Julien Kloeg, Hub Zwart (eds.)

Neanderthals and us: connecting human evolution and philosophical anthropology

INTERNATIONALES JAHRBUCH FÜR PHILOSOPHISCHE ANTHROPOLOGIE

INTERNATIONAL YEARBOOK FOR PHILOSOPHICAL ANTHROPOLOGY

Herausgegeben von/edited by
Bruno Accarino, Jos de Mul, Hans-Peter Krüger

Band 12, 2022

Neanderthals and us: connecting human evolution and philosophical anthropology

Edited by
Julien Kloeg and Hub Zwart

DE GRUYTER

With thanks to the Rotterdam Arts and Sciences Lab for its generous support in making this yearbook volume possible.

ISSN 2192-4279
eISSN 2192-4287

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.dnb.de.

Printing and binding: CPI books GmbH, Leck

www.degruyter.com

Contents

Book Reviews / Buchrezensionen

Editorial

Since the discovery of the first Neanderthal remains in 1856, Neanderthals, our most proximate "other", have added a comparative dimension to the question who we are as human beings. Neanderthal research forces us to ask why, until recently at least, only Homo sapiens is seen as truly embodying the idea of humanity. Neanderthals are more like us than other early humans, but the guiding conviction was that they were different. Precisely this (genetic, behavioural, and cultural) difference allegedly confirmed our own exceptionality. The overall trend has been to frame Homo sapiens as favoured evolutionary "winners", whose alleged "superiority" led to the demise of Neanderthals. Research is rapidly questioning this. Meanwhile, in the face of the current global environmental crisis, the narrative of humanity as an evolutionary success story (outcompeting rivals) is challenged and problematised from various perspectives. Neanderthal research challenges us to rethink our "place in the cosmos" (Scheler) or at least in nature in such a way that our self-image is no longer grounded in a logic of dichotomies and binary oppositions, but rather in a logic of connectedness and inclusion.

Philosophical anthropology has always been informed by empirical research (e.g., archaeology and paleo-archaeology, primatology, ethology, ethnography, etc.) emphasising the role of language, technology, art and symbolism in anthropogenesis, the process of becoming human. Evidence indicates that dental hygiene, cooperative hunting, complex stone tools, language, planning, care for the ill, and burials were practiced by Neanderthals as well. This questions the validity of strategies of "othering" them. Neanderthals are basically human, and the quest for a minimal yet decisive difference between "them" and "us" becomes increasingly unconvincing. Now that allegedly unique markers are no longer unique for Homo sapiens, Neanderthals are becoming part of the "in group", are considered more or less "fully human", but perhaps we should acknowledge that the philosophical anthropological impact of Neanderthal research is more challenging than that. Human self-understanding becomes contested precisely because our self-understanding was based on exceptionalism (i.e., "us" being better, superior, more rational, vocal, innovative, adaptive, successful, etc., than "them"). It is precisely this self-definition of humans as "favoured" species, laying claim to evolutionary competitive "success" at the expense of others that becomes contested. How to develop a more inclusive framework that no longer relies on the logic of dualist thinking? This volume not only envisions a reflection on Neanderthal research from a philosophical anthropological perspective but aims to stage a mutual learning dialogue between representatives of both fields.

In the first contribution to this Yearbook volume, **Hub Zwart** and **Marie Soressi** develop a perspective on the necessity of a dialogue between paleo-archaeology and philosophical ways of thinking about the 'deep history' of humanity. By invoking perspectives from Hegel, Bachelard, Teilhard de Chardin and Sloterdijk, a rich history of

https://doi.org/10.1515/jbpa-2022-001

such dialogue is disclosed. This is further developed by exploring the implications of paleo-archaeological Neanderthal research for human existence today, which once more underscores the importance of interdisciplinary work – of which the contribution is itself an expression – in considering these implications. as well as the importance of interdisciplinary dialogue to think these implications through.

Corijn van Mazijk takes up this call with a view to providing a basic framework for thinking about the evolution of material culture beyond current shortcomings of defining 'modern symbolism'. The contribution develops a concept of culture based on so-called shared intentionality, which allows humans to cooperate and transmit culture across generations, through what I call generative pathways. Van Mazijk then outlines a theory of cultural evolution in accordance with principles of niche-relative selection. This suggests a stage-based approach to the evolution of material culture, as a more gradualist alternatives to the dichotomous modern/pre-modern thinking which dominates in current debates.

Shumon Hussain provides a perspective on the dichotomous framing of Neanderthals as the ultimate others. Through this framing they have emerged as a key locus of recent negotiations of what it means to be human. Hussain argues that they Neanderthals have so claimed a prominent place in our self-devising projects as 'interpretive animals'. Yet this place is not given or fixed, and greatly depends on how we interrogate and engage with them as fossil interlocutors capable to recalibrate the Anthropos. Drawing attention to the resistant potential of Neanderthal archaeology, Hussain argues that the Anthropocene opens up new historical horizons to query Neanderthals and to overcome the current preoccupation with questions of their extinction and our survival in favour of a new dialog with the diversity of Neanderthal life, allowing us to productively re-imagine ourselves in a time where human self-assertion and hybris continue to threaten all of planetary life.

In his contribution, **Pouwel Slurink** considers different theoretical explanations of how Homo sapiens came to distinguish itself from its evolutionary relatives: centrally, a divergent evolutionary trajectory, the intergroup competition hypothesis, and the self-domestication hypothesis. Slurink considers ecological and climatic perspectives as well and indicates the possibility of conceptualizing Neanderthals (and possibly other *Homo* species) as intelligent specialists coexisting with their ecosystems in stability, in contrast to the generalist *Homo sapiens* who turned ecological flexibility into ecological dominance. The resulting 'success of our species' is not cause for self-congratulation but should inspire caution when considering the plight of future generations, also in light of our evolutionary past.

In their joint contribution, **Karel Kuipers**, **Julien Kloeg** and **Marie Soressi** explore three different conceptualisations of the 'human' in human evolution research. These are based respectively on anatomical, behavioural, and genetic data from different sub-disciplines within the field of human evolution. With Plessner's anti-essentialist and 'sceptical' philosophical anthropology in mind, Kuipers, Kloeg, and Soressi use these conceptualisations in connection with philosophical anthropology, bringing out the importance of collaboration between human evolution research and philosophical

anthropology so as to better understand what it means to study human evolutions as humans.

Etienne Bimbenet begins from the observation that various archeological records of symbolically mediated culture place the appearance of behavioral modernity in Africa at a time much earlier than previously accepted. Moreover, these findings tend to show that this first behavioral modernity may have concerned more people than the only anatomically modern human (H. sapiens): Neandertals, and why not other premodern humans like Denisovans, may have been part of it. Beyond these archaeological and paleoanthropological implications, we focus on a third involvement, of an anthropological type. How shall we understand the word 'symbolic', in expressions such as 'symbolic material culture', 'symbolic behavior' or 'symbolic thought'? Between a language that would have emerged fully armed from a happy neuro-cognitive mutation and a bare sharing of attention, between a Chomskyan linguistics and a psychology of collective intentionality, Bimbenet makes the case for a medium term: a collective intentionality that would be symbolically scaffolded; or conversely a language defined by its symbolic sharing of attention, rather than by its syntactic articulation. Symbolic material culture in Middle Stone Age Africa would presuppose a "conventional intentionality", which could have been an essential element in the construction of our early humanity.

Davide Vecchi critically analyses the hypothesis that human nature phenotypes are adaptations with a developmentally significant genetic basis. In order to scrutinise this adaptationist hypothesis, the backdrop provided by current evolutionary knowledge, particularly concerning the history of our lineage, is essential. While we remain ignorant about many significant details of our history, molecular studies have contributed to fill these gaps. I shall illustrate a variety of empirical and theoretical developments stemming from molecular studies that question the adaptationist narrative. Vecchi explores what molecular studies may contribute to make sense of human exceptionalism.

Susan Peeters, **Hub Zwart**, **Stine Jensen** and **Marie Soressi** consider the presence of Neanderthals in an artistic context. Whereas archaeological findings often raise more questions than they answer, novels can be considered as laboratories of the imagination, allowing authors to explore possible scenarios. They can function as spotlights, conveying and amplifying stereotypes and ideologies which are also at work in scholarly discourse more explicitly. With scientific Neanderthal discourse as a backdrop and frame of reference, we will focus on novels that deal with Neanderthal – Homo sapiens encounters. Such novels try to understand Neanderthals in terms of their humanity, but also establish our own identity by emphasising the difference between us and them. How do novelists in comparison with scientists deal with the ambiguity of Neanderthals, being strange and familiar at the same time, human, but not-us?

In their joint contribution, **Anna Riethus**, **Dustin Welper**, and **Melanie Wunsch** introduce the Stiftung Neanderthal Museum and its approaches to conveying Neanderthal research to a broad European audience. The museum, which opened in 1996 in

Mettmann (near Düsseldorf), Germany, implements various strategic initiatives to promote public interest and education on Archaeology, human evolution, the Stone Age, and Neanderthals. This contribution elaborates on two ongoing projects of the museum: the NWO-funded project "Neanderthals & Us" which includes the "Paleo Experts" initiative (a citizen panel), and the exhibition project "Neanderthalerin". The Citizen Panel "Paleo Experts" is introduced with its goals, the conducted outreach work, and the chosen strategic communication channels. For the exhibition project "Neanderthalerin", the project's focus is on marginalized groups and combines multimedia and narrative elements with a multilingual approach, as will be explained. The Neanderthal Museum commitment to fostering a lively exchange on Neanderthals and archaeology is illustrated via these two specific projects, and we close with an outlook on future undertakings.

Filip Jaroš considers the phenomenon of so-called animal cultures, which are proving to be a critically sensitive point in the problem of the relationship of nature and culture. The discovery of cultural diversification in the behavioral manifestations of apes and other higher animals is considered by evolutionary biologists as a triumph of naturalism: biological science has shown that humans and their culture do not represent an anomaly, as tradition, in the form of handing down skills and customs, also exists among non-human creatures. At the same time, however, doubts of a theoretical and philosophical nature arise, exposing the pitfalls of naturalism. In his contribution, Jaroš assembles arguments to show that animal behavior cannot accurately be described by the means of a physicalistic biology. First, by calling attention to the indeterminism of individual behavior, which in modern theoretical biology is usually included under the more general concept of agency. Jaroš then observes that the behavior of many so-called higher animals includes a social component that reflects both the variability of behavioral manifestations among different groups of the same species and their uneven distribution within a given community.

Wiktor Stoczkowski and **Anne Collinot** inquire into the link between Neanderthals and economic sustainability. The fashionable notion of a sustainable economy refers to an economy that accepts some limits to run for a long time without compromising the ability of future generations to survive and thrive. When it comes to economic sustainability, Neanderthals set a record (at least 300,000 years) that Modern Humans have yet to match, while alarmist forecasts are already predicting an impending ecological apocalypse. What was the secret of the longevity of the Neanderthal world? This contribution is based on an earlier French-language publication and has been translated into English and reworked for the purpose of this Yearbook volume.

Human exceptionalism, the idea that humans have a higher moral status compared to other animals, is often represented as a pre-Darwinian idea, debunked by evolutionary theory. This raises the question: how exactly are scientific observations and hypotheses used to support an ethical view? In his contribution, **Hugh Desmond** targets the "egalitarian narrative" which represents human evolutionary origins such that human exceptionalism seems implausible. Desmond argues that this narrative backgrounds differences in ecological dominance, and in particular represents human eco-

logical dominance as an avoidable moral evil. I argue that this fails to acknowledge the ways which human dominance is intertwined with the agency of humans, which is (on the whole) greater than the agency of non-humans. Dominance is not so easily avoidable for humans, and moreover, it is not an unequivocal evil since it is intertwined with basic human rights and with the possibility for moral behavior towards other species. The upshot is that the old equivocal adage appears to be in fact the more balanced proposition: neither beasts nor gods, humans are both part of and separate from the animal kingdom.

The aim of **Joachim Fischer**'s contribution is to present philosophical anthropology as a specific theoretical technique to achieve an adequate concept of man, namely a theoretical strategy in the face of Cartesian dualism – that is, the dualism between naturalism and culturalism. The thesis is that modern philosophical anthropology is a specific (and presumably important) theory because it steers a skilful course between naturalism and culturalism, or in other words, between Darwinism and Foucaultism. Helmuth Plessner would have said: between Darwin and Dilthey, but today philosophical anthropology appears as a paradigm that operates between the theories of Darwin and Foucault. This paradigm builds a bridge between biology on the one hand and the social and cultural sciences on the other, a bridge that cannot be constructed by Darwin (and his successors) or by Foucault (and his successors). This bridge allows us to accept these two paradigms of naturalism and culturalism as approaches to thinking, while at the same time limiting their validity claims as partial truths. This contribution is based on an earlier English-language publication and has been translated into German and reworked for the purpose of this Yearbook volume.

The review section is composed of three contributions. **Andreas Höntsch** discusses *Tertiarität. Studien zur Sozialontologie* by Joachim Fischer. **Frank W. Stahnisch** discusses *Die Stufen des Organischen und der Aufbau des Organismus. Eine überfällige Gegenüberstellung der philosophischen Anthropologie Helmuth Plessners und der philosophischen Biologie Kurt Goldsteins* by Hermann Ackermann. **Hans-Peter Krüger** discusses *The Human Image in Helmuth Plessner, Pierre Bourdieu, and Psychocentric Culture* by Isaac E. Catt.

Julien Kloeg and Hub Zwart, editors

Hub Zwart, Marie Soressi

Neanderthals and us: Towards a philosophy of deep history

Paleo-archaeology[1] and philosophical anthropology

How did Neanderthals experience their world, compared to their Sapiens contemporaries, who entered what is now Europe more than 40,000 years ago? Was their way of thinking, their "manner of being in the world", as archaeologist Ludovic Slimak (2023) phrases it, comparable, or significantly different? And *why* would we want to reconstruct how Neanderthals experienced the world in the deep past? Is it to compare "us" with "them", or is it to better understand our complex deep history? Is it to draw comparisons and contemplate on what sets "us" apart, adopting an essentialist approach? Or is it rather to document and enhance our understanding of the intricate narrative of our ancient origins, without the necessity of measuring ourselves against our forebears? Such questions seem difficult to answer, but against the backdrop of three decades of highly productive Neanderthal research they do emerge, both among philosophers and among paleo-archaeologists. One of our arguments will be that these questions can best be addressed in dialogue, so that paleo-archaeologists and philosophers join forces and work together. In this contribution we will outline some ideas which philosophy has to offer to the debate, while drawing attention to current paleo-archaeological discussions and the type of data archaeologists may provide. Finally, we will elaborate on the strengths and benefits of a philosophy paleo-archaeology dialogue.

Outlines of a philosophy of deep history

Philosophy has been defined, by Hegel and others, as the study of *thinking as such*, – either systematically (e. g., logic) or historically, tracing the journey of consciousness through various configurations of knowledge: philosophy as a historical *phenomenolo-*

This publication is part of the project entitled *Neanderthals and "us": how the golden age of Neanderthal research challenges human self-understanding* with file number 406.21.FHR.011 which is financed by the Dutch Research Council (NWO).

1 We employ the term paleo-archaeology with the understanding that it encompass all aspects of human evolution research based on the archaeological record, including studies on the biology and skeletal remains of fossil hominins.

Hub Zwart, Erasmus University Rotterdam; **Marie Soressi**, Leiden University

 https://doi.org/10.1515/jbpa-2022-002

gy of the spirit (Hegel 1807/1986). For philosophers like Hegel, however, human history (the journey of human consciousness) commenced some twenty-five centuries ago – 500 years before common era –, during the so-called *Achsenzeit* – the axial period, as Karl Jaspers (1949) once phrased it, when the first philosophical ideas still known to us were conceived at various locations around the globe, by thinkers such as Laozi, Confucius, Buddha, Parmenides and Heraclitus, – an intellectual daybreak, when the human world suddenly began to think (Zwart 2020a).

From a contemporary perspective, however, such a timeframe is far too limited. The journey of human thinking must have commenced millennia ago, somewhere in the deep past, and traces of early human reflection (as the outcomes of *cognitive evolution*) are being excavated and assessed by paleo-archaeology as a thriving research field. Thus, philosophers are faced with the challenge to drastically widen their perspective. Human beings have been thinking for thousands of years, and paleo-archaeology may provide some access into past worlds of experience and thought, as part of a pre-history, or rather of *deep history*, of human action and reflection, – although the precise manner and nature of human *thinking* will have evolved as well.

Corijn van Mazijk (2023) recently emphasised the need for a *philosophy of prehistory*. "Time is ripe," he argues, "for a completely new discipline, which should have already existed." Although we sympathise with his plea, there are also some critical comments to be made. First of all, the prefix "pre" still seems to suggest that history is what really counts. It is an odd word, disparaging even, given the immense duration and crucial importance of the "prehistoric" period. A *philosophy of deep history*[2] or *of the Pleistocene* captures the need for broadening philosophy's temporary horizon more convincingly. Moreover, we agree with Raymond Corbey's comment (Corbey 2023) who argued that a philosophy of prehistory (of deep history and the Pleistocene) already exists. Noticing the results and insights that have been gained by paleo-archaeological research during recent decades, some attention has already been given to considering their philosophical implications, e.g., the impact of paleo-archaeological findings on how we think about ourselves as humans. As argued, such reflections should neither be a purely philosophical, nor a purely archaeological affair. Rather, experts from the two disciplines must join forces to help refine the goals and means of on-going research in paleo-archaeology and philosophical anthropology. What we propose in this paper is a reflective mutual learning dialogue between paleo-archaeology and philosophy concerning the process of anthropogenesis: the coming into being of humans.

Such an endeavour faces numerous challenges and ambiguities, however. One of them is the question whether the nature of human thinking as such evolves over time. Should we opt for *continuity* – arguing that human consciousness is essentially the same today as always, as Edmund Husserl for instance did (van Mazijk 2023)? Or should we rather study how human consciousness evolves and unfolds historically in multiple changing contexts? Many archaeologists, including Ludovic Slimak for in-

2 See also the concept of Paleohistoire developped by B. Valentin (2008).

stance, seem to opt for continuity, arguing that the first modern humans who entered Europe basically "thought like us" and already "understood the world like we do" (Slimak 2023, p. 18). In their flint technologies, Slimak argues, we already recognise "our logic", "our way of being in the world" (p. 25). This view implies that human cognition (the human way of thinking) entered Europe no later than 40,000 years ago with the arrival of Homo sapiens (Cro Magnon humans), separating us (modern humans) from other early humans, including Neanderthals.

Precisely here, recent paleo-archaeological research has a lot to offer, in the sense that archaeologists engage in similar discussions, triggered by archaeological findings. Our understanding of cognitive evolution has gained from palea-archaeological excavations and interpretations. The size and shape of Homo sapiens brain became like ours at least 35,000 years ago, but maybe even as early as 100,000 years ago (Neubauer et al 2018). In palaeo-archeology, it is generally accepted that all the major behavioural and biological traits characterising anatomically modern humans emerged, consolidated and spread sometime between 100,000 and 35,000 years ago (Neubauer et al 2018; Scerri and Will, 2023). Some archaeologists still argue that Neanderthals were not included in this, that their way of thinking and their manner of experiencing the world was allegedly very different from ours, and that they did not yet develop the "package" of modern human cultural and behavioural traits that are found in Homo sapiens. Precisely this conviction, however, has come increasingly under siege, both for philosophical and for archaeological reasons. In the past, the archaeological understanding of "modern behaviour" in the deep historical sense was confined to a binary framework, characterized by the presence or absence of certain traits (Scerri and Will, 2023, p. 2) and this binary logic has historically dominated discussions on the evolution of human behaviour.

The shift from binary thinking towards a more dynamical and inclusive view was documented quite extensively by Eleanor Scerri and Manuel Will (2023). Until recently, they argue, the concept of "modern behaviour" in the archaeological (i. e., deep historical) sense was viewed within "a binary framework of presence and absence" (p. 2). This binary logic has long dominated discussions on human behavioral evolution. Modern humans were distinguished from Neanderthals by a trait list based on a range of (primarily European) archaeological materials. In their paper, Eleanor Scerri and Manuel Will listed this "package of traits" that are considered to reflect the spectrum of modern behaviour in Africa (see Tab. 1).

Table 1. List of traits thought to reflect the spectrum of 'modern behavior' in Africa (Scerri and Will, 2023).

Trait	Inference	Bridging theories
Long-distance transport, e. g., of raw material, shells, etc.	Social networks, exchange	Social groups pooling risk in situations of demographic stress
Standardization of regionally distinctive artifacts and tool	Social networks, signaling of emblematic style	Representation of group identity, shared concepts and signaling po-

Table 1. List of traits thought to reflect the spectrum of 'modern behavior' in Africa (Scerri and Will, 2023). *(Continued)*

Trait	Inference	Bridging theories
forms (e.g., point forms, backed pieces)		tentially linked to risk-pooling groups
Notching, incision, patterns, art	Intentional designs, abstract thinking, intragroup codification, and symbols with language?	Representation of identity (personal or group), the intersection of habitual disposition and concrete social conditions that create meaningful visual codes
Collections of shells, some intentionally perforated	Personal ornamentation, esthetics, symbolism? collections of sets	Personal ornamentation points to sense of identity of self vs. others, collections indicate concepts of esthetics and value
Intentional burial	Coping mechanisms for grief, shared values, belief systems	Mortuary treatment relates to bonds of affection and group identity. Burial ethnographically also relates to systems of shared belief
Artifact diversity in form, material and method; hafting and composite tools; pigment use	Task specialization, innovation, teaching, planning depth, memory, abstract thought?	Task specialization drives social cohesion, and may also require language. Diversity in use of forms, materials and methods including composite products implies advanced cognitive processes, increased creativity and problem-solution distances, and expanded subsistence and lifeways
Structured living spaces	Group cohesion, planning depth, social order	Denotes an understanding of the optimal organization of space relative to lifeways and subsistence
Diet breadth	Adaptability, flexibility, and plasticity of behavior	Humans are 'generalist specialists' whose specialty is to rapidly adapt to new environments and foods
Expanded ecological niche	Innovation, planning, experimentation, flexibility, and plasticity of behavior	Ability to test and learn new adaptive strategies and pass these horizontally and vertically within group
Diverse use and control of fire	Cooking, heating including heat treatment of raw materials, control of plant life and ecosystems.	Using fire to control landscapes, food, and raw material demonstrates unprecedented control of the natural environment
Seasonal habitation or resource exploitation	Planning depth, understanding of cyclicity and periodicity	Ability to project and plan into the future based on modeling of the past

This modern package, Scerri and Will argue, was often presented as emerging at a specific point in time and envisioned as a big leap or 'revolution' in human evolution: a sudden origin of behavioural modernity *as a package* around ~50 – 40 thousand years ago. This view on 'cultural modernity', however, has increasingly been criticized, based on theoretical, methodical, and empirical grounds. Scerri and Will's review show that multiple non-linear trajectories can be observed in Africa through space and time, especially for the 300 – 30,000 years time period. In Europe, many traits associated with this package are now also identified in Neanderthals (Roebroeks and Soressi, 2016). This implies that the Neanderthal way of experiencing the world will probably have been different compared to contemporary experience, but not in the sense that their way of thinking was *not yet human.* Some archaeologists have even gone further, suggesting that interactions between Neanderthals and Homo sapiens may have played a role in driving innovations in Homo sapiens (Greenbaum et al 2019).

An important implication of this more inclusive approach is that, while the ways in which humans experience, investigate and interact with reality may have changed dramatically in the course of time, starting from the Pleistocene, there is no rigid dividing line between *human* and *not yet human* that would separate Homo sapiens from Neanderthals. As indicated, while it is evident that cultures and epochs emerge, evolve and decline, the philosophical question is whether such changes affect our basic way of *being in* and *experiencing* the world. Or should we see these various forms of being human as varieties of a basic, continuous structure? Are there multiple (fundamentally different) ways of being human (including the Neanderthal way of being in the world)? Or should we rather posit that the modern way of thinking emerged for the first time in Homo sapiens? Such questions already arose when scholars began to study ancient and indigenous cultures, but discontinuity may deepen as we dive deeper into the past. How to answer such questions for the Pleistocene era? Can we imagine how Neanderthal or Cro Magnon artisans experienced their existence? How to enter those lost worlds of self-consciousness and interaction? Such questions are difficult to address, yet important to open up when it comes to broadening our temporal scope.

The focus of this thematic volume of philosophical anthropology is on the relationship between modern humans and Neanderthals. Neanderthals seem more like us than other early humans, but until recently the guiding conviction was that they were markedly different, so that research tended to highlight genetic or behavioural *differences* between them and us. Recent findings challenge this conviction, as we have seen, and the distance between Neanderthals and modern humans seems rapidly decreasing. One possible response could be to argue that Neanderthals were already fully human as well, – although archaeologists such as Slimak still emphasise significant differences in the technologies and traditions of Neanderthals versus modern humans, so that different artisanal "manners" suggest "different manners of being in the world" (p. 25). Yet, these views, presented in a book directed at a broad audience rather than in research papers, became questionable in the light of recent findings. As indi-

cated, we will argue in favour of a shift from binary thinking (*them* versus *us*) towards a more dynamical view on deep human history.

For us, the implications of Neanderthal research may go much further than the question whether Neanderthals were 'fully human' or not, moreover. We should reconsider our understanding of humanity as such, opting for a more fluid and dynamic view that no longer relies on the logic of dualist thinking that rigorously distinguishes human from *not yet fully* human. Rather than adopting one particular form (e. g., modern human subjectivity, often seen from a Western viewpoint) as our norm, we might study how multiple ways of being human have emerged in the course of (deep) history. Thus, coming to terms with the "human phenomenon", as Pierre Teilhard de Chardin once phrased it, requires an imaginative journey into the past, guided by paleo-archaeological research, taking us back to the world of human experiences as it unfolded fifty thousand or even hundred thousand years ago, emphasizing the need to avoid hierarchical comparisons between ancient humans, studying them in their own context instead. Such a view on deep human history implies that Neanderthals and Homo sapiens are no longer compared and hierarchised but explored and understood in their own context and trajectory.

Our contribution to this volume offers a brief overview of previous contributions to a "philosophy of deep history", from G.W.F. Hegel up to Peter Sloterdijk, while connecting their ideas with developments in paleo-archaeology. We discuss a number of philosophers who developed a dialectical perspective on what archaeology teaches us concerning the deep history of human thinking. While early humans were still embedded in nature, at a certain point they distanced themselves from their natural habitat, and in philosophical anthropology, this *separation* from nature is thematised as negativity, as a *deficit* (e. g., human beings as 'Mängelwesen'). This inevitably calls for a "negation of the negation", e. g. the emergence of culture and technology as instances of *compensation*, allowing humans to establish self-made dwellings, starting with the cave and what it contained: the beginnings of language, tool use, pyrotechnics, symbolism, music, and art. We start our rereading with Hegel who saw history as the "skull site" of the journey of human consciousness: a journey studied in archaeology by excavating the debris, the petrified remains, the traces that were left behind, as evidence of previous manners of human existence. Gaston Bachelard builds on this, arguing that the cave (as the primal human dwelling) itself is shaped like a skull, suggesting a connection between caves, caverns and craniums. Jacques Lacan raises the question whether Neanderthals were already part of the 'symbolic order', while Pierre Teilhard de Chardin, a practicing archaeologist himself, sees Neandertals as a chapter in the emergence of the 'noosphere' (the network of thinking). And Sloterdijk focusses on the cave as a 'clearing' where language and thinking once emerged. For Sloterdijk, by developing technologies, humans not only reshape their environment, but also themselves: their anatomy (e. g., the evolution of the human hand), but also their manner of being in the world. Finally, we assess the implications of paleo-archaeological Neanderthal research for human existence today as well as the importance of interdisciplinary dialogue to think these implications through.

Hegel on skull research

G.W.F. Hegel died in 1831, decades before the fossil remains nowadays known as "Neanderthal 1" were found in the Neander valley near Düsseldorf (in 1856), named after Joachim Neumann, a composer of Christian hymns ("neander" being the Greek version of his German surname, so that, coincidentally, the name *Neanderthals* is literally linked with the epithet "new man" (Bichakjian 1997). Neanderthal remains had been found earlier, but the *Neanderthal 1* finds for the first time suggested that these fossils, including the upper part of a Neanderthal cranium, belonged to a species of human beings anatomically different from Homo sapiens. Although Hegel obviously never refers to Neanderthal paleo-archaeology, nor to human evolution more in general, his *Phänomenologie des Geistes* does contain an interesting reflection on skull research ("phrenology"), which may serve as a first point of departure.

In *The Phenomenology of the Spirit*, Hegel argues that human skulls attract our attention because they once contained a human mind, thereby indicating the "presence of self-awareness" (Hegel 1807/1986, p. 247). Therefore, already in the time of Hegel, researchers argued that human skulls might inform us about the nature of human thinking, as the cranium is both determined by and determining the size and shape of the brain. A research field known as phrenology had emerged in those days, based on the conviction that the inner shape of the skull contains important information about the consciousness that once inhabited it.

