The dawn of some things: a few thoughts on Upper Paleolithic social inequality

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Abstract: *Spurred by the scientific and media debates surrounding the recent apparition of D. Graeber's and D. Wengrow's* The Dawn of Everything: A New History of Mankind*, the paper focuses on a key chronological and cultural segment, the European Upper Paleolithic, in at attempt at assessing the presumed early emergence of social stratification. A brief discussion on the limits of interpretation challenging Paleolithic archaeology is followed by a critical review of the existing archaeological record. While various lines of evidence hint for social inequalities (i.e., age, gender, individual status and abilities etc.), no convincing proof for social stratification (i.e., hereditary ranking) or major seasonal social restructuring is identified, even in the most culturally complex Upper Paleolithic contexts, such as the Gravettian or the Magdalenian. The causes of such absence are not related to the coarse-grain archaeological record, but to the unique environmental and demographic circumstances of Late Glacial Europe (low population numbers, wildly unstable climate, seasonally limited environmental productivity, high-mobility etc.) that apparently made egalitarian arrangements a most effective, evolutionary-stable strategy.*

Rezumat: *Inspirată de dezbaterea științifică și mediatică stârnită de recenta apariție a lucrării lui D. Graeber și D. Wengrow,* Zorii tuturor lucrurilor: o nouă istorie a omenirii*, contribuția de față se concentrează asupra unui segment cronologic și cultural crucial, Paleoliticul superior european, în încercarea de a evalua presupusa apariție timpurie a stratificării sociale. O scurtă discuția asupra limitelor documentare și de interpretare ale arheologiei paleoliticului este urmată de o trecere în revistă critică a dovezilor arheologice. Deși existența unor forme de inegalitate socială (vârstă, sex, statut, abilități individuale etc.), este indiscutabilă, dovezile cu privire la apariția stratificării sociale (i.e. ierarhii ereditare), sau a unor restructurări sociale sezoniere majore lipsesc, chiar și în cele mai complexe contexte culturale, precum Gravettianul sau Magdalenianul. Această absență nu se datorează rezoluției grosiere a documentației arheologice, ci circumstanțelor ecologice și demografice unice proprii Europei din ultima perioadă glaciară (demografie firavă, climat instabil, productivitate limitată sezonier, mobilitate crescută etc.), care aparent au transformat aranjamentele egalitare într-o strategie adaptativă stabilă și eficientă.*

Keywords: *Upper Paleolithic, social inequality, ecology, paleodemography, funerary behavior*

Cuvinte-cheie: *Paleolitic superior, inegalitate socială, ecologie, paleodemografie, comportament funerar*

◈ 1. Introduction

The wide success of D. Graeber's and D. Wengrow's *The Dawn of Everything: A New History of Mankind* (Graeber, Wengrow 2022) is anything but a surprise. The book blends an impressive amount of (fresh) archaeological data and (less fresh) anthropological perspectives into a captivating narrative targeting a wider audience. The array of reactions (*e.g.*, Appadurai 2022; Birch 2022; Feinman 2022; Joyce 2022, etc.), ranging from sheer enthusiasm to throughout criticism, mirrors both the qualities and the flaws of the book, and the interest usually surrounding de-constructivist approaches targeting mainstream evolutionary narratives.

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I must state from the start that I enjoyed the book and I keep recommending it to my students – together with alternative reads on the same topics. It provides a great deal of food for thought for archaeologists, anthropologists, historians, and philosophers alike. The book's aims are nonetheless high – and at times so is the stretch from the empiricist realm to the grand narrative needed to accomplish them. The two authors are bound from the start to the confines fatally associated to the majestic endeavor of writing a 'new history of humanity': sacrificing (some of) the factual details to a key tenet. As the major precept is precisely the diversity/reversibility of evolutionary paths leading to complex/stratified societies and more generally, the lack of directionality in (pre)historic social evolution, the very possibility of building a coherent narrative[1] able to counter-balance the dominant evolutionary accounts, drastically diminishes. The anti-evolutionary ethos permeating the authors' work certainly invited valiant anachronisms, such as the Paleolithic 'princely graves' associated to 'regalia', mammoth 'public works' that function as 'centers for exchange', etc. (Graeber, Wengrow 2022, p. 77-89).

It is the same anti-evolutionary, politically imbued[2] stance that probably also explains the thick dark before 'the dawn': Graeber and Wengrow choose to start their new history of humankind very late, with Anatomically Modern Humans and especially with the European Upper Paleolithic (henceforth UP). For what is supposed to be the 'dawn of everything', this is a puzzling choice. Rushing towards the cognitive uniformity of *Homo sapiens* and the supposed ethnographic familiarity of the UP is of course attractive in terms of the available archaeological record – orders of magnitude richer for the last thirty millennia of the Pleistocene than for earlier periods. It is reasonable to consider, nonetheless, that whatever social and political abilities UP people displayed must have originated in a more distant past. Hierarchical or egalitarian, all human social arrangements known historically or ethnographically rely on unique cognitive abilities (selective social learning, imitation, language, shared intentionality and a 'theory of mind', normative cognition, etc.) and behavioral propensities (counter-dominant behaviors, cooperation, generalized altruism etc.), which we are forced to think are evolutionary rooted much deeper (*e.g.*, Boehm 1999; Dubreuil 2010; Bowles, Gintis 2011; Anghelinu 2013). I suspect that the major reason for avoiding any serious discussion on the Lower or Middle Paleolithic is the rather justified expectation that a Hobbesian image may appear (*cf.* Grove 2020), threatening the clever, playful, and 'socially aware' description provided for the UP *Homo sapiens*.

The present paper is not meant to add to the already thick layer of reviews this work enjoyed. Acknowledging the polemic stance the book incited, I would rather gather some general thoughts on UP social landscape, in the hope that they will fuel some skepticism regarding an early emergence of (seasonal or permanent) stratified societies proposed by Wengrow and Graeber and other authors as well (*e.g.* Vanhaeren, d'Errico 2005; Hayden 2001; 2008; 2020). Although in line with the conventional socio-evolutionary wisdom fiercely

[1] The attempt at building a grand narrative, while deriding at the same time the desirability of grand narratives is in fact a common post-modern paradox. As an archaeologist, I would leave this conundrum to better geared philosophers.

[2] Justly criticizing the many outrageous forms of inequality of the modern world, the authors treat the very idea of an evolutionary inherited, biologically hard-wired propensity for inequality (doubled by an apparently equally hard-wired inequity aversion) not as a falsifiable scientific theory, but simply as 'cynicism' (Wengrow, Graeber 2015). However, similar ethical concerns can be found in the works of most archaeologists and anthropologists including overt defenders of social-evolutionary approaches (*e.g.*, Hayden, Villeneuve 2010; Price, Feinman 2010a; Kelly 2013).

contested by Graeber and Wengrow, my arguments regarding the persistence of egalitarianism are not, however, connected to a supposed political incapacity of UP people, but to the actual ecological and demographic circumstances of their lives.

