DIOGENES

Diogenes 214: 49–59
ISSN 0392-1921

The Origins of Language: Material Sources

Marcel Otte

Anatomical retroaction

Because of their upright stance and bipedal movement, hominids have a bone structure that tended to favour the development of the brain: muscle attachment points atrophied on both skull and neck. The ease of manipulation thus facilitated relieved the jaws of the powerful functions of grabbing, cutting, preparing food, attacking or defending. The bone masses that were freed up in this way were gradually taken over to enlarge the cranial envelope in a retroactive effect, since at the same time behaviour was becoming more complex and richer (tools, hunting, habitat, traditions).

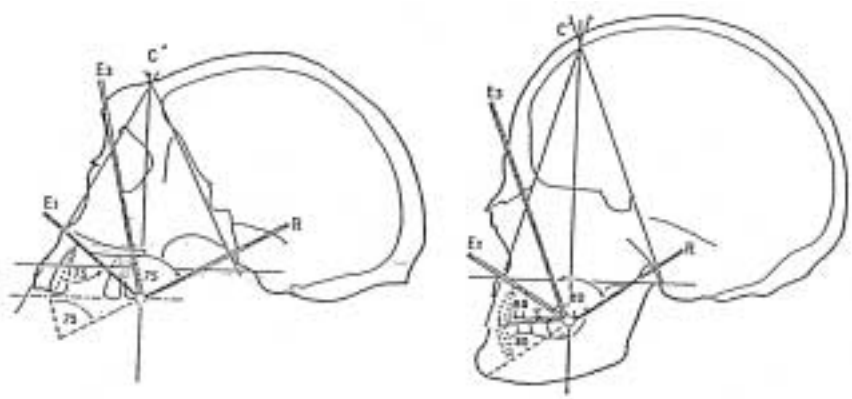


Fig. 1. The retraction of the jaws is a universally observed effect that feeds back into anatomy from behaviour when functions move from the head to the hands. At the same time the brain develops to occupy the space vacated when the bony mass of the muscle attachment points reduces to a thin wall (after Leroi-Gourhan, 1964a)

SAGE: Los Angeles, London, New Delhi and Singapore, http://dio.sagepub.com
DOI: 10.1177/0392192107077650

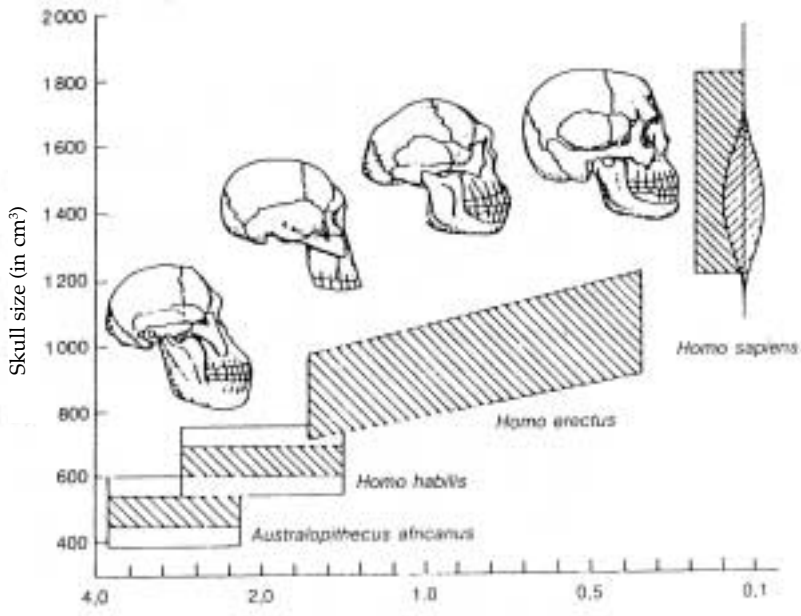


Fig. 2. The importance assumed by symbolization is demonstrated indirectly by the relationship between the brain size and chronology (after Eccles, 1991). Across time, the growing importance of behaviour justifies and highlights this evolution, which it seems to trigger rather than follow