Hegel's comment on this argument contains an important caveat. Although a skull is evidently an intriguing object, he contends, the human mind cannot be reduced to cranial bones. Human thinking is contextualised, as we would nowadays phrase it. Although there is doubtlessly a connection between the brain, the cranium and self-awareness, human beings dwell in a *world*, a symbolic environment if you like, so that the information provided by the shape and size of cranial bones is limited at best. To phrase it in paleo-archaeological terms, Hegel argues that, if we are interested in the history of human consciousness, we should not only study skullcaps, but also explore phenomena such as tool use, crafts, and parietal art at the same time. Research should consider the *connection*, the *interaction* between skull shape and other archaeological items (often) found in caves. This is far from obvious, especially in times of specialisation, where researchers focus on specific questions or items, running the risk of losing sight of the global picture, indicating how partial objects may form a meaningful ensemble. Hegel's comments are important because they already envision human thinking as the outcome of a dialectical process: an interaction (*Wechselwirkung*) between the shape (the evolution) of the brain and other factors, such as tool use and language.

On the final page of *The Phenomenology of the* Spirit, Hegel returns to the skull once more, precisely where he famously argues that "absolute knowledge" is the end for which the spirit in the course of history strives. For Hegel, philosophy is a phenomenology of the spirit, as we have seen, tracing its long and winding progression through

various stages, as revealed and preserved in various *externalisations*, whose remnants constitute the *Schädelstätte* (the skull site) of consciousness (Hegel 1807/1986, p. 591). Thus, according to Hegel, not only paleo-archaeology is devoted to studying skulls. Rather, all material traces and remnants of thinking are like skulls, serving as a point of departure for studying the vicissitudes of the spirit on its way to self-understanding and comprehensive knowledge. For Hegel, the phenomenology of the spirit equals philosophical archaeology.

Friedrich Engels (1925/1962), a dialectical thinker inspired by Hegel, likewise argued that human evolution is a process of interaction between brains, hands, and tools. By developing and using their hands to employ and manufacture tools, human beings also shaped themselves, Engels argued, emphasising the decisive role of *labour* in human evolution. Besides skulls, other parts of human anatomy are equally important, notably our hands, in combination with the products and waste products of human activity. As indicated, dialectics urges us to focus on the *Wechselwirkung*, – the interaction between brain, embodiment, and environment, between human activity (human labour, as Engels phrases it) and the evolution of our organs, notably the human hand and the human brain.

Gaston Bachelard and the cave archetype

Although French philosopher of science Gaston Bachelard (1884–1962), likewise inspired by Hegel, never addresses the philosophical implications of Neanderthal research explicitly, his *phenomenological psychoanalysis* of science nonetheless entails an interesting perspective on paleo-archaeology as a research field. Bachelard was interested in the tension (the interaction) between the *iconoclastic* tendencies of modern science (challenging established worldviews and replacing them with quantified information) and the basic images or *archetypes* that continue to guide scientific research (Zwart 2020b; 2022). We notice this tension also in the monograph by Slimak, already referred to above. Scientific research may both be both fostered and hampered by imaginative thinking. Imagination may broaden our view, but internalised expectations and ideas may also hinder our capacity to consider (allegedly improbable) alternatives. Paleo-archaeology is a research practice which relies on precision measurements for analysis, documentation and replication, but researchers also use their imagination to explore the broader picture, helping them to discern how their findings may fit together.

According to Bachelard, the guiding image (the *archetype*) of paleo-archaeology is the image of the cave, and everything associated with it. Archaeologists often look for fossilised early human remains inside caves. It was in Sumatran caves, for instance, that Eugène Dubois once hoped to discover the missing link, systematically exploring every single cave he could reach, although it was only when he tried his luck on the Solo riverbank near Trinil (Java) that the team of convicts that had been put at his disposal unearthed the famous Pithecanthropus (Homo erectus) skull. The archetypal

image of early humans dwelling in caves inspired him to travel to the Dutch Indies in the first place,[3] and his example shows how this guiding archetypal image can be a source of inspiration, but may also become an "epistemological obstacle", as Bachelard phrases it (Zwart 2019). Dubois had to *give up* his tropical cave image of early humans in order to succeed in finding a Homo erectus skull.

A cave can easily be conceived as a place of human origins, Bachelard argues, first and foremost because its shape is reminiscent of a uterus. Bachelard also points out, however, that a cavern (the inhabitable space inside a natural cave) is shaped in a manner reminiscent of a human cranium, so that an association (an *alliteration* even) can be discerned between cave, cavern, and cranium: three instances of C-minor, as Bachelard phrases it (1948, p. 171), – because of their association with darkness and death, as a heritage or cultural memory from the distant past, linking caves with shamanistic and burial rituals for instance (Halbwachs 1980). The pre-historic cavern was shaped like a skull, Bachelard argued, and its opening was like an eye socket, providing a panoramic view across the landscape. It is no coincidence that later in history, caverns were used by mystery cults for initiation rites. Caverns allow us to return to our primal human origins, allow us to relive the dawn or awakening of humanity. This is what archaeologist aim for, according to Bachelard: to achieve maximum proximity to the "cradle" of humankind (cave – cavern – cranium – cradle). The cranium lies buried in a cavern where human existence once unfolded, – in an interactive manner, sculpting human cognition through tool use, pyrotechnics, and parietal art.

Jacques Lacan on Neanderthals and the symbolic order

Jacques Lacan (1901–1980) developed his psychoanalysis of science along similar lines as Bachelard. Lacan likewise discerns a basic tension between "the symbolic", i. e. the tendency of science to work with symbols or signifiers (measurements, chemical symbols, mathematical equations, technical terms, etc.) and what he refers to as "the imaginary" (the juxtaposed tendency to grasp the real in terms of images, archetypes, fantasies, worldviews, etc). In other words, human beings aim to come to terms with the real in an interactive manner along two dimensions: via the imaginary (the dimension of stories, images, and myths) and via the symbolic (the realm of measurements and mathematics, of symbols and signifiers). Modern science is basically *iconoclastic*, aiming to replace traditional myths and worldviews by symbolisation and quantification, but science nonetheless remains vulnerable to the power of guiding images.

3 Because primates are usually found in tropical regions, Dubois argued that early humans must have evolved in tropical caves as well. Therefore, he expected to find the missing link in a cave in the tropics. Coming from the Netherlands, the Dutch Indies seemed a logical place to start.

Against this backdrop, Lacan became fascinated by Cro-Magnon archaeology, notably parietal art. Lacan's views on Cro-Magnon cave art were influenced by archaeologist André Leroi-Gourhan (1911–1986), professor of prehistory at the Collège de France from 1969 until 1982, who studied parietal drawings from a structuralist perspective, analysing the distribution of images in terms of patterns and binary oppositions. Cro Magnon (Homo sapiens) artworks are up to circa 40,000 years old in Europe (and up to 50,000 years in Asia). Although the precise function of these fascinating murals is unknown, it seems unlikely that they were merely efforts to portray the world outside (e.g., images of animals). Rather, most experts agree that these murals were part of practices of reflection in the sense that the humans who produced these artworks were *thinking* about their world. Maybe these drawings were involved in shamanistic rituals (Clottes 2005), in combination with music, singing, dance, poetry, and meditation, as efforts to influence the behaviour of herds, or implore spiritual forces.

For Lacan, parietal art reflects the shift from the "imaginary" to the "symbolical" (1965–1966, p. 503), i.e., from parietal art as a product of fascination and imagination (triggered by the amazing *Gestalt* of the depicted animal) towards parietal images as something more symbolic: as pictograms, so that these images may have functioned as symbolic elements or "signifiers", presumably in the context of shamanistic rituals.

Against this backdrop, it is interesting to consider two short references to Neanderthals in Lacan's seminars (transcripts of his weekly sessions, conducted from 1953 onwards). In *Seminar II*, during a session devoted to Hegel, Lacan (1978) contends that Neanderthals were already part of what Hegel envisioned as *the self-realisation of the Spirit through history.* Their archaeological remains are part of what Hegel refers to as the phenomenology of the spirit (Lacan 1978, p. 91). Or, in Lacanian terms, Neanderthals were already part of the *symbolic order*, the world of language and symbolic behaviour, involving the use of symbols (*signifiers*, in Lacanian terms, echoing saussurian semiotics).

Yet, in *Seminar III* Lacan (1981) adds that, in the case of Neanderthals, although they dwelled in a symbolic world and probably used some kind of language, "a certain number of signifiers were still lacking" (Lacan 1981, p. 344).[4] Given the context of this remark, Lacan was thinking about the role of prohibitions in human history. Like Hegel, Lacan saw the emergence of monotheism (based on a series of rigid prohibitions announced by an authoritative father figure) as a decisive moment in history, paving the way for modern moral subjectivity (involving modern experiences such as duty, guilt, and individual responsibility). Yet, prohibitions also played a decisive, structural role in earlier human cultures, as Freud had already argued in *Totem and Taboo* (Freud 1913/1940). What Lacan is suggesting, albeit speculatively, is that Neanderthal culture may have been considerably less driven by prohibitions and taboos. Interestingly,

4 "Il est assez probable qu'un certain nombre de signifiants essentiels manquaient à l'homme de Néandertal. Inutile d'aller chercher si loin, car ce manque, nous pouvons l'observer sur les sujets qui sont à notre portée" (Lacan 1981, p. 344)

this resonates with an argument made by Ludovic Slimak, already cited, namely that, while Homo sapiens stone technology was *standardised* and *normalised* by rigid rules (*règles puissantes*, *devoirs*, *tabous*), neanderthal manners by contrast were decidedly less rigid. Precisely because of this standardisation, Slimak argues, we contemporary humans still recognise *the logic of those prohibitions* (p. 37), whereas the manners of Neanderthals seem more distant to us. For Lacan, human culture, the symbolic order, is shaped by prohibitions, and this already applies to early human history.

Furthermore, Lacan, who worked as a psychiatrist at the psychiatric hospital Sainte Anne in Paris, subsequently suggests that some affinities may be observed in the experiences of psychiatric patients today (Lacan 1981, p. 344), who likewise have a problematic relationship with the symbolic order and its normalising prohibitions, historically grounded in monotheism. Lacan hints at the possibility that psychiatric patients may have adopted ways of thinking which are closer to Neanderthal logic than the style of thinking adopted by most other contemporary humans, – but Lacan does not elaborate this suggestion further, although a similar line of thinking had been explored by Sigmund Freud in *Totem and Taboo* (1913/1940), where it is suggested that our understanding of contemporary neuroses can be deepened by reflecting on events that allegedly once happened during a primordial, Pleistocene past, – although also in the case of Freud this line of thinking remained a fairly speculative exercise.

The importance of the link between early human existence and contemporary mental health challenges was again emphasised by the Nobel Prize Committee awarding the 2022 Nobel Prize in Medicine to human origins geneticist Svante Pääbo (Callaway and Ledford 2022). The Nobel committee argued that his research had provided genetic foundations for understanding how our genomic history continues to affect our present biology. Notably, research has suggested correlations between the presence of specific sections of Neanderthal DNA in our genetic makeup and conditions such as schizophrenia (Gregory et al., 2021) or severe COVID-19 (Zeberg and Pääbo, 2020). Additionally, the adaptation to high altitudes in contemporary Tibetans is attributed to genetic material inherited from the Denisovans (Huerta-Sánchez et al., 2014), a population who co-existed with Neanderthals. These ancient genetic fragments will persist throughout the future of our species, underscoring the importance of understanding their implications for our health (as emphasised by geneticist David Reich in Callaway and Ledford 2022).

Teilhard de Chardin and the noosphere

The philosophy of deep Pleistocene history becomes more informed and precise in the case of Pierre Teilhard de Chardin (1881–1955). Although Teilhard was thoroughly trained in philosophy and theology, he was first and foremost a paleoanthropologist, actively involved in the discovery of *Homo erectus pekinensis* ("Sinanthropus") in China in the 1920s and 1930s. He came from a Catholic aristocratic background, was ordained a priest in 1911, survived World War I (as a stretcher-bearer, distinguished

with the Legion of Honour), joined the Jesuit Order, and conducted paleoanthropological field work during the interbellum. While at work in the Ordos desert, he conceived a vision of cosmic evolution, with anthropogenesis as a crucial moment. Because his books were published posthumously, his ideas, although conceived much earlier, became famous in the 1960s and 1970s (so that, in terms of reception, he is a contemporary of Lacan). His core concept is the "noosphere", derived from νοῦς: i. e., *mind* or *intellect* and referring to the evolving layer of language and communication, science and technology, information and communication that is emerging and proliferating *via us*, human beings, pervasively interacting with and transforming both the geosphere and the biosphere quite drastically.

Teilhard was also deeply fascinated by Cro-Magnon parietal art. For Teilhard, cave art represents a turning point in the process of noogenesis (the birth of thinking, the emergence of self-consciousness). He was a close friend of French archaeologist Abbé Henri Breuil (1877–1961), professor at the *Collège de France* from 1929 to 1947, with whom he visited parietal sites such as Lascaux and Mas d'Azil (Aczel 2007, p. 51). Besides being astonishing artworks, Teilhard argued, these paintings reflect a spiritual (symbolic) dimension. Drawings of animals are accompanied by signs, dots and pairs of lines and often seem superimposed on one another, like playing cards. Therefore, similar to Lacan, Teilhard contends that, rather than being mere representations, these paintings functioned as symbols or pictograms in shamanistic rituals, possibly to probe and influence the movements of herds (Zwart 2022).

Teilhard's magnum opus *The Human Phenomenon* (1955/2015) was completed in China in 1940 but published posthumously in 1955. Here and elsewhere Teilhard argues that a direction, an orientation, an axis is discernible in evolution, namely towards increasing complexity and interiority (p. 8), towards integration and sublimation (p. 180), towards self-consciousness and self-directedness, while human beings represent the moment in time when evolution becomes "conscious of itself", becomes "consciously self-directed" (p. 20, p. 126).

The Human Phenomenon contains a chapter entitled *The Deployment of the Noosphere*, and one section of this chapter is dedicated to Neanderthals. Around 60,000 years ago, Teilhard argues, the noosphere, the thinking network was expanding, and this involved a progress in "hominisation", as reflected in cave industry and the emergence of burial practices (p. 135). For Teilhard, Neanderthals were part of this process. They were, Teilhard argues, "truly human… and yet a human still not exactly like ourselves" (p. 136). While "Mousterian skulls" give evidence of a long-lasting Neanderthal presence in Eurasia, Teilhard also notices an "abrupt invasion" of Cro-Magnon or "Aurignacian" human types in Europe and the Middle East and this, Teilhard argues, represented a fundamental "rejuvenation of humanity" (p. 137). Among Neanderthals we already see evidence of an important psychic step, e. g., the appearance of burial places in caves, so that Teilhard is prepared to "grant the flame of true intelligence even to the most confirmed Neanderthals" (p. 139). And yet, their intellectual activity seems to have been largely absorbed by survival and propagation:

> What could these distant cousins of ours really have thought? We have no idea. But, on the contrary, with Homo sapiens, a definitely liberated thought exploded … on the walls of the caves. The newcomers brought art with them. And thanks to the language of this art, for the first time we can enter right into the consciousness of those vanished beings… Spiritually, they are so strangely close to us. (p. 139)

While Neanderthals remain distant, in the case of Cro Magnon art we, for the first time, experience "spiritual nearness", Teilhard argues, allowing us to enter their world of thinking.

Building on decades of research since Teilhard wrote these lines, this experience can now be probed more in detail. First of all, although the evidence is not as abundant or elaborate as that of later Homo sapiens, some findings suggest that Neanderthals engaged in rock art. Notable examples include sites such as Gorham's Cave in Gibraltar (e. g., the famous Neanderthal *hashtag*, Rodríguez-Vidal et al., 2014), the La Pasiega cave in Spain (Hoffmann et al 2018) and La Roche Cotard in France (Marquet et al 2023). These engravings, finger flutings and paintings are believed to be the work of Neanderthals because their dating suggests an age that is older than the presence of Homo sapiens in Western Europe. At the same time, evidence is growing that Homo sapiens may have been present in Central and Western Europe at an earlier date than envisioned until now (Harvati et al 2019; Slimak et al. 2022). Also, the artistic nature of these traces and signs remains debatable.

As to language, language capacities of Neanderthals remain a controversial topic (e. g. Botha, 2020) but recent modeling of the Neanderthals auditory capacities conclude that they had auditory, and hence speech, capacities similar to Homo sapiens (Conde-Valverde et al. 2021). While evidence for Neanderthal burial practices is not as clear-cut as it is for some late (and rare) Homo sapiens during the Upper Paleolithic, there are indications that Neanderthals engaged in some form of burial or intentional disposal of the dead. The multiple Neandertals individuals preserved at La Ferrassie in France or at Shanidar cave in Iraq are among the most intriguing cases (Pettitt, 2010; Maureille and Knüsel, 2022).

Also worth mentioning, because unique and very surprising, are the circular constructions made of broken stalagmites found deep inside the cave of Bruniquel in France, 300 meters from the entrance (far away from any source of natural light: Jaubert et al. 2016; Soressi 2016). Because Neanderthals were the only hominin group present in western Europe at that time, the Bruniquel construction shows that Neanderthals explored the use of underground space. In Teilhardian terms, Neanderthals were not solely absorbed with the challenges of survival. The enigmatic language of their potentially artistic expression may speak to us.

Peter Sloterdijk's views on anthropogenesis

The German philosopher Peter Sloterdijk endeavours to write a history of human thinking (including early human thinking) "from below", which means that it is informed by the archives of human activity, and this evidently includes paleo-archaeological findings. An important source of inspiration is Martin Heidegger's concept of a "clearing" (*Lichtung*), i. e., the idea that humans have distanced themselves from nature by entering an open space, created by language, – albeit in combination with tool use and pyrotechnics (Sloterdijk 2001b). Sloterdijk's guiding question is: how did this clearing come about? Evidently, as he phrases it, humans did not step into this clearing during a forest hike, as if the clearing had already been there, waiting for early humans to arrive. The clearing is closely connected with the process of anthropogenesis, with the emergence of language, pyrotechnics, and tool use. Dialectically speaking, it is the result of interaction. Human thinking emerged in a clearing which these early human beings created themselves.

Although Sloterdijk developed his philosophy of the Pleistocene at various places, in his magnum opus *Sphären* as well as in other works – notably *Nicht Gerettet: Versuche nach Heidegger* (Sloterdijk 2001a) –, he offers a summary of his views in a booklet entitled *The Human Greenhouse* (*Das Menschentriebhaus: Stichworte zur historischen und prophetischen Anthropologie*). Therefore, it is to this booklet that we will refer here. Again, the concept of the *clearing* is the starting point for Sloterdijk's Pleistocene philosophy. He develops a way of thinking about humans which builds on the conviction that humans are more or less *self-made* in the sense that the human condition (the human way of being in the world) resulted from the emergence of human activities (use of tools, fire, domesticated animals and plants, in combination with music, poetry, dance, painting, and other art forms). All these activities, all these practices and techniques not only resulted in modifying the environment, – making the world more hospitable and inhabitable for humans, more human-friendly as it were. They also functioned as anthropo-techniques, as practices for crafting humans, so that modern humans are the *outcome* or *product* of a long history of technical and cultural human activities. The result is an exodus from nature, a process of hominization (p. 13). Whereas other animals dwell in a natural environment, humans exist in a world of their own making and precisely now that we are facing a global environmental crisis, an apocalyptic state of emergency even, Sloterdijk argues, time has come to reconsider how humans beings once upon a time, in deep history, stepped out of nature as it were, and into this clearing. Now that via genetic modification and other technologies we may steer the future evolution of humanity, we become profoundly interested in human evolution, – envisioned as an evolutionary deviance because, on an unprecedented level, humans themselves determined the condition of their own evolution. As Teilhard already phrased it, in the case of humans, evolution became radically self-directed.

Sloterdijk's reflections on early human history revolve around what he considers as the primal dwelling (*Ur-Ort*) of humanity, namely the cave, a semi-spherical space offering protection from meteorological contingencies, where temperature could be conditioned, and language (singing, storytelling, transmission of information) could emerge. The cave was a primal interior where an *internal environment* (a greenhouse) could be established and maintained, more human-friendly compared to the inhospitable conditions outside.

For Sloterdijk, there are important differences between this human primal dwelling and animal dens. First of all, Sloterdijk argues, human new-borns are extremely vulnerable and dependent for an extended period of time (because of their large brains, humans are born prematurely into this world and multiply the size of their brain by a factor of 4 in between their birth and adulthood (chimpanzees for instance do so by a factor of 2, Bogin 2020). The primal dwelling allows for that. Even adult humans, due to lack of fur, tusks, claws, etc., stay inside for extended periods of time, to process clothing, tools, and food. In the case of humans, the primal dwelling functions as a greenhouse or incubator, significantly reducing selective pressures, notably early in life, but also later (e.g., during the night, when humans recuperate from daily activities in the proximity of a fireplace.) Moreover, the topological essence of the primal dwelling is not only the inhabited cavern as such, but also the opening, which allows humans to gaze into, and reflect on and deliberate about the wide expanses outside the cave, – before stepping out into these environs in a well-prepared manner, wearing clothes, carrying tools and weapons, but also informed by stories, previous experiences, and other forms of communication.

All these preparatory activities, taking place inside the cavern, open up the world. Without them, the natural world would be an inhospitable or even lethal environment, but now, building on anthropo-techniques, humans have artificially enhanced their fitness as it were. The cavern is the site where tool use (litho-technique) evolved, with younger humans learning the craft from more senior humans. And the opening of the primal dwelling is a window into the world, allowing humans to consider, plan and evaluate collective activities, as language users. In caverns, they verbally share experiences concerning how to achieve a particular goal or how to hit a particular target. Via chants and artworks, they create a spiritual and symbolic habitat, allowing them to produce a worldview, indicating how things fit together in a comprehensive manner. Inevitably, a shift occurs from mere adaptation to the external environment towards developing ways to actively *reshape* the environment, either directly (e.g., with the help of fire) or in a more indirect and spiritual manner (via chants and other forms of group art). In other words, the clearing was a hospitable, but also an acoustic ambiance. Although Peter Sloterdijk consistently speaks about Homo sapiens and keeps silent about Neanderthals and other early human species, to the extent that his paleo-ontology (his account of the coming into being of humans) is valid, it would apply to Neanderthals as well, for whom the glacial cavern likewise functioned as a primal dwelling enabling a human way of being in the world.

Although Sloterdijk offers a fascinating view on deep history, at least one caveat must be mentioned here as well. As was already indicated above, the notion that prehistoric people exclusively inhabited caves is a misconception which archaeologists have long debunked, especially with the advent of commercial archaeology, so that the validity of Sloterdijk's imaginative Pleistocene anthropology, although valuable in itself, is nonetheless limited. In 1992, the European Convention on the Protection of Archaeological Heritage, aimed at safeguarding European archaeological heritage, was signed. This initiative led to extensive archaeological investigations preceding or accompanying large construction projects across many European countries. Consequently, thousands of Palaeolithic sites have been discovered in open-air settings rather than caves. In the past, before the use of large excavation machinery (which became available in the late 1970s in France), manual excavations were limited, and caves were considered high-potential areas for Pleistocene archaeology. Before the 1990s, most Pleistocene archaeological work was therefore concentrated in cave settings. While caves are advantageous for preserving bones, open-air sites generally lack such preservation. Yet, prehistoric humans were not confined to caves but also inhabited open-air environments.

Figure 1[5] shows the most well-dated palaeolithic sites in Europe (up until 2020) and the location of rocks in which caves can form.

Let this suffice as a concise overview of the emerging dialogue between archaeology and philosophy concerning our understanding *of deep history* and let us now turn our attention more explicitly to the current status of Neanderthal research before reflecting on the importance of the archaeology-philosophy dialogue more explicitly in the final section.

The current Neanderthal debate: Human or "not yet fully human"?

As Pleistocene humans, both Neanderthals and modern humans existed under similar conditions, and often dwelled in caves. Yet, as we have seen, some archaeologists still try to draw a line between them and us. Ludovic Slimak (2023) claims that *their manner of being in the world* was different. Whereas Cro Magnon cave dwellers allegedly experienced the world like us, Neanderthals represent a different manner of *being in the world*, he contends.

Nobel Prize laureate Svante Pääbo (2014) makes a similar argument, more emphatically even. He explicitly draws a line between *them* and *us*, in his memoir focussing on sequencing neanderthal DNA:

5 We thank W. Chu for his help in drawing this map.

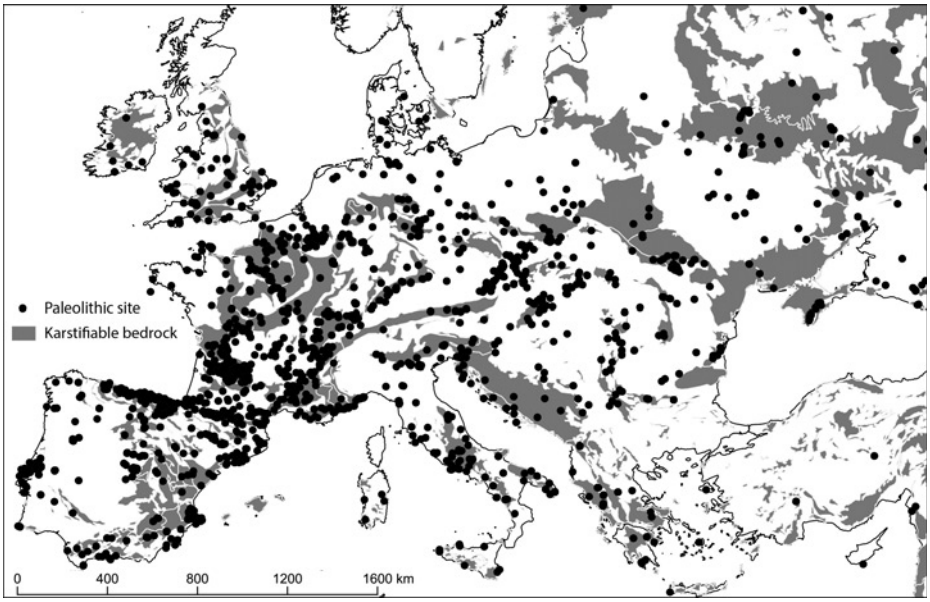

Figure 1. Distribution of reliability dated Pleistocene sites and karstifiable bedrock in Europe (map redrawn after Chu et al. 2021)

> Among the few differences one would expect to find in the Neanderthal genome, there must be those that set us apart from all earlier forms of human forerunners... Those few differences must form the biological foundations of the radically new direction our lineage took with the emergence of modern humans: the advent of rapidly developing technology, of art in a form we today immediately recognise as art, and maybe of language and culture as we now know it. (Pääbo 2014, p. 4)

Pääbo consistently emphasises this: "Neanderthals were profoundly different from us... Neanderthal DNA was very different from the DNA of modern humans" (p. 14). Indeed, his research focussed on one single question: what makes humans unique? What had set humans on an evolutionary track so different? (p. 83). Yet, also in 2014, Paola Villa and Wil Roebroeks questioned this approach in their paper entitled "Neandertal Demise: An Analysis of the Modern Human Superiority Complex". The questioned the prevalent tendency within paleo-archaeology to position ourselves in a superior light without substantial data to support such claims. And in 2023, the authors of this paper joined a panel discussion at the EuroScience Open Forum (ESOF), the largest multidisciplinary scientific conference in Europe, to publicly question the "western perspective on the reconstruction of human history".[6] And in her book *Kindred: Neanderthal life, love, death and art*, however, Rebecca Wragg Sykes (2020) offers a similar

6 https://leiden2022.nl/sites/default/files/2023-06/D3.2%20ESOF2022%20Programme%20and%20evaluation%20report.pdf.

perspective, arguing that the "renaissance of Neanderthal research" over the past three decades has revolutionised our understanding of "the symbolic dimension of their world" (p. 12). Some of her examples were already mentioned above. She notably refers to the famous Bruniquel cave, discussed earlier, where Neanderthals constructed a circular monumental structure consisting of stalagmite stumps, a sacred chamber in the dark, "made by thinking minds" who "spoken in some form" and "certainly laughed" (p. 245). Besides Bruniquel, the past three decades in Neanderthal research have seen "an explosion in the archaeological evidence for symbolic aspects to Neanderthal life" (p. 246). One spectacular example is a cave painting in the La Pasiega cave. Throughout the cave, surfaces with figures and engravings can be found and uranium-thorium dating suggested a scalariform (ladder shaped) figure to be older than 64,000 years, – and therefore made by Neanderthals (Hoffmann et al 2018), although the dating remains heavely debated. Indeed, the issue of how to interpretate such finds (should they be considered as symbols, as representations, as evidence of symbolic behaviour, etc.) is still open to debate (cf. the contribution by Karel Kuipers, Julien Kloeg, and Marie Soressi in this Jahrbuch). It goes without saying that, from a philosophical perspective, these ongoing debates, undecided as yet, are crucially important when it comes to addressing the question to what extent the Neanderthal manner of thinking differed from how Cro Magnons experienced their world, or how we experience the world today.

In fact, the discipline of paleo-archaeology has been delving into in-depth debates during the last three decades to figure out whether Neanderthals were human or not.

In their discussion of Neanderthal finger-flutings on cave walls in La Roche-Cotard, created around 57 thousand years ago, Jean-Claude Marquet and colleagues provide an overview of symbolic productions attributed to Neanderthals. While they are few in number, known examples of supposed Neanderthal art are definitely intriguing, the most famous example being Gorham's cave, Gibraltar, where a geometrical design created with lithic tools (also known as the Neanderthal hashtag) was found. Marquet and colleagues also mention Bruniquel of course. Neanderthal parietal art is different from art forms of later periods, the authors argue. The finger-flutings in La Roche-Cotard were "meticulously made" and reflect an "progression in complexity" from one panel to the next (p. 43). These markings are non-figurative and geometrical (circular, axial, or triangular), but their layout shows "an organised, deliberate composition." It is "the result of a thought process giving rise to conscious design intent" (p. 43). The authors describe these parietal markings as "the frequent repetition of thoughtful gestures" (idem).