◈ 2. The strawman

Bouncing between evolutionary optimism and anti-evolutionary skepticism has a long tradition in Western social, anthropological, and historical thought (Lenski 2002), archaeology included (Trigger 1989; Eggert 2012). Thomsen's three-aged system had already its own detractors and later diffusionist and culture-historical movements are prominent examples of anti-evolutionary challenges for the stadial models in use (Trigger 1989). Challenging mainstream social-evolutionary theories has in fact become common practice in archaeology, at least since the inception of post-processual archaeology several decades ago (*e.g.*, Shanks, Tilley 1987). Finding small-scale exceptions and targeting the grand narratives' sitting ducks is also an old intellectual sport (*cf.* Wallerstein 2003). Speculating on the impact these critiques really had on the evolutionary paradigmatic camp stays beyond our purposes here. The fact is although not all societies in the world passed through a 'Bronze Age', none of those who did it ever returned to 'Neolithic' after experiencing metallurgy (*cf.* Eggert 2012). Consequently, most archaeologists (and the public as well) still tend to associate social complexity and, by extension, hierarchical societies, with sedentism, demographic growth and in the main with the adoption of farming, which (eventually) led to the replacement of the more egalitarian social arrangements considered typical to hunter-gatherers with less egalitarian social constellations. However, this 'reactionary' and 'dull' perspective on social evolution (Graeber, Wengrow 2022, p. 15), captures poorly the far more nuanced views archaeologists hold on the topic of social evolution, admittedly more visible in their quarters of professional competence.

Unilineal models have long lost currency in anthropological and archaeological thought (Feinman 2023) and increasingly many professionals are eager to annotate generic trends with countless exceptions. Paralleling the revisionist critique in anthropology (*cf.* Sassaman 2004), which ruined the anthropological stereotype of hunter-gatherers, archaeology has been tackling frontally the issue of inequality and complexity in prehistoric foraging societies for quite some time now (*e.g.*, Price, Brown 1985; Ames 2010; see also Moreau 2020). Moreover, for some authors at least, Paleolithic equality was simply 'inconceivable' (Pettitt 2020, p. 201; see also Grove 2020). Not only the egalitarianism of Bushmen epitomized by *Man the Hunter* (Lee, DeVore 1968) long ceased to represent the blueprint of Paleolithic societies, but an increasing number of specialists are in fact claiming the emergence of hereditary ranking in Paleolithic times (*e.g.*, Vanhaeren, d'Errico 2005; Hayden 2008; *cf.* Moreau 2020 and references therein). Even if, as Graeber and Wengrow (2022, p. 83) and others (*e.g.*, Honoré 2022) suggest, this amounts to moving the evolutionary transition between egalitarianism/stratification considerably earlier in time, the political capabilities in manipulating social realities, allegedly refused to our Paleolithic ancestors, are clearly granted by mainstream research. The lack of social stratification and the egalitarian ethos in later, fully agricultural, and culturally complex contexts is also widely admitted (*e.g.*, Souvatzi 2008; Kienlin, Zimmerman 2012).

Apart from eco-ethological inferences based on extinct hominins' anatomy, Pleistocene archaeologists usually approach social evolution through material culture evolution, often equated with surviving traces of basic technologies. Although the relationship between the

two evolutionary strands remains complicated[3], the general view on cultural/technological evolution is presently anything but unilineal. Especially after the advent of neo-Darwinian co-evolutionary theories, studies on cultural evolution, increasingly corroborated by mathematic and statistic modeling, provided quantitative support for two older insights: (1) the unpredictability, diversity and reversibility of evolutionary paths are common, in both biological and cultural evolution; (2) in contrast to biological evolution, cultural evolution runs through different transmission mechanisms, displays a completely different pace, and consequently has a strong, Lamarckian-like cumulative aspect, that might sometimes lead to swift burst in complexity, or to (equally cumulative) simpler cultural adaptations and information loss (*e.g.*, Boyd, Richerson 2005). Consequently, I would dare to assume that most archaeologists and anthropologists would now at least (1) consider sedentism and/or the transition to farming as an enhancing, but not as a sufficient condition for the emergence of stratified societies; (2) admit that some hunter-gatherer societies display social stratification (*i.e.*, ranking); (3) expect cumulative growths and decreases of social complexity and/or social inequality over time. While socio-political complexity may experience very Spencerian cumulative growth cycles (Chapman 2003; Trigger 2003; for hunter-gatherers, see Kelly 2013), the reverse is equally familiar to archaeologists (*e.g.*, Müller 2017): the disappearance of the large Pre-pottery Neolithic B or Cucuteni-Tripolye aggregations are just obvious examples. By way of consequence, although not straightforwardly connected to socio-cultural complexity, social inequality could have followed a similarly syncopated itinerary.

In sum, whatever differences are separating popular evolutionary theories of H. Spencer, J. Diamond, F. Fukuyama, and N. Harari (or T. Hobbes and J. J. Rousseau, for that matter), they do not mirror the current academic views on social evolution. Simply by taking issue with long abandoned stadial narratives, or with the allegedly egalitarian social 'stage', amounts to building an easy-to-dismantle straw man. On theoretical grounds, as documented by various bursts of complexity reported for Holocene foragers (*e.g.*, Prentiss *et alii* 2007; Layton 2020), it is well possible to have witnessed social complexity and inequality taking off in Pleistocene times. Whether or not this development took place is an empirical issue. Our ability to record it remains, however, far more limited than our ethnographically fed imagination

◈ 3. Measuring Paleolithic inequality

Despite their awareness regarding the limitations of stadial models, the 'obsession' of archaeologists and anthropologists alike for the emergence of social complexity, often conflated with the emergence of social inequality[4], *a fortiori* implying a preexisting egalitarian

[3] The relationship between technology and social organization is far from simple even in the case of hunter-gatherers. For instance, the egalitarian Inuit have a complex technology, while complex social arrangements including territoriality and ritual knowledge control accompany simpler technologies in the case of Australian Aboriginals (Layton 2005).

[4] 'Social inequality, the organizing principle of hierarchical structure in human society, is manifested in unequal access to goods, information, decision making and power. Status is the determinant of social position and status differentiation in the foundation of inequality […]. This structure of unequal relations, of status differentiation, is essential to higher orders of social organization and is basic to the operation of more complex societies. So, questions about inequality are intricately bound up with questions concerning human cooperation, leadership, and social differentiation both vertical (hierarchical) and horizontal' (Price, Feinman 2010b, p. 2).

state of facts, is real (*cf.* Moreau 2020; Ames 2010). Bound to fragmented remains of material culture, archaeology is however, poorly equipped to detect equality and not particularly motivated to properly look for it[5]. Egalitarianism is often understood as a residual state featuring the absence of obvious disparities in terms status and (usually) wealth between individuals or classes of individuals. With their simpler material culture and limited possessions, nomadic hunter-gatherers appear like ideal candidates for such negative description based on absences. This perception of foragers runs apparently counter to the equally widely shared idea that inequality based on age, gender, and abilities, entailing different degrees of personal autonomy, prestige or power over others is present in all know societies, including hunter-gatherers (Flanagan 1989; Kelly 2013)[6]. The paradox is only apparent: for most archaeologists, social inequality refers not to inter-personal differences in status, wealth, or power, but to *social stratification*, *i.e.*, structural inequalities based on *inherited* ranking. The latter configuration is clearly distinct from what is commonly met among foragers, although stratified hunter-gatherers are known in Holocene contexts (Kelly 2013).

Ranked societies are however just an extreme point in a continuum of variation of egalitarian/inegalitarian arrangements, which also includes forager societies (Flanagan 1989; McCall, Widerquist 2015). At least in the case of hunter-gatherers, inequality may take the form of the so-called 'trans-egalitarian societies', which do display short(er) term socio-economic inequalities able however to transcend generations (Owens, Hayden 1997; Hayden 2001)[7]. Although status inequalities are not politically institutionalized in these societies, they may mimic well social stratification, at least from an archaeological perspective. Consequently, to invoke institutionalized inequality in Paleolithic times would at minimum require the recording of such trans-egalitarian societies that 'encompass the typological murkiness between egalitarian and stratified societies' (Ames 2010, p. 26).

