

Chapter 9. Conclusion: Diachronic varieties of the transformation cycle of elements, and their global distribution

9.1. Recapitulating our indications of the distribution and history of element systems worldwide since the Middle Palaeolithic

We are now finally in a position to sketch the diachronic varieties of the transformation cycle of elements in their global distribution (Fig. 9.1).

The affinity between East Asia (China, Japan), on the one hand, and South Central Africa, on the other, is striking: these are the only instances where a fully-fledged catalytic transformation cycle has been attested so far. The Nkoya / Taoism continuity can hardly be explained by the Pelasgian Hypothesis let alone by the Back-to-Africa model or by the *Borean Hypothesis: whereas a simple, recursive element system (including Empedocles's) is likely to be a Pelasgian trait, the world distribution of the transformative element cycle is too restrictive than that it can be taken to be transmitted by any of these three models which combine a perspective of several or many millennia with the concomitant, wide distribution on the world map.

Around 2000, when I was only beginning to perceive, still very dimly, the transcontinental continuities which dominate the present argument and much of my other recent work, I was struck (van Binsbergen 2002) by a similar rapprochement between East Asia and Sub-Saharan Africa in the field of formal cultural systems: animal symbolism underlying astronomical classifications, divination systems, clan systems, and toponymical systems (notably the nomenclature of the Ancient Egyptian *nomes*). I wondered if such systems might have enough in common to treat them

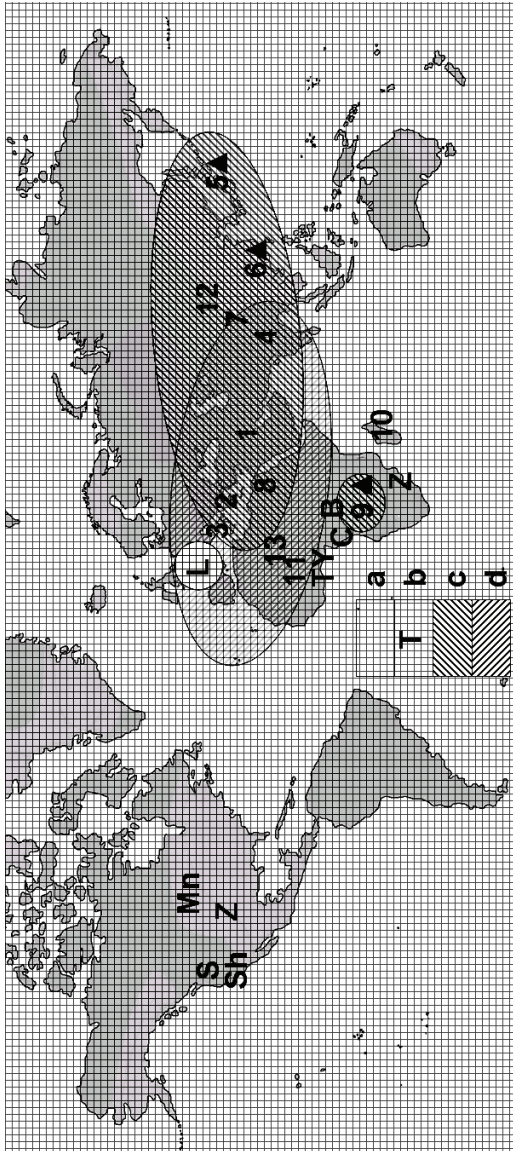


Fig. 9.1. Diachronic varieties of the transformation cycle of elements: Global distribution.
a. Globally distributed substrate ingredients towards element cosmologies presumably

dating back to Middle Palaeolithic Africa, before the Out-of-Africa Exodus (80-60 ka BP) (this book, Table 6.1)

