of their separation was in fact already obsolete when, during the Bronze Age and mainly in its literate polities, the ‘Triadic Revolution’ established itself as standard. Whereas the binary opposition is static in that it, in endless recursion, can only copy its underlying juxtaposition, the triad is immensely dynamic in that, perhaps for the first time in

global cultural history, it offers the mode of thought capable of handling movement, escape from the original juxtaposition, and transformation into something totally new and unexpected – the dynamics of dialectics, such as fathomed, in the history of Western philosophy, first by Heraclitus (Diels [1960 /] 1934-1937), formalised more than two millennia later by the end of the 18th century CE for the first time (Kant), subsequently given a central position in Hegel's ternary logic, and popularised in Chalybaeus' well-known three-stage operation Thesis – Antithesis – Synthesis (Chalybaeus 1860; Hegel 1807 / 1977, 1822-31 / 1992; Kant 1781 / [1983 /] 1964).’ (van Binsbergen & Woudhuizen 2011: 149 f).

The emphasis on twosomes and foursomes, in *Borean, as well as in North American and sub-Saharan African formal systems (including divination, mythology, and social organisation) in historical times, contrasts strikingly with the very conspicuous, ‘Dumezilian’ emphasis on cosmological and mythological threesomes / triads throughout the Ancient Near East (including Egypt), South Asia, and Europe, in proto-historical and historical times. *The triadic format stands out as a regional Neolithic innovation* (also cf. Kaul 2005), underneath of which apparently much older dyadic formats persist, for instance such as inform the Ancient Egyptian Hermopolitan cosmology, the Empedoclean (I submit: Pelasgian) element system of Greek Antiquity, etc. From this point of view, then, the four-element system of Empedocles, based on 2ⁿ recursion and without the triadic element which the catalyst provides in the Taoist transformation cycle of elements (Figs. 3 and 4), is markedly more archaic and less advanced than the Taoist one, and than triadic systems in general.

In their present form, African 2ⁿ-based divination systems (*Hakata, Ifa, Sikidy*; cf. Chapter 2) unmistakably have *one major, recent* background in the South West Asian divination system ^c*ilm al-raml*, whose astrological overtones inevitably were informed by Hellenistic, ultimately Ancient Near Eastern astral divination where triadic transformations – groups of three zodiacal signs called *triplicities* – of element foursomes (!) play a considerable role (Bouché-Leclercq 1879, 1899; Tester 1987; Pingree 1978; Gadd 1966), each again with three specific planets as astrological ‘rulers’. More important however seems to be that, in a longer time perspective, ^c*ilm al-raml* in turn was informed by, or has a common origin with, the East Asian correlative system of *Yi Jing*, and that both, along with the African 2ⁿ-based systems, appear to continue an Upper Palaeolithic Old World standard pattern.



Triads seem to be restricted to literate Eurasian mythologies; from: van Binsbergen & Woudhuizen 2011: Fig. 6.5, with referenced data points, p. 152; 1 = triad attested

Fig. 6.7. Global distribution of triads in mythology.

Thus, although first attested in Egyptian and Mesopotamian documents from the Early Bronze Age, the non-cyclic, non-transformational element systems described in the preceding sections follow an archaic pattern reminiscent of modes of thought reconstructed for the Upper Palaeolithic. This raises the question as to how the transition was made from the range-like logic implied in *Borean reconstructions, to the firm, absolute binary oppositions that today, world-wide, govern our lives, technologies, and specialist, academic knowledge production.

In my opinion the binary opposition came to be installed as the norm,

- in the first place as a result of articulated speech becoming the absolute norm for human communication (which – Ferdinand de Saussure was right (de Saussure 1968 / 1916) – is predicated on binary opposition between phonemes),
- and subsequently and even more formidably, as a result of the package of post-Neolithic civilisation, containing writing, the state, money, organised religion and proto-science, that has raised domesticated, binary thought to the norm and has banished undomes-

ticated thought¹⁷⁸ to the (fortunately still very extensive) non-specialised, non-academic, non-formal domains of everyday life.

