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Becoming Neanderthal

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Abstract

The *vexata quaestio* of Neanderthals' cognitive capacity in comparison with anatomically modern humans – and the role this may have played in their demise as a separate species – has attracted extensive attention in archaeological studies of the past half-century. In contrast, other aspects of Neanderthal life and thought have received far less interest. Following an initial review of cognitive aspects and their ramifications, necessary to clarify the author's opinion on this debated matter, the paper attempts to expand the horizon and break this 'cognitive circle' by examining Neanderthal ways of being-in-the-world, based on the available archaeological record and selected theoretical approaches in anthropology from a comparative perspective.

Keywords:
Middle Palaeolithic, cognitive archaeology, ontological turn, social complexity, modern behaviour

Introduction

Neanderthals are one of the only two extinct species of hominins proven to have contributed with their genetic material to that of living humans. Contrary to the more recently discovered so-called Denisovans (Krause et al. 2010), the first Neanderthal specimen was found already in 1829, in the early days of prehistoric archaeology. It was a few years later, in 1856, that the Neanderthal skull from the eponymous valley close to Düsseldorf (Germany) was recognized as belonging to a new species. This date marks the beginning of the long and somewhat troubled history of us – living members of *H. sapiens* – trying to understand our closest evolutionary relatives. As it has been widely recognized, this was quite a bumpy road (Zilhão 2019; Wragg Sykes 2020). If initially the identity of Neanderthals was reconstructed mostly in opposition to our own (feral and brute *versus* culturally and technologically versed), the paradigm has recently shifted, and several studies have documented a growing number of striking similarities between the two species across nearly every aspect, from material culture to genes. Indeed, the strongest break with the old narrative was, without doubt, the publication of the first version of the complete Neanderthal genome (Green et al. 2010), which in a somewhat spectacular and emotional way has once and for all shaken the rigid boundaries that humans have built over the centuries around that chosen space we have taken great care to ensure we are the only inhabitants of: the boundaries of the superior, the elected, the privileged, the sons and daughters of God, if you will.[1]

This sensational discovery has immediately prompted many, both inside and outside the scientific community, to reconsider the narrative in which the Neanderthals

1 The tension between transcendentalism and immanentism is central to the discussion developed in this paper, appearing on several occasions and from different perspectives throughout the text.

became extinct and were thereby assumed to be inferior, at any level. As has been noted, the narrative around Neanderthals shifted rapidly after the 2010 discovery, both in popular and academic circles, marking a true U-turn in an otherwise steady, more than a century-old trend (e.g., Gamble et al. 2011; McCluskey 2016). It is a very human reaction – here in the sense of vain and embarrassing – that once the existence of several introgression episodes and genetic exchanges between the two hominin species was established (Nielsen et al. 2017), we immediately start to think that Neanderthals may not have been so 'sub-human' after all. Otherwise, we would have had to accept carrying 1 to 3 per cent of 'sub-humanity' within us, which, on one hand, may explain much of the world's history, but would certainly be a hard pill for our pride to swallow. Although most researchers seem to have accepted a revised narrative concerning Neanderthals, there is no general consensus on the overarching frameworks or the details, and some researchers still support a narrative in which factors related to an alleged cognitive inferiority of Neanderthals may have played a pivotal role in their fate (most recently, Coolidge et al. 2023).

At present, it seems safest to say that Neanderthals, as a separate species, became extinct and that this was likely a product of a range of different causes. Many hypotheses have been put forward in the literature. A recent review (Vaesen et al. 2021) has grouped them into three categories:

1. Demographic: allele effects, inbreeding, population size, stochasticity;
2. Competitive: cognitive, economic, morphological and social advantages;
3. Environmental: climatic factors and epidemics.

According to the study's conclusion, a consensus appears to have recently formed around the first composite, disfavouring the competitive one, which, as we have just seen, had been the most preferred by scientists for much of the research history. Notwithstanding this loss of relevance, the research into the emergence of complex thinking or modern behaviour in *H. sapiens* is 'only' a matter of determining *when* and *how* it actually occurred. It is already known that complex behaviour emerges at a certain point in time and eventually leads to specific outcomes, so it is only necessary to investigate its origins and causation. We can therefore say that it is a teleologically driven and etiologically oriented enterprise.

For *H. s. neanderthalensis,* however, despite the significant progress made, research is still stalled on the question of *whether they ever developed* complex thinking/modern behaviour. At the same time, while researchers continue to invest significant energy in demonstrating whether Neanderthals and *H. sapiens* had the same cognitive capacities or not, the time also seems to have come to begin discussing how they were different in terms of their own cultures, cosmologies and worldviews (Moro Abadía/Chase 2021). Therefore, in this paper I shall proceed with a dual goal. First, I will review the recent contrasting positions on Neanderthals' cognitive capacity and behavioural complexity, with a particular focus on the discourse of symbolism – analyzing the presence or absence of a syntactic language and the symbolic nature of their artistic production. Second, at the end of this paper, I will attempt to move beyond the discussion of Neanderthals' intellect and focus on the cultural and cosmological similarities and differences between Neanderthals and anatomically modern humans (AMHs) as well as among Neanderthals themselves, as retrievable from the archaeological record. Following these premises, a closer examination of Neanderthal ontology will be attempted, based on a review of the currently available data and selected theoretical positions: immanentism (Marshall Sahlins, Alan Strathern), scalarity and pluripresence (Nurit Bird-David) and the ecology of life and perception of the environment (Timothy Ingold).

Modern behaviour and cognition

Under the umbrella of 'behavioural modernity,' an ensemble of behavioural and cognitive expressions – such as abstract thinking, long-term actions, cooperation and symbolism (e.g., art, personal ornamentation, body decoration and, most prominently, language) – is brought together. These are argued to represent the concrete realization of neurological processes and, on a different but equally relevant level, cultural ones. As recently summarized (Zilhão 2018; Davies 2019), its conceptualization emerged within a specific intellectual milieu of the 1990s, when the most widely accepted hypothesis for the origin of modern humans centred on a single and relatively recent speciation event. This framework gave rise to several explanatory approaches, such as 'mitochondrial Eve' or the 'recent African origin.' Quite interestingly, from the very beginning, behavioural modernity was invoked to oppose Sapiens and Neanderthals, following the logic that

'no two species are exactly alike in their behavio[u]ral and anatomical repertoires' (Henshilwood/Marean 2003, 643).