- b. **Intermediate element systems lacking a transformative and cyclical nature:** Z Zuñi and neighbouring peoples; S Skagit; Sh Shasta; Mn Menomini; Y Yoruba; T Togo; B Bushong; C Lower Congo; Z Zulu; L Lascaux (Upper Palaeolithic)
- c. **Fully-fledged correlative element systems attested in historical times, and estimated to go back to 2nd millennium BCE: transformation cycles with a limited number of elements:** from this book, Table 4.1: 1 Ancient Mesopotamia 2 Greek; 3 Latin; 4 Hindu and Buddhist; 5 Japanese: *Godai*; 6 Chinese *Wu Xing*; 7 Bön; 8 Ancient Egypt; only by implication and analogy: 9 Nkoya; 10 Madagascar; 11 Dogon; 12 Mongolians; 13 circum-Saharan zodiacal lore (Pâques 1964). *Of these, 5, 6 and 9 are cyclical, transformational, and catalytic.*
- d. **The no-longer-transformative, rigid four element system of Late Antiquity, medieval Western Eurasia, and Early Modern times.**

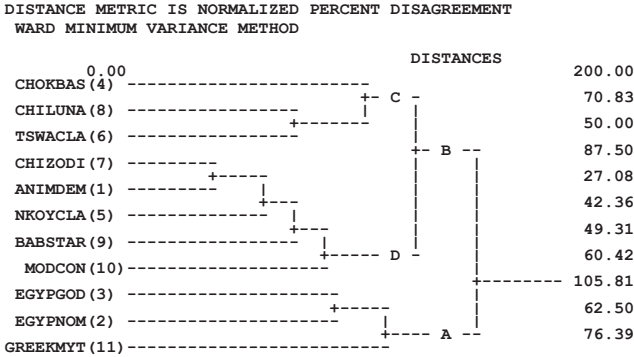
as belonging to one corpus whose internal patterns of coherence could be subjected to statistical cluster analysis. Then already I found close affinity between the Nkoya clan nomenclature (and other African systems of animal symbolism), on the one hand, and the Chinese zodiac and Chinese lunar mansions, on the other hand – whereas Ancient Egyptian, Ancient Mesopotamian and Ancient Greek series of animal symbolism (astro-nomical, topographical and as attributes of gods) turned out to cluster only at much greater distances from each other and from the African and Chinese material.

At the time, I was so enamoured with Afrocentricity that I could not think of a better explanation than a common, African origin for all these systems, which origin then would have to be situated in the Upper Palaeolithic. I am now aware that the catalytic transformation cycle of elements is typologically very advanced, and therefore can only be a few millennia old.

The affirmation of Chinese influence on Africa has been the subject of numerous studies,²⁶⁵ and the circulation of material objects and forms of symbolism reminiscent of East Asian specifically Taoist divination (di-

²⁶⁵ E.g. Duyvendak 1949; Snow 1988; Li Anshan 2000; Neville *et al.* 1975; Davidson 1959; and my work in connection with the 2012 Leiden conference. Moreover, I recently reviewed in detail much of the literature on Chinese global maritime explorations from an Africanist perspective (van Binsbergen 2012f). Numerous studies also have been devoted to Indonesian influence across the Indian Ocean, see Solheim II 2000 and references cited there; and with special attention to Africa, Dick-Read 2005, 2012.

vining tablets, numerical symbolism, divining bowls etc., and Buddhism) makes it quite conceivable that such recent East Asian influence resulted in the South Central African clan nomenclature as a catalytic transformation cycle of elements in disguise.



1. Old World animal demons – ANIMDEM; 2. Ancient Egyptian nome names – EGYPNOM; 3. Ancient Egyptian gods – EGYPGOD; 4. Chokwe divining basket items – CHOKBAS; 5. Nkoya clan names – NKOYCLA; 6. Tswana clan names – TSWACLA; 7. Chinese zodiac items – CHIZODI; 8. Chinese Moon stations – CHILUNA; 9. Babylonian star names – BABSTAR; 10. Modern constellation names – MODCON; 11. Attributes of gods in Ancient Greek mythology – GREEKMYT.²⁶⁶

Fig. 9.2. Comparing Old World formal systems through cluster analysis, provisionally²⁶⁷ bringing out the unexpected clustering of African nomenclatural material with Chinese and Babylonian material, clustering away from Ancient Egyptian and Greek material.