Given the limited number of examples of potential Neanderthal art that have been preserved and discovered so far, and the discussions concerning interpretation to which they give rise, we should be careful when it comes to generalisations. Still if we add Gorham's cave, Bruniquel and La Roche-Cotard together, the impression emerg-

es that people living in Europe 60 to 40,000 years ago somehow may have played a ritual function, in interaction with other practices.[7]

Many paleo-archaeologists continue to search for evidence that would set aside Neandertals from Homo sapiens. Recent debates on Neandertal burials for instance (Rendu et al 2016) suggest that the interpretation of the evidence is dictated by the definition given to the word "burial". Interpretations in favour or against Neanderthal burials are at risk of being dependent on the modern views of spirituality and the care of the dead, showing the limit of the dualist quest for absence or presence of burials, which posits a binary (and hierarchical) opposition between them and us, as discussed above. Our option rather is to closely study the history of behaviours related to the treatment of the dead over a longer term, as Paul Pettitt did in his book *The Palaeolithic origins of human burial* (Pettitt 2010). By putting findings in perspective, and embedded them in their own trajectory, paleo-archaeologists may circumvent dualistic interpretations and refine and complexify the reconstruction of the deep past.

The added value of interdisciplinarity

What does the archaeology – philosophy dialogue add to our understanding of early human existence? How may philosophy help archaeology, and the other way around? First of all, the dialogue may help researchers and scholars to overcome some of the tenacious biases inherent in the binary logic, the binary manner of thinking (*them* versus *us*) which dominated the debate until quite recently. Archaeological findings challenge philosophical conceptions about being human, often positing an ontological divide, a significant difference between humans and other, biologically closely related species, using language, culture, and conscious planning as an argument. Philosophers are challenged to explicitly reconsider this logic, which is at work both in archaeological research practices and in philosophical reflections. This will help us to envision deep human history not as being defined by a sudden genetic mutation or cultural leap which separates modern humans from Neanderthals, but as an interplay between epochs of continuity and moments of discontinuity occurring in both groups, – each mostly living for a long time in separate and distinct areas (Europe for the former and Africa for the latter) – thereby seeing Neanderthals as part of a more inclusive and comprehensive understanding of deep human history. The key issue here is not whether Neanderthals should be considered human or 'not quite human'. Rather, we must develop a more fluid way of thinking and of interpreting archaeological finds. Given that we often discuss archaeological findings in a comparative framework that contrasts Neanderthals (who disappeared) with early modern humans (who

7 Steven Mithen (2005/2006) pushes this even further when, via active imagination, he tries to envision a community of Neanderthal humans singing and humming in their caves, while beating sticks on bones, a spectrum of sounds echoing and reverberating along the walls, sparsely decorated with non-figurative designs: an ice-age soundscape (2005/2006, p. 245).

were obviously successful), we may wonder how this framework is biased by Western thought. European culture is known for having emphasized what may be 'uniquely human' and separates 'us' from others, where the concept of 'other' not only involves other primates, but also women, indigenous people, and early humans (cf. the contribution by Susan Peeters et al., this volume). The question is not where to draw the line. Rather, the question is whether a more fluid and inclusive interpretative framework can be developed in dialogue, not only between archaeology and philosophy, but also with other fields.

At the same time, the dialogue may make us more aware of how imagination and quantification may interact in scientific research. To give a concrete example, whereas imaginative reconstructions often build on the conviction that early humans dwelled in caves (as we have seen both in the case of paleoarchaeologist Eugène Dubois and in the case of philosopher Peter Sloterdijk), human existence actually evolved in multiple types of dwellings. The fact that so many instances of Pleistocene art have been found deep inside caves seems to suggest that caves were sites where spiritual preoccupations were enacted, but we may also argue that caves provide optimal conditions for preservation. Yet even here, preservation is finite, and the sparseness of the Neanderthal artistic record may partly be due to a lack of preservation.

Whereas archaeologists may challenge philosophical convictions, philosophy may provide ideas and theories that can be refined and empirically tested by archaeologist. Moreover, the dialogue is not only relevant for bridging the gap between disciplines, as it may also stimulate and deepen the dialogue between academic research and broader audiences, addressing questions that are of interest to society at large (cf. the contribution in this volume by Anna Riethus and colleagues concerning the Citizen Panel at the Neanderthal Museum in Mettmann near Düsseldorf). In the view of contemporary challenges such as mass extinction and climate change, the question of human origins and our place in nature has gained significant urgency. While archaeologists often focus on very specific research questions, these dialogues may help us to develop a comprehensive view. In times of uncertainty and crisis, we tend to take a step backwards and ask ourselves where we are coming from. Besides concrete technological innovations, the current environmental crisis calls for reflection against the backdrop of a deep temporal horizon.

References

Aczel, A. (2007). *The Jesuit and the skull. Teilhard de Chardin, evolution and the search for Peking Man.* New York: Penguin.

Bachelard, G. (1948). *La terre et les rêveries du repos.* Paris: Corti.

Bichakjian, B.H. (1997). "The Neanderthal Man: A Cousin, not a Sibling." *LOS Forum*, 25, Fall, pp. 7–10.

Bogin, B. (2020). The Evolution of Human Growth. In: *Patterns of Human Growth.* 3rd ed. Cambridge Studies in Biological and Evolutionary Anthropology. Cambridge: Cambridge University Press; 2020:143–186. https://doi.org/10.1017/9781108379977.004.

Botha, Rudolf (2020). *Neanderthal language: demystifying the linguistic powers of our extinct cousins.* Cambridge University Press.

Callaway, E., Ledford, H. (2022). "Geneticist who unmasked lives of ancient humans wins medicine Nobel." *Nature* 610 (7930). https://doi.org/10.1038/d41586-022-03086-9.

Chu, Wei, Nett, Janina J. (2021). "The past in dust: current trends and future directions in Pleistocene geoarcheology of European loess." *Journal of Quaternary Science* 36.8: 1279 – 1292. https://doi.org/10.1002/jqs.3388.

Clottes, J. (2005). Shamanic Practices in the Painted Caves of Europe. *Spiritual Information: 100 Perspectives on Science and Religion*, 279.

Conde-Valverde, Mercedes, et al. (2021). "Neanderthals and Homo sapiens had similar auditory and speech capacities." *Nature ecology & evolution* 5.5: 609 – 615.

Corbey, R. (2023). "Waarom negeren filosofen de prehistorie? Een repliek." ANTW. In press.

Corijn van Mazijk (2023). "Waarom negeren filosofen de prehistorie? *Op weg naar een philosophy of prehistory.*" Algemeen Nederlands Tijdschrift voor de Wijsbegeerte 115 (3). https://doi.org/10.5117/ANTW2023.3.009.MAZI.

Engels, F. (1925/1962). Anteil der Arbeit an der Menschwerdung des Affen. In: Engels, F. (1925/1962) *Dialektik der Natur.* Marx Engels Werke 20, pp. 444 – 455. Berlin: Dietz Verlag.

Freud, S. (1913/1940). Totem und Tabu: einige Übereinstimmungen im Seelenleben der Wilden und der Neurotiker. *Gesammelte Werke* IX. London: Imago.

Greenbaum, G., Friesem, D. E., Hovers, E., Feldman, M. W., & Kolodny, O. (2019). Was inter-population connectivity of Neanderthals and modern humans the driver of the Upper Paleolithic transition rather than its product?. *Quaternary Science Reviews*, *217*, 316 – 329.

Gregory, M. D., Eisenberg, D. P., Hamborg, M., Kippenhan, J. S., Kohn, P., Kolachana, B., ... & Berman, K. F. (2021). Neanderthal-derived genetic variation in living humans relates to schizophrenia diagnosis, to psychotic symptom severity, and to dopamine synthesis. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics*, *186*(5), 329.

Halbwachs, Maurice (1980). *The collective memory*, New York: Harper & Row Colophon Books.

Harvati, Katerina, et al. (2019). "Apidima Cave fossils provide earliest evidence of Homo sapiens in Eurasia." *Nature* 571.7766: 500 – 504.

Hegel, G.W.F. (1807/1986). *Phänomenologie des Geistes.* Werke 3. Frankfurt am Main: Suhrkamp.

Hegel, G.W.F. (1832/1986). *Vorlesungen über die Ästhetik I.* Werke 13. Frankfurt am Main: Suhrkamp.

Hoffmann, Dirk L., et al. (2018). "U-Th dating of carbonate crusts reveals Neandertal origin of Iberian cave art." *Science* 359.6378: 912 – 915. https://doi.org/10.1126/science.aap7778.

Huerta-Sánchez, Emilia, et al. (2014). "Altitude adaptation in Tibetans caused by introgression of Denisovan-like DNA." *Nature* 512.7513: 194 – 197. https://doi.org/10.1038/nature13408.

Jaspers, K. (1949). *Vom Ursprung und Ziel der Geschichte.* München: Piper.

Jaubert, J., et al. (2016). Early Neanderthal constructions deep in Bruniquel Cave in southwestern France. *Nature* 534 – 7605: 111 – 114. https://doi.org/10.1038/nature18291.

Lacan, J. (1978). *Le séminaire II: Le moi dans la théorie de Freud et dans la technique de la psychanalyse* (1954 – 1955). Paris: Éditions du Seuil.

Lacan, J. (1981). *Le séminaire III: Les psychoses* (1955 – 1956). Paris: Éditions du Seuil

Lacan J. (1965 – 1966) Le séminaire XIII: L'objet de la psychanalyse. http://staferla.free.fr/.

Marquet, J-C; Freiesleben, TH; Thomsen, KJ; Murray, AS; Calligaro, M; Macaire, J-J; et al. (2023). The earliest unambiguous Neanderthal engravings on cave walls: La Roche-Cotard, Loire Valley, France. PLoS ONE 18(6): e0286568. https://doi.org/10.1371/journal.pone.0286568.

Maureille, Bruno; Knüsel, Christopher J. (2022). "The earliest European burials." *The Routledge Handbook of Archaeothanatology.* London: Routledge, 140 – 158.

Mithen, S. (2005/2006). *The singing Neanderthals: the origins of music, language, mind and body.* London: Phoenix.

Neubauer, Simon; Hublin, Jean-Jaques; Gunz, Philipp (2018). "The evolution of modern human brain shape." *Science advances* 4(1), eaao5961. https://doi.org/10.1126/sciadv.aao5961.

Pääbo, S. (2014). *Neanderthal man: in search of lost genomes.* New York: Basic Books.

Pettitt, Paul (2010). *The Palaeolithic origins of human burial.* London: Routledge.

Rendu, William, et al. (2016). "Let the dead speak… comments on Dibble et al.'s reply to 'Evidence supporting an intentional burial at La Chapelle-aux-Saints'." *Journal of Archaeological Science* 69: 12 – 20.

Rodríguez-Vidal, Joaquín, et al. (2014). "A rock engraving made by Neanderthals in Gibraltar." *Proceedings of the National Academy of Sciences* 111.37: 13301 – 13306.

Roebroeks, W., & Soressi, M. (2016). Neandertals revised. *Proceedings of the National Academy of Sciences* 113(23): 6372 – 6379.

Scerri, Eleanor ML, and Manuel Will (2023). "The revolution that still isn't: The origins of behavioral complexity in Homo sapiens." *Journal of Human Evolution* 179: 103358.

Slimak, L. (2023). *Le dernier néanderthalien. Comprendre comme meurent les hommes.* Paris: Odile Jacob.

Slimak, Ludovic, et al. (2022). "Modern human incursion into Neanderthal territories 54,000 years ago at Mandrin, France." *Science advances* 8.6: eabj9496.

Sloterdijk, P. (2001a) *Nicht gerettet: Versuche nach Heidegger.* Frankfurt: Suhrkamp.

Sloterdijk, P. (2001b) *Das Menschentriebhaus: Stichworte zur historischen und prophetischen Anthropologie.* Weimar: Verlag und Datenbank für Geisteswissenschaften.

Soressi, M. (2016). Neanderthals built underground. *Nature* 534 – 7605: 43 – 44. https://doi.org/10.1038/nature18440.

Teilhard de Chardin, P. (1955/2015). *The human phenomenon* (Translation: Sarah Appleton-Weber). Brighton/Chicago/Toronto: Sussex Academic Press.

Valentin, B. (2008*). Jalons pour une paléohistoire des derniers chasseurs, XIV*^{e} *– VI*^{e} *millénaire avant J.-C.* Series: Cahiers archéologiques de Paris 1, 1. Paris: Publications de la Sorbonne.

Wragg Sykes, R. (2020). *Kindred: Neanderthal life, love, death and art.* London: Bloomsbury.

Zeberg, H., S. Pääbo (2020). The major genetic risk factor for severe COVID-19 is inherited from Neanderthals. *Nature* 587.7835: 610 – 612.

Zwart, H. (2020a). *Styles of thinking.* Series: Philosophy and Psychology in Dialogue 2. Berlin/Münster/Zürich: LIT Verlag.

Zwart, H. (2019). *Psychoanalysis of technoscience: symbolisation and imagination.* Series: Philosophy and Psychology in Dialogue. Berlin/Münster/Zürich: LIT Verlag.

Zwart, H. (2020b). Iconoclasm and Imagination: Gaston Bachelard's philosophy of technoscience. *Human Studies* 43:61 – 87. https://doi.org/10.1007/s10746-019-09529-z.

Zwart, H. (2022). "The symbolic order and the noosphere: Pierre Teilhard de Chardin and Jacques Lacan on technoscience and the future of the planet." *International Journal of Philosophy and Theology* 83(1 – 3), 117 – 145. https://doi.org/10.1080/21692327.2022.2093775.

Corijn van Mazijk

Evolving cultures: Shared intentionality and the evolution of symbolism

I am a 'child of time', I am in a we-community in the broadest sense … which is once again in community with generative subjects, with the closest and most distant ancestors. And it has 'worked' on me … all that I am is founded, partially by this ancestral tradition, partially by living tradition. (Husserl 1921–1922, in Husserl 1973a, 223, my translation)

1 Introduction

One question philosophers have dealt with for ages concerns the definition or supposed "essence" of the human being. While of itself an old question, it is today often associated with the philosophical anthropology movement of the early twentieth century, led by such figures as Max Scheler (1874–1928), Ernst Cassirer (1874–1945), and Helmuth Plessner (1892–1985), who interacted in different degrees with phenomenologists like Edmund Husserl (1859–1938) and Martin Heidegger (1889–1976).

More recently, the question what defines the human being has been regaining some attention in debates in cognitive archaeology, albeit in modified form, and often in light of new discoveries pertaining to our Neanderthal cousins. Debates now usually focus on the application of such concepts as "behaviorally modern" and "modern symbolism". These closely related concepts are taken to capture something distinctively human, with their application to earlier, usually Middle Stone Age/Middle Paleolithic (MSA/MP), hominins being the central point of controversy.

Archaeologists tend to associate concepts like "modern symbolism" with the production of certain kinds of seemingly non-functional objects or aspects of them. For most of the twentieth century, these and other, similar terms were standardly reserved for the sort of behavior associated with Late Stone Age/Upper Paleolithic (LSA/UP) figurines, such as the famous lion-man of Hohlenstein-Stadel, dated some 30kya (Dalton 2003), as well rock art, such as of Chauvet and Lascaux, dated some 28kya-37kya and 17kya respectively (Quiles et al. 2016; Ducasse and Langlais 2019). These were, of course, all made by *Homo sapiens,* and it is worth noting that to date, there is no evidence of any comparable depictive art by any other species of humans, or by MSA *Homo sapiens* in Africa.

Nevertheless, more recent findings have challenged the classic picture of a "creative explosion" (Pfeiffer 1982) in the LSA/UP. Use of pigment may go back 400–500kya (Wynn 2012, 290–291; Rifkin et al. 2015; Dapschauskas et al. 2022), and its decorative use is often taken to indicate modern symbolism as well, although pigment also has various functional uses (Henshilwood and Dubreuil 2009, 50; Vanhaeren and d'Errico 2006, 1107). The role of beadwork, a more recent invention but nonetheless originating well before the LSA/UP and not unique to *Homo sapiens*, is now also often said to be a

 https://doi.org/10.1515/jbpa-2022-003

symbolic one (Bouzouggar et al. 2007; Zilhão 2007; Zilhão et al. 2010, 1023; Henshilwood and Dubreuil 2011, 375; d'Errico and Vanhaeren 2012; Prévost et al. 2021, 1). In addition, the possible decorative use of pendants and eagle talons, also by Neanderthals, might suggest behavioral modernity (Rodríguez-Hidalgo et al. 2019; Frayer et al. 2020), and recent research suggested the decorative preservation of lion claws by Middle Paleolithic hominins as far back as 190kya (Russo et al. 2023).

In light of such findings, some authors now suggest that modern symbolism is not underpinned by a distinctive genetic and/or cognitive basis unique to *Homo sapiens* (Wolpoff et al. 2004; Zilhão et al. 2010; Colagè and d'Errico 2018). Recent evidence pertaining to ochre, pendants, and beadwork from Neanderthals has been taken to indicate that behavioral modernity "is not a species-specific phenomenon" (Zilhão 2007, 1), and that Neanderthals and modern humans must have been cognitively indistinguishable. Others have been more critical of such assessments, however, and the view remains represented by a minority today, according to Papagianni and Morse (2022). Indeed, while there is increasing evidence for comparably complex tool production of Neanderthals and *Homo Sapiens* for much of the earlier MSA/MP, evidence for the use of beadwork and pendants by Neanderthals is still relatively sparse, and the absence of Neanderthal depictive art should not be ignored. Also, some research suggests Neanderthals may have had better auditory and speech capacities than expected, but still not quite in the modern human range (Conde-Valverde 2021), and other recent work points to differences in neurogenesis (Pinson et al. 2022).

Everyone, then, agrees that the cognitive and behavioral gap between various MSA/MP hominins is smaller than previously thought, but there is little more agreement than that. This lack of consensus is not due only to a gaps in data. Debates are also said to suffer from "loose reference to symbolic culture" (Wynn et al. 2016, 15) and a "poverty of appropriate interpretive concepts" (Wynn and Coolidge 2010, 5). Indeed, there is no consensus as to what "modern symbolism" consists in, and there is a tendency to reduce the complexity of archaic hominin behavior to simple dichotomies, such as between "modern" versus "pre-modern" behavior, which reflects the essence-thinking of the old philosophical anthropology.

A closely related disagreement in the literature is the one between advocates of *continuity* and *discontinuity* approaches. Continuity approaches emphasize that complex human behavior evolved gradually, often involving a mosaic of different elements which gradually came together. Thus symbolic capacities may have become "gradually richer and more elaborate [...] without any sudden changes or truly novel features" (Parravicini and Pievani 2018). From this viewpoint, there need be no "essence" of the human being which sets it apart from other, extinct hominins. Discontinuity approaches, on the other hand, tend to emphasize the importance of a single, usually genetic, change – what Bickerton (2000) called "factor X". Discontinuity approaches tend to fit better essentialist thinking about human nature, as they suggest archaic hominins missed a certain "factor X", which determined the success of *Homo sapiens*.

In the following section, I first reflect on some of the conceptual problems involved in the debate on modern symbolism, which in my view cast doubt on the usefulness of

generic concepts like "modern symbolism". In the following three sections, I take a step back, and provide a basic outline of the mechanisms of the evolution of material culture. Here I argue that macro-cultural change can be viewed in terms of the selection of useful adaptations which are transmitted across generations, as in natural evolution. There are differences between both evolutionary processes, however. In particular, I suggest that culture relies mainly on so-called *shared intentionality*, which makes horizontal and vertical transmission possible through what I conceptualize as *generative pathways.* This transmission process does not rely on genes, but on the brain's plasticity and to a lesser extent external vehicles. With this fairly basic account of cultural evolution at hand, I return to the debates about (dis)continuity and modern symbolism in sections 6 and 7. Here I defend stage-based approaches to the evolution of material culture, as they offer gradualist alternatives to the dichotomous thinking dominating current debates, and better fit the theory of cultural evolution outlined.

2 Modern symbolism: Basic problems

In this section, I consider some basic problems concerning the concept of "modern symbolism". To start off, each of these two words currently lacks an agreed upon meaning. The concept of "symbolism" holds connotations to that of a symbol, which taken in the familiar Peircean sense, means a signaling relation which is both arbitrary and conventional (see van Mazijk 2023). While this definition of a symbol applies, for example, to the representations involved in writing, the use of ochre, pendants, beadwork, or even figurines and rock art do not entail symbolism in this sense. Decorative ochre use, pendants, and beadwork may be said to signal something, but it is far from obvious that they hold conventionally determined reference. Figurines and rock art, on the other hand, are icons. It is thus from the start unclear what the concept of "symbolism" is doing in discussions on ESA/LP and MSA/MP material culture, for none of the items of these periods clearly carry information in the way symbols do. Until a better concept is found, a simple improvement would be to speak of *material culture* instead.

It is also unclear what the "modern" part is supposed to refer to, and authors often do not specify whether the material culture itself, or the implicated behavior, genetics, or cognition[1] is supposed to be at stake. As also noted in the introduction, the concept of "modern" may (inadvertently) evoke an image of a dividing line between modern and pre-modern behavior, which in turn may motivate unproductive semantic discussions.

From the perspective of cognitive archaeology and/or evolutionary psychology, we not only want to understand material culture, but also the cognitive or behavioral

1 The term "cognition" is also ambivalent; it is nowadays used to refer not only to brain function, but also to external vehicles included in cognitive processes, and situated behavior in general. One's cognition is determined by genes, but also by the environment, one's upbringing, and culture. Arguably, then, the concept lacks clear reference.

changes it implies. In this regard, it is useful, first of all, to distinguish between the roles of *biology* and *culture* (without implying they are radically distinct). To give an example, MSA/MP beadwork and pendant construction may involve a wide range of genetically fixed cognitive abilities, like memory, imagination, navigation, sensorimotor skills, and so on. Cognitivist and neuroscientific approaches in archaeology may help elucidate the role of such abilities. However, besides this, production most likely involves a certain inauguration into a culture. I define culture more precisely in the next section; for now, it can be taken quite generally to concern the sort of learning and communicative practices by which humans share ideas, skills, knowledge, plans, etc.

One important feature of culture is that it can be passed on to the next generation. That is to say, culture allows of *vertical transmission*, generating a link between living generations and their ancestors. As (archaic) humans transmit ideas from one generation to the next, the cultural achievements of past communities remain effective for them, even those of many generations ago, although often in modified forms. Such a link, which connects humans across generations, can be conceptualized as a *generative pathway*. Generative pathways need to be sustained by continuously passing on cultural achievements from one generation to the next; any break would mean an abrupt loss of culture. However, if appropriately maintained, culture might also accumulate, as new generations can build on the achievements of previous ones.

The importance of generative pathways is sometimes overlooked, but it can hardly be overstated, as humans are – as Husserl also suggested in the opening quote of this contribution – virtually nothing outside of the unbroken chain which connects them to their ancestors (Henrich 2017). For example, although largely based on anecdotal evidence, modern humans growing up outside of society and the continuous chain of generativity which connects them to previous societies (so-called feral children), appear so severely impaired that they cannot even develop language (see discussion in Candland 1993, 9–26). Likewise, it is virtually inconceivable that a contemporary human, let alone an MSA/MP hominin, could spontaneously invent beadwork production, that is, without any access to generative pathways. This art presupposes, then, besides genetically fixed brain functions, the development and maintenance of generative pathways, through which the vast array of accumulating techniques and cultural behaviors required to produce such tools is transmitted.

Human behavior depends thoroughly on cultural transmission, and this dramatically complicates our understanding of prehistoric hominin behavior. For one, it makes it very difficult to determine *how* hominins produced their material cultures. One might think that we should be able to identify certain necessary and sufficient conditions for the production of tools like beadwork. But this need not be the case. For example, it is perfectly conceivable that some MSA/MP hominins relied on improved processual memory, or any other genetically fixed cognitive function, whereas other hominins relied more substantially on culture and instruction. Both groups, then, would produce the same tools, but the production would be realized in different ways. This problem, sometimes called *equifinality*, suggests that complex or modern be-

havior need not be grounded in any particular set of necessary and sufficient conditions.

A related complication is that the same material products may also realize different functions, and therefore could point to different behaviors. While on a holiday in Athens, I asked a friend why she wore jewelry. She told me that she wore one piece because her grandfather gave it to her; it made her feel connected to him. Other jewelry she wore only with certain clothing on befitting social occasions, and other jewelry all the time because it looked good. This illustrates nicely that cultural objects are not only possibly multiply realizable, but they might also themselves realize multiple functions. Something similar may apply to MP/MSA beadwork and pendants, and this again complicates our understanding of use and function. Thus, the multiple realizability of products (in terms of their biological and generative conditions) *and* the multiple realizability of the functions of those products (in terms of their socio-cultural use) pose significant interpretative problems for archaeologists.

Other problems concern the descriptions we use to assess use and function. First, it is not always clear what sort of understanding otherwise intuitive descriptions yield exactly, and we sometimes shift without noticing it between explanatory discourses. For example, from the perspective of social cognition, beadwork might be said to aid social cohesion, from a biological perspective to enhance chances of survival or reproduction, and from a phenomenological perspective the ability to express oneself. Each of these suggestions may be informative regarding the cultural evolution of beadwork, but these descriptions also clearly overlap. Consider the remark by Donald (1991, 10), that "it could well be the case that the intellectual capacities needed to sustain large groups are identical to those that enable cultural invention". In saying this, he probably had in mind that the same "intellectual capacities" could have different functions. However, it could also be that "sustaining large groups" and "cultural invention" are not in fact two radically different things to start with, but to an extent overlapping descriptions.

Humans, then, may not always be well-equipped to think about complex behavior, and our concepts and explanations are often quite vague and overlapping. This holds in particular for broad concepts, which are inherently less likely to represent any particular function. This may well hold for the concept of language, which is traditionally conceptualized as a single "symbolic function" (Cassirer 1972), and it almost certainly holds for concepts like "art" and "symbolism".

Finally, our assessment of use and function is complicated by the many difficulties involved in considering changes over long periods of time. To give just one example, there is the possibility of exaptation, that is to say, of changing use and function. This can hold for physical traits, but also for material culture. For example, it is possible that the cultural use of ochre was first borne out of practical needs, and gradually evolved to carry social information. The adaptive function of ochre use then changed over time, a difference which need not be visible in the archaeological records.

These were just a few of the problems concerning the use of concepts like "modern symbolism", and I skipped many others, as those pertaining to the correct use of infer-

ence, conflicting data, and cultural biases. Many of these problems apply to all prehistoric interpretation, and they need not stop us from making sense of the deep past. However, it seems to me that a concept like "modern symbolism" faces more substantial problems, as this concept is currently too broad and vague. Focusing discussions on modern symbolism (or modern behavior for that matter) may do more harm than good, as it distracts from a more careful interpretation of data. One way to remedy this situation is to speak of "material culture" instead, and to try to make sense of the many observable changes in material culture over the long course of the Paleolithic – rather than to ask when behavior first became "modern".

Thinking about cultural change, rather than focusing on the question of "modern" behavior, presupposes a viable concept of *culture* as well as of *cultural change.* In the next section, I outline a framework for thinking about culture, and section 4 and 5 offer a theory of how cultures might evolve. After these discussions, I return to the topic of modern symbolism and the debate about (dis)continuity.

3 An account of culture: Shared intentionality and generative pathways

In the previous section, I considered some of the problems involved in debates on modern symbolism. Along the way, I introduced the concept of *generative pathways*, which refers to the transmission of ideas, techniques, and behaviors – in short, of culture – across generations. It seems *prima facie* likely that an understanding of the mechanisms underlying this process of transmission, and therefore of cultural change, is important in interpreting observable changes in material culture in a scientifically responsible manner. Among others, an understanding of macro-cultural change could inform debates on (dis)continuity and (pre)modern symbolism. Yet very few cognitive archaeologists seem to engage with this topic. Before developing an understanding of macro-cultural change in section 4 and 5, I first defend a particular take on culture in this section.

There is a relatively strong "Platonic" tradition in philosophy living to this day, which views the cultural achievements of humankind as "spiritual", in contrast to "natural" (*Geist* and *Natur,* as the German called it, e. g. Husserl, Scheler, Plessner). This realm of "spirit" has numerous analogs in Anglophone philosophy today, for example in the so-called "space of reasons" of John McDowell (McDowell 1994; 2009; 2013; van Mazijk 2020). Many of such contemporary analogs do not completely separate spirit from nature, but they do at least maintain this distinction, as a way to separate humans from non-human animals, or to conceptualize the subject matter of the humanities in contrast to that of the natural sciences.

In my view, the concept of culture can be significantly de-Platonized (naturalized) by defining it as the product of a certain type of social cognition, one that is characterized by what is today called "shared intentionality" (Tomasello 2010; 2021; van Mazijk

2024a; 2024b; 2024d; 2024 g). Shared intentionality involves the understanding of being directed at a third thing *together*, rather than merely individually. For example, humans and some captive primates like chimpanzees can manipulate each other's (or a caretaker's) attention by pointing. Generally speaking, pointing has a referential and a social intention, the latter usually being some request. Interpreting this social intention ("what does the other want me to do?") requires more than merely tracking the direction of pointing. In particular, it involves a complex *recursion* of intentional states, today commonly called *third order intentionality*, as in "I see that you want to show me X" (see also van Mazijk 2024a; 2024b; 2024d; 2024 g). This contrasts with, for instance, a more basic act like gaze following, which involves two orders of intentionality ("I see that you see X").