The issue of the emergence of modern behaviour in the archaeological record alongside the appearance of AMHs has been famously described by Colin Renfrew et al. (2008) as the 'Sapient Paradox': put simply, why does behavioural complexity seem to appear relatively late in the Palaeolithic record, even though AMHs are known – based on the Jebel Irhoud finds (Hublin et al. 2017) – to have first appeared as early as ca. 300 ka BP? On the one hand, the recent accumulation of archaeological discoveries that continually push back the dates of elusive complex behaviour (e.g., Henshilwood/Dubreuil 2011) has rendered this paradox outdated; on the other, its plain colonialist logic (Porr 2010; Porr/Matthews 2017) has cast an even darker shadow over it. The paradox relies on a seemingly reasonable assumption – namely, that new morphology corresponds to new traits (with the corollary that the same morphology implies the same traits and functions). Notwithstanding its logic, this assumption is fallacious, just as the 'Sapient Paradox' is:

> *[It is] caused by a conceptualization of mental abilities as innate capacities generated by the same selective processes that operated on skeletons rather than as the products of distributed cognition that arise from the interactions of individual minds with others and with the material products of those behavio[u]rs.*
>
> *(Davidson 2010, 179)*

For this reason, it seems more prudent that the primary evidence for cognitive abilities should come from the *direct* study of past hominins' behaviour and cognition, that is, 'from archaeological evidence for behavio[u]r rather than from skeletal remains, genetic arguments, or any other form of inference that does not rely on evidence of behavio[u]r' (Davidson 2010, 179). If modern behaviour is not the direct result of a morphological, biologically determined feature caused by a mutation that literally rewired our brain in a very short time span,[2] then its origin must lie elsewhere. Many researchers have turned their attention to social, cultural, historical as well as demographic factors (e.g., Davies 2019; Zilhão 2019 and the references in Nowell 2010, 445). This, in turn, has opened the path to a series of consequences, the most significant of which is that more than one 'modernity' could exist and emerge independently in different regions, at different times and – relevant to our present discussion – different species. To prove the existence of modern behaviour in Neanderthals as well as early AMHs, lists of traits have been inferred from findings and features in the archaeological record (e.g., Davidson 2010; Villa/Roebroeks 2014; *contra* Wynn et al. 2016, 207–208). Although the attribution of modern behaviour to early AMHs has been a contested topic (e.g., Botha 2010; Coolidge/Wynn 2011), it has not been as divisive as it is for Neanderthals, due to the species gap. One such list shows three cognitive classes: information flow, planning depth and conceptualization (with symbolism included in the third class) (Davidson 2010). If we try to extend it to the archaeological record of Neanderthals, the list undoubtedly shows that Neanderthals possessed all the cognitive abilities it features (Table 1) – a condition that, moreover, has been demonstrated not to be necessary, with flexibility being the 'true mark of modern human cognition' (Davidson 2014, 1536). And flexibility is, without doubt, present in the Neanderthal populations that archaeologists have been studying for more than a century.

Although quite significant in its conclusions, this reasoning relies on the still-dominant concept of biological species, as proposed by Ernst Mayr (1942; 1963; 1970). Since its inception, it has been used almost universally in both biology and palaeoanthropology. Recently, however, it has become subject to reflection and revision (de Queiroz 2005) due notable limitations in its application in several cases: asexually reproducing organisms, single-celled organisms, cases of hybridization, ring species and – most relevant to the present discussion – also in palaeontology, where interbreeding capabilities between two entities cannot be demonstrated.

On top of this, the 'list-of-traits approach' remains grounded in dominant cognitive models, all of which are based on a Cartesian view of the world. It is universally accepted that René Descartes made some of the most significant contributions to the transition from the Aristotelian Middle Ages to modern science, through his focus on rationalism and the development of a scientific method. By emphasizing mathematics and deductive reasoning in understanding the natural world, he paved the way for a more mechanistic – and also secular – view of the universe (Henry 2004). Because of this, the success of Descartes' approach to science has been immense – and in many respects, rightly so. However, it has also faced a long

2 For the many proposals concerning the nature of this 'lightbulb moment,' see Stephen Davies (2019, 222–223) and *infra*, the Robert C. Berwick/Noam Chomsky hypothesis.

Features	Cognitive class	Occurrence in the Neanderthal archaeological record	Concrete examples
Range extension to previously unoccupied regions	2	Yes	Middle East, Siberia
Increased diet breadth	1	Yes	E.g., Roebroeks/Soressi 2016
Hafting and composite techniques	2 and 3	Yes	E.g., Mazza et al. 2006; Niekus et al. 2019
New tool materials	3	Yes	E.g., Soressi et al. 2013; Romagnoli et al. 2014
Special-purpose tools	3	Yes	E.g., lissoirs, Soressi et al. 2013
Greater control of fire	2 and 3	Yes	E.g., Sorensen et al. 2018; Niekus et al. 2019
Use of pigment	3	Yes	E.g., Zilhão et al. 2010
Image and representation	3	Yes	E.g., Rodriguez-Vidál et al. 2014; Leder et al. 2021

Table 1: Cognitive classes and their features in the context of Neanderthal archaeological evidence (1: information flow, 2: planning depth, 3: conceptualization (including symbolism)). Table: modified after Iain Davidson (2010).

series of profound criticisms, from multiple perspectives and for various reasons.[3] When it comes to understanding the complexities of relationships among hominins, this framework may have run its course as a cognitive scheme, specifically due to the limited nature of the available data.

A possible alternative, further supporting the fluid concept of behavioural modernity we have been discussing, is to refer to 4E cognition (Newen et al. 2018). It has been defined as an approach wherein

> *cognition does not occur exclusively inside the head, but is variously* ***embodied***, ***embedded***, ***enacted***, *or* ***extended*** *by way of extra-cranial processes and structures (Rowlands 2010). This is intended to contrast with traditional views, where internal representations of states of affairs are symbolically manipulated so as to output knowledge or action.*
>
> *(Carney 2020, 77, emphasis original)*

In the 4E explanation of organic cognition, humans are no longer separated from the world and others, as Descartes-based models argue; instead, they are an integral part of it, with agency flowing in all directions – from landscapes to objects to people. In such a scenario, where the traditionally rigid concept of cognition becomes porous, the category of hominin can also be understood as more flexible. Most importantly, when following this approach, there is no 'trait list' to hang around a hominin's neck like a colonial nameplate for people in a non-literate society.

In sum, although the proponents of the Neanderthal indistinguishability claim (e.g., Villa/Roebroeks 2014; Zilhão 2019) demonstrated the strengths of their reasoning, in my view, this approach still relies on a problematic foundation – the concept of biological species and the use of trait lists as proof of modernity. It therefore seems advisable to review and, if necessary, revise their conclusions under new perspectives. To do so, I will now focus on the archaeological record of Neanderthals, examining one of the most debated cognitive aspects of modern behaviour – symbolism – and two of its most significant 'products': syntactic language and art.

Symbolism and symbolic thinking

A discussion in the literature has been revolving around the presence of one category of the complex or modern behaviour package among Neanderthals: symbolic thought and symbolism (*contra* Davies 2019). The classic definition of signs and their relation to the objects they denote is Charles Sanders Peirce's tripartite scheme: icon (a sign referring to its object through similarity), index (through factual connection) and symbol (through interpretive habit or norm of reference) (Fig. 1). A symbol is therefore a sign which meaning goes beyond its graphic representation. Whereas icons and indexes are often more or less intuitive (Figs. 1a, 1b), a symbol (Fig. 1c) instead requires a learning curve – context, implications, use

3 A notoriously skeptical – bordering on hostile – attitude toward science and technology is evident in the theoretical framework of one of the most prominent, albeit divisive, philosophers of the 20th century, Martin Heidegger (2005). It finds its roots in Friedrich Nietzsche's ambivalent position on this subject (Cristy 2022). For a criticism from the point of view of a historian, see Helen P. Liebel (1964).

patterns, etc. – and interactions with others who share specific pieces of information.