These considerations lead to the following tentative reconstruction of historical relationships as in Fig. 9.3:

²⁶⁶ Source: van Binsbergen 2002. These eleven distributions (numbered as in Figure 9.2) are each derived from a considerable literature, from which I here list only a small selection: 1. Fontenrose 1980; 2. Roeder 1952; 3. Bonnet 1971; 4. Rodrigues de Areia 1985; 5. author’s fieldnotes and van Binsbergen 1992; 6. Schapera 1952; 7, 8. Walters 1989; 9. Walker & Hunger 1977, Hunger & Pingree 1989; 10. Moore 1984; 11. Smith 1880, Graves 1964.

²⁶⁷ These results are provisional in that recently, in anticipation of final publication, the analysis has been replicated with some additional material and with closer attention to the specific mathematical requirements for cluster analysis on this kind of (dichotomised) data. The results, though, have remained the same.



Fig. 9.3. Tentative historical reconstruction for Fig. 9.1.

Legend: as Fig. 9.1. The proposed historical sequence of the four types a-d appears bottom left. Upper Palaeolithic lines of influence and transmission have not been indicated. Broken lines give proposed Pelasgian / protohistorical transmissions from

the Late Bronze Age on – note the cross model of transmission in four directions. Question marks indicate particularly uncertain instances of proposed transmission. Unbroken lines give proposed transmission in historical times (last two millennia, especially the most recent millennium).

In Chapter 5 I posed, in passing, the question whether perhaps all of the world's element systems could be considered to descend from Empedocles' four-element system. By now we have accumulated enough data and insight to persuade us to limit the extent of massive Empedoclean influence to those parts of the world where Hellenic and subsequently Hellenistic civilisation effectively penetrated, *i.e.* the Western Old World (Europe, the world of Islam, South Asia, and North and circum-Saharan Africa) – even though it remains possible that the South, South East and East Asian overseas influence conveyed to sub-Saharan Africa, transmitted some of that Empedoclean orientation to more Southerly parts of Africa, and there, with its emphasis on foursomes, contributed to the shaping or reshaping of the four-tablet oracle and Ifa.

9.2. Conclusion

Having taken glances at numerous instances of element cosmologies from all over the world, we are now in a position to argue their historical connectivity against a broad canvass informed by recent long-range genetics, linguistics, comparative mythology and comparative ethnography.

We started out with the Working Hypothesis that element cosmologies, even those with cyclic, transformational and catalytic features, are globally widespread and have a great antiquity, going back to the Upper Palaeolithic. This Working Hypothesis was vindicated in so far as the global distribution and antiquity of element systems *per se* are concerned, but had to be utterly rejected: cyclicity, transformation and catalytic dimensions turn out to be much more recent and local than the Upper Palaeolithic. Our analysis reveals that element cosmologies were not an invention of the Presocratics in Ionia and Graecia Magna in the middle of the 1st mill. BCE. Careful reconstructions of prehistoric modes of thought reveal that the first, minute vestiges of element thinking can already be traced to the pre-Out-of-Africa common heritage of Anatomically Modern Humans, to the contents of 'Pandora's Box' – where mythical proto-types of the most prominent elements circulating in historic element

systems can already be reconstructed. Subsequently, simple cosmologies of a handful of elements, but still without the features of cyclicality and transformation, may be reconstructed for the Upper Palaeolithic, on a global scale.