This is not, however, an easy task. Measuring (especially emerging) inequality is as difficult as proving equality. Even a cursory look around us suffices in proving that wealth, status, prestige, power, and authority are not inevitably congruent. Inequality may take refuge in social domains located further from the direct reach of archaeology (*e.g.*, control of ritual knowledge), get amalgamated in myriad ways by specific cultural codes (Drennan *et alii* 2010), or leave no material traces at all[8]. Moreover, key concepts like 'wealth' or 'prestige objects' may be tautologically defined, or be simply affected by our modern preconceptions of 'richness' or 'exotic' (*cf.* Henry-Gambier, Boulestin 2021), while modest remains (*e.g.*, unspectacular lithic resources) may have carried a far heavier symbolic weight in past social worlds (Farbstein 2011; Sterling 2015).

Things are getting even more complicated in the case of impoverished Paleolithic contexts. Archaeology typically relies on several lines of evidence for inferring social

[5] The supposed pristine egalitarian state led to the inevitable conclusion that 'inequality has to be proven, egalitarianism does not' (Ames 2010, p. 15).

[6] For many professionals in social sciences, the emergence of inequality is a moot point: no known society is truly egalitarian. Various forms of inequality (age, gender) are so pervasive in all known human societies that the actual issue becomes the very emergence of egalitarianism (*cf.* Anghelinu 2013).

[7] These societies are characterized by 'private ownership of resources and produce, low levels of sharing and institutionalized hierarchies based ultimately on wealth […], by the production and transformation of food surpluses, economically based competition, the use of prestige goods and a range of specific feasting patterns' (Hayden 2001, p. 232).

[8] Prestige-seeking behavior may take the conspicuous humility way, leaving few or no archaeological traces at all (Ames 2010).

inequality (Chapman 2003; Drennan *et alii* 2010): differences in size, architecture, and inventories of domestic spaces (including storage facilities); differential access to exotic goods or technologies; differential funerary treatment (including the degree of elaboration of the graves and the richness of the funerary inventory); systematic differences in diet and health. Good chronometric control and robust regional coverage are of course key for discerning any meaningful temporal and spatial patterning. Paleolithic archaeology scores poorly at most of these proxies of inequality, which may work reasonably well for documentary richer Holocene archaeological contexts. Due to their mobility, limiting the scope of material accumulations and the degree of elaboration of domestic spaces, hunter-gatherers rely mostly on relational and embodied 'wealth' (Smith *et alii* 2010; Bowles *et alii* 2010). This obviously deprives the material record potentially generated and left behind, with obvious consequences for archaeology. The preservation of Paleolithic contexts is further down severely conditioned by post-depositional processes and selective preservation. Moreover, a large amount of crucial data (*e.g.*, funerary) was recovered at low resolution in the early days of archaeological research. The documented exotic goods are few (*e.g.*, shells, minerals, amber, ivory, etc.) and their presence is hard to correlate with specific individuals, except for funerary contexts. The latter record is geographically and temporally scattered (Arenas del Amo *et alii* 2024); human remains are therefore few, poorly preserved and rarely available in statistically representative samples for assessing meaningful differences in activity regimes, health, or diet at a group level. Moreover, Paleolithic archaeology works at some unique temporal and spatial scales. It deals with 'faceless' individuals and units (technocomplexes, archaeological 'cultures') orders of magnitude distant from ethnographic ranges. The archaeologically visible trends are built on aggregated outcomes of individual and communal choices in changing ecological and social circumstances, usually averaged by material palimpsests. This means that to become archaeologically visible, social stratification should have been persistent, multi-generational. Likewise, given the patent difficulty of measuring Pleistocene relational and embodied wealth, some evidence for the transmission of material wealth would be needed. On the other hand, several generations' emerging stratification may be simply swamped by the time-averaged record and simply stay below the archaeological radar[9]. This is of course unfair to any stratification process that subsequently failed, giving credit to Graeber's and Wengrow's innuendo that mainstream archaeology only measures evolutionary success. Besides, much like Holocene hunter-gatherers (Kelly 2013), Paleolithic societies were likely at least as diverse as the ecological settings they inhabited, so invoking 'the UP society' is clearly a gross generalization. If we are to avoid cherry-picking examples and collapsing time periods and cultural contexts, any hints suggesting emerging stratification should display at least some regional and temporal coherence. This is one of the key aspects that we are missing even in the best documented area and temporal slice, the European UP.

◈ 4. Shaving the ice with Occam's razor

Thanks to the long research history and the large archaeological community involved, the European UP provides by far the most intensively studied record of Pleistocene hunter-

[9] Changing the ethos from generosity and humility to boastfulness and competition is not a swift process, as it entails changes in enculturation mechanisms (Kelly 2013). While this may seem to offer Paleolithic archaeology some time breadth to record significant trends, it still supposes societal changes that may take place below the chronological control of radiocarbon dating, for instance.

gatherers in the world. Consequently, most examples invoked in the debate regarding Paleolithic social hierarchies come from Europe (*e.g.*, Hayden 2001, 2008; Vanhaeren, d'Errico, 2005; Moreau 2020 and contributions therein) and is it no surprise that Graeber and Wengrow proposed to first 'melt the ice' covering Upper Pleistocene European societies (Graeber, Wengrow 2022). The northern latitudes that made Eurasia particularly sensitive to the dramatic climatic and landscape changes of the Upper Pleistocene, and the (related) dynamic cultural evolution, recommended the European UP as an excellent training ground for all theories regarding hunter-gatherers' evolution towards social stratification. It is, however, precisely this syncopated cultural, demographic, and social itinerary that raises serious issues for the defenders of the early birth of structured inequalities, including transient/seasonal ones.

All ethnographically grounded models for the emergence of stratified or at least 'trans-egalitarian' hunter-gatherers (*e.g.*, Arnold 1993; Hayden 2001; 2008; Prentiss *et alii* 2007; Kelly 2013; Graeber, Wengrow 2022), merge to various degrees (seasonal) resource abundance/shortages, food storage, territorial (geographic or demographic) circumscription leading to above average population upsurges, and sedentism. Few if any of these aspects can be at present securely demonstrated for the European UP.

For some authors (*e.g.*, Hayden 2001; 2008; 2018; Guy 2020), the concentration of large settlements, reduced mobility, 'rich' funerary contexts, and UP art corresponds well to biomass richness and environmental productivity of Upper Pleistocene Europe. At least some of these generic associations are, however, debatable, to say the least. In some areas 'rich' in graves such as Liguria, mammoth and reindeers were in fact not providing the main subsistence base (Zilhão 2014), while a reduced mobility was never invoked, unless we use circular arguments and infer a reduced mobility based on the constant (re)use of some funerary spaces such as Arene Candide (Sparacello *et alii* 2018). The large Italian Epigravettian funerary sample seems in fact to correspond to a rather dramatic demographic landscape (Posth *et alii* 2023). In contrast, the allegedly more productive environments of the 'mammoth steppe' are not systematically associated to spectacular graves (Henry-Gambier 2008; 2009). The current funerary landscape of UP Europe (found mostly in caves in Western Europe, or deeply buried by the Last Glacial Maximum loess accumulation in Central and Eastern Europe) seems to have more to do with preservation/research biases than with any sort of environmental affluence (Arenas del Amo *et alii* 2024).