From the data archaeologists have collected since the first discovery, Neanderthals have been associated with a solid and growing body of examples of complex behaviour (see Table 1). Additionally, credible claims of symbolic thought have been extensively reported in recent literature (e.g., Zilhão et al. 2010; Romandini et al. 2014; Leder et al. 2021).

Syntactic language

As has been correctly noted, 'the study of cognitive evolution is closely related to the study of the origins of speech and language' (Davidson 2014, 1530). Language has often been described as the most complex product of human cognitive abilities and therefore possibly the highest expression of symbolic thinking *tout court* [*tr*. pure and simple]. Although many studies briefly discussed above argue that Neanderthals were indeed in possession of symbolic thinking, this does not automatically imply that they also had fully syntactic language, as has been shown by Rudolf Botha (2010) for early AMHs. Conversely, if Neanderthals did possess fully syntactic language, it would necessary follow that they also exhibited modern behaviour.

A syntactic language, as we know from modern sign languages all over the world, does not necessarily need to be spoken or heard. Some authors have suggested that early hominin or AMH communities may (must?) initially have relied only on the gestural modality (e.g., Tomasello 2008, 8 and 226 ff.). Furthermore, objects can also be experienced in metaphorical ways via what has been described as 'corporeal logic' (Johnson 2017), implying that comprehension can occur even in the absence of speech and language.

Be as it may, the production and reception of language in its oral form (speech) is bound to the articulatory and auditory systems, which operate within the realm of acoustics. In brief, sounds must first be produced and received before they can be decoded. Although the existence of a syntactic language does not necessarily require speech, research on Neanderthals' physical apparatus has almost unanimously concluded that they *were capable* of producing (D'Anastasio et al. 2013) and receiving speech (Conde-Valverde et al. 2021) in a manner comparable to that of AMHs.

Palaeogenetic studies have further contributed to this topic, particularly regarding the capacity for producing syntactic language. The FOXP2 gene has been an ideal candidate to support speculations of a recent evolution of language exclusive to *H. sapiens*, after Wolfgang Enard and colleagues (Enard et al. 2002) 'found evidence for both accelerated evolution in the hominin lineage and a recent selective sweep in [it]' (Atkinson et al. 2018, 1424). Critiques of this model were subsequently raised, specifically in connection with the Neanderthal genome (Krause et al. 2007), which was also found to have carried the FOXP2 substitutions previously thought to be exclusive to *H. sapiens*. More recently, the idea of natural selection acting on this locus has been rejected even for *H. sapiens* populations (Atkinson et al. 2018). Overall, the impression is that the evolution of language is unlikely to be linked to a single gene, but rather, seeing its complexity, to multiple loci. What is relevant for the argument here is that a version of FOXP2 identical to that of *H. sapiens* was present in Neanderthals, and the relevance of FOXP2 in neurological processes related to language production remains undisputed (Lai et al. 2001; MacDermot et al. 2005; Torres-Ruiz et al. 2019).

Even though physical and genetic preconditions seem to have both been in place, there is still no consensus on the language abilities in Neanderthals, specifically because there is no agreement on the relative priority of the emergence of new biological traits *versus* cultural aspects in the origins and development of language. In their recent contribution, Berwick/Chomsky (2017, 154) prefer to rule out Neanderthal's sharing of human language syntax, the Basic Property[4] and 'even the rudiments of symbolic language.' It must be noted that their short review of the archaeological evidence

4 Internal language is based on recursive operations that yield what is called the 'Basic Property,' or 'Merge' – a recursive operation that enables the 'generation of an infinite array of hierarchically structured expressions that are interpreted as thoughts' (Brand 2019).

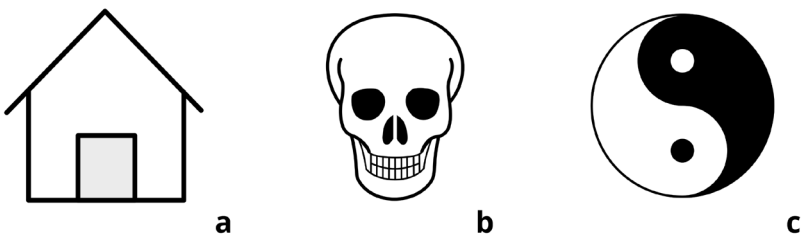

Figure 1: C. S. Peirce's classification of signs (a: icon, b: index, c: symbol). Figure: G. Di Maida.

is highly selective and omits several 'possible proxies for language' that they seem to have overlooked or that were published later (for a review of such material, see below).

The exclusion of Neanderthals' possession of a syntactic language in this theory seems primarily motivated by the framework the authors adopt for its emergence in AMHs: the triggering event that enables the Basic Property is – according to them – a fully wired fibre-tract 'ring' to the Broca's area (classically associated with syntactic computation and deficits), which is suggestively absent in newborns. Evolutionary speaking, they argue, a small re-wiring of the brain may be enough to produce the Merge Property. This aspect is crucial to accommodate a short chronology that the authors' argument requires. In this scenario, the emergence would mean any given point between 200 and 60 ka, possibly closer to the lower limit, considering evidence from Blombos Cave, dated to ca. 80 ka. Specifically, the short chronology is necessary to reconcile the innatism of this theory (syntax is physically located in the brain, and the syntax-specific hardware must have appeared at a given point) with its 'Sapiens-only' policy: anything else more than this re-wiring would have required a longer time and could potentially open the door to syntactic language in other hominin species. In any case, although a short chronology is necessary within such AMH-only models, it is not sufficient to exclude an earlier emergence: as the authors propose, such pre-conditions *can* develop rapidly, but this does not preclude the possibility that they could have arisen before 200 ka or 300 ka years ago.

Innatist/cognitive/biological approaches are not the only options for explaining the emergence of language in our evolutionary linage; in fact, they have come under strong criticism in recent years (e.g., Ingold 2021, 496 ff.).

Although substantially based on Cartesian foundations, an example of an empirical approach is found in the work of Michael Tomasello and the stringent arguments presented by him and his colleagues (Tomasello 2003; 2008 and bibliography therein). Tomasello finds the basis of human communication in cooperation:

> *Thus, for reasons we do not know, at some point in human evolution individuals who could engage with one another collaboratively with joint intentions, joint attention, and cooperative motives were at an adaptive advantage. Cooperative communication then arose as a way of coordinating these collaborative activities more efficiently [...].*
>
> *(Tomasello 2008, 8)*

From a pre-linguistic iconic gestural basis – which he describes as the 'first manifestation of uniquely human forms of cooperative communication' (Tomasello 2008, 166) – language also arose

> *by piggybacking on these already understood gestures. [...] As part of this same evolutionary trajectory, human beings also began to create and pass along culturally various grammatical conventions organized into complex linguistic constructions that codified complex types of messages for use in recurrent communicative situations.*
>
> *(Tomasello 2008, 9, examples 222 ff.)*

As is immediately clear, this implies that language and grammar are not innate categories but culturally driven conventions. In one of his publications dedicated to the acquisition of language, Tomasello (2003) collects an impressive corpus of evidence across the classic linguistic categories (from morphology to syntax), all pointing to a usage-based explanation of acquisition.