All these cultural developments had to be symbolized, thought up, recorded and passed on or adapted to fresh situations. And so in the long run anatomy reflected 'cultural selection', that is, adaptation to mastery of the symbolic: the face was reduced and the neck muscles became vertical. Finally the head was balanced like a cup-and-ball, and the contents of the brain increased as was necessary for the status of our species: from that point we could no longer subsist in a purely 'natural' manner; culture became a crucial

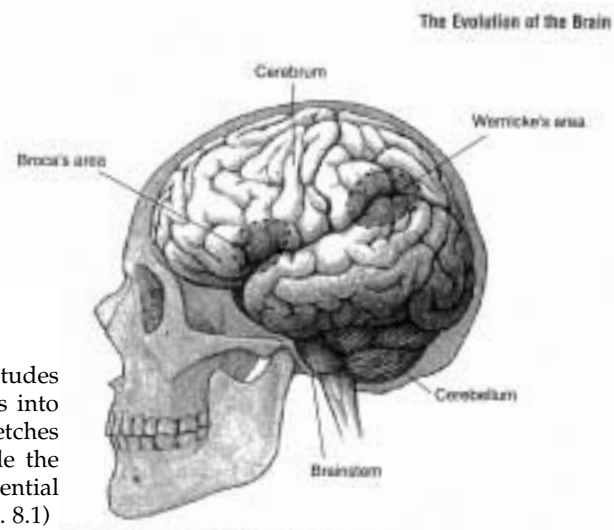


Fig. 3. Endoskulls reflect these aptitudes even more clearly: as the head comes into balance on the spine the bone veil stretches out and slims down, making possible the cervical expansion that becomes essential (after Arsuaga and Martínez, 2006: fig. 8.1)

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

component for all human beings and their anatomy simply adapted progressively in response.

Voicing abilities

Since at least the time of the Neanderthals, modulations of the pharynx were as flexible as in present-day humans. The hyoid bone (the tongue muscle attachment point) discovered at Kebara clearly proves this, and the total length of this oral space has hardly increased since *Homo erectus*. Our endocranial moulds also illustrate developments in the cerebral lobes, which are activated when we speak. It seems likely that enlargement of the cerebral lobes was both made possible by the bipedal stance (anatomical retroaction) and required for mastery of concepts that were organized in an increasingly complex manner, and this is proved by behaviour during these same periods: what is said must first be thought and the development of this consciousness leaves obvious material traces. Here again there is interactivity between neurone capacity and control of cultural activities, of which language is the main example.

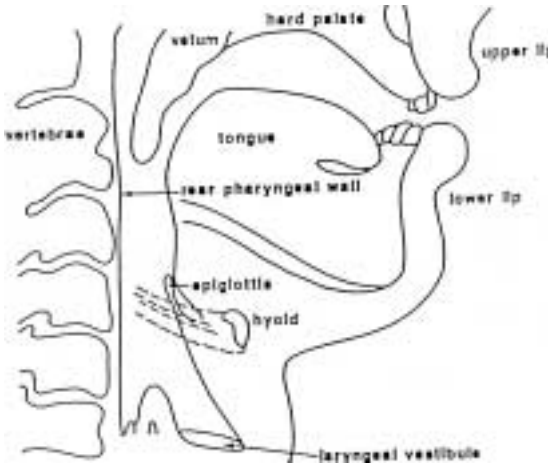


Fig. 4. The basic elements of voicing abilities were in place as early as our paleontological origins; but we had to have something to say. Archeological evidence leaves us in no doubt as to the vital importance assumed by information transfer with its ever more complex organization (after Lieberman, 1989)

Gratification and stimulation

Experiments on newborns show there is brain stimulation during very early childhood (ontogenesis) similar to that seen for the whole of development (phylogenesis). Sound units are captured as they are used and as they are gratified; in this way the 'lexicon' is built up. Grammatical fluency is similarly acquired, in an 'epigenetic' manner which selects, from among all the aptitudes that might be available, those that have an appropriate reality (syntax). Rules are then deduced according to the connections most regularly encountered. Thus up to this point there is no observable 'logic'.

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

But what can be noted in an individual's youth assumes a completely different significance on the developmental level, because once the stimulations and gratifications are socialized they combine ad infinitum with what is produced by these modes of communication.