Put in simpler terms, sharing intentionality requires what the philosopher Edmund Husserl called "reciprocal empathy" (Husserl 1973b, 471–479). That is to say, it includes a complex awareness of each other's intentional states, in such a way that there is awareness that both subjects are directed at some third thing, hence *together*, rather than merely individually and contingently. According to Husserl, this includes two subjects, S^1 and S^2, which are together directed at a third thing: "S^1 grasps empathically S^2, and S^2 grasps empathically S^1, but not only that: S^1 experiences (understands) S^2 as experiencing S^1 understandingly, and vice versa" (Husserl 1973a, 211). This reciprocal empathy thus involves what is today called third order intentionality (Tomasello 2010; 2021), where both subjects are not only directed at X, but moreover entertain something like "I see that you see that I see X".

This complex recursion of intentional states allows minds to connect and to share object-directedness, which opens the door, or so I argue, to a new kind of information exchange. Any information thus exchanged might be inaccessible to any individual – including non-human animals and infants – who has not at some point partaken in the relevant processes of sharing attention. For example, a bison or a human newborn do not understand words, they do not see the practical function of a Levallois stone tool, and they do not grasp the meaning of the symbolic signs engraved in a Mesopotamian clay tablet, for the simple fact that neither has partaken (and the bison can never partake) in the right social intentionality. Words, tools, and symbolic signs, then, presuppose a capacity for mutual empathy and shared object-directedness. Their "meaning" is group-bound, and only appears to those who have been appropriately socialized by sharing attention.

It makes sense, in my view, to define "culture" primarily in terms of *the totality of group-bound behaviors and significances which are originally*[2] *accessible only to those who have partaken in the relevant processes of shared intentionality.* Culture then depends, in one way or another, on the psychological principles of sharing intentionality.

2 Humans can also to an extent understand "strange" or "alien" cultural products, thus without having partaken in the relevant processes of shared intentionality of the group to which they belong. In such a case, humans do not access these products "originally", but rather through an analogy to their own culture and experiences, based on empathy, see also van Mazijk (2024b).

I realize that this is a somewhat demanding concept of culture, as it excludes the products of mere imitation, which do not presuppose shared intentionality, as one individual can imitate another who is not socially engaging.[3] For example, extant non-human primate tool use (like nut cracking) appears based on imitation, not instruction, which would require sharing intentionality.

It is true that imitation also requires complex social understanding. In particular, it requires *second order intentionality*, of the sort "I see that you see X". Imitation does not, however, presuppose the mutual recognition of being similarly directed at a third thing, which is what shared intentionality is about. Non-human primates, at least in the wild, do not actively form such *triadic bonds.* They do not point out things to each other, so as to be directed at something together, as a "we". They also do not actively give names to things by pointing them out to each other, to create new meaning structures which are group-bound, and they further do not (clearly) actively instruct each other in practical activities. Instead, they mainly communicate through pantomime, which is *dyadic* (see e.g. Pika and Mitani 2009; Gibson 2012; Tomasello and Call 2019; Tomasello 2021). Interestingly, chimpanzees are in fact capable of pointing, which serves to establish shared intentionality, in captivity. Consequently, they appear to possess the relevant cognitive infrastructure, while lacking the right (cooperative) motives to use it in the wild, as Tomasello (2021) has also argued.

Clearly, some form of information transmission is possible based on second order intentionality, as in imitation. However, a concept of culture based only on shared intentionality does a much better job at capturing what's distinctive about human cultures, as opposed to the "cultures" of other animals, which tend to rely on imitation (e.g. nut cracking). Only humans actively engage in shared intentionality, and only humans thoroughly depend on cultural transmission for existence – although this skill and human dependence on it may certainly go back millions of years (see Henrich 2017; van Mazijk 2024d).

The concept of shared intentionality, then, while being somewhat restrictive in excluding most animal "cultures" based on imitation, may go a long way in addressing the gap which exists between non-human animal cultures and human cultures. An additional advantage of basing culture on shared intentionality is that this type of social understanding does not invoke a hard dividing line between humans and other animals. For, as mentioned, even chimpanzees can in fact engage in shared intentionality in captivity, when motivated by sufficiently cooperative human caretakers (Leavens et al. 2005). Viewing culture in terms of shared intentionality thus conceivably bridges the gap between human and non-human primate cognition, making it easier to see how culture evolved gradually out of ape-like intentionality, with its likely starting point 2–3mya ago (van Mazijk 2024d). By contrast, the more commonplace (at least in ar-

3 Naturally, it also excludes products of individual learning, which do not require imitation. This includes what is sometimes called "reactive heritability": evolutionary adaptations which develop in response to the environment, see Buss (2016, 404).

chaeology) conception of culture in terms of material-symbolic culture risks inadvertently emphasizing the gap, since detailed material cultures appear much later in the records, with no clear analog in non-human primate "cultures".

My suggestion so far, then, is that we view material culture (like tools) as well as abstract culture (like verbal or gestural communicative signs), as depending largely on a specific kind of social understanding, namely the one involved in sharing intentionality. One might also simply say that culture requires a certain type of social bond, namely *we-groups,* based on sharing attention, which differ from the dyadic (*I-you-groups*) characteristic of other primate social life. The formation of such we-groups allows individuals firstly to transmit culture *horizontally*, that is, between co-existing individuals. However, we-groups can be composed of constantly changing individuals, and this effectively allows humans to pass on culture *vertically* as well, to subsequent generations, even when there is no intention to do so. For example, one individual might teach others in its group a new way of producing tools by sharing intentionality (showing objects, pointing them out to others, fixing gazes by speech acts or attention-getters, etc.). This particular know-how may subsequently outlive the inventor and their pupils, as long as it is consistently carried over onto new subjects who continuously join the group. This way, sharing intentionality becomes formative of what I earlier called a generative pathway, which links individuals across generations, in terms of cultural accomplishments.

It appears that, probably quite early on in our evolution, the advantages of shared intentionality and the culture it yields made hominins thoroughly dependent on these generative pathways. Put differently, culture, as the product of sharing intentionality, became an integral part of the ecological niche hominins inhabited, and to which new generations had to adapt in order to survive (Henrich 2017). For example, it has been suggested that ESA/LP hominins' knapping skills indicate "evolving social cognitive capabilities" (Stout and Semaw 2006, 317) as well as teaching and practice (Hiscock 2014, 27). Morgan et al. (2015) further hypothesize that these Oldowan hominins subsequently became dependent on this very culture-infused ecological niche, such that "reliance on Oldowan tools would have generated selection favouring teaching". In short, generatively transmitted, cultural behavior (Oldowan tool-making) changed the ecological niche hominins inhabited, to which they subsequently adapted biologically speaking.

Morgan et al. (2015) seem to have had mainly biological adaptations in mind. In this sense, culture becomes another environmental factor which exerts selection pressure on heritable traits, and thereby becomes part of the story of evolution by natural selection. As Blackmore (2010, 268) also notes, "brains gradually became better and better at copying [with culture]", and Ermakov and Ermakov (2021, 3) suggest in a similar vein that "changes in cultural inheritance can lead to changes in genes".

However, it is sometimes overlooked that hominins may also have adapted to their culture-infused ecological niches through *more culture.* This is a quite different kind of adaptation, which is today still poorly understood. For example, we might be able to consider a useful idea, a new word, a bond-strengthening item, or a new tool-making

technique as itself an item selected for heritability, not within genes, but *within generative pathways*, for the adaptive advantages they may yield. In other words, any product of culture, if sufficiently useful within an already culture-infused environment, might be viewed as being "selected" and "transmitted" to the next generation. This could then happen quite independently of any natural heritability (genes), for the transmission process is a completely new one, as it relies on shared intentionality.

In summary: culture need not be understood as something spiritual which floats freely above nature, but we also need not explain it away. Instead, culture can be viewed naturalistically in terms of social intentionality theory, that is: the complex understanding minds have of other minds, and more specifically, the mutual recognition of being so-and-so directed. This type of social understanding allows the transmission of ideas, techniques, and much more across generations. This brings us to the topic of macro-cultural change which I discuss in the next two sections.

4 Evolving cultures: Sharing attention and plastic brains

Evolution is often viewed as the change in heritable characteristics of a biological population (a species) over successive generations. Any particular species inhabits an environment (an ecological niche), and as this environment continuously changes, the species adapts under selection pressure. The evolution of any species, then, depends on the niche-relative selection of favorable heritable traits. This means that there is no more or less evolved species in an absolute sense; a species merely adapts to the ecological niche it inhabits.

While this account of evolution offers a good starting point, it excludes macro-cultural change – at least insofar as "heritable traits" was earlier taken in the usual, biological (genes) sense. For large-scale developments in culture, such as those in our recent (pre)history, do not seem to presuppose genetic change. Human cultures have evolved at an incredible pace for at least the past 40ky, while relatively few relevant genetic changes appear to have been centrally involved in this process. This raises the question: how does cultural change compare to the familiar Darwinian theory of evolution by natural selection?

There is today lively debate about cultural evolution, and about the extent to which principles of genetic evolution apply to cultural evolution (Boon et al. 2021). In my view, macro-cultural change can be regarded as a different form of evolution, which is both similar to and different from natural evolution (note that while I oppose "cultural" to "natural" evolution, I am not implying the former is not natural). This process can be seen as centrally involving at least the following three factors (see also Mesoudi 2011, 25–54 for a more elaborate introduction to cultural evolution, but without the concept of shared intentionality).

First, cultural transmission relies on *sharing intentionality.* Put simply, in contrast to genes, products of culture[4] are not transmitted (as for most animals at least) through sexual reproduction, but by sharing attention. This makes the interactions between the individuals involved a crucial factor in cultural evolution. Culture is the product of different individuals who in mutual social understanding cooperate, instruct each other, and organize themselves socially. This means demographics and population density are important factors in cultural evolution. In some cases, behavioral differences reflected in the archaeological records may well be explained by differences in populations and demographics, or better, by differences in the generative pathways which these groups maintain. In particular, the possibility of interactions between groups can lead to a *fusing* of generative pathways, which can speed up cultural evolution. This may have been a crucial factor especially in early African *Homo sapiens* during the MSA/MP, and likewise in the cultural explosion in Upper Paleolithic Europe.

Second, the primary vehicles underlying these social activities are not genes, but *brains.* The internal storage of culture in the brain is sometimes referred to as the memotype (Heylighen and Chielens 2009). Cultural evolution depends largely on the brain's plasticity: it's capacity to be programmed with different "software", which is made available by we-groups and their generative pathways. As Donald (1991, 14) once put it, cultures "restructure the mind [...] in terms of its fundamental neurological organization". Culture, then, presupposes highly plastic brains, which can adopt various cultural "software". Lower degrees of neural plasticity and shorter infancy phases (themselves matters of genetic "hardware") will limit the cultural impact of sharing intentionality, as would presumably have been the case with many archaic hominins.

Third, many, although not nearly all, cultural products involve *materiality.* The external storage of culture is sometimes referred to as mediotype (Heylighen and Chielens 2009). For instance, material tools are inherently made from external materials, and some information about tool-making techniques can be stored in these tools themselves. This holds even more for written language, which is itself little more than an external storage system. Culture, then, is not stored only in brains, but also in the material environment.

At the same time, not all products of culture can be said to be material or "extended" in this way, and this puts, in my view, limitations on theories focusing predominant-

4 The idea that products of culture are both heritable and subject to evolution by niche-relative selection, just like genes are, is central to the contemporary research field of memetics. As my outline here differs in some ways from memetics research, which like Dawkins (1976) conceptualizes memes as distinct cultural units, I avoid the term "meme", and speak instead of "products of culture". Various objections to the concept of "meme" have been formulated in the literature. Mesoudi suggests that the boundaries of a meme are not sufficiently clear, and that cultural evolution is "non-particulate" (Mesoudi 2011, 41–43).In a similar spirit, Heylighen and Chielens (2009) argue that culture as a replicator has a lower fidelity than genes, as individuals and communities change culture when they integrate it within their existing cultural systems. As I am not defending memetics here, this is not a concern in this paper.

ly on material-external vehicles, like material engagement theory (Malafouris 2013). For example, symbolic speech acts also presuppose shared intentionality (shared directedness at abstract objects or objects which are named), and words must be transmitted through generative pathways. Yet words, and symbolic gestures alike, do not require external vehicles in the way writing does. It is in my view quite likely that rich material-symbolic cultures are relatively late cultural adaptations, while cultural evolution itself started much earlier (I am thinking well over 2mya, but there is no hard evidence for this; see van Mazijk 2024d where I elaborate this claim further).

In conclusion: there are, on the simplified picture presented, two different forms of evolution. I skipped many technical differences and ongoing debates about them, but the main differences between the two forms of evolution concern, in my view, the vehicles of the entities which are copied (brains versus genes) and the transmission process (social intentionality, in particular shared intentionality, versus sexual reproduction). Simply by sharing attention, (archaic) humans can transmit vast stores of cultural information across generations. In doing so, each generation reprograms the brains of the next generation. Given the right circumstances, this novel copying process can lead to significant change much faster than evolution by natural selection can account for.

Granted that this is all somewhat acceptable, at least as a very rough sketch, we have yet to address whether cultures also literally *evolve*, namely through mechanisms of selection and adaptation, as is the case in evolution by natural selection. In the next section, I try to further clarify the workings of macro-cultural change, and I suggest that this indeed involves mechanisms of selection and adaptation. After this discussion, I return to the topic of (dis)continuity and modern symbolism, to see how these reflections may inform our thinking there.

5 Evolving cultures: Cultural adaptation and selection

As the previous section outlined, culture is "heritable", albeit in a completely new sense, namely through the principles of shared intentionality and the generative pathways they produce. Simply by sharing attention, (archaic) humans can transmit cultural information across generations. Importantly, in so doing, they not only constantly reprogram brains, but also change their cultural and material environments. For example, a world with new, complex tools in it creates a different environment or ecological niche, which will in turn favor some new ideas more than others. Perhaps, then, cultural change can itself be regarded as subject to niche-relative selection, in such a way that we should speak not only of gene-culture coevolution, but also of culture adapting to culture.

While cultural evolution theories are gaining grounds, they are still controversial, as they contradict longstanding ideas about the nature of art and culture. In particular,

culture and art are often seen (i) to have non-functional aspects, and to (ii) result from subjective (free) creative processes. In what follows, I defend the idea of macro-cultural change by niche-relative selection against some possible objections, in a non-technical manner (see also Heylighen and Chielens 2009 for other objections, as well as replies to them).

First, it is sometimes supposed that the observable variations between human cultures is indicative of some sort of freedom, and that this variation must therefore be incompatible with cultural evolution by niche-relative selection. This is not true, however, for environmental pressure always allows variations to exist, and many differences between cultures are simply such variations. For example, the fact that humans all look somewhat differently is due to the fact that facial features are apparently not subject to a sufficiently strong selection pressure that could eradicate such differences. Something similar holds for many cultural differences. It should in this regard not be overlooked that human cultures are in fact often quite alike, just like human faces are still broadly similar. For example, eating rice with sticks or a fork is a cultural variation between populations which selection pressures allow to exist. But there is still a general cultural adaptation underlying both behaviors, namely the use of simple tools for food consumption. This cultural adaptation, then, was sufficiently beneficial to be selected in most populations (although not everywhere), and was transmitted through shared intentionality.

A second possible objection is that some cultural behaviors do not seem to advance survival or reproductive chances; they rather seem to be non-functional, or even to work contrary to reproduction. Such behaviors, for example institutionalized celibacy, are not, then, like forks and chopsticks, which are evidently useful. Such seemingly non-adaptive behaviors, like those of celibate monks, can usually be explained quite simply by considering their adaptive function within the larger population.[5] While celibacy may not enhance the reproductive advantages of certain individuals, it can – and evidently has been – selected in different populations as a useful adaptation, for it is only a small part of a larger group which remains reproductive.

A third possible objection concerns the cultural impact of the actions of individuals. Let us take an influential individual like Vladimir Putin as an example. It appears to us that Vladimir Putin is a free individual, yet his decisions may have substantial effects on human cultures across the world. Such effects may well seem quite sudden, rather than gradual. Also, they could be interpreted by some as destructive, which does not go well with the idea that they would have been selected for being useful adaptations. How, then, do we make this compatible with niche-relative selection? Do the ways in which cultures change around us not reveal that culture is not a matter of selection and adaptation after all?

5 Natural evolution also allows of maladaptation, and this offers another explanatory route for certain cultural phenomena. Institutionalized celibacy, however, evolved in many distinct cultures, and it seems more feasible to explain it in terms of adaptation. Note, however, that this is merely an example.

It is quite easy to be misled by the details of our everyday lives when considering principles that govern change over large populations and time spans (I am only defending macro-cultural evolution). The actions of any given animal are never fully determined by principles of selection, and Darwin himself certainly never suggested such a thing. Just as any individual bison may run itself off a cliff, Putin's individual actions are just that: an individual's actions, although here they happen to impact the lives of billions of other people as well.

Not all cultural change, then, is necessarily fixed by niche-relative selection. In fact, we do not ordinarily use the term "culture" to refer to useful adaptations at all. In everyday parlor, the word "culture" rather refers precisely to cultural *variation:* the different cooking styles, clothing, decorations, and so on of various people. Phenomenologically speaking, that is, from the human viewpoint, cultural variation seems to be far more salient than the adaptive patterns underlying them.

While such variations certainly remain of interest from the viewpoint of "micro-level disciplines" (Mesoudi 2011, 52), as in the arts and humanities, the study of hominin evolution plays out on an entirely different scale. Here, material (cultural and symbolic) changes are better understood in terms of functional adaptations, by considering how earlier humans adapted and evolved under changing environmental pressures. The environments partially change because of new cultural inventions, and new cultural inventions also result from changing environments.

In conclusion: by sharing intentionality, (archaic) humans transmit culture across generations, thereby changing their environments, which in turn changes their behaviors, which in turn changes their environments. This process of change is subject to niche-relative selection, and at least on a macro-scale, changes in material culture can be viewed as *functional adaptations* to changing culture-infused environments.

6 Continuity and discontinuity approaches

The previous sections provided a basic framework for thinking about cultural evolution. This framework bears on questions concerning the origins of symbolic modernity. I gave a fairly general account of what culture might be and how it evolves, which can occur both in "dialogue" with (gene-culture coevolution), but also independently of, genetic changes. In short, humans continuously adapt to their culture-infused environments, partially through culture, and they transmit such cultural adaptations horizontally and vertically by sharing intentionality. This process requires the brain's plasticity, and may involve external vehicles. In recent (pre)history, with unprecedented population densities and complex fusions of generative pathways, this has given rise to incredible cultural *variation*, which is remarkably salient to the human eye. Over the longer course of hominin prehistory, however, culture need not have been so richly varied, and variation need not have been as salient to earlier hominins. In considering the longer process of the evolution of the human mind, cultural and biological *adaptation* (function), not variation, should be the principle concern.

This discussion on cultural evolution bears on a significant divide in discussions on the advent of "modern" behavior, namely between so-called *continuity* and *discontinuity* approaches. Some of the better known discontinuity approaches of the past decades have argued that single genetic mutations might be responsible for modern symbolism. For example, Chomsky famously maintains that there was a unique species-defining mutation, present in a metaphorical Adam or Eve, which resulted in behavioral and symbolic modernity (here guised as "infinite generativity", Hauser et al. 2002, 1572). This mutation is taken to have occurred only in the *Homo sapiens* line, and no longer than 100kya.

In the field of cognitive archaeology, the enhanced working memory hypothesis by Wynn and Coolidge is quite well-known, and might be read as belonging to the same camp of discontinuity approaches. Wynn and Coolidge (2011) suggest that language alone is "insufficient to account for all of the features of the modern mind", and that "several other components [were involved], including problem solving and long range planning abilities". They subsequently hypothesize a possible mutation in the genetic or epigenetic basis of enhanced working memory, which could have been responsible for crucial changes in these cognitive capabilities (Coolidge and Wynn 2005; Wynn and Coolidge 2010). They further suggest that humans may have been neurologically modern sometime before this is reflected in the archaeological records.

A single mutation with a great impact on life on Earth is always a theoretical possibility, and it goes without saying that *some* genetic adaptations underlie species-specific behavior, including "modern" syntactical capacities (see Mozzi et al. 2016). Nevertheless, there are reasons, I believe, to be wary of interpreting "modern" human behavior *exclusively* along the lines of a single genetic mutation. This is firstly because, in the case of humans, a genetic explanation is never a complete explanation, because culture is no less a part of the story of our evolution, and it is, as I have argued, not reducible to genes. This means genetic explanation is bound to be one-sided. Second, it is worth noting that, during the whole history of life on Earth, there are only a few possible candidates for single mutations which completely changed the course of life on our planet, such as the first self-replicating RNA, the first mitochondria, and the first meiosis. Such events, then, are quite special, and only the most exceptional of circumstances should bring us to consider either natural or cultural evolution as discontinuous in this sense.

It is perhaps for similar reasons that Merlin Donald in *Origins of the Modern Mind* suggested that a continuity approach is "the only avenue open to us" (Donald 1991, 24). At the same time, he noted that "the evolution of cognition at the modular level might have continued well beyond the point at which physical evolution had stopped" (Donald 1991, 14). In other words, cultural evolution, from some point onward, may have started to completely outpace natural evolution, with human brains continuously being rewired independently of any genetic adaptations. Does this incredible acceleration of cultural evolution not suggest some kind of disruptive event after all?

In my view, we need not draw that conclusion. In this regard, it is sometimes overlooked that rapid cultural innovation is not in fact a universal phenomenon among hu-

mans from the LSA/UP onwards. Some smaller and isolated populations of "modern" humans, while often making more complex art and advanced tools than for instance the Neanderthals, did not accumulate culture as rapidly as in other, more densely populated parts of the world. From an archaeological perspective, some of them need not even appear as "advanced" as Magdalenian populations in Europe some 17kya. While these more isolated cultures could still be distinguished as "modern", the suggestion of radical discontinuity appears motivated mainly by comparisons to humans standing in specific generative pathways.

At the same time, there is now increasing evidence for significant cultural adaptations in the MSA/MP. This is reflected, for instance, in research on MSA/MP symbolic speech capacities, as well as on the early use of decorative items and wooden tools. It thus appears that at least some archaic humans already developed the right genetic makeup as well as generative pathways required for relatively complex cultural practices. Such findings, too, blur the dividing line between modern and pre-modern behavior, and point to continuity.

Nevertheless, the old doctrine of a "cultural explosion" (Pfeiffer 1982) continues to exert a notable influence today, and this is partially due to the fact that there still is notoriously little evidence for significant material-cultural evolution during most of the ESA/LP, with only limited and often controverted evidence in the MSA/MP (such as decorative ochre use, the Excalibur axe, Shanidar "burials", etc.). The archaeological records thus continue to sketch a picture of thousands of generations of pre-historic humans living in largely the same cultural worlds. In short, the archaeological records can still legitimately be interpreted along the lines of discontinuity.

However, it is worth repeating my earlier claim, that external materials are not the only – or even the main – vehicles for cultural evolution. Archaeologists have a long and detailed history of underestimating the graduality of cultural change, as they tend to focus one-sidedly on material culture. To give one arbitrary example, Steven Mithen, in his otherwise brilliant book *The Prehistory of the Mind* (1996), built a theory of cognitive modularity almost entirely around the gaps in the archaeological records at the time. He claimed, rather absurdly from a viewpoint a mere 20 years later, that archaic humans had a special cognitive module for stone manipulation, and could not see that other materials could also be worked. Likewise, Donald (1991), who based his ideas partially on the archaeological and paleontological data then available, hypothesized a (too) recent "mimetic phase" to fit the lack of evidence in his day regarding the speech and auditory capacities of MSA/MP hominins.

Obviously, theories should be based on evidence. Still, constraints of archaeological evidence should not, or at least not all too easily, motivate the construction of theories which are quite implausible from an evolutionary standpoint. In other words, archaeologists should take cultural evolution and its inherently gradual nature more seriously. I have argued so far that changes in material culture should be viewed through the lens of cultural evolution theory. This primarily means reconstructing the material records explicitly in terms of functional adaptations to culture-infused worlds, instead of e. g. supposedly non-functional body decorations. It further means favoring a gradualist

approach at (nearly) all costs, no matter how rapid culture-infused environments may change under the right circumstances. Finally, it means viewing the material-archaeological records within a much larger history of sharing intentionality and transmitting culture, the bulk of which does not materialize.

7 A plea for stages

Donald's (1991) strategy, as of many others, was to accept continuity, and to divide prehistorical cultural evolution into stages. Rather than asking the familiar "like us or not like us" questions of the old philosophical anthropology, thinking in stages means to provide "broad, unifying concepts that express the dominant cognitive quality of the individual mind in relation to society" (Donald 1991, 269). Such thinking in stages is compatible with a gradualist account of human cultural evolution which views products of material culture as functional adaptations to the culture-infused environments of the time.

Such cultural-evolutionary thinking should be part and parcel of the field of evolutionary cognitive archaeology. However, the evolution of culture is not a mere extension of genetic evolution. As I have argued, it operates on its own principles, and therefore the study of prehistoric cultural change demands a different kind of evolutionary theorizing. In particular, identifying the adaptive function of prehistoric items presupposes an understanding of the adaptive problems they are to solve. This is particularly complicated, because the environments which exerted selection pressure on prehistoric cultural items were themselves culturally infused, and largely in ways which do not materialize. For example, beadwork production may fix an adaptive problem that is itself already predominantly cultural, one that is mediated by complex social hierarchies and some symbolic speech, both of which depend on generative transmission. Beadwork might thus be an adaptation to a problem which is itself already cultural, and furthermore largely immaterial, as pre-existing hierarchies and communicative systems need not materialize. The generative transmission of beadwork would in turn "reprogram" future generations of hominins, thereby modifying the cultural worlds they inhabit, which then exert new cultural (as well as biological) pressures, and so on.

I have argued that, given that evolution is a gradual process, it makes no sense to fit all the data into a pre-modern/modern conceptual schema. Instead, more specific cultural-evolutionary hypotheses are needed, which can make gradual changes in material culture over longer periods of time understandable. The construction of such hypotheses will rely largely on reverse-engineering: taking the archaeological findings and other data as starting points, we need to reconstruct the problems these adaptations were selected to solve. It is not unusual in evolutionary biology to formulate (functional) hypotheses which may not be verifiable by current means. They can be scientific hypotheses nonetheless, and their credibility depends on how they explain or predict data in accordance with viable theoretical models.

8 Conclusion

I argued in this chapter that thinking about modern symbolism requires taking evolution seriously. I first outlined some of the problems involved in thinking about modern symbolism. These problems are substantial, which means archaeologists (and philosophers) should resist framing discoveries in terms of "modern symbolism", as if something new is thereby learned about human behavioral complexity or cognitive evolution. I then defended a concept of culture primarily based on the psychological and phenomenological principles of shared intentionality, and outlined a theory of how cultures evolve. Finally, I returned to the question of symbolism, where I suggested that continuity thinking is to be preferred, and that stage-based approaches are the way forward, as they are compatible with gradualism, and avoid the old dichotomies. Rather than debating the "modern" nature of certain items, such stage-based thinking should focus on the construction of hypotheses concerning the adaptive problems which cultural items were selected to solve.

References

Bickerton, D. (2000). "Resolving Discontinuity: A Minimalist Distinction between Human and Non-human Minds", *American Zoologist*, Vol. 40, No. 6, 862 – 873, https://doi.org/10.1093/icb/40.6.862.

Blackmore, S. (2010). "Memetics Does Provide a Useful Way of Understanding Cultural Evolution", *Contemporary Debates in Philosophy of Biology* F. J. Ayala and R. Arp (eds.), Oxford: Wiley-Blackwell.

Boon, E., van den Berg, P., Molleman, L., Weissing, F. J. (2021). "Foundations of cultural evolution", *Phil. Trans. R. S.* B 376: 20200041, https://doi.org/10.1098/rstb.2020.0041.

Bouzouggar, A., Barton, N., Vanhaeren, M., d'Errico, F., Collcutt, F., Higham, T., Hodge, E., Parfitt, S., Rhodes, E., Schwenninger, J-L., Stringer, C., Turner, E., Ward, S., Moutmir, A., Stambouli, A. (2007). "82,000-year-old shell beads from North Africa and implications for the origins of modern human behavior", *Proceedings of the National Academy of Sciences*, 104 (24), 9964 – 9969.

Buss, D. M. (2016). *Evolutionary Psychology: The New Science of The Mind. Fifth Edition.* London, New York: Routledge.

Candland, D. K. (1993). *Feral children & clever animals.* Oxford: Oxford University Press.

Cassirer, E. (1972). *An Essay on Man: An Introduction to a Philosophy of Human Culture.* New Haven, London: Yale University Press.

Colagè, I., d'Errico, F. (2018). "Culture: The Driving Force of Human Cognition", *Topics in Cognitive Science*, Vol. 12, 654 – 672.

Conde-Valverde, M., Martínez, I., Quam, R. M., Rosa, M., Velez, A. D., Lorenzo, C., Jarabo, P., Bermúdez de Castro, J. M., Carbonell, E., Arsuaga, J. L. (2021). "Neanderthal and *Homo sapiens* had similar auditory and speech capacities", *Nature Ecology and Evolution*, Vol. 5, 609 – 615.