Once a non-nativist explanation of language acquisition is accepted, the author frees himself from the recent 'hardware change' that is needed in the Berwick and Chomsky model. He is therefore ready to implement a more structured physical precondition, one that would require more time to develop. Tomasello identifies this 'single biological adaptation' in the ability to understand the internal mental states of another person (mentalizing, Tomasello 2003, 291). No longer bound to a hardware-based theory in terms of chronology, this feature could have emerged at any point after 6 Ma years ago (the separation between the common ancestors of us and the great apes, who lack it). This perspective potentially frees space for its presence in any other hominin species.

However, Tomasello himself never mentions any species other than *H. sapiens* when discussing syntactic language-related abilities (Tomasello 2003), and he actually restricts the emergence of the major motives involved in cooperative communication to the *sapiens* lineage: indirect reciprocity (informing) and cultural group selection (sharing) (Tomasello 2008, 238 ff.). The first motive, mutualism (requesting), is attributed by him to all representatives of the genus *Homo*. It is interesting to note *en passant* [*tr.* in passing] that the possibility of inferring changing levels of intentionality – directly tied to mentalizing – from stone tools has been credibly proposed (Cole 2015).

On Neanderthals, Tomasello remains agnostic, although he finds it likely that they possessed one or both of the above-mentioned major features, with doubts existing only about the conventionalized aspects of their modes of communication (personal communication, 9 August 2023). This means that, despite his distinction, it cannot be excluded that the biological adaptation and the two other major motives may have appeared prior to the separation of the AMHs lineage, and thus could have been shared with other hominin species (including Neanderthals).

In conclusion, and of particular significance for the argument, whether one follows Tomasello's model or that of Berwick and Chomsky, nothing seems to speak against an emergence of one or the other linguistic precondition *before* the split of the AMHs lineage.

Similar conclusions have recently been presented in support of a longer chronology (Hillert 2015). Specifically, regarding Neanderthals and language, this was also the outcome of the currently most accurate paper on the subject (Dediu/Levinson 2018), which thoroughly reviewed the genetic, archaeological, linguistic and speech evidence. The authors concluded:

> *(I)t is difficult to argue that Neanderthals lacked complex linguistic codes, capable of communicating about spatial locations, hunting and gathering, fauna and flora, social relations, technologies, and so on. This would imply a large lexicon, and propositional encoding. Granting Neanderthals advanced language capacities seems to us* ***inevitable****.*
> *(Dediu/Levinson 2018, 53, emphasis added)*

Although not conclusively demonstrated, it seems that circumstantial evidence at the current stage of research strongly suggests that Neanderthals possessed syntactic language. This conclusion has significant consequences, as noted earlier: if Neanderthals had language, then they necessarily also exhibited modern behaviour – comparable to, and not inferior to, that of AMHs.

But there is more to add. From linguistic studies we know that smaller groups have less structured and more erratic languages (Raviv et al. 2019), and that morphological complexity is inversely proportional to population size, where the first is higher when the latter is lower (Lupyan/Dale 2010). Since Neanderthals are believed to have had a notoriously low population density (Vaesen et al. 2021), we can therefore argue that these characteristics would have applied to their languages. This aspect further connects to broad dynamics of 'cultural group selection and sharing attitudes' (Tomasello 2008, 208 ff.). In short, humans express solidarity within a group by aligning their behaviours with those of their peers, although they tend to discriminate against individuals who are different (the parochial altruism argument, Pisor/Surbeck 2019). The same principles that bring people together, when looked in an exogenic perspective, are the ones that create differences and separations (Graeber/Wengrow 2021, 164 ff.). Languages are known to often play a prominent role in such schismogenesis phenomena. Palaeogenetics also seems to support such scenarios (Fabre et al. 2009). In conclusion, based on both linguistic and genetic factors, it is hard not to postulate the existence of different groups and 'cultures' among Neanderthals, with distinct dialects or languages that had most likely differentiated themselves in groups both within their species as well as in relation to AMHs. At the same time, it should be kept in mind that the notoriously low population density of Neanderthals may have played an inhibitory effect on such diversifications (the so-called Boserupian trap, Boserup 1965; Bocquet-Appel/Degioanni 2013).

Art

Despite much progress made by archaeology, we still have a very limited comprehension of past human groups and their worldviews, social structures and lives in general. This aspect, together with the lack of consensus regarding the intrinsic nature of art (Adajian 2022), has made archaeologists opt for a very inclusive definition of it (art *sensu latissimo*, so to speak). The currently most widely accepted definition covers the representation of geometric or abstract forms and signs as well as naturalistic and fantastic subjects rendered through different techniques (painting, engraving, bas-relief, sculpture, etc.). It also includes the production of functional or ritual entities bearing decorative and/or culturally significant geometric, abstract, naturalistic or fantastic elements.

The further back we go in time, the more the borders between usually distinct areas of symbolic thinking tend to blur. This is, for instance, the case of the bone with cut marks from Les Pradelles, which has been proposed as one of the earliest examples of number symbolism (d'Errico et al. 2018). Similar cases are often listed as examples of art from the Middle Palaeolithic, whereas in later periods they could also be seen as reflections of 'accounting.'

All prehistoric examples of material expression share a common feature that justifies their inclusion in the artistic realm: they manifest a symbolic cognitive functions, such as advanced calculation capabilities, ritual dimensions, expression of self, group identity and so on.

Examples of art production among Neanderthals are still considerably rare, but they are far more numerous than they were 25 years ago. In the past few years, many new examples have been added to the record (e.g., Leder et al. 2021), slowly yet steadily changing the overall picture – and this process is still ongoing (Álvarez-Alonso et al. 2025).

All in all, three main categories can be distinguished within the evidence that archaeologists recognize as Neanderthal artistic production, *sensu latissimo* as outlined above (Fig. 2):

a. Personal objects,[5] including perforated shells and engraved or cut organic material of animal origin (bone, tooth or claw);
b. Graphic representations, constituted by engravings, carving and pecking on mobile or stationary surfaces – mostly exclusively linear and non-iconic – as well as wall paintings (abstract signs and, notably, one hand stencil);
c. Architecture, represented by the single but extremely significant case of Bruniquel Cave, with its artificial structures made from stalagmites.

5 The word 'ornamentation' may be problematic from an ontological perspective, as noted by Oscar Moro Abadía and Amy A. Chase (2021, 103).

Bird plumage and perforated claws (Finlayson et al. 2012) have been interpreted as relevant for the expression of self and the perception of others – that is, for how one looks (e.g., Davies 2019). In addition to this, they may also refer to positions and roles within a social group. It has also been rightly noted (Moro Abadía/Chase 2021, 102–103) that these interpretations come from a *H. sapiens* perspective and that such items were likely perceived differently by Neanderthals. Drawing on Eduardo Viveiros de Castro's perspectivism, Moro Abadía/Chase (2021) warn against an easy one-to-one correspondence between objects made by AMHs and those made by Neanderthals. In short, anthropology itself is based on a 'controlled equivocation,' in which two subjects from different cultures may speak about and observe the same things while they mean different ones (Viveiros de Castro 2004). This is a constitutive condition of the discipline, so to speak, and cannot be eliminated without risking the pitfalls of colonizing attitudes.