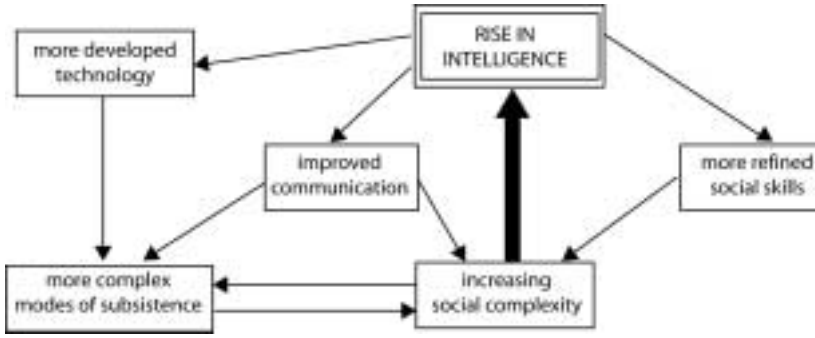


Fig. 5. Seen globally this backwards movement, from the biological to the cultural, has a social meaning: it is reflected in styles, fashions, traditions. Growth in the faculties of abstraction thus becomes an essential, endless and even uncontrollable process

Then social groups form systems where the whole symbolic order is transformed: from a simple exchange of information to the essential condition for survival and identity. Strangely these changes were triggered on a world scale in a parallel manner: everywhere, tools, burials, art, agriculture and writing emerged against a backdrop of conceptual order and among totally separate human groups. Given these functional similarities, we do not need to explain the spontaneous emergence of some tool (for instance, the axe) any more than the appearance of grammatical rules in the most distant regions of human occupation. The laws of convergence come into operation as soon as the mind is working, in technical areas as well as the cognitive aptitudes and language spheres that reflect them.

The technical grid

The different aptitudes for thought, and so for speech, are most universally demonstrated by the series of technical actions of which the stone evidence has come down to us in large numbers. As they are systematic, these successive adaptations can be recognized in their regularity as well as their variations. The rock responds each time to a clearly defined sequence of movements: around a dominant general theme variations of a grammatical kind appear, while all these language-like systems are also improving worldwide.

Thus technology allows us to make contact with the activities of the mind and the tolerance accorded to variations around the principle of an idea, as differences in style might appear within the same language. Nevertheless, the general articulation

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

of language inclines towards the same operations and everywhere we can see the independent arrival of Levallois types of knapping, blade then flake, which probably reflect the same trend towards lightness, flexibility and complexity. And so, in parallel, 'discourse' (spoken or thought) had to follow that technical expansion and show inflexion points, which are attested materially and necessitate their conceptual and language equivalents. Therefore, decoding technical actions is like transcribing the words and thoughts necessary and sufficient to perform them. As it is essentially the stones that have come down to us, all the organic components (handles, poles, cases, sheaths) must have widened yet further the range of mechanical combinations: technology as it has been preserved is no more than the skeleton of technical ability and thought; organs and flesh have to be sought elsewhere.