Although variable, environmental productivity during the Marine Isotope Stages 3 (MIS3) and MIS2, which generally replicated boreal, arctic, or sub-arctic conditions, remained as a rule very low (Davies 2020 and references therein). Key resources like fuel were not particularly abundant in many areas, and landscape changes forced repeated abandonment of sites or entire regions even after achieving complex techno-cultural adaptations, as was the case with the Central European Gravettian (Maier *et alii* 2016; Maier, Zimmerman 2017). Even at lower latitudes, the Solutrean (Canessa 2021) or Magdalenian (Langlais *et alii* 2012) correspond to generally cold and highly fluctuating environmental contexts, consistently reflected in the pulses of the related demographic networks. This also suggests that the most complex UP technologies are primarily connected to environmental risk-reduction (Torrence 2001). It also forces us to assess the supposed environmental richness at a more reduced temporal and spatial scale.

The bountiful image of Upper Pleistocene hunting (and feasting) usually features vast reindeer herds mass-slaughtered seasonally (Hayden 2001; 2008). However, in key areas such as South-West France, the evidence is strongly indicative for a rather permanent, endemic

reindeer population hunted all year round on an encounter basis (Fontana 2017, 2022). Further to the North and East, migrating reindeer might have occasionally allowed such mass-slaughters in key locations (*e.g.*, Street *et alii* 2012; Zilhão 2014; Covalenco, Croitor 2021). In open areas like the Paris Basin, however, the evidence points to a far less massive exploitation, coupled with high residential mobility of small human groups still by Magdalenian times (Fougère 2011). Moreover, the short-term (a few years) pattern of reindeer migrations, which can be affected by snow-line changes leading to massive (hundreds of kilometers) shifts, indicates a fluctuating and thus less reliable resource on the long-term (*cf.* Davies 2020).

The basic subsistence patterns have some crucial corollaries for hunter-gatherers: seasonal prey abundance is conductive to 'collector' strategies, including storage and deferred consumption, while encounter strategies of endemic, territorial fauna favors a more opportunistic 'forager' strategy (Binford 1980). Climatic gradients are in this respect as important as the regional topography. This means that some climatically favorable latitudes, such as the art haven in Franco-Cantabria, coupled with rugged topographic contexts impeding large-scale animal migration, might have in fact encouraged a forager, residentially mobile life.

Unless selectively consumed by a certain social group, which was simply not yet demonstrated, the use of lower-ranked resources and the broadening of diet towards birds, small mammals, fish or marine resources, a typical UP, but much older trend (Stiner, Munro 2002), does not point into the abundance direction either, although it may have supported a certain (seasonal?) reduction of mobility. In terms of key resources like food, we may therefore infer at best 'intermittent resource bounties' that cannot exclude periods of dearth and lean times. In any case, 'there is little evidence of resources that were predictable or dense enough to be defendable or divisible […]' (Davies 2020, p. 144). From the most direct evidence of nutritional status, the paleoanthropological sample, one can only conclude that UP people were generally (and equally) well-fed (Holt, Formicola 2008).

In the highly seasonal environment of Upper Pleistocene Europe, storage for the lean, winter season would have been clearly a vital strategy (Layton 2020). However, despite some earlier proposals (*e.g.*, Soffer 1989), storage (*i.e.*, pits, caches etc.) is documented only to a very limited extent (*e.g.*, Zilhão 2014; Einwögerer 2021). In the case of bone-filled pits, it is often hard to discriminate between storage (shouldn't they be empty?), roasting or refuse pits. If indeed willing to keep our inferences close to the facts, their presence should more prudently be read as an attempt at mitigating seasonal fluctuations of food supply and not as proofs for communal feasting initiated by a (non-productive) elite.

UP demography remained most of the time well below[10] most ethnographic hunter-gatherers' level, both in terms of total number and regional densities (Boone 2002; Maier *et alii* 2016; Kretschmer 2019; Schmidt *et alii* 2021). This aspect is crucial in terms of social dynamics: the smaller the social scene, the less likely it is to see a motivation for/a successful implementation of power and prestige relations (Roscoe 2020). With a few thousand individuals living across Europe even in the Gravettian 'Golden Age' or in the late Magdalenian, and regional densities ranging between 0.8 and 2.6 persons/km^2 even in the most

[10] UP population estimations vary wildly (*e.g.*, Tallaavara *et alii* 2015 *vs.* Maier *et alii* 2016) depending on the criteria used for modeling, ranging from environmental capacity to the actual density of recorded archaeological site. Even if affected by major taphonomic issues and unequal field research (Boemke *et alii* 2023) and therefore prone to underestimations, the latter, empirically grounded models are given credit here.

densely populated areas (Maier *et alii* 2016; Maier, Zimmerman 2017), the UP social scene looks too rarefied for aggrandizers. Such figures are indicative of a thin demography in which distance networking and information exchange remained vital. The geographic patterning and documented continuity of personal ornaments across millennia and across formally defined archaeological units (Vanhaeren, d'Errico 2006; Baker *et alii* 2024) point to resilient networks of reciprocity likely inherited across generations. While this persistence may point to the constant importance of relational wealth (Moreau 2020), it also provides evidence for a generally low demography and a wide mobility.

UP group size is hard to estimate based on site size or artifact abundance given the time-averaged palimpsest nature of most archaeological accumulations. Nonetheless, no aggregations[11] of the size reported ethnographically in the case of 'complex' foragers were documented, even during the Gravettian 'Golden Age' (Svoboda *et alii* 2016; Svoboda 2020). Every time higher resolution archaeological data becomes available, they point to small groups in the demographic range of egalitarian hunter-gatherers. In the best-preserved sites offering access to well-segregated occupation episodes, such as Pincevent, evidence indicates a few dozen persons (with signs of sharing of reindeer meat – Zubrow *et alii* 2010).

Overlapping mating networks, open boundaries bands and exogamous breeding provide thus the most likely scenario for UP societies. Abundant archaeological data involving high-scale raw materials or artifact transfers and genetic data support this inference from the early to the last stages of the European UP (*e.g.*, Péttillon *et alii* 2015; Sikora *et alii* 2017). Demographic packing, sometimes invoked in Franco-Cantabria to explain the burst of artistic behavior and symbolic marking, was at best punctual and remained well below the expected densities of 'complex' hunter-gatherers (Davies 2020).

On the other hand, although stone arrangements/pavements (Einwögerer 2021), huts and mammoth-bone structures (Zilhão 2014; Iakovleva 2015) were reported in various UP contexts, particularly in Central and Eastern Europe, they can hardly be read as 'monumental' (*cf.* Graeber, Wengrow 2022) collective endeavors. Many of these structures were in fact described in early days of archaeological research and were less then ideally documented; moreover, at least some of the massive mammoth bone accumulations were obviously *not* houses, but likely hunting-related symbolical depositions (Oliva 2021; Sablin *et alii* 2023).