At Fumane Cave (Italy), large avifaunal remains with marks of anthropic modification have been documented (Peresani et al. 2011). They are securely associated with Neanderthals and are notably absent from the Aurignacian levels. In total, 25 bird claws (23 from large raptors) from 10 sites within a quite compact area have been extensively documented (Rodríguez-Hidalgo et al. 2019 and Fig. 2). Overall, it appears reasonable to argue that there was a group of Neanderthals in Western Europe engaged with birds with a clear symbolic motivation.

Figure 2: Map of the Neanderthal sites with art objects. The orange ones indicate sites dated to the so-called 'transitional phases.' Figure: G. Di Maida.

The graphic record produced by Neanderthals is mostly non-iconic, with the notable exception of a hand stencil at Maltravieso (Spain). Several examples show that aniconicity is far from a marker of simplicity (see the extremely intricate case of the Wauja du Xingu or the cartographic use of geometric signs among the Warlpiri (Descola 2021, 156 ff. and 225 ff.). Moro Abadía/Chase (2021) have argued that European Upper Palaeolithic AMHs may have represented animals in their artistic production to differentiate themselves: '(I)t is possible that they began to represent animals because they perceived them as different entities' (Moro Abadía/Chase 2021, 104). A different perspective, in which Upper Palaeolithic artists intended to express a relationship with the animals they depicted, cannot be excluded.

For the present discussion, it is not essential which of these two (or possibly more) explanations stand behind the artistic production of AMHs. What is relevant is that while AMHs felt the urge to express a feeling of kind, related to the animal world (specifically to the species most commonly represented), Neanderthals did not depict animals. This may hint toward a different way of relating to their environment, one in which artistic depictions of such subjects is not involved. If we link this with the secure evidence of 'ornamentation' objects (see above), it seems reasonable to argue that Neanderthals engaged with their surroundings in different ways, using parts of specific animals (e.g., birds of prey) to create artistic objects, instead of producing two-dimensional representations of different kinds.[6]

Engravings on flint seem to be widespread across the entire Neanderthal range (Fig. 2; Majkić et al. 2018, Table 1). Based on the record from the Levant, however, this behaviour does not seem to be exclusive to Neanderthals, as at least one other site (Qafzeh, Israel) shows engravings surely associated with AMHs. A key question, then, is whether this may be a case of cultural transfer from Neanderthals to Sapiens, or instead reflects a *shared* cultural trait present in the Near East.

Be that as it may, regardless of its function,[7] art always points to complex social interactions and higher cognitive capacities. This is also shown by other Neanderthal artistic items, such as the engraved bone from Einhornhöhle [*tr*. Unicorn Cave] (Germany) (Fig. 3). The graphic execution speaks of aesthetics, recognition of symmetry and a sense of proportion (Leder et al. 2021). All these elements clearly point at modern behaviour and higher cognitive abilities (Henshilwood/Debreuil 2009, 57).

At Bruniquel (France), two circular structures made from more than two tons of broken calcite stalagmites were discovered ca. 300 meters deep in the homonymous cave. A recent work (Jaubert et al. 2016) has suggested these structures to be of anthropic origin, given their regular shape, the abundance of broken materials laying around and the presence of several fireplaces. Consistent and replicated radiometric age of 176±2 ka BP

6 As made evident by numerous ethnographic cases (Descola 2021, 243–244 and 292–293), the relevance of objects (such as masks), in contrast to two-dimensional graphic representations (rock art), plays a crucial role in differentiating the artistic production of animist *versus* totemist groups. Specifically, this distinction is seen in the contrast between the researched multiperspectivism of the animist groups and the single, forced perspective of totemist groups, often indicating a flaunted indifference toward the viewer's perspective. At the same time, it has been abundantly demonstrated that it is not safe to infer a group's cosmology solely from its imagery/artistic production. The presence of hybrid cosmologies (e.g., the Tsimishian of the Northwest British Columbia, Descola 2021, 266 ff.), and the multicausal origin of similar – if not apparently identical – artistic objects (e.g., the intricate case of hybrids and chimeras, Descola 2021, 303 ff.) clearly illustrate this complexity.

7 From the grade-zero 'art for art's sake' found in ethnographic contexts (Sauvet et al. 2009) to identity marker, aetiological tool and so on.

Figure 3: Engraved giant deer phalanx from Middle Palaeolithic layer 4.5 of Einhornhöhle, Lower Saxony, Germany (Leder et al. 2021). Photo: V. Minkus.

for the regrowth and tips of the stalagmites of the structure, combined with the burnt bones, safely places these structures within the timeframe of Neanderthal activity. If these structures are interpreted as ritualistic (Dediu/Levinson 2018), then we are clearly in 'cult' or 'religious' territory, implying that they were built with a ritual purpose in mind. Surely, their location so deep in the cave supports this interpretation. Alternatively, if these structures are seen as an organized living space, they would still speak for a complex social life, which must have included articulated planning, precise communication and the execution of complex group tasks. Both categories (a) and (b) – and possibly also (c), depending on the preferred interpretation – represent items not necessarily utilitarian in scope – a characteristic that constitutes one of the defining aspects of artistic expression.

In conclusion, this overview of Neanderthals' symbolic material culture suggests us the following about their cognitive traits: 'ornamentation' objects hint at high-level social interactions; geometric art speaks of aesthetics, sense of proportion and style as well as artistic intent; and spatial organization points to articulated social life, group dynamics (coordination, communication, planning) and possibly even ritual and religious activities.

Regarding the specificities of Neanderthals, it seems reasonable to conclude that bird-related ornaments – and specifically those involving large birds and birds of prey – point to the specific cultural traits among Neanderthals connected to these animals. This constitutes an important factor for characterizing Neanderthal subcultures both internally and in contrast to AMHs, although at present it is hard to say more about it.

Engravings on objects (bones and stones) constitute a widespread aspect of Neanderthal artistic expression and may represent a shared trait with AMHs in certain regions (e.g., the Near East), albeit potentially associated with different meanings. The presence of a hand stencil, although solitary, also opens up interesting perspectives: first, it links Neanderthals to one of the most widespread graphic elements in the *Homo sapiens* rock art record worldwide; and second, such motifs have been described as markers of a '*participatif* [*tr.* participatory] way of being in the world, specifically pointing toward a need for contact beyond any particular signification (Grosos 2021, 80 ff.).

With the sole but significant exception of this hand stencil, the Neanderthal art record is so far constituted by geometric signs only.[8] While this represents the most striking and distinguishing characteristic of Neanderthal artistic production in comparison with that of AMHs, it is also a trait shared by both: AMH art is, as it is well known, largely composed of non-iconic and geometric motifs, which by their very nature are easier to associate with a range of different meanings. Conversely, the absence of a figurative repertoire among Neanderthals may suggest a different approach and intention in the relations with the environment and its faunal component in comparison to AMHs.