However, it was not until the Bronze Age, and specifically in West Asia, that out of these time-honoured ingredients of element cosmology, a fully-fledged transformational and cyclical element system was constructed. The present-day distributional ramifications of the cosmology of the transformative element cycle, as well as etymological research of the *Yi Jing* terminology, suggest that this transformative system has a distinct and traceable history going back to Bronze Age West Asia, third or second mill. BCE – perhaps in a context that may be related to early metallurgy (on the assumption that it is metallurgy that would bring local specialists to consider – perhaps in order to manage and hand down as secret initiation formulae – detailed notions of element transformation, especially if one of the elements thus identified is metal). From these putative West Asian beginnings, the early transformative element cycle may readily have been communicated towards Central and East Asia on the spur of dramatically increased communications with the Central Asian invention of the chariot,²⁶⁸ with the Scythian-Korean-Japanese connection ensuring that the system ended up in Japan as well as in Shang China (implying therefore, contrary to popular belief, but in line with Terrien de Lacouperie, that the system is *not* indigenous in China). Subsequently, the transformative element cycle spilled over into at least one region of now Bantu-speaking sub-Saharan Africa (the Nkoya of South Central Africa), probably as a result of *direct transmission* from East or South Asia, in a process of recent cultural and probably also even demic diffusion across the Indian Ocean.

Meanwhile, the transformative element cycle was also introduced into the New World, again probably²⁶⁹ not on the basis of Upper Palaeolithic,

²⁶⁸ Kazakhstan, 2000 BCE; for references, once more, see van Binsbergen & Woudhuizen 2011: 382 *f.* with extensive literature.

²⁶⁹ Tacitly we are operating here on the common assumption (also often applied, *mutatis mutandis*, to sub-Saharan Africa) that North America can only have been the destination, and never the origin, of cultural innovations in prehistoric times. For North America, this view is based on the assumption that that continent was peopled in an eastbound influx from the West, across Beringia or otherwise across the Pacific

*Borean continuities (for which the system seems to be far too recent), nor of Pelasgian transmission, but through the trickle of transcontinental migrations which recent research (*cf.* Jett 2002) has brought to light for periods long *after* a major wave of peopling the Americas via the Bering Strait route took place.

Let us finally consider the implications of the scholarly affirmation, in the present argument, of an immensely widespread and seminal, Upper Palaeolithic element system, with a Bronze Age West Asian reformulation in terms of cyclicity and transformation. It amounts, in the first place, to a further corrective of now rapidly obsolescent, Eurocentric views as to the Presocratic origin of philosophy and science.²⁷⁰ The Presocratics' search, in the middle of the first millennium BCE, for the *prima materia* has throughout the history of Western thought, and especially during the past two centuries, been acclaimed by Western historians of science as the very beginning of philosophy and rational thought. Now we can perceive how their search, however fruitful ultimately in some of its results, in the first place appeared to be based on the regressive misinterpretation (reification, compartmentalisation, and immobilisation), in a remote Western backwater peripheral to the Asian and African centres of civilisation, of a profoundly dynamic cyclical transformation system of elements that by the time of the Presocratics was already at least a thousand years old. We are compelled to add at least one millennium to the starting date of philosophy, and to move its place of origin further into West Asia, instead of continuing to situate it in Ionia, Ancient Greece (now Western Turkey) and Graecia Magna, *i.e.* Southern Italy.

Traces of the transformation cycle of elements may also be found with

– perhaps with a slight trickle from Western Eurasia and Africa. However, recent genetic research has demonstrated that there have also been population movements across Beringia from East to West, into Eurasia, 10-15 ka BP (Tamm *et al.* 2007, with illuminating diagram). Elsewhere (van Binsbergen & Woudhuizen 2011: 125, 156 – the later page presents the diagram from Tamm *c.s.*) I discuss this finding in the context of the possible American origin of a particular type of Flood myth and Flood hero, in the light of similar suggestions emerging from my multivariate analysis of Flood myths (van Binsbergen with Isaak 2008). It is therefore not totally unthinkable that the four-element cosmology was the gift of America's early inhabitants, to humankind as a whole.

²⁷⁰ *Cf.* the *Black Athena* debate initiated by Martin Bernal (1987-2006); also van Binsbergen 1997a / 2011a.