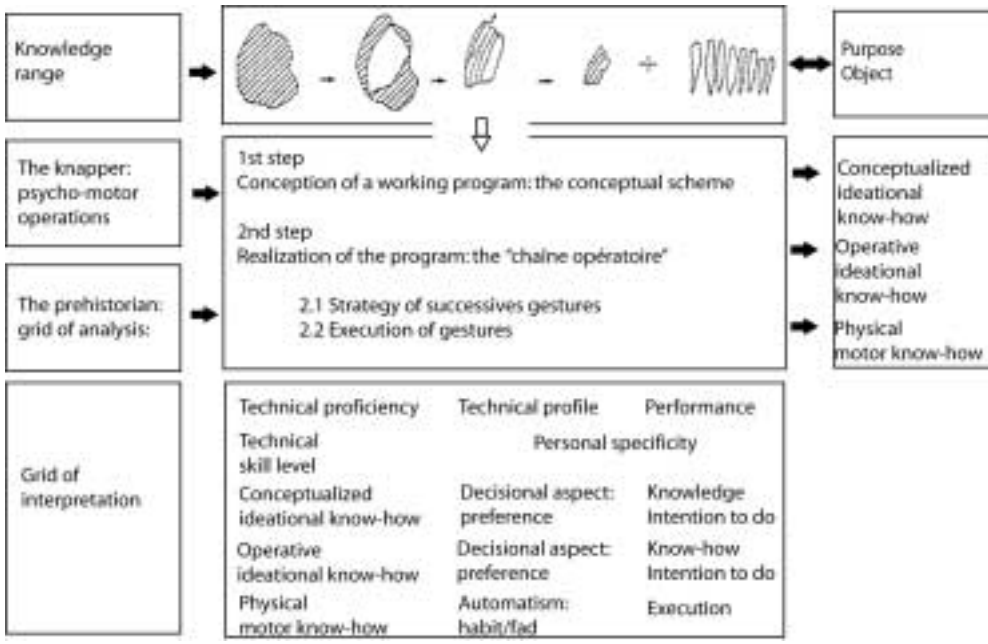
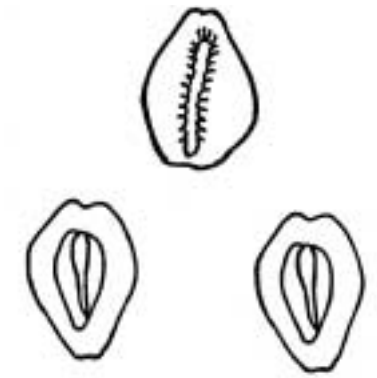


Fig. 6. In the technical area the 'variations' tolerated around an overall theme clearly reflect flexibility of thought and speech. At one and the same time traditions are adopted regionally, and universals run through the whole of humanity: as with language here we have to distinguish the traditional element from what is due simply to aptitudes that are evenly spread worldwide (after Ploux)

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press



A man between two women

A coveted woman

Fig. 7. Signs are built up in a conventional form: they may contain a message as ephemeral as it is hermetic. The interplay between the two sides of a cowrie-shell (male and female) allows coded messages to be composed (after Lefèvre and Cheick)

Language and signs

An indirect effect of symbolization is visible in the concentration of meaning in non-verbal graphic arrangements. For example, the quite ephemeral positioning of cowrie-shells, placed on the ground in a particular order and situation: concepts inhabit signs without the mediation of speech.

Signs called 'abstract' also come from schematizations based on realistic figures replete with meaning. From the curvilinear snake, water with wavy lines, the sun with its radiating circles, for instance. Such messages can contain intensified information for communicating over distances: there are many examples in ethnography (message-sticks) which remind us of the incised stick from the Upper Paleolithic. Here we have language without a doubt since it is active at both ends of the chain, with the stick acting as intermediary.

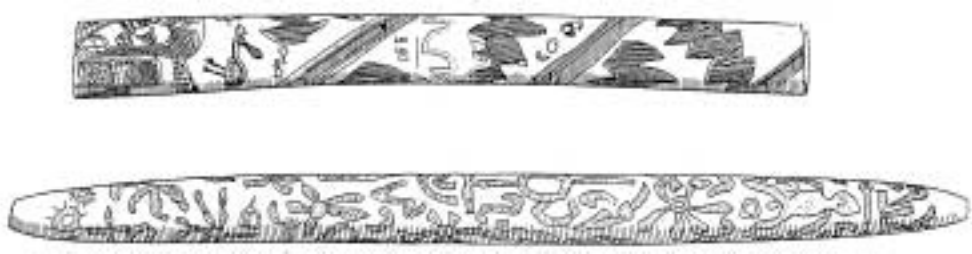


Fig. 8. Wooden message-sticks from Australia show the density of the discourse of which they are the material intermediary. Preceding and succeeding them are two worlds of abstract expression that are limited to verbal expression (British Museum)

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

These structured graphic messages existed as early as the Paleolithic but tended to become more schematic during protohistory: then the images are scarcely recognizable and their whole value lies in the meaning of the arrangement and, as a consequence, in the orchestrated symbolic interplay between the pictures and the meanings of their particular context. Labelled 'mythograms' by André Leroi-Gourhan, these graphic constructions require a prior narrative whose signs provide the meaning. The permanence of rocks gives a lasting quality to a mythical narrative which would otherwise be fluid and ephemeral in the spoken language. However, these constructions are evidence of frequent and subtle abstractions, at the very least the equivalents of those found in abstract language and plastic 'discourse'.