Coolidge, F. L., Wynn, F. (2005). "Working Memory, its Executive Functions, and the Emergence of Modern Thinking", *Cambridge Archaeological Journal*, 15: 1, 5 – 26.

Dalton, R. (2003). "Lion man takes pride of place as oldest statue", *Nature*, Vol. 425, No. 7, 7.

Dapschauskas, R., Göden, M. B., Sommer, C., Kandel, A. W. (2022). "The Emergence of Habitual Ochre Use in Africa and its Significance for The Development of Ritual Behavior During The Middle Stone Age", *Journal of World History*, 35, 233 – 319.

Dawkins, R. (1976). *The Selfish Gene.* Oxford: Oxford University Press.

d'Errico, F., Vanhaeren, M. (2012). "Linguistic implications of the earliest personal ornaments", in: The Oxford Handbook of Language Evolution. K. R. Gibson, Maggie Tallerman (eds.), Oxford: Oxford University Press, 299 – 302.

Donald, D. (1991). *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition.* Cambridge, London: Harvard University Press.

Ducasse, S., Langlais, M. (2019). "Twenty years on, a new date with Lascaux. Reassessing the chronology of the cave's Paleolithic occupations through new ^{14}C AMS dating", *Revue d'Archéologie Préhistorique*, Vol. 30, No. 1, 130 – 147.

Ermakov, D., Ermakov, A. (2021). "Memetic approach to cultural evolution", *BioSystems*, 204, https://doi.org/10.1016/j.biosystems.2021.104378.

Frayer, D. W., Radovčić, J., Radovčić, D. (2020). "Krapina and the Case for Neandertal Symbolic Behavior", *Current Anthropology*, Vol. 61, No. 6, https://doi.org/10.1086/712088.

Gibson, K. R. (2012). "Are other animals as smart as great apes? Do others provide better models for the evolution of speech or language?", in: The Oxford Handbook of Language Evolution.

Hauser, M. D., Chomsky, N., Fitch, W. T. (2002). "The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?", *Science*, 298, 1569.

Henrich, J. (2017). *The Secret of Our Success: How Culture Is Driving Human Evolution, Domesticating Our Species, and Making Us Smarter.* Princeton: Princeton University Press.

Henshilwood, C. S., Dubreuil, B. (2009). "Reading the artifacts: gleaning language skills from the Middle Stone Age in southern Africa", in: *The Cradle of Language.* R. Botha, C. Knight (eds.). Oxford: Oxford University Press, 41 – 61.

Henshilwood, C. S., Dubreuil, B. (2011). "The Still Bay and Howiesons Poort, 77 – 59 ka: Symbolic Material Culture and the Evolution of the Mind during the African Middle Stone Age", *Current Anthropology*, Vol. 52, No. 3, 361 – 400.

Heylighen, F., Chielens, K. (2009). "Evolution of Culture, Memetics", in: *Encyclopedia of Complexity and Systems Science*, R. Meyers (ed), New York: Springer, https://doi.org/10.1007/978-0-387-30440-3_189.

Hiscock, P. (2014). "Learning in Lithic Landscapes: A Reconsideration of the Hominid 'Toolmaking' Niche", *Biological Theory*, Vol. 9, 27 – 41.

Husserl, E. (1973a). *Zur Phänomenologie der Intersubjektivität. Texte aus dem Nachlass. Zweiter Teil: 1921 – 1928.* Husserliana XIV, I. Kern (ed.), Dordrecht: Kluwer Academic Publishers.

Husserl, E. (1973b). *Zur Phänomenologie der Intersubjektivität. Texte aus dem Nachlass. Dritter Teil: 1929 – 1935.* Husserliana XV. Kern (ed.), Dordrecht: Kluwer Academic Publishers.

Leavens, D. A., Russell, J. L., Hopkins, W. D. (2005). "Intentionality as Measured in the Persistence and Elaboration of Communication by Chimpanzees (*Pan troglodytes*)", *Child Development*, Vol. 76, No. 1, 291 – 306, https://doi.org/10.1111/j.1467-8624.2005.00845.x.

Malafouris, L. (2013). *How Things Shape the Mind: A Theory of Material Engagement.* Cambridge, Massachusetts: MIT Press.

McDowell, J. (1994). *Mind and World.* Cambridge, Massachusetts: Harvard University Press.

McDowell, J. (2009). *Having the World in View: Essays on Kant, Hegel, and Sellars.* Cambridge: Harvard University Press.

McDowell, J. (2013). "The Myth of the Mind as Detached", in: *Mind, Reason, and Being-in-the-World: the McDowell- Dreyfus Debate.* J. K. Schear (ed.), London, New York: Routledge.

Mesoudi, A. (2011). *Cultural Evolution: How Darwinian Theory Can Explain Human Culture and Synthesize the Social Sciences.* Chicago: University of Chicago Press.

Mithen, S. (1996). *The Prehistory of the Mind: The Cognitive Origins of Art and Science.* London: Thames and Hudson Ltd.

Morgan, T. J. H., Uomini, N., Rendell, L. E., Chouinard-Thuly, L., Street, S. E., Lewis, H., Cross, C. P., Evans, C., Kearney, R., de la Torre, I., Whiten, A., Laland, K. N. (2015). "Experimental evidence for the co-evolution of hominin tool-making teaching and language", *Nature Communications*, Vol. 6, No. 6029.

Mozzi, A., Forni, D., Clerici, M., Pozzoli, U., Mascheretti, S., Guerini, F. R., Riva, S., Bresolin, N., Cagliani, R., Sironi, M. (2016). "The evolutionary history of genes involved in spoken and written language: beyond FOXP2", *Scientific Reports,* vol. 6, 22157, https://doi.org/10.1038/srep22157.

Papagianni, D., Morse, M. A. (2022). *The Neanderthals Rediscovered: How a Scientific Revolution is Rewriting Their Story.* London: Thames & Hudgon.

Parravicini, A., Pievani, T. (2018). "Continuity and Discontinuity in Human Language Evolution: Putting an Old-fashioned Debate in Its Historical Perspective", *Topoi,* 37, 279 – 287.

Pfeiffer, J. E. (1982). *The Creative Explosion: An Inquiry Into the Origins of Art and Religion.* New York: Harper & Row Publishers.

Pika, S., Mitani, J. C. (2009). "The directed scratch: Evidence for a referential gesture in chimpanzees?", in: *The Prehistory of Language*, R. Botha, C. Knight (eds.), Oxford: Oxford University Press, 166 – 180.

Prévost, M., Groman-Yaroslavski, I., Crater Gershtein, K. M., Tejero, J.-M., Zaidner, Y. (2021). "Early evidence for symbolic behavior in the Levantine Middle Paleolithic: A 120 ka old engraved aurochs bone shaft from the open-air site of Nesher Ramla, Israel", *Quaternary International*, https://doi.org/10.1016/j.quaint.2021.01.002.

Pinson, A., Xing, L., Namba, T., Kalebic, N., Peters, J., Oegema, C. E., Traikov, S., Reppe, K., Riesenberg, S., Maricic, T., Derihaci, R., Wimberger, P., Pääbo, S., Huttner, W. B. (2022). "Human TKTL1 implies greater neurogenesis in frontal neocortex of modern humans than Neanderthals", *Science,* Vol. 377, 6611, https://doi.org/10.1126/science.abl6422.

Quiles, A., Valladas, H., Bocherens, H., Delqué-Količ, E., Kaltnecker, E., van der Plicht, J., Delannoy, J.-J., Feruglio, V., Fritz, C., Monney, J., Philippe, M., Tosello, G., Clottes, J., Geneste, J.-M. (2016). "A high-recision chronological model for the decorated Upper paleolithic cave of Chauvet-Pont d'Arc, Ardèche, France", *PNAS,* Vol. 113, No. 17, 4670 – 4675.

Rifkin, R. F., Dayet, L., Queffelec, A., Summers, B., Lategan, M., d'Errico, F. (2015). "Evaluating the photoprotective effects of ochre on human skin by in vivo SPF assessment: Implications for human evolution, adaptation and dispersal", *PloS ONE*, Vol. 10, | https://doi.org/10.1371/journal.pone.0136090.

Rodríguez-Hidalgo, A., Morales, J.I., Cebrià, A. et al. (2019). "The Châtelperronian Neanderthals of Cova Foradada (Calafell, Spain) used imperial eagle phalanges for symbolic purposes", *Sci Adv.* 1;5 (11), https://doi.org/10.1126/sciadv.aax1984.

Russo, G., Milks, A., Leder, D., Koddenberg, T., Starkovich, B. M., Duval, M., Zhao, J. X., Darga, R., Rosendahl, W., Terberger, T. (2023). "First direct evidence of lion hunting and the early use of al ion pelt by Neanderthals", *Scientific Reports,* Vol. 13, 16405.

Stout, D., Semaw, S. (2006). "Knapping Skill of the Earliest Stone Toolmakers: Insights from the Study of Modern Human Novices", in: *The Oldowan: Case Studies Into the Earliest Stone Age*, N. Toth, K. Schick (eds.), Gosport, Indiana: Stone Age Institute Press, 307 – 320.

Tomasello, M. (2010). *Origins of Human Communication.* Cambridge, Massachusetts: MIT Press.

Tomasello, M., Call, J. (2019). "Thirty years of great ape gestures", *Animal Cognition*, Vol. 22, 461 – 469.

Tomasello, M. (2021). *Becoming Human: A Theory of Ontogeny.* Cambridge, Massachusetts: Belknap Harvard.

Vanhaeren, M., d'Errico, F. (2006). "Aurignacian ethno-linguistic geography of Europe revealed by personal ornaments", *Journal of Archaeological Science,* Vol. 33, 1105 – 1128.

van Mazijk, C. (2020). *Perception and Reality in Kant, Husserl, and McDowell.* London, New York: Routledge.

van Mazijk, C. (2023). "Symbolism in the Middle Palaeolithic: *A Phenomenological Account of Practice-embedded Symbolic Behavior*", in: *The Oxford Handbook of Cognitive Archaeology.* T. Wynn, K. A. Overmann, F. L. Coolidge (eds.), https://doi.org/10.1093/oxfordhb/9780192895950.013.55.

Van Mazijk, C. (2024a). "Do great apes switch perspectives? Husserl, Tomasello, and operative intentionality", *Phenomenology and Mind*, 26 – 2024, 204 – 211, https://doi.org/10.17454/pam-2616.

Van Mazijk, C. (2024b). "Husserl's layered theory of empathy and Theory of Mind", *Journal of the British Society of Phenomenology,* https://doi.org/10.1080/00071773.2024.2391880.

Van Mazijk, C. (2024c). “Iconic origins of language? An essay review of Steven Mithen’s The Language Puzzle”, *Biology and Philosophy*, 39:16, https://doi.org/10.1007/s10539-024-09952-2.

Van Mazijk, C. (2024d). “Intentionality, pointing, and early symbolic cognition”, *Human Studies*, https://doi.org/10.1007/s10746-024-09713-w.

Van Mazijk, C. (2024e). “Prehistory, anti-Cartesianism, and the first-person viewpoint”, *Phenomenology and the Cognitive Sciences*, special issue *Philosophy and Prehistory: New Perspectives on Minds, Art, and Culture*, eds. C. van Mazijk, A. Killin, K. Overmann, https://doi.org/10.1007/s11097-024-09982-x.

Van Mazijk, C. (2024f). “Symbolism in the Middle Paleolithic: A phenomenological account of practice-embedded symbolic behavior”, In: *Oxford Handbook of Cognitive Archaeology*, T. Wynn, F. Coolidge, K. Overmann (eds.), Oxford: Oxford University Press, 1129 – 1148. https://doi.org/10.1093/oxfordhb/9780192895950.013.55.

Van Mazijk, C. (2024 g). “What naturalism? Great apes, old-fashioned philosophy, and the McDowellian language game”, *Asian Journal of Philosophy.*

Wolpoff, M. H., Mannheim, B. Mann, A., Hawks, J., Caspari, R., Rosenberg, K. R. Frayer, D. W., Gill, G. W., Clark G. (2004). “Why Not the Neandertals?”, *World Archaeology*, Vol. 36, No. 4, 527 – 546.

Wynn, T., Coolidge, F. L. (2010). “Beyond Symbolism and Language An Introduction to Supplement 1, Working Memory”, *Current Anthropology,* Vol. 51, 5 – 16.

Wynn, T., Coolidge, F. L. (2011). “The Implications of the Working Memory Model for the Evolution of Modern Cognition”, *International Journal of Evolutionary Biology*, 741357, https://doi.org/10.4061/2011/741357.

Wynn, T. (2012). “The Palaeolithic record”, in: *The Oxford Handbook of Language Evolution.* K. R. Gibson, M. Tallerman (eds.). Oxford: Oxford University Press, 282 – 295.

Wynn, T., Haidle, M., Lombard, M., Coolidge, F. L. (2016). “The Expert Cognition Model in Human Evolutionary Studies”, in: *Cognitive Models in Palaeolithic Archaeology*, T. Wynn and F. L. Coolidge (eds.), Oxford: Oxford University Press, 21 – 44.

Zilhão, J. (2007). “The Emergence of Ornaments and Art: An Archaeological Perspective on the Origins of ‘Behavioral Modernity’”, *Journal of Archaeological Research*, Vol. 15, 1 – 54.

Zilhão, J., Angelucci, D. E., Badal-Garcia, E., d’Errico F., Daniel F., Dayet L., Douka K., Higham T. F. G., Martinez-Sánchez J., Montes-Bernárdez R., Murcia-Mascarós S., Pérez-Sirvent R.-G., Vanhaere M., Villaverde V., Wood R., Zapata J. (2010). “Symbolic use of marine shells and mineral pigments by Iberian Neandertals”, *PNAS,* Vol. 107, No. 3, 1023 – 1028.

Shumon T. Hussain

The dialectic Neanderthal: Re-configuring the human question in times of planetary crisis

Introduction

Daniel Martin Feige (2022) has recently revitalized the self-conceiving human – the idea that humans are those living beings who constantly make and re-make themselves according to their own self-image(s) and thereby work through issues currently difficult to grasp and resolve conceptually. This understanding of what it means to be human has a systematic and a historical implication. Systematically, the human lifeform is said to be characterized by a *recursive condition* in which human behaviour is mediated by more-or-less conscious self-understanding – what Plessner (1975) has cast as 'excentric positionality' and what Scheler (2018) has described as the human predicament to grapple with a proper 'place' in the world. Historically, human self-conception must be understood as a deeply *situated* and as such context-dependent material and discursive construct, so that its realizations and recursive relationships with human behaviour may vary widely in time and space. Beyond the obvious difficulties of 'applying' this qualification of the Anthropos to past human contexts from which hardly any self-referential testimony has survived, it is informative to consider how the Neanderthal debate may play into the human self-devising project.

First of all, the scholastic preoccupation with *differentia specifica* is itself a reflex of the need to make sense of the particularities of human life in the face of other-than-human lifeforms. The classic Neanderthal debate which has raged in archaeology and palaeoanthropology for the last thirty years or so (Mellars and Stringer 1989; Mellars 2015 [1996]; Barker et al. 2007; d'Errico and Stringer 2011) neatly inscribes into this logic as Neanderthals were traditionally framed as the proximate 'others' (Corbey 2005; Peeters and Zwart 2020) and together with other primate model species (chimpanzees, bonobos) fundamentally shaped how scholars envisioned the evolution of our own species – *Homo sapiens.* Neanderthals have since sparked the creative imagination of the public and the scholarly community alike and essentially acted as a 'foil' or 'mirror' of human self-definitions (Shreeve 1995; Madison 2021), becoming a potent conduit of re-

I thank the editors of this volume, especially Julien Kloeg, for inviting me to contribute this paper and to re-spark my interest in the Neanderthal question. Special thanks goes to Raymond Corbey who has always kept my interest in all things philosophical anthropology.

Shumon T. Hussain, Center for Multidisciplinary Environmental Studies in the Humanities (MESH) & Institute of Prehistoric Archaeology, University of Cologne, Cologne, Germany, s.t.hussain@uni-koeln.de; orcid: 0000-0002-6215-393X

https://doi.org/10.1515/jbpa-2022-004

negotiating nearly all of the central registers of human self-assertion in late Western modernity – from nature vs. culture to body vs. mind. And even though there is a growing consensus as to the originality and hitherto often-underestimated complexity of Neanderthal life among archaeologists (e.g., Roebroeks and Soressi 2016; Romagnoli, Rivals, and Benazzi 2022; Nowell 2023), the assessment of the Neanderthal evidence continues to polarize.

Slimak (2023a) speaks of a 'hidden [...] fierce war': 'On [the] one side, those who think the Neanderthal is another us. On the other, those who think it is an archaic form of humanity, with vastly inferior intellectual capabilities [...] It is not so much a war of ideas as a war of ideologies [...].' In *The Naked Neanderthal*, Slimak (2023a) goes on to argue that these agonistic proclivities should not be taken overly seriously, and often do not hinge on the available data at all, as the goal must be to qualify Neanderthals on their own terms, escaping the strains of Sapiens-Neanderthal dialectics. In this, I would contend, there is emerging conceptual convergence among those who care about Neanderthals and the pasts we picture by reference to them: Wragg Sykes' *Kindred* (2020) presents a celebration of Neanderthal creativity and the richness of their cultures in Pleistocene Europe, Finlayson's *The Smart Neanderthal* (2019) argues for the cognitive depth and flexibility of their projects, and Hussain and colleagues (2022) have taken fundamental issue with the 'Sapiens benchmark' too often deployed in order to straight-jacked them.

Against this background, I suggest it is of key importance to distinguish between two equally informative interpretive projects: 1) to understand Neanderthal life from *within*, with as little distorting Sapiens baggage as possible; and 2) to strategically deploy a 'Neanderthal lens' in order to challenge, and perhaps even destabilize, our self-perception as well as the prevailing Whig narratives as to the evolutionary success of our species. The second project bears some similarities with the inversed methodologies of animal studies (Specht 2016; De Vos 2023) and often relies less on empirical evidence than on a careful dissection of assumptions and conceptual frameworks. From a metaarchaeological perspective, what is perhaps most striking about the Neanderthal debate is its ambiguity – the ongoing scholarly encounter with Neanderthals does not so much resolve old questions but rather exposes the many misconceptions on which they are based, and thereby frames a *liminal space* of cross-species investigations of anthropological import. Peeters and Zwart (2020) symptomatically refer to Neanderthals as 'familiar strangers', pointing precisely to the fact that they can be said to be similar to what we think makes us 'human' in some ways, while being clearly different in other regards; such interrogations thus often merely reveal the limits of the categories we use for such boundary negotiations. That Neanderthals frequently eclipse the neat divisions introduced by such packaging of reality – think for example of the human-animal boundary (Corbey 2005) – may thus ultimately tell us something important *about ourselves* and how we have come to imagine ourselves in evolutionary and planetary contexts.

With regard to the question of the human, Neanderthals may so be said to join the ranks of those who have begun to progressively unsettle the many supposed certainties

of the Anthropos (e. g., Haraway 2016; Bajohr 2020) – not coincidentally as the burgeoning planetary polycrisis (Morin and Kern 1999) proficiently dismantles the dysfunctionalities and pathologies of our long-standing conceptual imports. The Neanderthal debate therefore frames an important meta-conversation about useful assumptions and concepts to think about ourselves in the context of life and evolution more generally, and so perhaps yields impetus to revise our self-image as we work through such issues. Although I recognize the perspectives and insights to be gained by a 'post-critical' attendance to Neanderthals in order to imagine less biased and perhaps radically alternative futures (see e. g. Terry et al. 2024 for the need to decolonize the past in order to open-up the future), I argue that it is imperative to first critically disassemble the foundations of how we have come to frame and investigate Neanderthals in archaeology and beyond. I attempt to do this in the reminder of this paper by working through a number of vignettes characterizing such research.

'Moderns' vs. 'Ancients': The ambivalence of relating past and present

In James Shreeve's *The Neanderthal Enigma* (1995) – a masterful and perceptive synthesis of the first decade of Neanderthal research after the proclamation of the 'Human revolution' (Mellars and Stringer 1989; Mellars 1989) – Neanderthals are not simply juxtaposed to *Homo sapiens* but to so-called 'moderns' as an equivocation of the latter. This semantic is no coincidence and speaks to the larger context of the original Neanderthal debate still permeating the expert literature today (Shea 2011; Ames, Riel-Salvatore, and Collins 2013; Porr and Matthews 2017). The equalization of Sapiens and 'moderns' or 'modern humans' was famously recalibrated by the 'Sapiens paradox' (Renfrew 2008) – the realization of a major time-lag between the emergence of the biological features characteristic of *Homo sapiens* and the accretion of behaviour dubbed 'typically human', by which most scholars simply meant behaviours sufficiently similar to those documented in contemporary or historical human forager societies (e. g., d'Errico et al. 2012). While some scholars sought to explain this perceived nature-culture divergence by a sudden cognitive mutation in some Sapiens populations (Klein 1992; 2008), most archaeologists rallied around the idea that the proclaimed 'moderns' must have acquired a distinct *capacity for culture* in the earlier part of their evolutionary history (Sterelny 2011; 2014), thereby setting them apart from other hominins. Ironically, this nature-culture framing was only reinforced by the landmark paper *The revolution that wasn't* (Mcbrearty and Brooks 2000), which influentially criticized the Eurocentric focus of the debate and marshalled archaeological data from Africa to demonstrate the much earlier origin of many of the supposed key traits of Sapiens modernity built up long before entering Europe over the last 200,000 years or so.

This discursive context of debating Neanderthals is a complex construal interweaving various unreflected assumptions and default modes of thinking. As shown by post-

colonial critiques, Neanderthals are more-or-less radically 'othered' vis-à-vis ideas about rationality, human nature, and a supposed *telos* in the evolution of the Anthropos that were developed in the course of Western intellectual history, and so frequently reflect our historically derived self-image more than anything else (Porr 2011; 2014; Porr and Matthews 2017; Hussain in press). Importantly, these conceptual lenses are not simply descriptive but inescapably normative in the sense that they construe Neanderthals in relation to what humans *ought to be*, as what it means to be human can never be translated to a question of mere facts alone (we would otherwise commit circular reasoning: we must already know what the qualification 'human' broadly refers to before we lay out the facts in order to demonstrate it, otherwise we beg the question). Parallelizations of the idea of the 'human' and the genus *Homo* can also not evade this problem because they misconstrue the issue as a mere taxonomic problem.

In this context, it is perhaps unsurprising but worth reiterating that debates about Sapiens-Neanderthal relations often perpetuate undertones of race and racism (Graves 1991) and in most cases maintain a species-level and thus ultimately essentialist perspective, by which one is forced to compare *stereotypes*, even if these are constructed as heuristic devices based on the currently available archaeological evidence. This tacit essentialism indeed continues to be fundamental to how Neanderthals are negotiated today as only such a perspective allows for meaningful talk about quasi-stable Neanderthal *capacities* – be they behavioural, cognitive, cultural, or otherwise (see e. g. Haidle et al. 2015). Although capacities may generally vary, the species-level grounding of the debate makes it almost impossible to pay attention to capacity divergences that do not sit comfortably with proposed taxonomic boundaries and so elucidate intra- and cross-taxonomic diversity. As an additional complication, capacities cannot be observed directly, and much archaeological capacity analysis therefore comes close to a metaphysical undertaking. Not all capacities are 'expressed' or 'used' at all times and they are thus often regarded as generalized resources to act in certain ways without binding those possessing the respective capacities to necessarily do so. What kinds of capacities can then be said to exist, how many capacities one must postulate in order to explain observed behavioural variation and evolutionary change, and what the relevant unit of such capacity analysis would be (population, species, lineages) therefore greatly depends on our assumptions, and so feeds back into the question of how we *a priori* construct humanness if the latter is defined with reference to certain capacities and not others.

Ames and colleagues (2013) fittingly deprecate the 'unrealistic dichotomy […] between a modern and a non-modern archaeological record' – one of the many consequences of this dominant framing and internal logic of the debate (see also Corbey 1998; 2005). It is notable that not even the recognition of a direct contribution of some Neanderthal populations to the make-up of Sapiens DNA (e. g., Krause 2019) has altered the parallelization 'modern (humans)' and Sapiens vs. 'archaic (humans)' and non-Sapiens *Homo* representatives. I argue that this is fundamentally because the Neanderthal debate has become a key arena for our present-day self-affirmation as 'Moderns'. This echos a well-known historicist trope pertaining to the difficult rela-

tionship between past and present. Lowenthal (1985; 2015) has shown how various periods of human history have mobilized and related to the past in different ways – why we thus have to speak of 'politics of the past' respectively, in which archaeology has traditionally a crucial role to play (Gathercole and Lowenthal 2001). Lowenthal's (1985) original insight – foundational to heritage studies inter alia – was that the past does not simply exist independently of a present in which it is conjured up and brought to bear, and in the same way as the past can be constitutive for a given present, the latter deploys various strategies and techniques to render the past functional and useful for its projects. *The Past is a Foreign Country* (Lowenthal 1985, p. 74 ff.) skilfully illustrates how the 'Ancients vs. Moderns' trope often fulfils this key function and so illuminates situated past-present interactions.

Seen from this perspective, it may be less puzzling why notions such as 'modern humans', 'modern human origins' and 'behavioural', 'cultural' or 'cognitive modernity' stubbornly persist in the expert literature despite accumulating critique. These terms are conceptual registers of modernity as a period and are as such *instrumental to the modernist project.* The Neanderthal debate thus reflects not just biases and preconceptions inherited from earlier researchers and commentators, but actively contributes to and so reinforces the broader ensemble of specific socio-cultural norms, attitudes, and ways of doing and thinking that arose in the 'Age of Reason' and the subsequent Enlightenment period in Europe. This also further underlines that debating Sapiens-Neanderthal relationships is never a neutral or innocent undertaking but forcefully shaped by prevailing imperatives of human self-observation and self-understanding – albeit of very specific humans in time and space, and certainly not of humanity as a whole (neither past nor present).

Widening fractures of the modernist gaze

In *The Gap*, Thomas Suddendorf (2013) probes a whole range of long-standing candidate qualities of human exceptionalism such as language, intelligence, morality, culture, theory of mind as well as mental time travel in an attempt to salvage what is left of the division between the Anthropos and other species. Suddendorf's impressive synthesis demonstrates that *difference* is still an important feature of life in general and not all is fluid, but his exploration is also symptomatic of how humanness is negotiated and construed in the humanist tradition of Western modernity (Corbey 2005) – echoing predominant strategies of human-animal boundary policing in other fields such as history (Howell 2018). This tradition not only tables particular imaginaries of what makes us human but also perpetuates certain ideas as to *how* history unfolds and what it is *for.* Returning to Neanderthals, these ideas feature prominently in questions of their extinction as these are deeply entangled with the conditions of *Homo sapiens* dispersal and its emergence as a dominant global species. Firstly, I want to note that the questions we ask and foreground are an integral part of this conceptual framework. For instance, it is instructive that archaeologists continue to be fascinated by the idea

that only Sapiens made it into the final stretches of the Pleistocene and, relatedly, that there was a spike reduction of biological diversity in the hominin line supposedly corresponding to a pronounced increase in cultural capacity and diversity (see esp. Bon 2009). From this construal of the broader problem context alone – scholars want to know *why* – follows that there was likely a species-level difference between Sapiens and other Late Pleistocene hominins including the Neanderthals and Denisovans, laying the foundations for the evolutionary success of the former and the demise of the latter. The problem of the eventual demise of all non-Sapiens hominins, in other words, so becomes essentially a *differentia specifica* question – notably because this process is said to be co-extensive with the ecological and cultural expansion of Sapiens on a planetary scale.

What sets us apart from other hominins can so be understood by studying the reasons for *our survival* and *their extinction.* This is a classic form of historicism in which the 'winner' retrospectively dictates how historical processes are reconstructed and what matters; the demise-survival polarity so becomes readily attached to the ancients-moderns foil of past-making, often mediated by the concept of *progress* which is so central to Western understandings of history. It is in this way of mobilizing the past in order to explain (and legitimate) a purported present that value-driven judgements of superiority inhere. Klein (2003, p. 1526) for example asserts: '[a]lmost certainly, the Neanderthals succumbed because they wielded culture less effectively'. Villa and Roebroeks (2014) have referred to this kind of reasoning as the 'modern human superiority complex' and showed that such judgements are rarely consistent with the patterns observed in the archaeological record – they spring from the construal of the larger problem context more than anything else. Importantly, we can in principle ask other questions and the answers we are able to develop may be less tautological.[1] I will return to this point again later in this paper.