Unequal access to knowledge (i.e., information control from behalf of a certain social segment) could not have been securely proven either, despite claims to the contrary (Hayden 2001; 2018; 2020; Guy 2020). Very skilled individuals (art making, lithic knapping etc.) were demonstrably present in many UP contexts, but there is no indication that their competence, albeit sometimes recorded in segregated areas (*e.g.*, Pigeot 1990; Audouze, Cattin 2011), was exclusive or secret. At least in terms of lithic production, instances of expert and novice debris mixed in proximity suggest that the contrary was true (*e.g.*, Audouze, Cattin 2011; Pelegrin 2021). Given the highly elaborated lithic and organic technology, and artistic abilities documented, it is nonetheless reasonable to infer a certain degree of specialization between individuals during the UP (Pettitt 2020). The standardization of certain mass-produced artifacts such as the Sungir ivory pendants, or the Aurignacian basket-shaped pendants (White 2007; Heckel 2018) suggests that such specialization was already active in early stages of the UP. Does this relate to the existence of a complex task organization by formal elites

[11] Discerning aggregation sites in the archaeological record is admittedly a complicated issue (*e.g.*, Conkey 1980), but given their almost universal presence among hunter-gatherers in cold, seasonal environments, assuming their presence in the UP appears as a safe inference.

(Hayden 2001; Guy 2020), or just to a (gender-structured?) expertise perhaps associated to the long days in winter camps (White 2007; Zilhão 2014, p. 1776)? Inferring craft-specialization or ritual control of knowledge for such performances is certainly unwarranted. They may be equally attesting to individual competences and personal knowledge prone to loss – as indicated, for instance, by the diachronically 'unstable' recipes for pigments or parietal art styles (Davies 2020; Pettitt 2020). Even the artifact categories suggesting some specialized production circulated widely between sites (Heckel 2018) pointing to extended social networks, but providing no clue as to whether such circulation was limited to certain social categories only.

For some authors, the degree of specialization needed for mastering the Magdalenian parietal art, and especially the 'excessive' realism based on accurate imitation of animal figurations, point straightly to a different economic and political role of their makers. Such an 'illusionist artistic tradition', marking the ability of 'competing' with or 'appropriating nature' could only 'serve the interest of an elite' and could only be connected to 'highly hierarchical societies' for which the represented animals had some sort of heraldic meaning (Guy 2020, p. 223-224). Alternative readings of UP artistic realism do, however, exist (*e.g.*, Pettitt 2020; Birouste 2021). Moreover, the same argument should hold for the comparable, admittedly less realistic representations of Aurignacian or Gravettian ages (Petrognani 2015). UP themes, style and iconography were clearly the outcome of a rather long cultural cumulative process (Petrognani, Robert 2019). Connecting the increasingly rigid aesthetic norms and the emergence of abstract signs, typical to post-Gravettian imagery, to a social pressure towards conformism (*e.g.*, Petrognani 2015), including regional/ethnic boundary marking, is possible. Such normativism does not necessarily mirror social stratification, however, as prestige-based informal hierarchies could have led to a similar outcome. Prestige-biased transmission is a key cultural-evolutionary mechanism, but gaining and maintaining prestige is distinct from political domination and can in fact help promoting cooperation (Heinrich *et alii* 2015)[12]. Attention structures and costly-signaling may have provided some more or less visible advantages[13] and a higher social standing for the gifted individuals involved, but there are simply no indications that the resulting ranking was economically or politically reinforced.

To conclude, 'melting the ice' from the UP (social) landscape, as Graeber and Wengrow aspired, cannot simply be done by ignoring hard facts and alternative interpretations: the landscape and climates were challenging, the demography – low, and the functional social alternatives – still very few.

◈ 5. A closer focus: the Gravettian and the Magdalenian

Painting with a broad brush the paleo-environmental and paleo-social picture of the European UP may be of course misleading. Despite the wildly shifting climate, millennial cycles of relative stability, including favorable settings for increased environmental productivity, were also recorded (Rasmussen *et alii* 2014). Each of these cycles could have

[12] Moreover, while knowledgeable persons were granted prestige by the other members of the group, they would have also been complied to assertive modesty (Spikins 2008).

[13] '…differential access to resources including food, health, and reproduction can persist in egalitarian societies in the absence of an overt or visible political economy. Intense competition via competitive altruism or competitive humility can occur using non-material resources. Even costly signaling may have no material consequences' (Ames 2010, p. 32).

provided favorable ecological conditions and could have hosted enough generations for social complexity to boost on and for (seasonal or permanent) social stratification to arise. The Gravettian, particularly the Central European Pavlovian, and the Magdalenian were often invoked as documenting such trends (*e.g.*, Hayden 2018; Graeber, Wengrow 2022).

The Gravettian technocomplex marks for some authors a 'Golden Age' for UP hunter-gatherers (Roebroeks *et alii* 2000). With an elaborated resource exploitation, a sophisticated lithic technology, often relying on distant raw material transfers, a diverse organic industry, large open-air sites (Svoboda 2020) and rich symbolic manifestations in both portable (Mussi 2015; Baker *et alii* 2024) and parietal art (Petrognani, Robert 2019), the Gravettian was undoubtedly *culturally* complex. In terms of preservation (including the funerary sample), settlement sizes, technological complexity, and chronological and geographical focus, the Central European Gravettian/Pavlovian is by far a first major candidate for any discussion regarding social inequality in the UP.

The Pavlovian corresponded to a rich steppe-tundra context, but relatively mild climate[14] (Musil 2022). With a hunting economy mainly focused on reindeer, mammoth, and horse exploitation, supplemented by smaller species (birds, hares, carnivores etc.) and vegetal resources (Revedin *et alii* 2010; Wojtal *et alii* 2012; 2018), the Pavlovian also provided hints for a certain reduction of mobility (even year-round occupation of some sites has been postulated), and demographic aggregations (such as Dolní Vestoniče I and Pavlov I) estimated to have reached to ca. 100 persons (Svoboda 2020). Nonetheless, despite the apparent game abundance (if eating of carnivores and birds is indeed to be considered a gourmet choice…), no proofs of storage of whatever scale were found (*e.g.*, Fladerer *et alii* 2014)[15], unless we assume the use of archaeologically invisible methods (*e.g.*, wooden racks).

Wide scale mobility and large-scale, porous demographic networks are indicated by various lines of evidence across the entire Gravettian geographical range (*e.g.*, Roebroeks *et alii*, 2000; Mussi 2015; Moreau *et alii* 2016; Petrognani, Robert 2019). Proofs for social preeminence are few and rely only on several funerary contexts rather pointing to selected *individuals* ('big men'/successful hunters – Svoboda 2019, 'shamans'/'marked' persons – Oliva 2017, p. 102) or to some particular circumstances of death (see below) such was the case of the twins at Krems-Wachtberg (Teschler-Nicola *et alii* 2020). The Gravettian funerary sample is in fact the most representative for the entire European UP. However, beyond certain regional differences in terms of inventories and perhaps of age/gender (Henry-Gambier 2008, 2009; Henry-Gambier, Boulestin 2021)[16], most Gravettian graves required little time investment and contained rather modest inventories, if we leave aside the ochre application and protective mammoth scapulas. Taking the very small number of interred persons as a direct proof of social stratification remains speculative and obviously tautological. Purely symbolic (Oliva 2017; Petru 2018), preservation (Henry-Gambier 2008; Trinkaus *et alii*, 2010) or contextual reasons

[14] The picture of a friendly environment might change, however: recent isotope results (Reiss *et alii* 2024) show comparable winter temperatures for the Gravettian at Krems-Wachtberg and subsequent Late Glacial Maximum climatic contexts.