Language and religion

In the vast spaces of the caves mythic narratives were very fully elaborated with close matching between the themes depicted and the natural architecture of walls and roofs. The harmonious organization of the scenes, as regards themes as well as their dispositions on the walls, illustrates complex narratives where humans are positioned in mythical nature: in Amerindian mythologies these narratives show both logical coherence and regional diversity, which closely follow the degrees of variation presented around a common theme. Like their images these narratives thus demonstrate the flexibility of group thinking adapted to the specific situations in which the narratives were given new life.

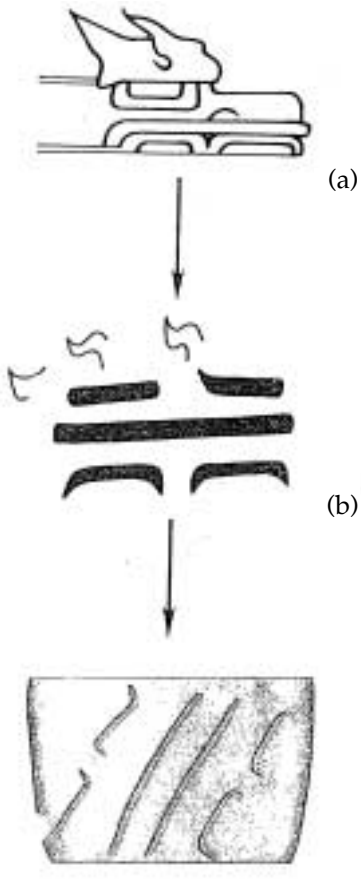


Fig. 9. Abstract signs may be derived from schemas developed from conventional figures, which become disembodied as different materials dictate. Though their original meaning remains (c), it is not necessary for users to be aware of the transformation, any more than we are conscious of the figurative origin of our alphabet when we use it

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

Fig. 10. In the age of metals the delimitation of signs organized in the context of the medium reflects the density assumed by symbolic discourse. We can still recognize figures but they are now shown only in the reduced form of schematic evocations: their meaning is supposed to emerge from their association (after Anati)

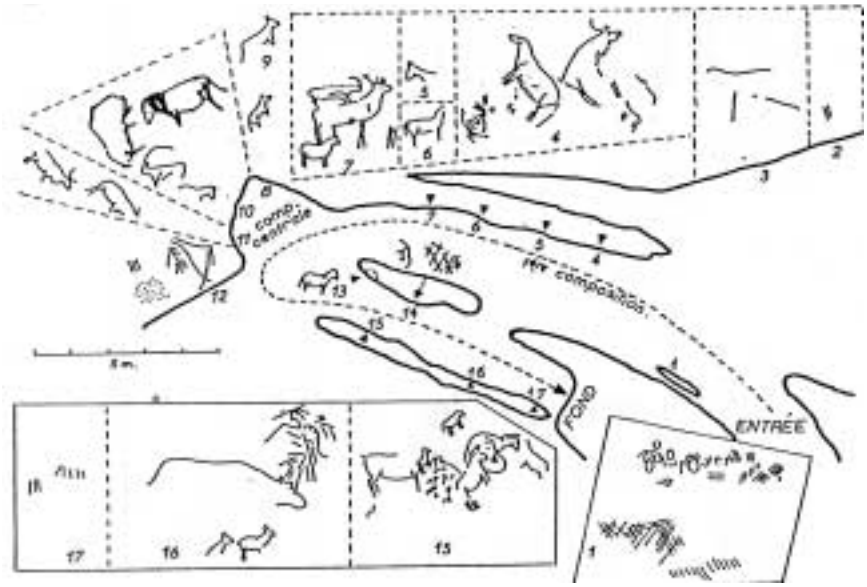


Fig. 11. The architecture of the deep caves was exploited in the mythic messages elaborated by the hunter peoples. The animals are treated naturalistically (there is no debate as to their identity) but their arrangement is the product of sample narratives which remain abstract (Las Monedas, after Leroi-Gourhan, 1964b)