Regarding sedimented ideas of how history precedes, it is critical to realize that Sapiens-Neanderthal interaction – fuelled by direct evidence for interbreeding (Villanea and Schraiber 2019) and possibly extended chrono-geographic overlap (Higham et al. 2014) – continues to be modelled, explicitly or not, as a *colonial encounter* in which Neanderthals are considered the quasi-colonized. This is done in an almost literal sense as Sapiens dispersal into Europe and elsewhere is framed as 'colonization' (Graves 1991; Hussain in press). In this way, ecological language and modernist historical imaginaries are mixed. Two observations are important here. First, there is almost zero engagement with the question whether the colonial encounter analogy is justified in the context of deep-time hominin-hominin interaction, suggesting that this figure of thought has been both normalized and internalized (see esp. Slimak et al. 2022; Slimak 2023b for recent examples). Second, the presumption seems to be that such asymmetric encounters with unbalanced power dynamics – symptomatically assumed rather than

1 In evolutionary studies, this figure of thinking is sometimes pejoratively termed a 'just-so-story' as a given entity is said to be well/better adapted because the entity survived whereas others did not.

examined – result in the inevitable domination of the supressed by the powerful, with quasi no counter-agency granted to the former. This engrained conceptualization clearly reflects the self-assertion of the supposedly powerful – the deep-time colonizers – especially given that the global displacement of other hominins by expanding Sapiens populations has often been celebrated as evidence for human ingenuity, exceptionality and unique adaptability (Klein 2003; Mellars 2015 [1996]; Marean 2015). Like in the historical context of European colonialism, the agency of the colonized is marginalized and even denied, albeit research increasingly shows that the colonized always *acts back* and frequently develops novel and creative behaviours as well as subversive coping strategies alongside patterns of resistance (e. g., Harrison 2002; Hofman and Keehnen 2019). How Neanderthal-Sapiens interactions have long been portrayed in the archaeological literature therefore reproduces some of the colonial imaginaries constitutive of European modernity, including the perception that such encounters across difference were strictly one-sided affairs and that colonization ultimately served the greater good of humanity.

Historically, the confident self-assertion of European powers was often linked to strategies of 'de-humanization' vis-à-vis the constructed 'other' in order to justify and legitimate the associated social, economic, political and intellectual ventures (see e. g. Kronfeldner 2021 and contributions therein). From this perspective, it seems to be no mere coincidence that Neanderthals are often still treated as ecological rather than as cultural agents and in the past were explicitly cast as 'mere animals' (cf. Corbey 2005) – irrespectively of the rapidly growing recognition of culture as a widespread phenomenon among many nonhuman animals (Rendell and Whitehead 2001; Safina 2020; Whiten 2021). Policing of the human-animal boundary in this context, in other words, is a direct consequence of imagining Neanderthal-Sapiens interactions as a one-sided quasi-colonial encounter, and so testifies to the potency of mixing the enlisted conceptual framings within a horizon of sense-making that echoes the long-standing historicist trope of 'Ancients' vs. 'Moderns'. These ideas are in the literature often fused – due to the disciplinary constitution of deep-time archaeologies – with blunt Darwinian precepts of fierce and brutal competition ('nature as red in tooth and claw') as well as the infamous 'survival of the fittest' trope popularized by Spencer and Tennyson rather than Darwin himself. Taken together, all of this strongly suggests that Neanderthal research is subject to a specific self-actualizing agenda in the wake of a historically grown apprehension of what it means to be human.

This argument can be further illustrated by engaging with a recent recalibration of the problem of Neanderthal extinction (and that of other Late Pleistocene non-Sapiens hominins), which, albeit subtle, may count as a point in case. Over the last five to ten years or so, the image of a *good* 'Age of the Moderns', as a historical explanation for how humans are today for the better, has suffered some serious cracks and scholars have begun to link the dawning of the same age to human eco-destructive potentials. Situated within the larger context of increasing attention to the deep-time roots of the so-called Anthropocene (Foley et al. 2013) and millennial-scale processes of defaunation and biodiversity attrition (Dirzo et al. 2014; Lemoine, Buitenwerf, and Svenning 2023;

Bergman et al. 2023), the eventual demise of Neanderthals and other hominins has been argued to be the result of unprecedented ecosystem impacts of expanding Sapiens populations – now notably cast as the 'ultimate invasive species' (Marean 2015; Shipman 2015; 2017). This not only provides a new reading of Stewart's (2007) classic proposal of Neanderthal extinction as part of a larger faunal exchange at the end of the last Ice Age, it not merely blames climate change but increasingly so Sapiens interference with ecosystem processes and faunal evolution.

The invasive species frame does not necessarily break with previous modernist tropes, however, as it offers a new lens to engage with the failures of the asserted *Indigenous* Neanderthal project in Eurasia, but this time with a *dark flavour* and not accidentally reminiscent of the so-called 'Columbrian exchange' as a possible starting point of the Anthropocene – the 'human age' (Lewis and Maslin 2018). Notably, this construal threatens to cast Neanderthals as curators and stewards of nature, while humanness is increasingly framed as the capacity to geoengineer novel biosphere conditions with an overriding tendency to destroy and unmake – re-surfacing yet another set of problematic polarities centered on ideas of primitivism, natural conservationism, and notably the 'noble savage' vis-à-vis Neanderthal otherness (cf. Anderson 2005, p. 6). It is important to emphasize that the invasive species concept so powerfully re-tables the problem of nature, as invasive species are those who do 'not belong' to where they go and thus stand 'out of nature', disrupting the natural order. The concept is linked to ideas of the fixity of nature and often criticized because of this import (e. g., Vogelaar 2021). I suggest that it is precisely because of this contestedness that the concept is drawn into the debate – it presents a crystallization point to think through the ambivalence of human nature in the face of planetary disaster and catastrophe of our own making. The danger is of course that archaeology helps framing eco-destructivity as an inevitable part of human nature and so plays into the hands of those who see little sense or hope in systemic transformations. This being said, the ongoing ecological recalibration of the problem of Neanderthal extinction in the archaeological literature showcases that such interrogation is still in the service of the historicist project of human self-understanding and is thus arguably complicit in the construction of some of the foundational myths of our time.

Alien worlds? Neanderthal technology and technicity

Paul Mellars allegedly once said '[a] typical Mousterian [Neanderthal] might make a tool and think, 'As long as this does the job, I don't care what it looks like'' (cited in Shreeve 1995, p. 303). The idea of stable, potentially information-yielding stone tool *shapes* was indeed a part of the original 'Human Revolution' model (Mellars and Stringer 1989; Bar-Yosef 2002; Mellars 2005; Barker et al. 2007) and a key entry on its associated Eurocentric list of Sapiens-specific behavioural features (Mellars 1989; Mellars

2015 [1996]). Mellars (1989, p. 365) explicitly emphasized that these new form regimes in stool tools are probably more important than production modalities, that they showcase unparalleled 'innovation' capacity, possibly inter-regional variation, 'standardization' and a concern with 'imposed form', possibly linked to corresponding 'mental templates' (but see Dibble et al. 2017 for a global critique of such simple mind-matter correspondences). For Mellars (1989, p. 365) and others, this concern and care for *shaping* objects in a specific and broadly conventionalized way unites diverse domains of Sapiens material culture in Europe, such as stone and organic tool technologies but also objects of personal ornamentation, and was argued not to be shared to the same degree with Neanderthals. Even though much of this construal is seen with a good dose of scepticism today – especially elevated morphological standardization turns out to be difficult to demonstrate – Valentin (2011), echoing some of these broader ideas, has recently argued that it is only in the European Upper Palaeolithic that a distinct *concept* of a coherent lithic type truly crystallizes (see also Weißmüller 2003, pp. 180–182). Bon (2009: 263–268; 2015) has similarly proposed that shaped and polished organic tools, considered a hallmark of the European Upper Palaeolithic, incurred considerably technological demands of curation, so spurring behavioural complexity in early Sapiens populations (and not Neanderthals).

What is interesting about these conversations is their commitment to particular assumptions as to the relevance of certain technological properties at the expense of others, and the related, inescapable normativity of such assessments. To begin with, we note a general commitment to the idea that output matters more than ways of doing things, presumably because only *artefactual output* can be assessed with regard to its causal interactions with the external world – leading to much emphasis on 'efficiency', 'efficacity', and other currencies to establish what has been called 'adaptive value'. Not only does this reproduce an output-oriented paradigm of production as it has become the baseline for Capitalist market economies predicated on growth and optimization, it is also tied to a progressivist notion of evolution according to which evolutionary success – grounded in a putative 'economy of nature' – is directly tied to the capacity to innovate and develop more effective means to extract energy from the environment (for an explicit archaeological account, see especially Binford 1962 and White 2007 [1959]). Leroi-Gourhan's (2009 [1987]) seminal formula that technological development among hominins is driven by the gradual maximization of total cutting-edge per volume unit is a classic expression of this way of thinking and has motivated a range of sophisticated statistical analyses of the evolution of 'cutting edge efficiency' (Režek et al. 2018; Muller and Clarkson 2016). The point here is not so much that these ideas cannot be useful, but rather that they can easily lead us astray in terms of what matters about the record, and about Neanderthals by extension.

As a matter of fact, it may be argued that this now normalized way of thinking with and through technology has proven relatively unproductive vis-à-vis the archaeology of Neanderthals, and this may in part be because of a disconnect between received ideas and what may be termed Neanderthal techno-economic rationality. To start with, Muller and Clarkson's (2016) assessment of cutting-edge fecundity of different stone

knapping technologies in early human evolution 'dispel[s] the notion that the transition to the Upper Palaeolithic was accompanied by an increase in efficiency', pointing to less pronounced net differences in productive efficiency than often assumed, and suggesting that much earlier technological transitions such as bifacial tool-making and the dawn of prepared core technology – both a hallmark of Neanderthal technological worlds – were more significant developments. In addition, it has been quantitatively shown that Levallois technology ranks among the most complex ways of working stone in terms of its degree of hierarchical organization (Muller, Clarkson, and Shipton 2017), confirming earlier qualitative interpretations of this recurrent feature of the Neanderthal record (Boëda 1993; 1994; Boëda, Geneste, and Meignen 1990; Geneste 2010). In general, there is a clear 'double standard' (Corbey and Roebroeks 2001) at work regarding complexity ascriptions, as Neanderthal technological worlds appear to be 'complex' in different ways than their later Sapiens counterparts, notably in Europe (Hussain 2018; Hussain and Will 2020).

Importantly, recent research taking stock of the techno-functional design of Neanderthal stone tools has powerfully demonstrated that relationships between form and function can be extremely fluid and are frequently predicated on dynamic co-optation and adjustment rather than stable outcome or functional recurrence (Boëda 1997; 2013; Soriano 2000; Geneste 2010). Tools exhibit high degrees of recycling and structural reworking – the emphasis often being placed on *potential use* rather than specific use targets. Thus, the relationship between stone blanks (unworked matrices for functional tool-modifications) and tools (retouched elements) may be quite different in many Neanderthal contexts, and the relationship between tool use and tool life-history seems often more multifarious than in Upper Palaeolithic contexts. Ultimately, then, the *concept* of a tool (Forestier and Boëda 2021) may indeed have been radically different when ideal-typical Neanderthal-associated Middle Palaeolithic and later Sapiens-associated Upper Palaeolithic settings in Europe are confronted. This is linked to structural differences in *how* tools are supplied by blanks within the context of the often marked diversity in Neanderthal-mustered production technologies, including variants of Quina, Discoid and Levallois and other systems (Jaubert 1999; Delagnes 2010; Brenet et al. 2014; Delagnes and Rendu 2011). These production technologies yield differentiated sets of blanks with varying transformation affordances and thus frame different regimes of tool-output and land-use, while introducing various options of inter-technology cooperation and synergy (Hussain 2024). This intricate landscape of co-existing stone working technologies is thus by itself often more complex (in the sense of diversification and structural depth) than in many Upper Palaeolithic contexts.

What can be added is a high degree of fractality and recursivity characterizing many Neanderthal-associated technological contexts – in the literature often referred to as 'ramification' (Bourguignon et al. 2004). Mathias and Bourguignon (2020) have shown that in southwestern France levels of ramification and structured nestedness in Neanderthal stone working tend to increase over time, while Pastoors and colleagues (2010) have argued that the overall efficiency of volumetric exploitation in the Late Middle Palaeolithic layers of Balver cave in western Germany appears to equally

ratchet up from the lower to the upper levels. All of this suggests – as argued by others before (Boëda 1991; Delagnes 1995) – that, clouded by the output-oriented gaze, *conceptual complexity* in stone technologies is considerable in many Neanderthal contexts and there is also substantial directional change and innovativeness in long-term technological developments (Boëda 2005; Jaubert 2009).

Recent research has similarly started to indicate that tools made from the remains of animals, especially their bones, are probably much more common in the Neanderthal archaeological record than long believed (see esp. Baumann et al. 2020; 2022; 2023). Generally speaking, this body of work seems to suggest that shape-stabilization and formalization were often less important for Neanderthal tooling behaviour and that this has also contributed to the somewhat reduced visibility of such objects for archaeologists. This is not to deny that Neanderthals sometimes invested in and curated quasi-stable forms – Late Middle Palaeolithic *Keilmesser* and handaxes offer paragon examples that they did (Uthmeier 2016; Frick and Herkert 2020; Jöris et al. 2022). Yet what is problematic is to suggest that standards of form and not the structure of technological worlds occupied by Neanderthals should be taken as indicative of their cognitive capacities and behavioural complexity. Indeed, the inherent *flexibility* of technological approaches increasingly evident in Neanderthal archaeology (Çep et al. 2021) should be seen as a genuine achievement and not as a deficiency or as somewhat inferior to the often-rigid serial or quasi-serial production of laminar blanks in Sapiens-associated Upper Palaeolithic contexts (and even this stereotyping is questionable).

As Churchill (2014) rightly notes, the inherent flexibility of deploying tools and drawing from a differentiated pool of production systems to meet various challenges and environmental conditions – what with Weißmüller (2003) can be qualified as a rich and deep technological 'concept reservoir' – may be one of the reasons why Neanderthals survived so long under changing circumstances. Such a view contrasts with the popular reading of Neanderthals as ecological rather than cultural agents – as reactive rather than proactive inhabitants of past worlds. Neanderthal technology would testify to a broad spectrum of strategic decision-making, not different in nature, but perhaps in kind, from that of contemporary Sapiens populations in Africa and elsewhere (cf. Shea 2011). The structure and motility of Neanderthal technological worlds may accordingly be understood as a broader design feature of their technologically-mediated way of life – a design enabling them to creatively and effectively navigating ever-changing external conditions and to remain vigilant in the face of crises. Interestingly, the mangle of crisis faced by human societies today is increasingly taken to indicate that key infrastructure and mitigative/adaptive measures should be designed not with a specific problem-solution context in mind but with regards to optimizing our capacity to flexibly mobilize the resources and means required to address a *whole range of possible adversities.* It is not impossible that Neanderthal techno-economic rationality was grounded in a similar logic of *actionable flexibility.* Such worlding – to use a concept from post-human theory – is not predicated on responsive adaptation (and thus elevated rates of change and innovation) but proactive exaptation and bricolage. This facet of Neanderthal life can only be fully exposed if the 'pharmacolog-

ical condition' (Stiegler 1998) of their technological behaviours – as simultaneously affording and constraining – is taken seriously, instead of continuing to cast them in light of progressivist history. Furthermore, it seems to be especially critical to not fall prey to the industrial, output-oriented, and form-centric paradigms of techno-economic organization that are so deeply ingrained in our own ways of living and thinking and that were long an integral part of our own self-devising projects. The Neanderthal archaeological record may simply resist such shoehorning.

A Neanderthal lens for the Anthropocene?

The previous sections have illustrated how Neanderthals are construed by a dialogue between our inherited historical horizons – notably the modernist project and its divisionary politics of 'Moderns' vs. 'Ancients' – and the evidence provided by the archaeological record. I have tried to show how our ideas about Neanderthals often serve our self-devising project as contemporary humans and that changes in and limitations of the Neanderthal debate can be reconstructed by attention to how such a 'dialectical anthropology' (Feige 2022) plays out in deep-time archaeology – a key discipline to forge our contemporary historical imagination. As Peeters and Zwart (2020) have previously argued, what is fundamentally at stake in these debates is the 'spark' or 'mark' of the human, and, notably, the distinction between the human and the non-human, even though the boundaries of them both are continuously re-negotiated. These authors also suggested that some of the paradoxes arising from how scholars conjure up Neanderthals increasingly indicate that a dualistic style of reasoning is no longer tenable. While I generally agree with this critique, the discussion presented here may be taken to suggest that such duality will never fully disappear as long as Neanderthals attract attention primarily because they catalyse our self-constitution in the present – explicitly or implicitly. It is in this context that the historical moment of the Anthropocene may offer a unique opportunity to fundamentally reconfigure this dynamic without denying or unmaking our aspiration to self-actualize in the face of Neanderthal knowledge and critique.

On a fundamental level, the Anthropocene can be understood as a deep-running crisis in human self-understanding as our actions and forms of societal organization draw strongly on how we imagine ourselves and our place on the planet. Without going into the details of this far-reaching diagnosis, it does imply that the Anthropocene moment marks the need for radical novelty and revision in the human self-devising project, including the need to escape past-making politics nourished in the 'Ancients' vs. 'Moderns' trope as such practices have arguably accelerated and widened the planetary polycrisis (Morin and Kern 1999). From this perspective, it may be counterproductive to foreground the question of who we *are* as humans in light of who we have *become* on historical and evolutionary timescales. Instead, we should perhaps ask how we can become *different* and how we can mobilize the past in order to *re-imagine ourselves*, not in light of the present but in light of hopefully better futures. In order to do

so, archaeology – just like the humanities more broadly – needs to be deployed in a future-serving manner (cf. also Cipolla, Crellin, and Harris 2024). Returning to Neanderthals, this may be translated to the desideratum of interrogating them *not* with regard to what they lack or in what sense they can be levelled with Sapiens behaviour, but instead to 1) challenge our default Sapiens-lens and to 2) imagine and think with the past otherwise. We can then also ask what we can *learn from them*, and how to meaningfully ask such questions. This project certainly requires to read Neanderthals 'against the grain' and perhaps to 'queer' them – i. e. to celebrate the possibilities of the Neanderthal record to resist Sapiens straight-jacketing.

This primarily means to take a more proactive stance vis-à-vis the dialectically constituted Neanderthal and to unpack our framings as well as critically rework them, rather than to give in to what has been called the 'tyranny of historicism' (Strauss 2013 [1963]). Neanderthals may so be queried with regard to key questions of our time such as how they shared the landscape with other beings and how they forged mutually conducive forms of co-existence with them (see Hussain, Weiss, and Kellberg Nielsen 2022 for some first ideas). We also need to be more attentive to the oppositions and alterities of the Neanderthal record itself, as these more often than not inform us about our own preconceptions and thus obstruct us from seeing the Neanderthals in novel, inspiring ways, or simply on their own terms. In order to carve a new space for Neanderthals within and at the fringes of our own self-devising projects, we thus need to learn to think with and image them in radically alternative ways. Mapping such alternative pasts is a fundamental precondition for mapping alternative futures. Importantly, this also entails a *dialectical* proposal for Neanderthal research going ahead: we should more systematically confront weighty questions of our own socio-historical horizon with issues and perspectives emerging from Neanderthals when investigated on their own terms. Neanderthals may so indeed regain their own voice within our ongoing self-devising projects, rather than supressing such voices. The notion of the 'dialectical' Neanderthal invoked in the title of this essay therefore draws attention to the necessary constitution of Neanderthals in the present, in lieu of our various historically situated self-devising projects as interpretive animals (Feige 2022), and simultaneously turns this into an opportunity as these self-devising projects can be recovered in analysis, examined, and updated in the light of intellectual and actionable imperatives.

All of this presupposes a radical critique of the historicist project in which most current Neanderthal research is neatly embedded – willingly or not. The archaeological evidence itself yields much revisionary power here. For example, new zooarchaeological and contextual data for elephant hunting during the Eemian interglacial of northwestern Europe challenges traditional ideas of Neanderthal social dynamics such as group size, interconnectivity and situational aggregations at key locations in the landscape (Gaudzinski-Windheuser et al. 2023; Gaudzinski-Windheuser, Kindler, and Roebroeks 2023) – possibly defying long-standing ideas about small and fragmented social worlds to be eventually overpowered by large and interconnected Sapiens worlds (Gamble 1998). Unusual depositions of large ungulate crania, recently reported from

the Iberian peninsula (Baquedano et al. 2023) – together with other emerging data on selective and patterned animal body manipulations (Wragg Sykes 2020; Hussain, Weiss, and Kellberg Nielsen 2022) – point to hitherto largely unrecognized and rich worlds of Neanderthal meaning-making, with diverse multispecies engagements wrought in complex more-than-human interrelationships, escaping reductionistic explanations that simply throw Neanderthals 'back into nature'.

In the wake of all of this, scholars increasingly recognize the plurality of Neanderthal life, undermining meaningful talk of *the* Neanderthals and complicating direct comparison with other hominins including *Homo sapiens* (which also needs to be pluralized). I believe that such developments may help to place much more weight on the critical question of who we can *become* when we engage in certain relationships in our heterogeneous worlds and in certain ways of doing things and not others, rather than foregrounding the static (either-or) problem of humanness. Ironically, such investigations may ultimately disclose – on a general level at least – that Neanderthals had the capacity to dynamically 'make themselves' and as such likely entertained self-devising projects of their own. Such self-devising projects would ultimately certify yet another layer of dialectics: the figure of the Neanderthal is not only dialectically constituted in the discursive spaces of the present, these hominins may have also dialectically constituted *themselves* while engaging with their worlds – another reason why Neanderthals need to be pluralized and their lived diversity recognized.

Conclusions

In their manifesto for a 'future-oriented humanities', Markus Gabriel and colleagues (2022) have pivoted the need to belabour our self-conception as humans in order to enable pro-active future-making and transformative change. In their view, how we conceive of and see ourselves is a key source of action and belief and as such should receive much more critical attention across a range of academic and non-academic fields. The global Anthropocene polycrisis presents new reasons and incentives to engage with these imaginaries and simultaneously outlines the urgency of actively re-inventing ourselves. I have argued here that the Neanderthal debate can contribute to these collective efforts as it constitutes a burning lens to how we currently negotiate and think through our purported human nature. The debate also presents another case in point illustrating that foundational preoccupations with humanness have largely clouded our view for our equally important animality and the resulting kinship with all biological life (Challenger 2021). I have suggested that careful attention to the Neanderthal debate as a long-standing vehicle of human self-constitution helps to clarify the limits of certain questions traditionally asked in archaeology but also points to the need to develop a 'new archaeology' of Neanderthals that can better serve a humanity in crisis. A key challenge, I suggest, is thereby not so much to objectively disclose *who they truly were* – what it is like to be a Neanderthal may be a question as unanswerable as Nagel's (1980) famous question '[w]hat it is like to be a bat' – but to engage with their

archaeological record and ask questions that *inspire us to re-imagine* ourselves, not in order to surpass them but to work towards a better world in the present and future. Again, I am not suggesting that the insurmountable alterity of Neanderthal being-in-the-world precludes informative knowledge about how they went about their lives and engaged with their heterogeneous and often rather unique worlds, neither does it counteract the need for contriving meaningful imaginative horizons to engage with them in the present. Rather than to push them back into 'nature', archaeology's responsibility is to curate this difficult dialogue and to ground it in tangible evidence on the variegated existences of Neanderthals. In this, Neanderthals do not necessarily pose greater challenges to archaeologists than fossil societies of *Homo sapiens*, as those, too, are stained in much (overlooked) deep-time alterity. This being said, Neanderthals nevertheless play an irreplaceable role in the human self-devising project and this is part of their ongoing legacy, and to repel it would certainly be a mistake – and by and large most likely impossible. What we need to do, instead, is to proactively work *with them* to take stock of the many ambivalences of being human – to challenge us and guide us in how to become *different* and perhaps *better* humans as we forge our own futures. The dialectic Neanderthal and its consequential legacy so forces us not only to re-imagine ourselves but also the many vanished Pleistocene worlds we hope to bring closer to and re-articulate with our own historical situatedness.

References

Ames, Christopher J. H., Julien Riel-Salvatore, and Benjamin R. Collins. 2013. "Why We Need an Alternative Approach to the Study of Modern Human Behaviour." *Canadian Journal of Archaeology / Journal Canadien d'Archéologie* 37 (1): 21 – 47.

Anderson, Kat. 2005. *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources.* Berkeley, Calif. London: University of California Press.

Bajohr, Hannes, ed. 2020. *Der Anthropos im Anthropozän: Die Wiederkehr des Menschen im Moment seiner vermeintlich endgültigen Verabschiedung.* Berlin; Boston: De Gruyter.

Baquedano, Enrique, Juan L. Arsuaga, Alfredo Pérez-González, César Laplana, Belén Márquez, Rosa Huguet, Sandra Gómez-Soler, et al. 2023. "A Symbolic Neanderthal Accumulation of Large Herbivore Crania." *Nature Human Behaviour* 7 (3): 342 – 52. https://doi.org/10.1038/s41562-022-01503-7.

Barker, Graeme, Huw Barton, Michael Bird, Patrick Daly, Ipoi Datan, Alan Dykes, Lucy Farr, et al. 2007. "The 'Human Revolution' in Lowland Tropical Southeast Asia: The Antiquity and Behavior of Anatomically Modern Humans at Niah Cave (Sarawak, Borneo)." *Journal of Human Evolution* 52 (3): 243 – 61. https://doi.org/10.1016/j.jhevol.2006.08.011.

Bar-Yosef, Ofer. 2002. "The Upper Paleolithic Revolution." *Annual Review of Anthropology* 31: 363 – 93.

Baumann, Malvina, Hugues Plisson, Serge Maury, Sylvain Renou, Hélène Coqueugniot, Nicolas Vanderesse, Ksenyia Kolobova, et al. 2023. "On the Quina Side: A Neanderthal Bone Industry at Chez-Pinaud Site, France." *PLOS ONE* 18 (6): e0284081. https://doi.org/10.1371/journal.pone.0284081.

Baumann, Malvina, Hugues Plisson, William Rendu, Serge Maury, Kseniya Kolobova, and Andrey Krivoshapkin. 2020. "The Neandertal Bone Industry at Chagyrskaya Cave, Altai Region, Russia." *Quaternary International*, August. https://doi.org/10.1016/j.quaint.2020.06.019.

Baumann, Malvina, Elspeth Ready, Hugues Plisson, Serge Maury, Nicolas Vanderesse, Hélène Coqueugniot, Kseniya Kolobova, and Eugène Morin. 2022. "Not so Unusual Neanderthal Bone Tools: New

Examples from Abri Lartet, France." *Archaeological and Anthropological Sciences* 14 (10): 200. https://doi.org/10.1007/s12520-022-01674-4.

Bergman, Juraj, Rasmus Ø. Pedersen, Erick J. Lundgren, Rhys T. Lemoine, Sophie Monsarrat, Elena A. Pearce, Mikkel H. Schierup, and Jens-Christian Svenning. 2023. "Worldwide Late Pleistocene and Early Holocene Population Declines in Extant Megafauna Are Associated with Homo Sapiens Expansion Rather than Climate Change." *Nature Communications* 14 (1): 7679. https://doi.org/10.1038/s41467-023-43426-5.

Binford, Lewis R. 1962. "Archaeology as Anthropology." *American Antiquity* 28 (2): 217–25. https://doi.org/10.2307/278380.

Boëda, Éric. 1991. "Approche de la variabilité des systèmes de production lithique des industries du Paléolithique inférieur et moyen: chronique d'une variabilité attendue." *Techniques & Culture* 17 (18): 37–79.

Boëda, Eric. 1993. "Le débitage discoïde et le débitage Levallois récurrent centripède." *Bulletin de la Société préhistorique française* 90 (6): 392–404. https://doi.org/10.3406/bspf.1993.9669.

Boëda, Eric. 1994. *Le concept Levallois: variabilité des méthodes.* Paris: CNRS Éditions.

Boëda, Éric. 1997. *Technogenèse du système de production lithique au Paléolithique inférieur et moyen en Europe occidentale et au Proche-Orient.* Paris: Unpublished Habilitation, University of Paris X-Nanterre.

Boëda, Éric. 2005. "Paléo-technologie ou anthropologie des techniques ?" *Arob@se* 1: 46–64.

Boëda, Eric. 2013. *Techno-logique & technologie: une paléo-histoire des objets lithiques tranchants.* @rchéo-éditions.

Boëda, Eric, Jean-Michel Geneste, and Liliane Meignen. 1990. "Identification de chaînes opératoires lithiques du Paléolithique ancien et moyen." *Paléo, Revue d'Archéologie Préhistorique* 2 (1): 43–80. https://doi.org/10.3406/pal.1990.988.

Bon, François. 2009. *Préhistoire: la fabrique de l'homme.* L'Univers historique. Paris: Seuil.

Bon, François. 2015. "À la croisée des chemins (crossroad traffic)." *Palethnologie. Archéologie et sciences humaines*, no. 7 (December). https://doi.org/10.4000/palethnologie.680.

Bourguignon, Laurence, J P Faivre, Alain Turq, and EXARC Experimental Archaeology Collection Manager. 2004. "Ramification des chaînes opératoires: une specificité du Mousterien?" *Paléo* 16: 37–49.

Brenet, Michel, Laurence Bourguignon, David Cologne, Mila Folgado, Marc Jarry, Laure-Amélie Lelouvier, Vincent Mourre, and Alain Turq. 2014. "Les techno-complexes au début du Paléolithique moyen en Aquitaine septentrionale: complexité, complémentarité des productions de débitage et de façonnage et implications comportementales." In *Transitions, ruptures et continuité en Préhistoire: Volume 2, Paléolithique et Mésolithique*, 81–101. Paris: Société préhistorique française.

Çep, Berrin, Benjamin Schürch, Susanne C. Münzel, and Jens Axel Frick. 2021. "Adaptive Capacity and Flexibility of the Neanderthals at Heidenschmiede (Swabian Jura) with Regard to Core Reduction Strategies." *PLOS ONE* 16 (9): e0257041. https://doi.org/10.1371/journal.pone.0257041.

Challenger, Melanie. 2021. *How to Be Animal: A New History of What It Means to Be Human.* New York: Penguin Books.