[15] Intensive exploitation of ungulates and grease-rendering in some other Gravettian contexts rather points to seasonal shortages than to feasting needs, not to mention the multiple possible additional uses of animal fat (Manne 2014).

[16] Isolated cases of cannibalism (Villotte *et alii* 2019) and possible secondary interventions (Trinkaus *et alii* 2010) are also reported for Gravettian.

(*e.g.*, circumstances/season of death)[17] can be envisaged for the small surviving buried sample. As no clear *social categories*, even less so *social classes* transpire from the Gravettian domestic or funerary contexts, any empirical proof for trans-egalitarian social arrangements is simply missing from the Gravettian archeological record.

The Magdalenian covers a smaller geographic space and time interval than the Gravettian, but undoubtedly displays the most elaborate UP material culture (Pétillon *et alii* 2015). Despite acknowledged regional aspects (Petrognani, Robert 2019), the general picture provided by the Magdalenian social landscape is nonetheless pointing to 'a generalized circulation of materials and ideas' (Pétillon *et alii* 2015, p. 4), with wide social networks recalling the Gravettian and comparable, if not higher mobility levels.

The Magdalenian funerary sample is far more limited than the Gravettian one. Most human remains are found fragmented, scattered on living floors. They often bear traces of subsequent anthropogenic interventions, including cannibalism, which seems to have represented rather the norm than the exception (Petru 2018; Marsh, Bello 2023). While most of the primary burials contained ochre, only a few provided a richer inventory. The best example is the famous female burial of Saint-Germaine-en-Rivière associated to ca. 70 red deer canines, exotic amongst the decorative objects found in the surrounding domestic context (Vanhaeren, d'Errico 2005). While this grave clearly attests to a special individual and to 'structured exchanges' at long distance, it is less clear, however, why the large number of exotic pendants should be indicative for a special 'group made up of several individuals […] entirely or partially made up of women' (Vanhaeren, d'Errico 2005, p. 129-130), as no other comparable Magdalenian grave is yet known.

Based on the variable intensity of visual displays, such as pendants, some authors (*e.g.*, Schwendler 2012) suggested that the Magdalenian featured the full range of societal types documented by ethnographic foragers, from egalitarian to stratified or at least trans-egalitarian societies. Schwendler saw a relaxation of egalitarian rules in contexts of environmental and social stress, with skilled people (in terms of hunting prowess, environmental knowledge, negotiation abilities etc.) benefiting from a larger social scene and being granted a special status[18]. How such *individual* abilities would have turned into the advantage of a distinct social group (*e.g.*, a lineage, a family), further able to gain political or economic control over others is not clear, however. The first issue with this approach is our

[17] The number of individuals displaying physical anomalies is unusually large in the UP funerary sample (Formicola 2007). It is however unclear whether these abnormalities reflect a special selection of buried individuals (including human sacrifices, as suggested by Formicola) or simply genetic issues related to inbreeding, especially as many cases belong to the Italian Epigravettian, documented to correspond to a population bottleneck (Holt, Formicola 2008; Posth *et alii* 2023). At any rate, we can only agree with Graeber and Wengrow (2022) that the very selection of 'giants', 'dwarfs' and 'hunchbacks' for burial could hardly mirror a permanent elite. At the same time, in the absence of a relevant sample of the living population, their epithets are terribly misleading and unfair to the buried sample itself, which mostly includes persons with no obvious physical problems. For instance, the Gravettian population to which 'the Prince' belonged was generally tall, but not gigantesque (Holt, Formicola 2008). We may of course speculate on the tallness of the Grimaldi individuals as telling something about embodied wealth (*cf.* Moreau 2020), but even for this purpose a larger anthropological sample would be required.

[18] Ironically, low population density such as in newly colonized areas, together with resource-stress, are usually depicted as major factors for reinforcing… egalitarian behaviors (*e.g.*, Hayden 2001; Price, Feinman 2010b).

current inability to distinguish between assertive (individual) and emblematic (ethnic/group) portable visual displays. This opens the possibility that the spatial and chronological patterns noticed relate at least in part to past ethnic geography (*e.g.*, Vanhaeren, d'Errico 2006; Baker *et alii* 2024) and to the intensity/nature of inter-group interactions (Gamble 1999), and less to the individual status of their bearers. Interpreting certain pendants as prestige items accessible to elite only is consequently speculative, as archaeology cannot yet connect these artifacts to specific individuals. It is precisely the wide circulation of pendants and their similarities in shape/color (Stiner 2014) that makes a strong case for reciprocity relationships and wide social networks normally associated to a fluctuating resource-base and risk mitigation. In sum, despite its unquestionable elaborated cultural repertoire, even the pinnacle or UP adaptations, the Magdalenian, provide no undisputable proof for social stratification.

◈ 6. (It is) all about Sungir

UP technocomplexes like the Gravettian or Magdalenian still depict phenomena spanning millennia and are therefore of limited relevance for tracking shorter-lived paleo-social trends. Neatly defined, closed contexts, providing snapshots into past social worlds, such as burials, were often thought of as providing better proxies for social inequality. In fact, the strongest arguments for inferring social stratification during the European UP were connected to several exceptional graves. Among these rare funerary contexts, the Sungir burials (Russia) dated around 34 ka cal BP (Sikora *et alii* 2017) are by far the most famous.

The three individuals here (Sungir 1, 2 and 3) and their lavish burial inventories (mammoth ivory spears and carved objects, arm bands, hundreds of pierced fox canines, more than 13,000 ivory beads sewn onto their clothing etc.) attracted a well-deserved attention (*e.g.*, Trinkaus, Buzhilova 2010; Trinkaus *et alii* 2014; Sikora *et alii* 2017). Their significance for the debate on UP social stratification is even more obvious given that two of them (Sungir 2 and 3) belong to children buried with hunting weapons, in contrast to the adult male Sungir 1. Rich children's burials (or at least as rich as their adult counterparts) seem to be rather a rule than an exception in the UP sample. For some authors, this practice indicates that even at a very young age, children were important members of their community, at least in some cultural contexts (Einwögerer *et alii* 2008; Henry-Gambier 2009; Wilczyński *et alii* 2016). Alternative interpretations, connected to their premature death and 'incomplete' social status may also be held responsible for such rich inventories (Petru 2018). At any rate, none of the known Paleolithic burials of children approaches the Sungir 'opulence'. Moreover, the three rich burials at Sungir are associated with individuals who benefited from a less conspicuous funerary treatment (if at all – Trinkaus, Buzhilova 2010). One of them is the less often mentioned fourth individual, buried on top of Sungir 1-3, with an original, albeit less impressive inventory (Bosinski 2015). While in terms of general inventory, the Sungir burials do contain the same artifact categories as most Mid UP burials across Europe, their number clearly exceeds by far the average and contrast with the more modest (and younger) cases at Dolní Vestoniče Triple Burial, or even the Arene Candide 'Prince' (Pettitt 2010). So, do the three burials really support the hypothesis of an early presence of Paleolithic social stratification in the Russian steppe 34 ka ago? Despite the appealing possibility of mirroring a selected, elite group typical for 'complex' hunter-gatherers, contextual data at Sungir are far more ambiguous.