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

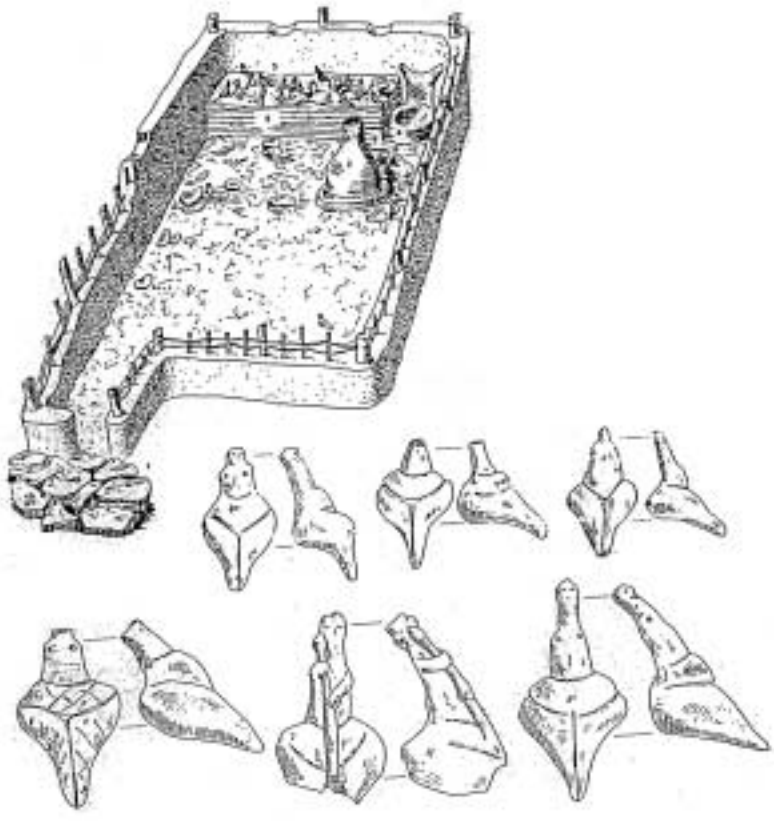


Fig. 12. In the Neolithic, the sacred space was constructed, marked off on the ground (templum: cut out) and religious messages were transmitted by the positioning of figurines and accessories (bench, oven, bowl). In this way value systems can be identified: each one conforms to them in order to be recognized, like a language and its regional dialects (Sabatinivka, Moldova, after Gimbutas)

A structure that is almost the reverse is found in protohistory when the building of the temple (*templum*: cut out) concentrates religious activities thus removed from the world of the city, which becomes 'pagan'. Then narratives are reflected in the arrangements of the movable elements such as statuettes, benches, basins or hearths. Protohistorical thought has to do with possession of territory, a relationship with the earth manifested by agrarian and fertile symbols; religious language thus matches productive thought (or vice versa).

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

Languages and peoples of Europe

As we go back in time it is easy to link peoples speaking European languages with behaviours such as techniques, religious practices and artistic tastes. For example, Romans or Celts are clearly identifiable in all their archaeological remains. Similarly the Iberi or the Etruscans belong to 'another world', revealed by their (non-European) languages as well as their styles and funeral practices at the very least. Following this line of thinking we can 'test' archaeological method by distinguishing the Hungarian people, of recent external origin (Late Middle Ages), from the Slav or Germanic peoples surrounding them: the archaeology leaves us in no doubt as to the basic peculiarities of Hungarian thought; similarly for the Avari, the Turks, the Mongols, who are all immediately identifiable from their behaviour even more so than their languages. Thus there are 'patches', on a specifically European cultural background, which included Anatolia. Pavel Dolukhanov (1993) has clearly shown that the Uralo-Altaic peoples (Estonians, Finns, Laps) were almost of local origin and that it is possible to follow their move northwards in the Late Ice Age and from the Mesolithic. But what about the rest of the continent, composed essentially of 'Indo-European' peoples, and what of their origins?