Finally, it is important to note that, as aDNA studies have now shown (Posth et al. 2023), contacts between AMHs and Neanderthals likely varied from group to group. Some of them show closer relations – evidenced by significant introgression episodes, as in the Bacho Kiro (Bulgaria) and Peştera cu Oase (Romania) – while others, such as Zlatý kůň (Czechia) and Ust'-Ishim (Russia), exhibit no more Neanderthal ancestry than other non-African groups.

Discussion

Notwithstanding a series of striking differences from our own idea of modernity,[9] based on the reasoning above and the bulk of evidence presented, it seems plausible to attribute to Neanderthals symbolic thinking as well as a form of syntactic language ability (whether sign-based or vocal). After all, the organization of large hunting parties, the creation of planned living or ritual structures, the production of artistic representations and the use of personal, 'ornamentation' objects all point to such capacities and to the relevance of sociality, including sophisticated systems of inter- and intra-group communication. At the same time, one must also consider that an endemic and extended low population density almost unanimously attributed to Neanderthals in recent literature (cf. Vaesen et al. 2021 and the discussion on this made above) may have limited social coordination and, consequently, the benefits associated with it.

Even if reduced, some sort of social coordination – possibly similar to that of Sapiens – seems necessary: pointing and interacting were likely among Neanderthal cognitive abilities. If this was the case, Neanderthals would also have displayed aspects of cooperation present in human children but absent in apes, where competition comes into play. As demonstrated by the experiments of Michael Tomasello and his team, such social and communicative abilities come with a host of related aspects: they are

8 Please consider also the San Lázaro pebble (Álvarez-Alonso et al. 2025).

9 Neanderthals seem not to have erected artificial shelters (houses). Yet, conventionally, the very concept of a house functions as a basic but critical material metaphor that underpins much of 'modern' experience and thinking about others, especially strangers.

'governed by social norms that dictate *how things ought to be done*' (Tomasello 2008, 171, emphasis added) and are therefore connected to an inherent sense of justice, a trait that directly links to the realm of ethics and morality.

Social coordination is entwined with these latter traits, because there is no cooperation without moral obligations and social sanctions of irregular behaviours, as Tomasello and his team have convincingly shown. Once we accept the presence of the social coordination among Neanderthals, it becomes plausible to extend to them these other traits as well. This is not all, however: a series of other consequences of crucial relevance directly derive from these conclusions. As has been observed (Rancière 1995, 20), although pleasure and suffering are elements common to the whole sentient world, the concepts of good and evil are restricted to humans. According to Tomasello's research, both may descend directly from, or be related to, social coordination skills, as they are innately present in small children. In contexts where the good/evil dichotomy is best visible – for instance, in the conceptualization of death[10] – the discursive articulation associated with it is strongly opposed to a purely phonic mode of expression, realized only through simple vocal and gestural markers. This, in turn, suggests that morality and the good/evil dichotomy are strongly connected to an expressive linguistic capacity. Taken together – the existence of a sense of justice, the concepts of good and evil and the ability to express and discuss them – these elements may very well lie at the root of the group dynamics labelled as politics:

> *La possibilité de cette articulation discursive, 'propre seulement aux hommes' marque l'ouverture de l'espace politique. La politique est la sphère où les torts peuvent être formulés, exprimés jugés.*[11]
>
> *(Malabou 2022, 343)*

In this perspective, it seems logical to conclude that the very nature of politics consists of exactly those elements highlighted in children's cooperative games when a shared reward is unjustly denied to one participant and is therefore inevitably connected to the linguistic capacity to articulate it.

If, as we have argued, Neanderthals indeed possessed a form of syntactic language, it seems plausible to extend to them the intertwined aspects of it: first, social coordination (*sensu* Tomasello), and then also morality, politics and religion.

And it is precisely religion that, in relatively recent years, has undergone a 'cognitive turn,' being investigated uniquely as a product of the human mind:

> *In recent decades, at least since [Stewart E.] Guthrie (1980), there has emerged a coherent research paradigm known as cognitive science of religion (CSR), a confluence of thought flowing from advances in cognitive science, evolutionary psychology, archaeology, social anthropology, philosophy, and related disciplines […], running parallel to the traditional scholarly pursuits within theology and religious studies.*
>
> *(Chilton/Kopytowska 2018, xx)*

Although the development of a CSR has been explicitly linked to cognitive archaeology and the work of Steven Mithen (e.g., 1996) and therefore limited to *H. sapiens*, based on the above argument, nothing really stands in the way of extending that same 'creativity' – that will 'explode' later in the Upper Palaeolithic – to earlier phases and other hominins.

At this point, we find ourselves at a crossroads: either Neanderthals *were* human, which implies that they possessed social coordination, language, ethics, politics and a kind of religious feeling (*their* kind), or they *were not* human and hence possessed none of these traits. I think that, based on the current state of research and the bulk of evidence collected, it is reasonable to attribute to Neanderthals *a* cognitive skillset similar in substance to that of AMHs.

There is more: although partially outside the scope of this paper, the reasoning applied here to the case study of Neanderthals has shown the impracticality of an approach in which a species (*H. sapiens*) – destined to become the dominant (and only) hominin species on our planet – gets to decide who is 'modern' and who is not, who has a higher cognitive skillset and who must be deemed inferior. For these reasons, it is not enough to open the door of Eden (to get back to the metaphor used in the introduction) to one or the other species or hominin types as a benevolent, patronizing (and even younger!) sibling. It is instead legitimate to ask whether the time has come simply to bring Eden down.

The use of ethnographic data in the study of prehistoric archaeology from an analogical perspective has a long – and, unsurprisingly, quite troubled – tradition in the history

10 This has also been known to be partially present among apes (Pettitt/Anderson 2020).

11 [*tr.* The possibility of this discursive articulation, 'unique to men,' marks the opening of the political space. Politics is the sphere where wrongs can be formulated, expressed and judged.] Translation: G. Di Maida.

of the discipline, specifically when it comes to art (Domingo Sanz 2021). Notwithstanding the known issues, I think that, with the necessary precautions, it represents an indispensable tool at the current stage of the discipline's development (Di Maida 2020, 88–89).

Neanderthals were hunters and gatherers. It is therefore within the realm of hunter-gatherers and the studies dedicated to them, that we should investigate traces of their lifestyles and cosmologies from an analogical perspective. Hunter-gatherers, as is well known (Bird-David 2017, 4), have had an impact on the history of research in many fields – from anthropology and ethnology to philosophy, sociology and religion – that is hard to overemphasize. More than that, their use as a 'court of appeal of the human nature' (*ibidem*) in regard to the most crucial aspects of human lives has made them an unavoidable point of reference. All this happened despite their objectively negligible total numbers in contrast to sedentary populations: when compared, hunter-gatherer populations are smaller by several orders of magnitude (25–50 members per group, Kelly 1995, 211). Attention to this small to tiny scale, although possibly the most visible characteristics of hunter-gatherer populations, has long been ignored by researchers in adherence to a principle of democracy. Bird-David (2017, 1 ff.) called this research approach 'scalar-blindness.' Although the choice and relevance of such an approach is understandable, especially in large comparative researches, its distortive effects on the study of small communities have been clearly defined and exposed (*ibidem*).