The archaeological context associated with these burials, although excavated on several thousand square meters, was dramatically affected by post-depositional changes (ice-wedges,

solifluction, etc.). Given the low resolution allowed by the 1 m thick palimpsest, invoking any economic affluence from the site's faunal remains and relatively mild climatic contexts or finding proofs of 'social storage' from the described 'ritual' pits (Bader, Bader 2004) is unwarranted. The burials themselves provide additional confusing data. Although likely contemporary, the buried individuals proved to have not been closely related (Sikora *et alii*, 2017); their degree of health varies, with at least one child suffering from repeated nutritional stress, while the other displayed a puzzling lack of tooth wear (Guatelli-Steinberg *et alii* 2011); both Sungir 1 and 2 show signs of peri-mortem injuries, particularly clear in the case of the adult Sungir 1, which met an accidental or intentional violent death (Trinkaus, Buzhilova 2010). High-mobility and high-activity levels were described for all individuals, irrespective of their age. Together with their various pathologies and signs of nutritional stress, this suggests they were not necessarily part of a privileged group. Moreover, what seems to be frequently downplayed (mostly because of the early misidentification of Sungir 2 as a girl) is the fact that interred individuals were all males. Although a comparative female sample is missing, taking at face value the Sungir graves may at best suggest a differential treatment of men as a *social category* – a common feature in egalitarian hunter-gatherer societies (Flanagan 1989; Kelly 2013). This slight preferential trend holds for the entire UP funerary sample (Arenas del Amo *et alii* 2024).

Most artifacts found in the Sungir burials, including the ivory beads (but notably not the ivory spears), were found in fragmented or scattered state in the domestic layers nearby (Iakovleva 2017). The small size and the limited wear of the pendants of the Sungir children, and the time-investment needed by their production (White 1993), point to their preparation in advance, indicating they either were part of a regular/ceremonial apparel, or that they were produced for the purpose of burial (Zhitenev 2017). This raises the possibility that the richly and, more importantly, *normatively* decorated equipment of the three individuals, as sets/assemblages, mirror at least in part the emblemic/ethnic style of the Sungir community (as suggested for other contemporary contexts – Zilhão 2014), possibly hyperbolized by the exceptional circumstances of the death/burial. There is little doubt that at least in terms of work the Sungir people interred an unusually great amount of 'wealth' with the three individuals and that such overwhelmingly rich inventories must have carried important symbolic connotations (Iakovleva 2017). It seems very likely, however, that this symbolism was at least in part related to the unusual circumstances of their death (for which we have some hints), and not to their alleged social class (for which we have none).

The last observations above hold true for virtually all UP graves. The exceptional burials are simply too… exceptional to support by themselves a model of formally ranked societies. They represent a small sample from the living population (Arenas del Amo *et alii* 2024), which for various reasons benefited from a different funerary treatment than the rest. While some burials indeed involve individuals with physical problems (Formicola 2007), or people experiencing accidental/violent deaths (Petru 2018), most other include individuals with no visible anomalies and unknown causes of death. Such exceptionality seems rather connected to the very individuals involved – children, teenagers, and adults alike – to the peculiar circumstances of their lives or deaths, and not necessarily to their belonging to a certain category or class of people. To equate burial elaboration and boastful inventories to social standing is clearly an over-simplification which downplays the disruptive effect death brings into the social matrix and minimizes the trivial fact that it was the living who buried the dead. Consequently, whatever followed the dead into the grave, much like the burial ceremony itself, carried multiple, symbolic, emotional, and social messages, and not simply

political statements. Unless we assume that burial grounds were a preferential field of manifestation for inequality displays, any circumvention of egalitarian rules should be also visible into the associated domestic contexts, which seems not to be the case. The obvious difficulty remains the scale-adjustment between the snapshot death/burial event(s) and the fragmented, time-averaged nature of the (geologically) contemporary contexts. In the absence of such solid contextualization, however, the interpretations will hang on our preference for one ethnographically inspired possibility or another.

◈ 7. A mirror of social tensions? UP art

As the outline above suggests, due to the low resolution of archaeological data available amplifying the burden of equifinality, even temperate readings of UP sociality (*i.e.*, which avoid strong words such as 'princiary', 'regalia' and 'monuments'), still rely on qualitative assessments such as 'abundance', 'feasting', 'storage', 'exotic', 'richness', 'specialization', 'marital child investment', 'normativism' etc. Many of these concepts reify observations made in considerably distant cultural contexts and transpose them into literally fossil UP societies. These notions come from (and may apply to) ethnography, art history or even Holocene archaeology, but meet serious difficulties in the face of the reluctant UP documentation, generated in natural and social worlds lacking any peer-to-peer analogy. Given the unique environments inhabited by Pleistocene societies, some societal forms might not even be anticipated from ethnographic evidence. If we are to move away from the ethnographic tyranny of Nambikwara, Inuit, Kwakiutl or horse-mounted hunters Sioux, a profitable way would be, in fact, to imagine some original societies, perhaps structured around metaphors inspired by their unique natural surroundings. With archaeology providing ambiguous arguments and ethnography feeding us with innumerable alternatives it might seem even riskier to search for inspiration into animal ethology to get a glimpse into UP social organization. However, there are some serious arguments for at least thinking about that.

The importance of animals and the imagined kinship relationship connecting them to humans is the very essence of all known hunter-gatherers' cosmologies and ontologies. Foragers' worlds are inhabited by non-human beings, animals, or spirits often connected through common paternity and/or universal brotherhood (Barnard 2007; Bird-David 2020). In the conceptual world of hunter-gatherers, the separation of human and animal individuals[19] is therefore fuzzy. This entails neither a perfect identity overlap, nor a sharp conceptual distinction, but more of a symbiotic relationship going beyond ecological sharing and blurring the boundaries between 'natural' and 'human/cultural' world. From this point of view, there is simply no a priori theoretical reason to consider the UP symbolic worlds as qualitatively different from the ontologies of ethnographically known foragers, quite to the contrary: Pleistocene landscape was literally dominated by wild animals, while human impact was certainly orders of magnitude lower than in the Holocene. The idea of a social life 'deeply

[19] Some authors suggest that even the distinction between human individuals is debatable in the case of hunter-gatherers. Consequently, they dismiss the very possibility of an egalitarianism connected to modern ideas such as regularity, uniformity, quantity, and numbers, as this presupposes the existence of distinct, commensurable individuals with equal access to resources (Bird-David 2020). Other ethnographic accounts suggest that at least some foragers are painfully aware of their status as individuals (Kaplan 2000). Furthermore, at least some of the New World egalitarian societies emphasize a strong preoccupation of individual autonomy (Graeber, Wengrow 2022).

enmeshed' in its ecological horizon and into animal agency networks is therefore perfectly rational (*e.g.*, Hussain 2019; Hussain *et alii* 2022; see also Barnard 2007; Pettitt 2020). Hunted or not, all animals were 'good to think' and we may even imagine them as providing 'a life-structuring principle' to Paleolithic hunter-gatherers (Pettitt 2020, p. 206). Paleolithic mobile and especially parietal art display a detailed and intimate knowledge of animal behavior pointing to much more than a Cartesian detachment. They show far more than passive inventories of animals, and likely carried diverse metaphors, with possibly social underpinnings. It is therefore reasonable to suppose that the animal-dominated UP art was actively involved in social negotiations promoting or challenging social order.