The capability of transcendent thought is also implied in binary oppositions. In a logic based on ‘range semantics’, no firm binary opposition and no genuine transcendence can be thought. It is my contention (van Binsbergen 2012a) that not transcendentalism, but immanentalism is the default option of the world-view of Anatomically Modern Humans. *Only occasionally, under very specific historical and statal conditions which happened to be met in sections of the Extended Fertile Crescent since the Early Bronze Age, does immanentalism give way to transcendentalism.* The typical implication of immanentalism is repetition, when it is fundamentally impossible to escape from the here and now, and all appearances to the contrary are ultimately a disguise of the idea of an *Ewige Wiederkehr des Gleichen* (Nietzsche 1973a, 1973b; Eliade 1954 / 1971). As one essential further step, the transformation cycle is also intermediate between range semantics and the binary opposition, but it is far more advanced than recursion. Note that the Old World correlative systems discussed in Chapter 4, tend to combine recursion in the form of reliance on 2ⁿ, with a cyclic structure of elements. In a transformation cycle of elements, an ontological position is still not totally fixed: the element may be Fire, and as such it is fixed in a number of unmistakable and unique characteristics or attributes, but being Fire is only a more or less ephemeral state, and may under specific conditions give way to e.g. being Earth,



Fig. 6.7a. A typical triad: Osiris, Isis and Horus depicted in gold (Osorkon II, first

¹⁷⁸ Lévi-Strauss’ *pensée sauvage / savage mind*, which is the common, everyday, non-specialist form of thinking, and not specifically the thinking of ‘savages’ – the latter being an impossibly obsolete term anyway.

*half 9th c. BCE, now at the Louvre, Paris, France); source:
<http://www.puc-rio.br/louvre/images/iependen.jpg>, with thanks*

just as it may have resulted from an earlier state *e.g.* being Wood. It is the powerful combination of a well-defined ontological state, and the ephemeral, transient nature of that state, which makes the transformation cycle a great improvement upon sheer recursion, yet still greatly falling short of firm, genuine binary opposition. Meanwhile, the hints at triads contained in the Taoist and Nkoya versions of the transformative element cycle reveal the relatively recent nature of these systems: they date from the very last few millennia, when the triad as civilisational norm had already established itself.

We may now pinpoint what the ‘peripheral miscomprehension’ of the Presocratics consisted in, and why it was essentially felicitous after all: unable to appreciate any more the cyclical nature of the elements, they essentialised them into frozen, discrete, parallel ontological states, applying the logic of binary opposition (which by that time had become a standard tool) to a much older mode of thought.

Let us consider once more my Cosmogonic Hypothesis claiming, for the Upper Palaeolithic during the period of the disintegration of *Borean, a succession of two rival cosmogonies: that of the Separation of Land and Water, supplanted, within a few millennia, by that of the Separation of Heaven and Earth. The scanty, and scattered, empirical evidence for this hypothesis cannot be presented in the present scope. Suffice it here to note that these cosmogonies may well be considered true revolutions of human thought, in the sense that they are

- on the one hand, far more effective exercises in thinking binary oppositions than had been possible under ‘range semantics’, and on the other hand, in that
- they are indications that in learning to effectively think binary oppositions, cosmological thinking in terms of the succession of one element by another proved to be of considerable importance: the cosmogony of the Separation of Land and Water (even if cast in the likely narrative shape – surviving well into literate Ancient times – of the Mother of the Primal Waters parthenogenetically producing her only Son, Land, who subsequently became her lover) is a meditation on the interaction between Earth and Water *as proto-elements*, while (to the extent to which the Sky is to be

equated with Air and / or Fire – a confusion which can still be noted at the level of the Presocratics) the cosmogony of the Separation of Heaven and Earth is a meditation on the interaction between Earth and Air, or Earth and Fire.

Having thus explored (mainly typologically, but also empirically by taking recourse to comparative mythology, comparative religion and comparative ethnography) crucial steps in the pre- and protohistoric unfolding of human thought faculties, we are in a much better position to take a closer look at West Asia in the Bronze Age. Let us now try and assess whether the striking, though partial, parallels between the Presocratics and East Asian correlative systems may have derived from mere independent parallel development, or instead are to be attributed to tangible and demonstrable historic connections between these two ends of the huge Asian continent; and, if in fact cultural borrowing took place resulting in these attested thought systems, whether such borrowing was from East to West Asia, or the other way around. It was the French-British Sinologist A.E.J.-B. Terrien de Lacouperie (c. 1845-1894) who by the end of the 19th century made the case for actual historic indebtedness of China to Ancient Mesopotamia, in a way now almost completely discarded by recent scholarship – often for the Politically-Correct reason that Terrien's claim today appears not so much counter-intuitive, but potentially hegemonic and (to the extent to which Greek and Modern North Atlantic civilisations ultimately may be seen as continuous, in considerable part, with Ancient Mesopotamia) Eurocentric. The present book's argument so far would seem to favour such Political Correctness, but as an essentially ideological position we should not take it at face value. Let us therefore carefully re-assess the case of Terrien de Lacouperie, in the next Chapter.