Churchill, Steven Emilio. 2014. *Thin on the Ground: Neandertal Biology, Archeology and Ecology.* Foundation of Human Biology. Ames, Iowa: Wiley-Blackwell.

Cipolla, Craig N., Rachel Crellin, and Oliver J. T. Harris. 2024. *Archaeology for Today and Tomorrow.* Abingdon, Oxon; New York, NY: Routledge.

Corbey, Raymond. 1998. "Theoretische Probleme zur Kognition, Sprache und Gesellschaft bei frühen Hominiden." *EAZ – Ethnographisch-Archäologische Zeitschrift* 39: 321–33.

Corbey, Raymond. 2005. *The Metaphysics of Apes: Negotiating the Animal-Human Boundary.* Cambridge; New York: Cambridge University Press.

Corbey, Raymond, and Wil Roebroeks. 2001. "Biases and Double Standards in Palaeoanthropology." In *Studying Human Origins: Disciplinary History and Epistemology*, 67–76. Amsterdam: Amsterdam University Press.

De Vos, Rick. 2023. *Decolonising Animals.* Sydney: Sydney University Press.

Delagnes, Anne. 1995. “Faible élaboration technique et complexité conceptuelle: deux notions complémentaires.” *Cahier Noir* 7: 101 – 10.

Delagnes, Anne. 2010. *Systèmes techniques, subsistance et mobilité au Paléolithique moyen: interactions et implications diachroniques.* Unpublished Habilitation. Bordeaux: Université de Bordeaux I.

Delagnes, Anne, and William Rendu. 2011. “Shifts in Neandertal Mobility, Technology and Subsistence Strategies in Western France.” *Journal of Archaeological Science* 38 (8): 1771 – 83. https://doi.org/10.1016/j.jas.2011.04.007.

Dibble, Harold L., Simon J. Holdaway, Sam C. Lin, David R. Braun, Matthew J. Douglass, Radu Iovita, Shannon P. McPherron, Deborah I. Olszewski, and Dennis Sandgathe. 2017. “Major Fallacies Surrounding Stone Artifacts and Assemblages.” *Journal of Archaeological Method and Theory* 24 (3): 813 – 51. https://doi.org/10.1007/s10816-016-9297-8.

Dirzo, Rodolfo, Hillary S. Young, Mauro Galetti, Gerardo Ceballos, Nick J. B. Isaac, and Ben Collen. 2014. “Defaunation in the Anthropocene.” *Science* 345 (6195): 401 – 6. https://doi.org/10.1126/science.1251817.

d’Errico, Francesco, Lucinda Backwell, Paola Villa, Ilaria Degano, Jeannette J. Lucejko, Marion K. Bamford, Thomas F. G. Higham, Maria Perla Colombini, and Peter B. Beaumont. 2012. “Early Evidence of San Material Culture Represented by Organic Artifacts from Border Cave, South Africa.” *Proceedings of the National Academy of Sciences* 109 (33): 13214 – 19. https://doi.org/10.1073/pnas.1204213109.

d’Errico, Francesco, and Chris B. Stringer. 2011. “Evolution, Revolution or Saltation Scenario for the Emergence of Modern Cultures?” *Philosophical Transactions of the Royal Society B: Biological Sciences* 366 (1567): 1060 – 69. https://doi.org/10.1098/rstb.2010.0340.

Feige, Daniel Martin. 2022. *Die Natur des Menschen: Eine dialektische Anthropologie.* Erste Auflage, Originalausgabe. Suhrkamp Taschenbuch Wissenschaft 2353. Berlin: Suhrkamp.

Finlayson, Clive. 2019. *The Smart Neanderthal: Bird Catching, Cave Art & the Cognitive Revolution.* First edition. Oxford, United Kingdom; New York: Oxford University Press.

Foley, Stephen F., Detlef Gronenborn, Meinrat O. Andreae, Joachim W. Kadereit, Jan Esper, Denis Scholz, Ulrich Pöschl, et al. 2013. “The Palaeoanthropocene – The Beginnings of Anthropogenic Environmental Change.” *Anthropocene* 3 (November): 83 – 88. https://doi.org/10.1016/j.ancene.2013.11.002.

Forestier, Hubert, and Eric Boëda. 2021. “Outil préhistorique: évolution, différence anthropologique, hominidés, hominisation, Homo sapiens, main et pied, nature-culture, singes.” In *Dictionnaire de l’humain*, edited by Albert Piette and Jean-Michel Salanskis, 401 – 9. Hors Collection. Nanterre: Presses universitaires de Paris Nanterre. http://books.openedition.org/pupo/12615.

Frick, Jens Axel, and Klaus Herkert. 2020. “Flexibility and Conceptual Fidelity in the Production of Keilmesser with Tranchet Blow.” *Journal of Paleolithic Archaeology* 3 (4): 682 – 718. https://doi.org/10.1007/s41982-019-00036-2.

Gabriel, Markus, Christoph Horn, Anna Katsman, Wilhelm Krull, Anna Luisa Lippold, Corine Pelluchon, and Ingo Venzke. 2022. *Towards a New Enlightenment: The Case for Future-Oriented Humanities.* THE NEW INSTITUTE.Interventions, volume 1. Bielefeld: transcript. https://doi.org/10.14361/9783839465707.

Gamble, Clive. 1998. “Palaeolithic Society and the Release from Proximity: A Network Approach to Intimate Relations.” *World Archaeology* 29 (3): 426 – 49. https://doi.org/10.1080/00438243.1998.9980389.

Gathercole, Peter, and David Lowenthal, eds. 2001. *The Politics of the Past.* Repr. One World Archaeology 12. London: Routledge.

Gaudzinski-Windheuser, Sabine, Lutz Kindler, Katharine MacDonald, and Wil Roebroeks. 2023. “Hunting and Processing of Straight-Tusked Elephants 125.000 Years Ago: Implications for Neanderthal Behavior.” *Science Advances* 9 (5): eadd8186. https://doi.org/10.1126/sciadv.add8186.

Gaudzinski-Windheuser, Sabine, Lutz Kindler, and Wil Roebroeks. 2023. “Widespread Evidence for Elephant Exploitation by Last Interglacial Neanderthals on the North European Plain.” *Proceedings of the National Academy of Sciences* 120 (50): e2309427120. https://doi.org/10.1073/pnas.2309427120.

Geneste, Jean-Michel. 2010. “Systèmes techniques de production lithique.” *Techniques & Culture. Revue semestrielle d’anthropologie des techniques*, no. 54 – 55 (June): 419 – 49. https://doi.org/10.4000/tc.5013.

Graves, Paul. 1991. “New Models and Metaphors for the Neanderthal Debate.” *Current Anthropology* 32 (5): 513 – 41. https://doi.org/10.1086/203997.

Haidle, M. N., M. Bolus, M. Collard, N. J. Conard, D. Garofoli, M. Lombard, A. Nowell, C. Tennie, and A. Whiten. 2015. “The Nature of Culture: An Eight-Grade Model for the Evolution and Expansion of Cultural Capacities in Hominins and Other Animals,” July. https://doi.org/10.4436/jass.93011.

Haraway, Donna Jeanne. 2016. *Staying with the Trouble: Making Kin in the Chthulucene.* Experimental Futures: Technological Lives, Scientific Arts, Anthropological Voices. Durham: Duke University Press.

Harrison, Rodney. 2002. “Archaeology and the Colonial Encounter: Kimberley Spearpoints, Cultural Identity and Masculinity in the North of Australia.” *Journal of Social Archaeology* 2 (3): 352 – 77. https://doi.org/10.1177/146960530200200304.

Higham, Tom, Katerina Douka, Rachel Wood, Christopher Bronk Ramsey, Fiona Brock, Laura Basell, Marta Camps, et al. 2014. “The Timing and Spatiotemporal Patterning of Neanderthal Disappearance.” *Nature* 512 (7514): 306 – 9. https://doi.org/10.1038/nature13621.

Hofman, Corinne Lisette, and Floris W. M. Keehnen, eds. 2019. *Material Encounters and Indigenous Transformations in the Early Colonial Americas: Archaeological Case Studies.* The Early Americas: History and Culture, volume 9. Leiden; Boston: Brill.

Howell, Philip. 2018. “Animals, Agency, and History.” In *The Routledge Companion to Animal–Human History.* Routledge.

Hussain, Shumon T. 2018. “Kreativität, Technizität und Autopoiesis. Zur Bedeutung des Homo faber für das Verständnis der frühesten Menschheitsgeschichte.” *Zeitschrift für Kulturwissenschaften* 12 (2): 49 – 66. https://doi.org/10.14361/zfk-2018-120206.

Hussain, Shumon T. 2024. “Transformation Analysis and Systems-Theory: From Micro-Scale Lithic Technical Systems to Macro-Scale Lithic Ecosystems.” In *Studying Technology of Non-Analogous Environments and Glacial Ecosystems.*, 531 – 547. Bonn: Habelt.

Hussain, Shumon T., in press. “Multispecies Alterity: Interrogating Hominin, Animal and Techno-Material Diversities of the Deep Past.” In *Alterity and Human Evolution: Deep Time and Multispecies Perspectives on Difference and Variation.* Oxford: Berghahn Books.

Hussain, Shumon T., Marcel Weiss, and Trine Kellberg Nielsen. 2022. “Being-with Other Predators: Cultural Negotiations of Neanderthal-Carnivore Relationships in Late Pleistocene Europe.” *Journal of Anthropological Archaeology* 66 (June): 101409. https://doi.org/10.1016/j.jaa.2022.101409.

Hussain, Shumon T., and Manuel Will. 2020. “Materiality, Agency and Evolution of Lithic Technology: An Integrated Perspective for Palaeolithic Archaeology.” *Journal of Archaeological Method and Theory*, September. https://doi.org/10.1007/s10816-020-09483-6.

Jaubert, Jacques. 1999. *Chasseurs et artisans du Moustérien.* Paris: La Maison des Roches.

Jaubert, Jacques. 2009. “Les archéoséquences du Paléolithique moyen du Sud-Ouest de la France: quel bilan un quart de siècle après François Bordes?” In *François Bordes et la Préhistoire*, 235 – 53. Paris: CTHS.

Jöris, Olaf, Petr Neruda, Andrzej Wiśniewski, and Marcel Weiss. 2022. “The Late and Final Middle Palaeolithic of Central Europe and Its Contributions to the Formation of the Regional Upper Palaeolithic: A Review and a Synthesis.” *Journal of Paleolithic Archaeology* 5 (1): 17. https://doi.org/10.1007/s41982-022-00126-8.

Klein, Richard G. 1992. “The Archeology of Modern Human Origins.” *Evolutionary Anthropology: Issues, News, and Reviews* 1 (1): 5 – 14. https://doi.org/10.1002/evan.1360010105.

Klein, Richard G. 2003. “Whither the Neanderthals?” *Science* 299 (5612): 1525 – 27. https://doi.org/10.1126/science.1082025.

Klein, Richard G. 2008. “Out of Africa and the Evolution of Human Behavior.” *Evolutionary Anthropology: Issues, News, and Reviews* 17 (6): 267 – 81. https://doi.org/10.1002/evan.20181.

Krause, Johannes. 2019. *Die Reise unserer Gene: Eine Geschichte über uns und unsere Vorfahren.* Berlin: Propyläen 2019. https://www.ullstein-buchverlage.de/nc/buch/details/die-reise-unserer-gene-9783549100028.html.

Kronfeldner, Maria E., ed. 2021. *The Routledge Handbook of Dehumanization.* Routledge Handbooks in Philosophy. London New York: Routledge, Taylor & Francis Group.

Lemoine, Rhys Taylor, Robert Buitenwerf, and Jens-Christian Svenning. 2023. "Megafauna Extinctions in the Late-Quaternary Are Linked to Human Range Expansion, Not Climate Change." *Anthropocene* 44 (December): 100403. https://doi.org/10.1016/j.ancene.2023.100403.

Leroi-Gourhan, André. 2009. *Hand und Wort: Die Evolution von Technik, Sprache und Kunst.* 1. Aufl., [Nachdr.]. Suhrkamp-Taschenbuch Wissenschaft 700. Frankfurt am Main: Suhrkamp.

Lewis, Simon L., and Mark Maslin. 2018. *The Human Planet: How We Created the Anthropocene.* New Haven; London: Yale University Press.

Lowenthal, David. 1985. *The Past Is a Foreign Country.* Cambridge [Cambridgeshire]; New York: Cambridge University Press.

Lowenthal, David. 2015. *The Past Is a Foreign Country – Revisited.* 1st ed. Cambridge University Press. https://doi.org/10.1017/CBO9781139024884.

Madison, Paige. 2021. "Brutish Neanderthals: History of a Merciless Characterization." *Evolutionary Anthropology: Issues, News, and Reviews* 30 (6): 366 – 74. https://doi.org/10.1002/evan.21918.

Marean, Curtis. 2015. "The Most Invasive Species of All." *Scientific American* 313 (12): 32 – 39.

Mathias, Cyrielle, and Laurence Bourguignon. 2020. "Cores-on-Flakes and Ramification during the Middle Palaeolithic in Southern France: A Gradual Process from the Early to Late Middle Palaeolithic?" *Journal of Archaeological Science: Reports* 31 (June): 102336. https://doi.org/10.1016/j.jasrep.2020.102336.

Mcbrearty, Sally, and Alison S. Brooks. 2000. "The Revolution That Wasn't: A New Interpretation of the Origin of Modern Human Behavior." *Journal of Human Evolution* 39 (5): 453 – 563. https://doi.org/10.1006/jhev.2000.0435.

Mellars, Paul. 1989. "Major Issues in the Emergence of Modern Humans." *Current Anthropology* 30 (3): 349 – 85. https://doi.org/10.1086/203755.

Mellars, Paul. 2005. "The Impossible Coincidence. A Single-Species Model for the Origins of Modern Human Behavior in Europe." *Evolutionary Anthropology: Issues, News, and Reviews* 14 (1): 12 – 27. https://doi.org/10.1002/evan.20037.

Mellars, Paul A. 2015. *The Neanderthal Legacy: An Archaeological Perspective from Western Europe.* New Jersey: Princeton University Press.

Mellars, Paul, and Chris Stringer, eds. 1989. *The Human Revolution: Behavioural and Biological Perspectives on the Origins of Modern Humans.* Edinburgh: Edinburgh Univ. Press.

Morin, Edgar, and Anne Brigitte Kern. 1999. *Homeland Earth: A Manifesto for the New Millennium.* Cresskill, N.J: Hampton Press.

Muller, Antoine, and Chris Clarkson. 2016. "Identifying Major Transitions in the Evolution of Lithic Cutting Edge Production Rates." *PLOS ONE* 11 (12): e0167244. https://doi.org/10.1371/journal.pone.0167244.

Muller, Antoine, Chris Clarkson, and Ceri Shipton. 2017. "Measuring Behavioural and Cognitive Complexity in Lithic Technology throughout Human Evolution." *Journal of Anthropological Archaeology* 48 (December): 166 – 80. https://doi.org/10.1016/j.jaa.2017.07.006.

Nagel, Thomas. 1980. "What Is It Like to Be a Bat?" In *The Language and Thought Series*, edited by Ned Block, 159 – 68. Cambridge, MA and London, England: Harvard University Press. https://doi.org/10.4159/harvard.9780674594623.c15.

Nowell, April. 2023. "Rethinking Neandertals." *Annual Review of Anthropology* 52 (1): null. https://doi.org/10.1146/annurev-anthro-052621-024752.

Pastoors, Andreas, Yvonne Tafelmaier, Alexandra Kunisch, and Jacqueline Ruland. 2010. "Bladelet Production, Core Reduction Strategies, and Efficiency of Core Configuration at the Middle

Palaeolithic Site Balver Höhle (North Rhine Westphalia, Germany)." *Quartär – Internationales Jahrbuch zur Erforschung des Eiszeitalters und der Steinzeit*, 25 – 41. https://doi.org/10.7485/QU57_02.

Peeters, Susan, and Hub Zwart. 2020. "Neanderthals as Familiar Strangers and the Human Spark: How the 'Golden Years' of Neanderthal Research Reopen the Question of Human Uniqueness." *History and Philosophy of the Life Sciences* 42 (3): 33. https://doi.org/10.1007/s40656-020-00327-w.

Plessner, Helmuth. 1975. *Die Stufen des Organischen und der Mensch: Einleitung in die philosophische Anthropologie.* Berlin; New York: De Gruyter. https://doi.org/10.1515/9783110845341.

Porr, Martin. 2011. "One Step Forward, Two Steps Back: The Issue of 'Behavioral Modernity' Again: A Comment on Shea." *Current Anthropology* 52 (4): 581 – 82. https://doi.org/10.1086/660845.

Porr, Martin. 2014. "Essential Questions: 'Modern Humans' and the Capacity for Modernity." In *Southern Asia, Australia and the Search for Human Origins*, 257 – 64. Cambridge: Cambridge University Press.

Porr, Martin, and Jacqueline M. Matthews. 2017. "Post-Colonialism, Human Origins and the Paradox of Modernity." *Antiquity* 91 (358): 1058 – 68. https://doi.org/10.15184/aqy.2017.82.

Rendell, Luke, and Hal Whitehead. 2001. "Culture in Whales and Dolphins." *Behavioral and Brain Sciences* 24 (2): 309 – 24. https://doi.org/10.1017/S0140525X0100396X.

Renfrew, Colin. 2008. "Neuroscience, Evolution and the Sapient Paradox: The Factuality of Value and of the Sacred." *Philosophical Transactions of the Royal Society B: Biological Sciences* 363 (1499): 2041 – 47. https://doi.org/10.1098/rstb.2008.0010.

Režek, Željko, Harold L. Dibble, Shannon P. McPherron, David R. Braun, and Sam C. Lin. 2018. "Two Million Years of Flaking Stone and the Evolutionary Efficiency of Stone Tool Technology." *Nature Ecology & Evolution* 2 (4): 628 – 33. https://doi.org/10.1038/s41559-018-0488-4.

Roebroeks, Wil, and Marie Soressi. 2016. "Neandertals Revised." *Proceedings of the National Academy of Sciences* 113 (23): 6372 – 79. https://doi.org/10.1073/pnas.1521269113.

Romagnoli, Francesca, Florent Rivals, and Stefano Benazzi, eds. 2022. *Updating Neanderthals: Understanding Behavioral Complexity in the Late Middle Paleolithic.* London: Academic Press.

Safina, Carl. 2020. *Becoming Wild: How Animal Cultures Raise Families, Create Beauty, and Achieve Peace.* First edition. New York: Henry Holt and Company.

Scheler, Max. 2018. *Die Stellung des Menschen im Kosmos.* Philosophische Bibliothek, Band 672. Hamburg: Felix Meiner Verlag.

Shea, John J. 2011. "*Homo Sapiens* Is as *Homo Sapiens* Was: Behavioral Variability versus 'Behavioral Modernity' in Paleolithic Archaeology." *Current Anthropology* 52 (1): 1 – 35. https://doi.org/10.1086/658067.

Shipman, Pat. 2015. "How We Hounded out the Neanderthals." *New Scientist* 225 (3012): 26 – 27. https://doi.org/10.1016/S0262-4079(15)60489-4.

Shipman, Pat. 2017. *The Invaders: How Humans and Their Dogs Drove Neanderthals to Extinction.* First Harvard University Press paperback edition. Cambridge, Massachusetts: Harvard University Press.

Shreeve, James. 1995. *The Neandertal Enigma: Solving the Mystery of Modern Human Origins.* New York: Morrow.

Slimak, Ludovic. 2023a. *The Naked Neanderthal.* Translated by David Watson. London: Allen Lane, an imprint of Penguin Books.

Slimak, Ludovic. 2023b. "The Three Waves: Rethinking the Structure of the First Upper Paleolithic in Western Eurasia." *PLOS ONE* 18 (5): e0277444. https://doi.org/10.1371/journal.pone.0277444.

Slimak, Ludovic, Clément Zanolli, Tom Higham, Marine Frouin, Jean-Luc Schwenninger, Lee J. Arnold, Martina Demuro, et al. 2022. "Modern Human Incursion into Neanderthal Territories 54,000 Years Ago at Mandrin, France." *Science Advances* 8 (6): eabj9496. https://doi.org/10.1126/sciadv.abj9496.

Soriano, Sylvain. 2000. *Outillage bifacial et outillage sur éclat au Paléolithique ancien et moyen. Coexistence et interaction.* Université de Paris X – Nanterre. Unpublished Doctoral Dissertation. Paris.

Specht, Joshua. 2016. "'Animal History after Its Triumph: Unexpected Animals, Evolutionary Approaches, and the Animal Lens.'" *History Compass* 14 (7): 326 – 36. https://doi.org/10.1111/hic3.12322.

Sterelny, Kim. 2011. “From Hominins to Humans: How Sapiens Became Behaviourally Modern.” *Philosophical Transactions of the Royal Society B: Biological Sciences* 366 (1566): 809 – 22. https://doi.org/10.1098/rstb.2010.0301.

Sterelny, Kim. 2014. *The Evolved Apprentice: How Evolution Made Humans Unique.* 1st paperback edition. A Bradford Book. Cambridge: The MIT Press.

Stewart, John R. 2007. “Neanderthal Extinction as Part of the Faunal Change in Europe during Oxygen Isotope Stage 3.” *Acta Zoologica Cracoviensia – Series A: Vertebrata* 50 (1): 93 – 124. https://doi.org/10.3409/000000007783995372.

Stiegler, Bernard. 1998. *Technics and Time, 1: The Fault of Epimetheus.* Translated by Richard Beardsworth and George Collins. Stanford: Stanford University Press.

Strauss, Leo, ed. 2013. *On Tyranny: Corrected and Expanded Edition, Including the Strauss-Kojève Correspondence.* Chicago, IL: University of Chicago Press. https://press.uchicago.edu/ucp/books/book/chicago/O/bo15288917.html.

Suddendorf, Thomas. 2013. *The Gap: The Science of What Separates Us from Other Animals.* New York: Basic Books.

Terry, Naomi, Azucena Castro, Bwalya Chibwe, Geci Karuri-Sebina, Codruţa Savu, and Laura Pereira. 2024. “Inviting a Decolonial Praxis for Future Imaginaries of Nature: Introducing the Entangled Time Tree.” *Environmental Science & Policy* 151 (January): 103615. https://doi.org/10.1016/j.envsci.2023.103615.

Uthmeier, Thorsten. 2016. “Neanderthal Utilitarian Equipment and Group Identity: The Social Context of Bifacial Tool Manufacture and Use.” In *The Nature of Culture: Based on an Interdisciplinary Symposium ‘The Nature of Culture’, Tübingen, Germany*, edited by Miriam N. Haidle, Nicholas J. Conard, and Michael Bolus, 65 – 77. Vertebrate Paleobiology and Paleoanthropology. Dordrecht: Springer Netherlands. https://doi.org/10.1007/978-94-017-7426-0_7.

Valentin, Boris. 2011. *Le paléolithique.* Que sais-je?, n° 3924. Paris: Presses universitaires de France.

Villa, Paola, and Wil Roebroeks. 2014. “Neandertal Demise: An Archaeological Analysis of the Modern Human Superiority Complex.” *PLOS ONE* 9 (4): e96424. https://doi.org/10.1371/journal.pone.0096424.

Villanea, Fernando A., and Joshua G. Schraiber. 2019. “Multiple Episodes of Interbreeding between Neanderthal and Modern Humans.” *Nature Ecology & Evolution* 3 (1): 39 – 44. https://doi.org/10.1038/s41559-018-0735-8.

Vogelaar, Alison E. 2021. “The rhetoric of invasive species: Managing belonging on a novel planet.” *Revue française des sciences de l’information et de la communication*, no. 21 (January). https://doi.org/10.4000/rfsic.10350.

Weißmüller, Wolfgang. 2003. *Sesselfelsgrotte II: Die Silexartefakte der unteren Schichten der Sesselfelsgrotte. Ein Beitrag zum Problem des Moustérien.* 1st ed. Franz Steiner Verlag.

White, Leslie A. 2007. *The Evolution of Culture: The Development of Civilization to the Fall of Rome.* Walnut Creek, Calif: Left Coast Press.

Whiten, Andrew. 2021. “The Burgeoning Reach of Animal Culture.” *Science* 372 (6537): eabe6514. https://doi.org/10.1126/science.abe6514.

Wragg Sykes, Rebecca. 2020. *Kindred: Neanderthal Life, Love, Death and Art.* Bloomsbury Sigma, Book Fifty-seven. London, UK; Oxford; New York: Bloomsbury Sigma.

Pouwel Slurink

How humans are made: Ecological factors, intergroup competition and social selection in Neanderthals and anatomically modern humans

Introduction

How do Neanderthals and their anatomically modern contemporaries fit into the story of human evolution? The picture gradually emerges of a tree with many branches, some growing back into the trunk. Theories of human evolution have often assumed one trunk, one process of 'progress', and then postulated one major evolutionary factor. But if the evolution of the genus *Homo* is more like a process of wild proliferation, then it would make more sense to assume multiple factors. Could it be that for each theory of human origins, we should look at the period and species to which it might apply? Different theories could then be based on different factors, just as a recipe is usually made up of a variety of ingredients and actions. Perhaps such an approach could shed light on the difference between Neanderthals and anatomically modern humans.

I will refer to several theories. First, some discuss the common factors between Neanderthals and modern humans: these relate to the origin of the genus *Homo* and its increasing dependence on cooperation and culture. Other theories seek to understand the causes of the increasing psychological and moral complexity of members of the genus at a later stage in their evolution. One theory that seems relevant is the intergroup competition theory of Darwin (1872) and Alexander (1989), among others: this explains human hyper-sociality and morality as the result of rivalry between different groups. More recently, the self-domestication model has come to the fore: Boehm (2012) and Wrangham (2019) argue that social selection within societies has been conducive to social and moral evolution. We need to discuss the extent to which these theories are mutually exclusive or complementary.

Of course, all reasonable theories of human evolution assume ecological factors. Overall, human ecological flexibility seems to have increased. But has this been a gradual process in all populations? Or was it a consequence of special circumstances at particular stages of human evolution? Or was it a trend that applies to the 'trunk' of the human evolutionary 'tree', while some of the 'branches' are more specialised forms that have adapted to a limited habitat with a particular survival strategy?

The writer wishes to thank Raymond Corbey, Hans van der Dennen and the editors of this issue for their useful comments and suggestions.

https://doi.org/10.1515/jbpa-2022-005

To get a handle on the various factors, it is important to know more about Neanderthals and anatomically modern humans during the Middle Palaeolithic.

Neos Andros: A new image of Neanderthals

Although they were often seen as primitive, clumsy cave dwellers, the name Neanderthals has always contained a paradoxical reference to 'new people'. The valley where their bones were first found was named after the preacher and composer Joachim Neumann, who called himself Neander, neos Andros – a name that refers to masculinity, courage and heroism. Whether Neuman was aware of this connotation is, of course, unknown. In any case, our image of those 'Neanders' has changed in recent decades (e.g. Papagianni and Morse, 2015; Finlayson, 2019; Wragg Sykes, 2020; Nowell, 2023).

Contrary to what was long assumed, Neanderthals *were* brave, even heroic hunters with a great knowledge of their environment. They were great craftsmen, who made aerodynamically optimised spears from carefully selected woods and used prepared birch resin and possibly even rope to join stone to wood (Kozowyk and Poulis, 2019; Hardy et al., 2020). They not only mastered fire, but may even have used it to deliberately create open spaces in the landscape (MacDonald et al., 2021; Roebroeks et al., 2021). Not only did they have a detailed knowledge of flora and fauna, but they were apex predators. This is demonstrated by the killing of large deer, as well as cave bears, cave lions, wolves, lynxes, and even huge forest elephants (e.g. Russo et al., 2023).

Hunting was central to Neanderthal life. The killing of large deer and elephants suggests that there was an initiation ritual for hunters (Slimak, 2023: 124). It is at least reasonable to assume that killing the largest elephant was a form of prestige, maintained through sexual selection of the best hunters. Perhaps there was even a kind of elephant meat potlach where several groups met. The amount of mammoth meat that was sometimes available made such a feast possible (Gaudzinski-Windheuser et al., 2023a; 2023b).

The skill of Neanderthals in toolmaking and hunting suggests that language and teaching must have played a role in the transmission of knowledge. Some archaeologists suspect that the Châtelperronian culture, intermediate between Mousterian and Aurignacian, was adopted by Neanderthals from modern humans (e.g. Hublin et al., 2012). This would suggest great flexibility and learning ability. Anyway, Neanderthal culture proved more complex than we thought (Schmidt et al., 2023).

In the last decade, several claims have been made about the ornaments and art of Neanderthals (Marquet et al., 2023). For example, raptor claws found at various sites could have been worn around the neck as ornaments, perhaps in combination with prestigious predator skins (Radovčić et al., 2015; Finlayson, 2019). Raptor feathers may have been used to express status.

All this suggests that the differences with anatomically modern humans have long been exaggerated. According to one recent genetic study, they split only 408,000 years ago (Levinstein Hallak & Rosset, 2024). Only a few years ago, based on analyses of den-

tal differences, it was claimed that the split occurred much earlier, at least 800,000 years ago (Gómez-Robles, 2019).