Thanks to Bird-David's seminal work, a new set of concepts and terminology – such as we- *versus* self-, pluripresence and so on – have found a definitive place in research. Here, I will focus my attention on one aspect specifically, which may play a significant role in better understanding Neanderthal group dynamics and lives: I refer to Nurit Bird-David's analysis of different modes of 'being many' (or 'few-many'). Building on the seminal work of Benedict Anderson (1983) on imagined communities and the birth of nation-states in the modern age, Bird-David (2017) identifies a crucial opposition between her small-community study group (the Nayaka) and the larger ones that form the foundation of modern nation-states. As Anderson proposed, these larger groups base their identity on belonging to a community of people they will never know or meet in person. Yet, in the minds of the members, they all belong to one and the same community – the nation – as they *imagine* it (meaning that it is created from a mental model with concrete effects on reality). As Bird-David sharply puts it, 'the modern imagination of the nation, and generally of the world, as made up of series of replicable plurals, […] provides a powerful model against which to assess [I]ndigenous alternatives' (*ibidem*, 14). These alternatives are indeed so deeply and painstakingly present at every level of the everyday lives of Bird-David's study group that she concludes, 'Kurgan and his relatives […] assertively recognized diversity as given' (*ibidem*, 44). This would then mean that, contrary to what the 'modern evolutionary script' has suggested to us, it is not true that small-scale societies are homogenous while complexity grows with scale, and actually, she argues, the opposite is true (*ibidem*).[12]

This apparently innocent conclusion has significant consequences, specifically when applied to prehistoric archaeology: how much of what appears similar to the researcher's eye would have been judged differently by the maker? While this opens a frightening chasm in the efficacy of archaeological practices,[13] it also helps understand the relevance of diversity in the lives of small to tiny hominid groups. Inversely to size, diversity seems to be directly proportional to the degree of pluripresence, along with other aspects connected to it, such as plurilogues (dialogues not specifically directed at one member but shared among all members of the group), plurirelation with relatives (exemplified by visiting and the tension this creates with the existing individual autonomy, *ibidem*, 67 ff.) and cosleeping (*ibidem*, 46–49). In relation to their environment, as Bird-David puts it, the cosmos of some tiny hunter-gatherer communities is 'a universe of tiny-scale multispecies communities of relatives whose plural mode is supported by a "diverse-and-together" rather than a "same-and-separate" logic' (*ibidem*, 176) – an aspect that is very similar to the '*participatif*' class mentioned above: '*La participation n'état donné pas la volonté d'être confondu; c'est celle de n'être pas séparé*'[14] (Grosos 2021, 86).

Although in a less direct way, the relevance of scale in the life of small communities plays a similar role in the posthumous book of Marshall Sahlins (2022). There, the author discusses a 'still-ongoing cultural revolution of world-historical proportion' that took place between the 7th and the 3rd century BC, driven by a 'distinctive civilization that spread from their origins in Greece, the Near East, Northern India, and China' (Sahlins 2022, 2).

12 Shirley S. Strum and Bruno Latour (1987) point out that baboons and primates generally lead *complicated* lives. Humans, by contrast, lead *complex* (and hence simpler) lives because they are constrained by conventions as well as emotions.

13 Doubts toward the theoretical soundness of basic archaeological methodology have already been expressed elsewhere (e.g., Di Maida 2022).

14 [*tr.* Participation is not the desire to be confused; it is the desire not to be separated.] Translation: G. Di Maida.

He then shows that the most prominent aspect of this civilization was an axial shift in the location of divinity: from the *hic et nunc* to an otherworld, separate from this earth, where humans were left alone to build their own systems. In philosophical terms, this was a transition from immanentism to transcendentism. Yet, despite the relevance of this civilization in the history of humanity, as Sahlins sharply noted, most of humanity after this period (and arguably all of humanity before it) has only ever known immanentism.

Hunter-gatherer groups, as is widely known, belong to this broader, immanentism-related part of humanity. More relevant to the present discussion, as we have already mentioned, they also provide the closest comparative analogue for humanity of prehistoric times (e.g., Maier et al. 2016, 4; Di Maida 2020, 88–89). Sahlins notes:

> *(T)he closer the human society comes to a 'zero degree of social integration', lacking chieftainship, stable settlements, corporate descent groups, and so on, the greater the disproportion between the organization and powers of human and metahumans.*
> *(Sahlins 2022, 134)*

This implies that the hunter-gatherer world is full of spirits and – as he continues, often terrifyingly so. A Chukchee shaman vividly described this:

> *We are surrounded by enemies. Spirits walk about invisibly with gaping mouths. We are always cringing, and distributing gifts on all sides, asking protection on one, giving ransom to another, and unable to obtain anything whatsoever gratuitously.*
> *(Bogoras 1904–1909 in Sahlins 2022, 136)*

The smaller, more isolated and more sparsely populated a group is, the more one may expect such a scenario.

We have seen how Neanderthals, both in Europe and Asia, exhibited an endemic and sustained low population density (*supra*). This crucial aspect connects closely with both Bird-David's (2017) notion of scalarity and Sahlins' (2022) reflections on hunter-gatherer groups and their spiritual world. Despite this common ground, however, the conclusions reached by them are almost antipodal. Bird-David, following earlier scholars (e.g., Turnbull 1965), showed how for 'some […] tropical forest hunter-gatherers, the forest is a parental being, that those who dwell in it are its children' (Bird-David 1990; 2017, 156). More than just a metaphor – 'the forest is a parent' – the tiny scale of being-together that they experience from the moment they are born (Bird-David 2017, 77 ff.), Bird-David continues, shapes how they imagine their *us*-world as well as the *different-from-us* world (the 'tribe/species' or 'collectives' of Descola 2005). In short, their continuous experience of plural life brings a 'kinship sensibility' in their interpretation of the cosmos, one in which diversity is present at every level, even across species and kinds, with members occupying different places within it, exactly as it happens in the 'us-group' (for a partial critique of this approach, see Ingold 2021, 51 ff.).

For Sahlins, however, things appear far less peaceful and balanced. From a gloomy and dreary world, where relationships between humans and meta-humans are frequent and ongoing, it is possible to extrapolate a picture in which members of such small groups intimately knew subjugation – as well as greed and exploitation – directly from their own gods and spirits. On the one hand, these aspects come in defiance of the constant and, frankly, blatantly mono-dimensional definition of 'egalitarian' applied to such societies. On the other – and more relevant for the present discourse – if Neanderthals had a religious sentiment of a sort, as I have been arguing, then it must have been one imbued with immanentism. Following Sahlins' reasoning, this would imply that their world was populated by a plethora of meta-humans. Whether this was a friendly, nurturing cosmos, as for the Nayaka, or a challenging and tormented one, as among the Chukchee, is difficult to say at the current stage.