By way of 'prehistoric' archaeology we are now able to pursue this movement backwards in time indefinitely so as to pinpoint the possible evolutionary rupture from which European peoples and cultures might have emerged. This 'rupture' does not exist anywhere in the protohistorical eras (Iron Age), where linguists have located a movement of people coming from the eastern steppes who might have brought at the same time languages, metal-working, patriarchy and 'Indo-European mythology'. None of these elements is attested by the smallest archaeological source as a phenomenon of external origin. There is no trace of any movement whatsoever, from the Crimea to Ireland, where nonetheless the oldest European languages are still alive. Colin Renfrew (1987) then wanted to detect Indo-Europeans' appearance in the Neolithic diaspora. However, though archaeology reveals obvious similarities between Anatolia and the Balkans in the Neolithic, the rest of the continent seems to evolve by acculturation of Mesolithic peoples to the new economy, since the continental Neolithic (Rubané) is very different from the Aegean fringes. Furthermore, Anatolia itself (like the Zagros today) belonged entirely to the European linguistic region (Greeks, Hittites) until the fall of Constantinople, which is equivalent to yesterday! Finally, the present-day geographical disposition of European languages reaches well beyond Anatolia towards the east (as far as the Punjab), whereas the Neolithic has no connection with the shores of the Black Sea.

Therefore, we have to accept that the various innovations (agriculture, metallurgy, tombs) came about through populations who mainly stayed in situ and that by convergence they are found in quite different cultural contexts, from China to the Bantu! In no way do they delineate ethnic factors, once they are seen at this level of generalization.

If we come back to European environments and those associated (Anatolia, Caucasus, Zagros), the local Neolithic is connected with the Mesolithic immediately prior to it: from the Montbanian to the Rubané all the north European Neolithic cultures are linked to their local Mesolithic (TRBK[1] and Ertebøllien). And this Mesolithic

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press

shows no break with the local late Paleolithic. This means that the only really sharp break, for cultures as well as peoples, occurs with the appearance of modern humans and the Aurignacian, which from every perspective break with local traditions. But, on a cultural level at least, this new population is in fact oriented towards the future Indo-European linguistic area: from Afghanistan (Kara-Kamar) to the Balkans (Bacho-Kiro) by way of Anatolia (Karain B) and Iran (Warwasi, Yafteh). The 40,000 years, or thereabouts, separating us from that process explains the variety of European languages, from Gaelic to Armenian. However, everywhere throughout those vast areas Aurignacian culture is common, and seems furthermore to be older in the eastern regions (Zagros) than in Europe, where it always looks like an intrusion from Portugal to the Crimea, regardless of the local cultural base.

Conclusion

Through the mists of the millennia awareness of ethnic groups occurred around common values which corresponded to varieties of European languages in historical times. We can discern their construction through archaeological evidence: Germanic, German, Slav peoples are clearly distinguished alongside others who either disappeared (Veneti) or became acculturated (Bulgars), or else were of external origin (Hungarians, Etruscans, Basques). There was no chronological split in this European backdrop until the first Aurignacians, whose demographic growth was much faster than the local Mousterians (that is why they 'got the upper hand' and migrated away from their original centre). This history of European languages and peoples not only has a constant unity identified by linguists and sociologists (Benveniste, 1969), it is also involved in the various innovative processes peculiar to the human race which are found worldwide, from mythology to pottery. So we must not confuse these two levels of approach, from the particular to the universal. As the beginning of the human sciences was in general rather a European business, we have too often tended to confuse the history of European-language peoples with that of all humanity. Stepping back a little (in time!) proves that the destiny of Europeans was connected with the transition (and here it was abrupt) to the Upper Paleolithic. Everywhere else other processes occurred, from South Africa to Polynesia, and they corresponded to other value systems reflected in both languages and myths. This diversity does not preclude logical regularities due to the coherence of the human mind, which evolved slowly through the paleontological phases of its emergence over millions of years.

Marcel Otte
University of Liège
Translated from the French by Jean Burrell

Note

1. Trichterbecherkultur (editor's note).

https://doi.org/10.1177/0392192107077650 Published online by Cambridge University Press