Aristotle, Plato, and even Empedocles himself. Meanwhile the recursive, more archaic, system (lacking cyclicality, transformation, and catalytic action) remained dominant, and – to the detriment of more dialectic, dynamic and flexible instruments of thought – it was this that, in Western thought, set the norm for element cosmologies until today. The Presocratics were active in an environment where already c. 1,000 years earlier a transformative element cosmology had been in circulation, probably as sacred, esoteric innovation of a much older, widespread, recursion-based simple element system. The presumably secret nature of the transformation cycle of elements (probably in metalworking contexts) might explain why it did not massively surface except in East Asia from the late 1st millennium BCE onward – with a recent offshoot into South Central Africa, and a trickle into the New World where it was occasionally captured in Flood myths. Given the fragmentation, heterogeneity and often relatively recent provenance of Native American groups from the Old World or perhaps Oceania, the presence of traces of (even transformative and cyclic) element systems in the New World should be allowed to add further detail and precision to our overall analysis but cannot alter or refute it fundamentally.

So it turns out that the message of this book reaches even beyond the specific point of the Presocratics pre- and protohistorical antecedents. For, in addition, three more general points are being made, which I consider of the greatest importance, and towards whose substantiation my specific long-range argument on the Presocratics goes a long way:

1. *We can reconstruct thought systems of the remote past in some detail and with some reliability.*
2. *Such reconstruction is predicated on the fundamental unity of (Anatomically Modern) humankind and the relative, porous nature, therefore, of cultural boundaries; and in its turn confirms the validity of such a point of departure.*
3. *This particularly means that sub-Saharan Africa has been part and parcel of global cultural history to a much greater extent than that part of the world is usually given credit for.*

Meanwhile these global perspectives should not obscure the fact that, as far as the Presocratics proper are concerned, setting their long-range context in space and time does answer many questions of established

Presocratics research, but also initiates a wide range of new questions, of which only a few are answered here. We understand now why the various Presocratic philosophers take turns in naming the identity of Primal Matter, selecting their answer from a very limited series that happens to coincide with – what our present research has shown to be – the long-established, West Asian element cycle of transformations.

One question, however, that we could not give the attention it deserves is the following. If the Presocratics were so unmistakably indebted to this wider background of thought in terms of elements, transformation and cyclicity, *what precisely compelled them*, from their peripheral and apparently second-hand perspective, and especially (since, as we have seen, traces of transformation and cyclicity can still be found in Presocratic element thinking), *what compelled their successors* who, from Classical Antiquity onwards received their thought, *to drop the cyclical and transformative element and to end up with a system of a handful of immutable, parallel ontological positions (Earth, Fire, Water, Air, and a Fifth One)?* Was it something in the setup of Hellenic city states and their Hellenistic successors, during the second half of the 1st millennium BCE (e.g., the shift from monarchy or oligocracy to democracy? the growth of a money economy specifically in the Greek world? the decline of Ancient religion?) that was incompatible with cyclicity and transformation? Was such incompatibility perhaps brought about by the very demise of the city state in the Hellenistic world, in favour for much more comprehensive, centralised and undemocratic state systems in violent competition, ultimately to be smothered under the *Pax Romana*, and against the background of a further growth of proto-globalisation? Did such conditions not impose a more or less immutable hierarchical socio-political order, in which the idea of a constant changing of position and identity as between equals – the implied basis of cyclicity and transformation – could no longer be entertained? Was it the political and economic demise of West Asian and Northeast African states (first Hatti, half a millennium later Egypt and Assyria, then the Persians, finally the Parthians and Meroe), that rendered their cyclical, transformative element cosmology obsolete in the eyes of inhabitants of the Aegean and the Central Mediterranean regions? Was dropping of cyclicity and transformation the price which West Asian and Northeast African worldviews had to pay when – in the historically familiar way of the ritual and cosmological systems of vanquished peoples – they subsequently penetrated the Roman Empire as decontextualised,

eroded and redefined, globalised exotic religions, such as the Isis cult, the cult of Mithras, and Christianity?