One final aspect that may help to shed more light on the Neanderthal cosmos is the perception and role of landscape among hunter-gatherer groups. As has been noted (e.g., Ingold 2021, 63 ff.), landscape constitutes an aspect of the mental-*cum*-material world of many hunter-gatherers. Through storytelling, singing, dancing in and about the landscape as well as daily subsistence activities, the world becomes home, and all its inhabitants – human, animal, non-human – become persons and agents within it. In a way, landscapes are the bond between the *us*-group and the *not-us* group, without being merely a place where things happen. The landscape is not a stage for the theatre of life to unravel but an active part of life itself. To paraphrase A. Irving Hallowell's (1955) description of the Ojibwa approach to the world, lives are lived not so much in terms of *where* but in terms of *who*. Within this perspective, the landscape itself becomes an agent – as virtually everything else – as can also be argued based on the 4E approach to organic cognition discussed above.

Attempting to delineate a Neanderthal cosmology in more detail at this stage is still close to a desperate enterprise. There are, however, a few aspects that could help in such an attempt. As Richard Bradley (2012) has shown for the Neolithic, a basic cosmology may consist of three components, or planes: an underworld, the world we live in and on and an overworld. Interestingly, Neanderthal material culture, as presented here, seems to echo this scheme: Bruniquel could represent the underworld, the Unicorn Cave the living world and Fumane's raptor talons and Gibraltar's corvid plumage the overworld. Such a spatial cosmology is, of course, constructed by borrowing elements across time and geography, and in reality, it may have been less coherent than this cherry-picked evidence suggests. Nevertheless, even as a bricolage of elements, it at least raises the possibility that Neanderthals held cosmological beliefs that explained to them why the world was as they experienced it (through their 4E cognition). This is surely not a primitive nor a behaviourally non-modern aspect. Rather, it exemplifies how materials and spatial relationships can scaffold concepts beyond that cognition alone may achieve. Neanderthals may not have settled Australia, or even entered Africa, but they may well have reached for the stars.

Conclusions

As I argued above, Neanderthals were not only cognitively capable of syntactic communication and possessed a complex social life (likely including social coordination) as well as a moral sense, politics and religiosity. They also most likely shared with present-day hunter-gatherers crucial aspects of daily lives: small to tiny groups based on a plural life and an immanent cosmology that bound together the us-community, the community of other beings (humans, animals and most likely non-humans too) and the landscape.

The picture I have presented so far may give the reader the impression that Neanderthals were essentially the same as AMHs (who are themselves simplistically depicted in a monolithic fashion): a conclusion akin the indistinguishability claims discussed above. This, however, must be rejected – first of all by the specific trends in the material culture of Neanderthal groups, insofar as visible through the currently available archaeological records outlined earlier. I share with many colleagues the belief that the search for such specific trends should more strongly guide the direction of research in the field (see Moro Abadía/Chase 2021).

On a more general level, such an impression might stem from a deeper misunderstanding: namely, that sharing faculties or characteristics at the cognitive or ontological level necessarily leads to identical end products, and conversely, that different starting points inevitably lead to mutually incompatible ends. If we were to carry this assumption to its most stringent consequences, then the plethora of modern human cultures known from thousands of ethnographic reports should not exist – for they all stem from one and the same cognitive condition. Same brain, same culture: to put it as a slogan.

A good example of this distortion comes from Ludwig Wittgenstein's famous remark on the impossibility of understanding a talking lion, should one exist (Moro Abadía/Chase 2021, 106). Translated into the simplified slogan above, this would read: 'different brains, mutually incomprehensible cultures.' Yet it is highly misleading to apply this to the Neanderthal case. For – it may seem trivial to stress this – Neanderthals are not lions. It is obvious that Wittgenstein used the lion as an example of an 'alien brain.' What he did not state, and what archaeologists who cited him in this context overlooked, is the possibility of imagining discrete levels between mutually comprehensible brains, up until they reach a point of incomprehensibility. Theoretically, nothing prevents the existence of brains that *partially* understand one another, without doing so completely.

No matter how different we imagine Neanderthals to have been, they will never be as remote from humanity as Wittgenstein's lions. Instead, they are one of several hominins – specifically the closest to AMHs – with a complex shared history that includes episodes of interbreeding (e.g., Villanea/Schraiber 2019). Ignoring this aspect seems quite excessive. It is therefore only logical – unless otherwise demonstrated – to imagine a closeness of the cognitive set-ups of Neanderthals and AMHs as well as in their ways of being-in-the-world. More than that, as we have seen above, it is not necessary to *imagine* their closeness: we now possess circumstantial evidence, when not direct proofs, pointing toward a striking similarity between Neanderthals and AMHs in the products of their cognitive abilities.

As for the numerous cultures of AMHs that have been documented – and those lost in the mists of the past – it is plausible to think that, despite their endemic low population density, Neanderthals too displayed a significant variety of cosmologies, worldviews, kinship relations, rules of communal living and so on. Although alternative perspectives were advanced in the 20th century with apocalyptic consequenc-

es, it is now firmly established that, no matter how deep the differences among groups, communities and societies may appear, humanity as a whole shares one core – biological, cognitive, anthropological. Humanity is, in truth, one.

Now, the question is: what about Neanderthals? Were they 'one' with AMHs as well? Recently, this very question divided scholars into two opposing factions. To resolve this 'Wittgenstein/Neanderthal Paradox' would also mean answering it: if we could meet them, would we understand them? My answer is both yes and no – much like what would happen if, say, a Byzantine monk were suddenly transported into medieval Japan. Only with time and shared life – overcoming major crises (including violent, possibly fatal episodes) – through building a common environment and mutual understanding, could the monk and their hosts begin to understand each other.

How much further removed would a Neanderthal be, compared to two random Sapiens in this example? This is a good point to focus future research endeavours. Asking whether Neanderthal and Sapiens would come to understand each other, is, in fact, an outdated question. The Neanderthal archaeological record now clearly testifies to cognitive faculties comparable to those of AMHs – identical, in some cases, such as in the Levant. This does not mean, however, that similar personal ornaments and art objects carried similar meanings among Neanderthals and AMHs, or even across different Neanderthals groups themselves – just as is the case with Sapiens across times and regions.

The statements made – especially the ones concerning Neanderthal ontology – are based on a range of hypotheses and contested aspects that have been debated, at times heatedly, by many colleagues. As I have been showing in the pages above, however, several new elements have become available in recent years that allow us to catch a glimpse of how Neanderthal individuals grew into adulthood within their social groups, the context of their communities, the kinds of cosmological beliefs they may have held and what their immanent universe may have looked like, at least at the most general level.

On an epistemological level, the division of hominins according to Mayr's biological species concept – together with the heated discussions on cognitive modernity and the traits thought to reveal its presence or absence – no longer seems in step with several lines of thought advanced in archaeological research over the past quarter century. For all those engaged in the study of deep history, it is now, more than ever, necessary to make a leap forward and beyond (perhaps even in all directions at once). As is often the case at the verge of new scientific revolutions (Kuhn 2012 [1962]), the time appears to have come to surpass outdated categories[15] and theories that cannot provide an organic meaning to the mass of data collected so far and instead to attune to the significant and stimulating ideas developed – intensely and inspiringly – across disparate yet interlinked fields of study, without falling into the trap of constructing new stereotypes that merely substitute the old ones.

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