None of the major animal species UP art focused on (reindeer, horses, bison, aurochsen, red deer) were, of course, egalitarian. Their fluid social order is dominated by dominance relationships which maintain a (constantly, usually seasonally challenged) hierarchical order. The Paleolithic art's focus on confrontations, 'a major artistic concern' for Magdalenians (Pettitt 2020, p. 211), is perhaps telling. It seems to 'suggest that aggression and inequality are intrinsic to the creation of life and the perpetuation of the social world'; if the scenes in Lascaux are 'essentially a comment on social organization of prey animals' (Pettitt 2020, p. 213), no matter how ambiguous this comment will stay, they do speak about competition, aggression, and social tensions. Whether or not some of the (admittedly speculative) readings, such as the domination of a few (bulls) over the more numerous 'social anchors' females (horses), 'social synchronies', the figurative asymmetries as (social) opposition, the alliances suggested by super-impositions etc. (Pettitt 2020) are correct is of course hard to tell. At minimum, the art in Lascaux refers to a dynamic and tensed social environment, in which differences, competition and aggression, but also attempts to maintain social order, are recurrently emphasized. While this blurry mirror tells something about social differentiation and even about possible seasonal organizational shape-shifts of Magdalenian groups, it tells, however, nothing about vertical social stratification (Pettitt 2020, p. 217).

The idea that UP people could have oscillated between diverse formulas of social organization on a seasonal basis, as suggested by Graeber and Wengrow (2015; 2022), may find some support if we think that in many ways, human and animal lives were symbiotic and that often the former mirrored the second (in terms of seasonal aggregations/fissions). Seasonal aggregations connected to autumn hunting were likely common occurrences across the UP (Street *et alii* 2012; Oliva 2017). The richness and diversity of the inventories often associated to such sites (true hubs for exotic raw materials) are obvious. The ceremonial aspect of these gatherings, as abundantly documented ethnographically, is also a reasonable expectation. It is also likely that such aggregations raised peculiar organizational issues. We simply have no proof, however, that they entailed anything more than an up-scaling of existing social norms based on sharing, personal autonomy, and deference to a prestige-based individual status.

◈ 8. Concluding remarks

While many things can be said to have their dawn in the UP (extended social networks, effective social-leveling mechanisms, highly normative behaviors, symbolically rich funerary ceremonies, figurative art etc.), structured inequality was apparently not among them. One potential explanation for this absence may be the low resolution and the ambiguity of existing archaeological data. However, all properly documented archaeological contexts suggest that egalitarianism was the dominant social norm of UP societies, even in the most complex

cultural settings. This suggests that the UP egalitarian landscape we perceive today is not simply the outcome of preservation biases. The demographic scale of UP societies and the challenges of their lives, including the high mobility demands that effectively limited material possessions, eliminated both the incentive and the possibilities for the emergence of an inherited social preeminence. Pooling and sharing information and resources proved the only system resilient enough to survive the Upper Pleistocene ecological challenges. While transient individual authority, prestige hierarchies and structured gender inequality were likely present, as expected on ethnographical grounds and hinted by archaeological data, there are simply no proofs for anything resembling social stratification even on a temporary/seasonal basis. The apparent lack of directionality of UP social evolution, as rightly reported by Wengrow and Graeber and many other authors, is the outcome of the dramatic ecological and demographic circumstances that also made egalitarian arrangements prevail on the long run.

This does not presuppose an incapacity for political maneuvering on behalf of UP people, or the absence of inter-group tensions, aggrandizers, gifted and revered persons etc. Maintaining egalitarianism is in fact politically challenging, as it involves a constant monitoring of others, fluid alliances and punishing mechanism for free-riders. This is why, far from representing a 'natural' (*i.e.*, pristine or unproblematic) stage in human social evolution, formal egalitarianism of the kind documented ethnographically[20] was probably a late, likely Upper Pleistocene accomplishment (Anghelinu 2013). If something new dawned in the social worlds of Paleolithic hunter-gatherers, it was precisely this 'unnatural' configuration in which sharing of food and knowledge and risk pooling limited social preeminence to individual merits.

Returning to the ethical issues[21] bothering the authors that inspired this paper, they were clearly right in avoiding the conventional Hobbes *vs.* Rousseau answers (*cf.* Lenski 2002), claiming either that people are naturally 'bad' (and social institutions 'good' in managing their innate selfishness), or that they are innately 'good' (but then lost control over their institutions, which subsequently became 'bad' and oppressive).

They were, however, wrong in suggesting that 'the wisest of apes', fully aware of the long-term consequences of their choices, really had a clear path ahead and simply made the wrong turn. The rhetorical use of singular is obviously misleading in this context, as any development towards stratification takes place in complex social and ecological contexts[22].

[20] Rigorous, systematically enforced egalitarianism is generally connected with modern cognitive capacities (Dubreuil 2010). As the boundary of cognitive modernity remains fuzzy, however, the possibility of tracing this basic strategy of sharing food and knowledge to earlier intervals, including pre-AMH hominins cannot be excluded. It is also possible that the UP, with its abundant record of personal decorations, only enhanced and gave material substance to this older trend (*cf.* Ames 2010).

[21] 'If there is a riddle here it is why, after millennia of constructing and disassembling forms of hierarchy, Homo sapiens – supposedly the wisest of apes – allowed permanent and intractable systems of inequality to first take root' (Wengrow, Graeber 2015, p. 613).

[22] We should perhaps add a grain of salt to the self-congratulatory descriptions of their own societies provided by various indigenous informers/wisemen quoted by Graeber and Wengrow (2022), allegedly less ethnocentric than their European counterparts. Their keen awareness on the (real) threats involved for their communities by the European hierarchical social model cannot be separated from the colonial/contact contexts that spurred their reflections. I doubt that such awareness was truly within reach for our Paleolithic ancestors, living in a world of hunter-gatherers, with limited social alternatives to people their imagination.

Albeit allowing too few epithets for a bestseller, macro-evolutionary thinking (cf. Prentiss *et alii* 2009) still provides a better explanation for such developments. From an evolutionary point of view, humans act like optimizers in both biological and cultural realms – although the harmony between the two strands should not be taken for granted, as biological and cultural priorities may conflict (Boyd, Richerson 2005). At every point in history, egalitarian or non-egalitarian arrangements can be viewed as serving the best interest of individuals *as they perceived it* (*i.e.*, in symbolically framed perspectives)[23]. To put it simply, in the beginning, tolerating various forms of inequality may have seemed a good, perfectly rational idea – and probably worked well for most people involved. UP egalitarian arrangements allowing fluid ranking may be therefore seen as an evolutionary stable strategy, which made perfect sense in both rational and evolutionary sense (*cf.* Ames 2010; Layton 2020). Much like egalitarianism, structured inequality is an emergent feature of smaller scale choices that subsequently became institutionalized through social practice, gradual changes of the enculturation norms and stochastic effects, and not a Monday morning decision made by a (not too) thoughtful individual. If we are indeed to react successfully against today's outrageous forms of inequality, we probably should act along the same lines. At the same time, we should also take seriously the huge socio-cultural distance separating the (post)industrial present from the Pleistocene hunter-gatherers' world and stop looking for Paleolithic arguments when criticizing the many injustices in the contemporary world.

◈ Acknowledgements

I am grateful to Marc Händel for his thoughtful comments on an earlier version of the manuscript. All remaining omissions or mistakes are of course my own. This work was supported by the Romanian Ministry of Education and Research, CNCS – UEFISCDI, project number PN-III-P4-ID-PCE-2020-0653.

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[23] 'Even the most extreme positivists acknowledge that an understanding of the world is mediated by the categories and associated meanings that individual learn as members of societies and that, human behavior therefore represents and adaptation not to the world as it really is but to the world as individuals imagine it to be' (Trigger 2003, p. 653).

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