Was there perhaps an ethnic factor, in the sense that cyclicity and transformation, as manifestations of an ultimately democratic and acephalous, segmentary conception of socio-political life and of the world as a whole, *and as such fitting in the Pelasgian tradition*, were implicitly perceived as archaic, rustic and unsophisticated, possibly with ‘Black’ and ‘barbarian’ overtones (the echoes of Homer’s metal-working, primitive, potentially Black Sinties, Latin evocations of alienness in the figures of Silenus and Pan, etc.), and therefore had to be suppressed from consciousness? ‘Cleansing’ Europe from ‘Blackness’ / non-Indo-European speech / non-Christian religion has been an inveterate, and most regrettable, undercurrent of European popular ideology for two millennia,²⁷¹ right through to the near-extirpation of Roma and Jews in the gas chambers of the Third Reich – but, beyond the proverbial outsider position of blacksmiths throughout the Western Old World, I have so far (fortunately) no concrete evidence to support these sweeping and tendentious ethnic suggestions in the specific relation of transformative, cyclic element cosmologies.

Along such and similar lines, I submit, the nature of the immensely productive and significant ‘misinterpretation’ of the West Asian cosmology of cyclical transformation of elements may be better understood, but the substantiation or refutation of such hypotheses should be undertaken by proper specialists in the intellectual history of Imperial and Late Antiquity, and not by me, and not in the present book.

Another question upon which future research is hoped to throw more light is that of the apparent historical paradox: while the transformative cycle with catalytic third agent could (at least, according to my analysis here) only have emerged with the *triadic* thinking tools of the Late Bronze Age, and while the resulting cosmology (especially in its radical Empedoclean redefinition) had a demonstrable impact not only on the West but also on South Asia and further afield, I have demonstrated that simpler element notions have been very widespread, across the continents, and go back to the Upper Palaeolithic. Hence for a proper apprecia-

²⁷¹ van Sertima 1985; Bernal 1987; but also see Snowdon 1970, 1989; and Keita 1993.

²⁷³ van Melsen 1941, 1949; Strathern 2000; Weeks 2003; Hooykaas 1935; etc.

tion of the cosmology found in South Central and Southern Africa in historical times, we need to appeal to a layered model comprising (a) Upper Palaeolithic, (b) Bronze Age, and (c) recent historical components, each with their own transcontinental history, part of which we have been able to reconstruct. How truly comparable are all these element cosmologies since the Upper Palaeolithic? And what were the specific factors bringing about the *Triadic Revolution* in the Bronze Age? Is it enough to appeal to the emergence of writing, the state, the money economy, organised religion, and proto-science? Surely, a more subtle and detailed empirical and theoretical argument is required on this point – but while the present argument allows us to phrase the question in such novel and focussed terms, its answer, again, should be left to specialists of Bronze Age political, social, economic and religious organisation.

Finally, I see new questions arising in the field of the history of Modern, global science and technology. *I have adduced comparative and historical data on the strength of which the long-range, global contexts, spanning a dozen millennia and more, may be reconstructed against whose background Presocratic thought emerged as a peripheral, radical mutation.* Establishing these pre- and protohistoric antecedents of the Presocratics proved to be a sufficiently taxing undertaking, wrought with numerous pitfalls (many of which I have fallen into, no doubt), and I have so far refrained from projecting *in detail* my new, contextualised understanding of the Presocratics onto the subsequent historical steps that led from them to Modern science and technology. Numerous are the histories of science organised as a discussion of (proto-)scientific element thinking.²⁷³ These histories, spanning the last two millennia of one of the greatest adventures of humankind (*i.e.* the emergence of natural science), tend to be tacitly conceived within an implied Eurocentric and Empedoclean framework,²⁷⁴ and one wonders if, and how, they should be rewritten in the light of the present book's long-range, transcontinental inspiration.

Nor is this all. The world image emerging from the present study and from much of my work of the last two decades, counters cultural, identity and political fragmentation, and reminds us world-wide of our deep-seated unity. Could there be a more timely and important message?

²⁷⁴ Harding 1991, 1993, 1997; van Binsbergen 2007b.