In any case, it is important to be careful when claiming the superiority or 'success' of one's species (Corbey, 2005; Peeters & Zwart, 2020). Evolution is not about superiority, it is about adaptations, their ecological context, and their consequences. Success means very different things to different people or simply refers to 'reproductive success', the number of offspring produced in a given generation (more about reproductive success later). Neanderthals were well-adapted hunters who repeatedly survived intense ice ages. They were particularly well adapted to their environment during milder periods. After all, they lived in Europe longer than our species has done so far.

This also means that we should be careful not to project ourselves onto Neanderthals too quickly. Neanderthals were unique, with their own 'ethogram' or behavioural profile, adapted to their particular survival strategy. In particular, they were adapted to more arctic conditions. Ludovic Slimak (2023) claims that they were predominantly adapted to Mediterranean forests, which moved northwards during the interglacial periods. Slimak therefore sees deep differences between the ethograms of Neanderthals and *sapiens.* In tool making, for example, they were less affected by the tendency towards cultural standardization (p. 178). In this sense, the individual Neanderthal craftsman or craftswoman was more 'original' than the individual *sapiens* craftsman or craftswoman.

It is possible that art and creativity played a less central role in Neanderthal cultures compared to *Homo sapiens.* Perhaps cultural traditions went extinct faster in the challenging environments in which Neanderthals lived, leading them to rely somewhat more on individual creativity.

Common ancestry, different evolutionary trajectories

Of course, more empirical data will be needed to settle the debate about the true nature of Neanderthals. Further genetic data will also be important. If the common ancestor lived relatively recently, then several shared traits between us and Neanderthals go back to *Homo heidelbergensis* or *bodoensis* (Roksandic et al., 2022). But to get a grip on the differences, it also helps to go back to the overarching models of human evolution. Is there reason to believe that Neanderthals followed a slightly different evolutionary trajectory than anatomically modern humans?

Let us first look at their common ancestry. Both species descended from archaic humans who were probably already good hunters, made hand axes and spears, and could make fire (Thieme, 1997; Goren-Inbar et al., 2004). The skulls of these archaic humans were already much larger than those of Australopithecines. They probably already had loose fontanelles and grew postnatally. According to one theorist, the

baby carrier must have developed very early, unfortunately without leaving archaeological traces (Taylor, 2010).

According to several theorists, 'cooperative breeding' played an important role in the early stages of the evolution of *Homo* (e. g. Hrdy, 2009; Van Schaik, C. P., & Burkart, J. M., 2010). This reduced the burden of maternal care on highly dependent infants. It also allowed group size to be flexibly adapted to the carrying capacity of the environment: in other species with shared brood care, such as bee-eaters, aunts, and uncles help when conditions are unfavourable and breed themselves when conditions are favourable.

During the period in which the genus *Homo* evolved, the climate changed, sometimes rapidly and dramatically, and changes in both diet and reproductive strategies enabled early humans to adapt very quickly (Potts, 1996). The genus Homo may have formed an adaptive radiation that diversified into different strategies, of which scavenging and meat-eating was only one. *Homo erectus* has been described as a kind of opportunistic 'weed', able to spread across a variety of changing ecosystems in geologically and climatically unstable Pleistocene Africa (Cachel & Harris, 1995). Weeds typically thrive on disruption and ecological instability, outcompeting and replacing more specialised species. A zoological analogy is provided by fast, clever adaptors such as mice, rats, sparrows and gulls, which often displace more demanding and specialised animals such as hamsters, orioles and dune pipits (Newson & Richerson, 2021: 87).

One of the most important socio-cultural changes in human evolution must have been the discovery of paternity. According to Chapais (2009), this discovery shook up relationships within early human groups. Once it was recognised that children were the product of a particular father, social complexity increased enormously. The number of kinship relationships that defined one's identity doubled, as did the number of people one could call on. This marked a break with the atavistic promiscuous or polygamous mating systems of chimpanzees and possibly Australopithecines, in which dominant males try to monopolise all matings during the female's fertile period. Covert ovulation made it easier for females to bind males permanently (Alexander & Noonan, 1979).

This had implications for the development of culture. Males were able to help the mothers of their children and also contribute to the transfer of gender-specific skills and knowledge. Throughout human evolution, the length of the pre-sexual juvenile period gradually increased, giving children more time to acquire all sorts of essential social, linguistic, and cognitive skills through play and learning.

The length of the juvenile period can be determined in part by studying dental maturation and general anatomy. For example, studies on the Nariokotome boy, an early *Homo ergaster*, suggest that teeth matured relatively quickly in this individual (Smith, 1994). Both dental growth and other anatomical data suggest relatively rapid brain and body development in newborn Neanderthals (Neubauer & Hublin 2012, Nowell 2023). Children in *sapiens* required a slightly longer period of education and training.

Migliano and Vinicius (2021) show how different social structures may or may not be conducive to cumulative culture. One important factor is the size of the group and

the degree of contact with other groups. New technological tricks may spread faster if there is more contact with other groups. A larger group may also lead to a greater division of labour. It simply pays more to specialise. This in turn can lead to new forms of technology or new combinations of technologies. Group size is important, at least if it is combined with good communication skills, because different kinds of knowledge can be spread throughout the group, and the group can call on many different specialists in different circumstances (Whiten et al., 2021).

Of course, it is difficult to assess group size. An indirect indication may be neocortex size. According to Aiello and Dunbar group size and neocortex size correlate in a series of primates (Aiello & Dunbar, 1993). Dunbar claims that in Neanderthals a relatively large part of the brain was occupied by the visual cortex. Neanderthals' large eyes were an adaptation to the long twilight hours in northern regions and required more brain tissue (Dunbar 2014). So, if Dunbar is right, groups of Neanderthals would have been smaller. This is consistent with genetic data (e. g. Skov et al., 2022), despite the surprising discovery of very large accumulations of slaughtered elephants at Neumark-Nord in Germany, suggesting a large Neanderthal group size (Gaudzinski-Windheuser et al., 2023a; 2023b).

Intergroup competition

The question now is whether the difference between Neanderthals and anatomically modern humans can be explained by the intergroup competition hypothesis. Many thinkers have postulated that intergroup competition is an important driver of human cumulative culture and strong group morality (Darwin, 1872, Alexander, 1990, van der Dennen, 1995, Slurink, 1993, 2002, Bowles & Gintis, 2011). Groups with loyal members would have an advantage when competing for the best hunting grounds and shelters. In competitive situations, relatively large groups would have an edge over smaller groups, too.

Many Neanderthal researchers today are highly critical of the idea that our anatomically modern ancestors displaced the Neanderthals because of their superior technology and intelligence. Many reject the 'competition hypothesis' in favour of a more demographic explanation of the replacement of Neanderthals in Europe by *Homo sapiens* (Vaesen, K., Dusseldorp, G.L. & Brandt, M.J., 2021). Thus, Villa and Roebroeks claim that "the Neanderthal archaeological record is not different enough to explain the demise in terms of inferiority in archaeologically visible domains. Instead, current genetic data suggest that complex processes of interbreeding and assimilation may have been responsible for the disappearance of the specific Neanderthal morphology from the fossil record" (Villa, P. & Roebroeks, W., 2014: 1).

Vaesen, et al. (2019) use principles of conservation biology to explain the decline of Neanderthals. Small populations are vulnerable to the effects of inbreeding, the disadvantages of small group size (Allee effects: including difficulty in finding mates, collaborators, and defenders) and natural population fluctuations (stochasticity). There is

ample evidence that Neanderthals lived in small populations, at least in some regions (Abrams, 2023). Probably they were well adapted to the carrying capacity of their environment. It seems that this carrying capacity was not exceeded until anatomically modern humans arrived (Vidal-Cordasco et al., 2023).

Perhaps studies of reproductive success can help here. They often reveal important evolutionary trends within societies, where sometimes the best hunters, sometimes the best warriors, and sometimes the most powerful or richest men have the most children (Betzig et al., 1988; Slurink, 2002: § 5.11; Hopcroft, 2006; Page et al., 2017). This could point to different selection pressures, where in different societies or at different times the qualities of hunters, warriors, or even extremely social or creative people contribute to the survival of their traits in the gene pool. It is possible that among Neanderthals, reproductive success was mainly determined by hunting success, as is probably the case among the Aché of Paraguay (Betzig et al., 1988). This may have led to unidirectional specialisation, with group size remaining determined by the carrying capacity of the environment. It seems that Neanderthals were completely absorbed in their struggle with ever-changing ecological conditions, with entire populations sometimes dying out during the coldest periods. During cold periods, eating meat was relatively important. During milder periods they could supplement or replace it with plant material and fish, but this was more difficult in the central Eurasian mammoth steppes than in coastal regions.

The situation was different for anatomically modern humans in Africa. African *Homo sapiens* also suffered from climate change, but it came in the form of droughts. During such droughts, populations migrated to the coast (Marean, 2015). There they foraged for seafood, shellfish, crustaceans and fish (Marean, 2010a, 2010b). There, they also encountered other populations of *sapiens.* This led to much interbreeding, but probably also to tribal rivalry and conflicts. One indication of this may be genetic studies showing that *sapiens* hybridised with groups across Africa (e. g. Hammer, 2013), whereas Neanderthal populations sometimes showed more *in*breeding (Skov et al., 2022).

The ability to exploit new food sources may have made African *sapiens* so ecologically flexible that it became somewhat detached from the ecosystem. Alexander introduced the term ‘ecological dominance’ to describe the position of predators who themselves suffer very little predation (Alexander, 1990, Slurink, 1993, 1994, 1995, 2002). Ecological dominance in modern humans may have sometimes led to relative overpopulation, which then caused migration and territorial expansion.

The tendency to attack neighbouring groups is as old as chimpanzees. Chimpanzees will sometimes sneak into neighbouring territories and kill anyone they encounter. This can eventually lead to the occupation of the entire territory (Wrangham and Glowecki, 2012). Hans van der Dennen, in his comprehensive *Origin of War*, points to a possible ‘male coalition strategy’ that may underlie war (van der Dennen, 1995). The idea that prehistoric hunter-gatherers were always peaceful does not seem to be true (Meyer et al., 2015; Crevecoeur et al., 2021; Lahr et al., 2016; Fernández-Crespo, 2023).

Could *Homo sapiens* have brought their more aggressive, invasive tactics with them as they expanded into Europe? It is currently unclear whether only gradual genetic assimilation can explain the disappearance of Neanderthals. In several controversial studies, the archaeologist Slimak argues that the evidence points in a different direction. First, his team analysed the soot above hearths in the Mandrin cave in southern France. They claim that the cave was used by Neanderthals for 80,000 years and then taken over by modern humans within a year (Vandevelde et al., 2017). More recently, a team from Slimak found more than a thousand possible arrowheads in the same cave. Some were broken, probably because they were on shot arrows. They claim that these arrowheads were left there by anatomically modern hunter-gatherers based on the presence of one (modern human) baby tooth (Metz et al., 2023; Slimak et al., 2022).

Then we have the deep wound in the sternum of Shanidar-3. This could have been caused by an arrow from a bow or a spear from a javelin thrower. Churchill conducted tests on spear throwers on dead pigs and concluded that the deep wound could only have been made by an enormous force (Churchill et al., 2009). He suggests an anatomically modern hunter or 'warrior'. Shipman (2015) also accepts this argument. She adds the cut marks on the jaw of a Neanderthal child at Les Rois in France as evidence of conflict with Neanderthals (Rozzi et al., 2009).

According to Slimak, Neanderthals also had fewer weapons than anatomically modern humans (Slimak, 2023: 174–175). Although it is sometimes difficult to decide which archaeologist to believe, all this suggests that the psychology of *sapiens* in Africa was much more shaped by complex relationships between groups. Neighbouring groups probably tended to maintain good relations, with individuals moving freely from group to group. It was important to know many people, and also to maintain contact with people from neighbouring tribes (Page et al., 2017). But sometimes interests diverged too much and back-and-forth irritation led to conflict. Groups with better teams and team spirit were able to defend the best places for longer, or even conquer new territory.

Homo sapiens' interaction and competition with other groups made them versatile opportunists. If *Homo erectus* was already a 'weed' that cleverly exploited the ecological chaos caused by climate change then *Homo sapiens* applied this strategy in turbo mode thanks to even more cumulative culture, becoming a kind of devilish 'master weed'.

The self-domestication hypothesis

A recent alternative to intergroup competition theory is self-domestication theory (Boehm, 2012; Wrangham, 2019). According to Christopher Boehm, morality began with resistance to the arbitrariness of aggressive leaders. We differ from chimpanzees in our preference for fairness and equality. Chimpanzee canines show that dominance hierarchies in this species are the result of constant physical power struggles. These are sometimes used to kill overly dominant leaders (Pruetz et al., 2017), but the hierarchy

usually returns anyway. Boehm thinks we must have gone through a phase where dominance hierarchies no longer worked and overly aggressive leadership was systematically punished. He calls this 'punitive social selection'. This would explain the egalitarian behaviour of hunter-gatherers. In his book *Moral Origins*, Boehm reports on his studies of capital punishment in a number of societies and concludes that killing despots must have been a way of counteracting our hierarchical tendencies and promoting mildness and self-control as early as the Mesolithic.

Building on the work of Boehm Richard Wrangham (2019) suggests that our allergy to despots has led to self-domestication. Just as we have bred dogs by not breeding the most dangerous ones, we have constantly culled the fiercest of our wolves by punishing aggressive behaviour – in fact breeding ourselves into puppies. But Wrangham argues that our lower levels of immediate 'reactive aggression' do not make us completely peace-loving. We are very good at 'proactive aggression' (planned aggression) and can easily overcome our aversion to violence through training. Our everyday levels of aggression are low, but we blindly follow the pack in organised aggression.

One indication that the domestication hypothesis explains the evolution of anatomically modern humans is the evolution of the face. At least compared to Neanderthals, we have a baby face (Zanella et al., 2019). Our face is relatively 'open' and expressive. By comparison, the Neanderthal face, with its heavy eyebrow arches, is less legible. The oldest *Homo sapiens* skull, from Jebel Irhoud, combines a modern face with a still 'primitive' occiput. This skull is approximately 280,000 – 350,000 years old (Hublin et al., 2017). Since then, the skull of *Homo sapiens* has become larger and rounder. New mutations allowed neurons to grow more rapidly and expanded the networks involved in social and creative behaviour (Nowell, 2023). The selective pressures that increased these mutations probably lay in the somewhat larger groups with relatively large numbers of unrelated individuals and the constant need to learn more social and linguistic skills and technological tricks.

This may show that competition *between* groups can increase competition *within* the group. Groups were more successful if they managed to attract strong or productive members from other groups. This would lead to strong teams and an increase in collective experience and knowledge. At the same time, it could lead to dissatisfaction and increased competition within the group. Periods of exchange would likely alternate with periods of increasing mutual distrust between groups.

Intergroup competition thus differs from pure group selection, as Alexander recognised when he linked it to indirect reciprocal altruism (1989). Indirect reciprocal altruism explains how we take into account the judgement of others in our interactions – in essence, it is an explanation for the evolution of conscience, just like the self-domestication hypothesis with its 'punitive social selection' (Boehm, 2012). Both theories explain the fear of group judgment. Bowles and Gintis (2011), who also propose an intergroup competition hypothesis, approach moralism from the opposite direction: their notion of 'strong reciprocity' concerns the altruistic willingness to punish antisocial behaviour and enforce beneficial group rules. The result is the same: like Alexander, they believe that intergroup competition leads to intragroup moralism.

Did some typically modern human traits arise in South Africa?

So the differences between Neanderthals and modern humans seem to have deep climatic and ecological causes. According to Curtis Marean, the use of coastal ecological resources, particularly in South Africa but perhaps also in the Mediterranean, led to profound changes in behaviour. He places the greatest changes during the later Saalian period, c. 200.000 – c. 120.000 years ago. At that time there was a great drought on the continent. Populations moved to the coasts and learned to cope with the tides. Crustaceans and the many tubers of the African fynbos also allowed females to gather a lot of protein (Marean, 2010a and 2010b).

Populations became relatively large for hunter-gatherers. This was accompanied by increased competition for the best sites. As a result, a new small type of stone tool was made, called a bladelet, which could be used as a spearhead. They may have been made by heating hard, siliceous rock (silica) to about 350 °C, after which it was very easy to process (Brown et al., 2012). These spear points could probably have been attached to throwing spears, and smaller points could have been attached to arrows. It now seems clear that bow and arrow were developed somewhere in South Africa more than 60,000 years ago (Bradfield et al., 2020; Metz et al., 2023; Kappelman, 2024).

So although Neanderthals had throwing spears, sapiens may have looked for ways to give their weapons extra acceleration. They may have already had javelin throwers. This is Churchill's explanation for the Shanidar-3 wound, as we have seen. And they had bows and arrows. Perhaps Neanderthals in the northern forests had less use for these technologies because they were more often close to their prey. But they may simply not have had the idea, or the techniques may have been lost. Cumulative culture must have been more difficult for Neanderthals anyway, because their smaller groups made them more vulnerable to isolation and extinction.

The tribes who lived along the rich coastline near Pinnacle Point and Blombos Cave during the Ice Ages probably had to defend their rich habitat from invaders at times. They developed a strong sense of self-awareness and group consciousness, but they were also concerned with weapons. Hence the development of better spearheads and, at some point, bows and arrows. According to Marean, the relatively large groups of *Homo sapiens* were characterised by cooperation between many unrelated individuals. Competition between groups could lead to stricter discipline within the group and punishment for antisocial behaviour (Marean, 2015).

All this reinforces the suspicion that there was a relevant difference between Neanderthals and anatomically modern humans. Neanderthals were adapted to the northern forests. There was certainly less pressure for constant cultural innovation. Groups were likely to be characterised by a high degree of kinship, especially among males, and the relationships between them may not always have been known.

Anatomically modern people were more oriented towards cumulative culture. They were sometimes more aware of family relationships and may have had better

words for them. Their groups included more 'wanderers' and 'refugees' as well as women from other groups. There was also more contact with other groups, probably exchanging women, but also precious materials such as obsidian (Blegen, 2017; Hawks, 2019). This explains the relatively large movement of resources among anatomically modern people. A greater awareness of familial relationships may have led to a slightly greater emphasis on bonds with a permanent partner, from which marriage forms eventually emerged. Relatively stable relationships also had the advantage that there was less conflict within the group and that the fathers were able to pass on specifically male traditions and crafts to their sons.

From time to time, some groups would try to wrest favourable territory from another group. This led to arms races, including social ones. The advantage went to those groups where experience, technique and team spirit were used to the full. There was a great need for resources to develop and celebrate group culture, to reward the deeds of all, but especially of some heroes and heroines. If promising young men saw better reproductive opportunities in other groups, they may have left. The result was that strong groups became stronger and stronger. Weaker groups were pushed into less fertile areas. This strong group culture may have allowed *H. sapiens* to evolve into an invasive exotic able to adapt to a variety of ecosystems.

In such mixed populations, group trust and the maintenance of shared traditions and stories were very important. Celebrations, rituals and stories were important, fostering a sense of community and enabling the transmission of experiences. At some point, this must have led to dance and trance, which in turn led to belief in the supernatural – which in turn could be used by special dancers and shamans to reinforce their authority and sense of community (Wade, 2009).

Generalists and specialists in the world of today and tomorrow

All in all, I feel strengthened in my suspicion that Neanderthals were more like intelligent specialists who had to constantly adapt to the shifting mammoth steppe and adjacent forests. Neanderthals were excellent hunters and craftsmen, but they lived in smaller groups than *sapiens,* so they had less collective knowledge (Whiten et al., 2021; Longrich, 2020).

Anatomically modern humans were more generalists, able to survive in the interior of Africa as well as on the coast. They probably had more experience interacting with other groups anyway, trading resources and moving individuals between groups. Already at an early stage of their evolution, their group life must have been more complex than that of the Neanderthals, hence their open, expressive face. Their culture was more based on tradition and standardisation.

Out of necessity, they developed more weapons, not only for hunting but also because living with other groups sometimes led to conflict. This led to more arms races,

where larger groups with stronger teams and experienced specialists could push other groups out of the best areas. It is possible that inter-group competition has at times encouraged the tendency towards patriarchy. Men are simply more gifted at physical aggression and risk-taking, and society values this most when it is needed.

Looking back at the evolution of *Homo*, one could devise a trend towards increasing ecological flexibility, accompanied by increasing reliance on cumulative culture (e.g. Richerson and Boyd, 2020). It could be argued that humans are more dependent on learning than on instinct because rigid instincts are far too biotope-specific. Wonderfully, we also resemble other pests in this respect, such as rats, because they are also relatively dependent on learning (as Konrad Lorenz realized).

However, this trend mainly concerns the 'trunk' of the *Homo* evolutionary tree. Especially if we look backwards, we see this general trend: overall towards more opportunism, more ecological flexibility, more gene-culture or culture-gene coevolution, more cumulative culture, more inter-group competition. But the Neanderthals show that there are also successful species of *Homo* that are more specialised. Specialists were sometimes able to survive on the fringes of the human habitat. I think Neanderthals were such specialists, as well as possibly *Homo naledi* and Flores man.

In the more generalist forms of *Homo*, the juvenile phase probably became longer and longer: survival required a relatively high level of knowledge. Not every individual in the group needed to have all this knowledge. The strength of *sapiens* probably lay in relatively large groups with individuals with many different experiences. Increasingly smooth communication made it possible to draw on that experience when needed. With Bickerton, I tend to think that language began quite early as a way of alerting and recruiting other group members (Bickerton, 2009), but could easily evolve from this role into a carrier of cumulative culture, as it is today.

Their enormous ecological flexibility allowed *Homo sapiens* to evolve into a weed that could repeatedly take advantage of ecological instability. His opportunism and cunning also enabled him to exploit the weaknesses of neighbouring tribes. When he entered new territories, his primary intention was undoubtedly not to defeat or displace other species. It is possible that initial contacts were often peaceful, with irritations and xenophobia coming later.

This may explain why there was an early period of gene exchange between *Homo sapiens* and Neanderthals in the Middle East (Sankararaman et al., 2012). Whether there was peaceful contact with occasional romantic relationships, or rather abduction and sexual assault, is still unclear. What we do know is that anatomically modern humans were early ecologically dominant opportunists who, when they arrived in a new area, first wiped out competing predators and then the megafauna (Bergman et al., 2023). It is not unlikely that they also played a less pretty role in the disappearance and absorption of Neanderthals, and that *Homo naledi* and Flores man were also eventually displaced or exterminated by our species. It is even possible that the relatively low percentage of Neanderthal genes in European populations is an indication that the Neanderthals here were relatively affected by anatomically modern invasions. Will we ever find out?

So it is time to put an end to the narcissistic narrative that the mainstay of human evolution – from ecological flexibility to ecological dominance and intercultural arms races – is all good and beautiful. The much-celebrated 'success of our species' has a dark side. It is even possible to see the actions of our species as a natural disaster that can boomerang back on ourselves. It is time to pay more attention to species of *Homo* and to human cultures that coexisted or coexist with ecological systems more sustainably. Instead of patting ourselves on the back for getting so far away from our original environment, let's learn to coexist with nature so that future generations can have a life at all.

References

Abrams, G. C. M. G. (2023). *Close encounters of the third kind?: Neanderthals and modern humans in Belgium, a bone story* (Doctoral dissertation, Leiden University).

Aiello, L.C. & R.I.M. Dunbar (1993). Neocortex Size, Grous Size, and the Evolution of Language. *Current Anthropology*, 34, 2: 184 – 193.

Alexander, R.D. & K. Noonan (1979). Concealment of ovulation, parental care and human social evolution. In: N. Chagnon & W. Irons (Eds.), Evolutionary Biology and Human Social Behavior, N. Scituate, MA: Duxbury Press.

Alexander, R. D. (1989). Evolution of the Human Psyche. In Mellars & Stringer (eds.), *The human revolution: Behavioural and biological perspectives on the origins of modern humans*, 455 – 513.

Alexander, R.D. (1990). *How Did Humans Evolve? Reflections on the Uniquely Unique Species*, Ann Arbor: Museum of Zoology, U. of Michigan Special Publication No.1.

Bergman, J., Pedersen, R. Ø., Lundgren, E. J., Lemoine, R. T., Monsarrat, S., Pearce, E. A., ... & Svenning, J. C. (2023). Worldwide Late Pleistocene and Early Holocene population declines in extant megafauna are associated with Homo sapiens expansion rather than climate change. *Nature Communications*, *14*(1), 7679.

Betzig, L., Mulder, M. B., & Turke, P. (Eds.). (1988). *Human reproductive behaviour: A Darwinian perspective.* Cambridge: Cambridge University Press.

Bickerton, D. (2009). *Adam's Tongue. How Humans Made Language, How Language Made Humans.* New York: Hill and Wang.

Boehm, C. (2012). *Moral Origins. The Evolution of Virtue, Altruism, and Shame.* New York: Basic Books.

Bowles, S., & Gintis, H. (2011). *A cooperative species: Human reciprocity and its evolution.* Princeton University Press.

Blegen, N. (2017). The earliest long-distance obsidian transport: Evidence from the ~200 ka Middle Stone Age Sibilo School Road Site, Baringo, Kenya. *Journal of Human Evolution*, *103*, 1 – 19. https://doi.org/10.1016/j.jhevol.2016.11.002.

Brown, K. S., Marean, C. W., Jacobs, Z., Schoville, B. J., Oestmo, S., Fisher, E. C., ... & Matthews, T. (2012). An early and enduring advanced technology originating 71,000 years ago in South Africa. *Nature*, *491*(7425), 590 – 593.

Bradfield, J., Lombard, M., Reynard, J., & Wurz, S. (2020). Further evidence for bow hunting and its implications more than 60,000 years ago: Results of a use-trace analysis of the bone point from Klasies River Main site, South Africa. *Quaternary Science Reviews*, *236*, 106295.

Cachel, S, & Harris, J.W.K. (1995). Ranging patterns, land-use and subsistence in *Homo erectus* from the perspective of evolutionary biology. In J. Bowe & S. Sartono (Eds), *Human evolution in its ecological context. Paleo-anthropology: Evolution and ecology of* Homo erectus (pp. 51 – 56). Leiden, the Netherlands: Pithecanthropus Centennial Foundation.

Chapais, B. (2009). *Primeval kinship: How pair-bonding gave birth to human society.* Harvard University Press.

Churchill, S. E., Franciscus, R. G., McKean-Peraza, H. A., Daniel, J. A., & Warren, B. R. (2009). Shanidar 3 Neandertal rib puncture wound and palaeolithic weaponry. *Journal of human evolution*, *57*(2), 163 – 178.

Corbey, R. (2005). *The metaphysics of apes: Negotiating the animal-human boundary.* Cambridge University Press.

Crevecoeur, I., Dias-Meirinho, M. H., Zazzo, A., Antoine, D., & Bon, F. (2021). New insights on interpersonal violence in the Late Pleistocene based on the Nile Valley cemetery of Jebel Sahaba. *Scientific reports*, *11*(1), 9991. https://doi.org/10.1038/s41598-021-89386-y.

Darwin, C. (1872). *The descent of man, and selection in relation to sex.* D. Appleton.

Dunbar, R. (2014). *Human evolution: A pelican introduction.* Penguin UK.

Fernández-Crespo, T., Ordoño, J., Etxeberria, F., Herrasti, L., Armendariz, Á., Vegas, J. I., & Schulting, R. J. (2023). Large-scale violence in Late Neolithic Western Europe based on expanded skeletal evidence from San Juan ante Portam Latinam. *Scientific Reports*, *13*(1), 17103.

Finlayson, C. (2019). The Smart Neanderthal. Bird catching, cave art & the cognitive revolution. Oxford: Oxford University Press.

Gaudzinski-Windheuser, S., Kindler, L., MacDonald, K., & Roebroeks, W. (2023a). Hunting and processing of straight-tusked elephants 125.000 years ago: Implications for Neanderthal behavior. *Science Advances*, *9*(5), eadd8186.

Gaudzinski-Windheuser, S., Kindler, L., & Roebroeks, W. (2023b). Widespread evidence for elephant exploitation by Last Interglacial Neanderthals on the North European plain. *Proceedings of the National Academy of Sciences*, *120*(50), e2309427120.

Gómez-Robles, A. (2019). Dental evolutionary rates and its implications for the Neanderthal–modern human divergence. *Science advances*, *5*(5), eaaw1268.

Goren-Inbar, N., Alperson, N., Kislev, M. E., Simchoni, O., Melamed, Y., Ben-Nun, A., & Werker, E. (2004). Evidence of hominin control of fire at Gesher Benot Yaaqov, Israel. *Science*, *304*(5671), 725 – 727.

Hammer, M. F. (2013). Human hybrids. *Scientific American*, *308*(5), 66 – 71.

Hardy, B.L., Moncel, M.H., Kerfant, C., Lebon, M., Bellot-Gurlet, L., Melard, N. (2020). Direct evidence of Neanderthal fibre technology and its cognitive and behavioral implications. *Sci. Rep.* 10:4889

Hawks, J. 2019. Did Acheulean hominins have long-distance obsidian trade? *John Hawks Weblog*, https://johnhawks.net/weblog/did-acheulean-hominins-have-long-distance-obsidian-trade/.

Hopcroft, R.L. (2006). Sex, status and reproductive success in the contemporary U.S. *Evolution and Human Behavior* 27: 104 – 120.

Hublin, J. J., Talamo, S., Julien, M., David, F., Connet, N., Bodu, P., ... & Richards, M. P. (2012). Radiocarbon dates from the Grotte du Renne and Saint-Césaire support a Neandertal origin for the Châtelperronian. *Proceedings of the National Academy of Sciences*, *109*(46), 18743 – 18748.

Hublin, J. J., Ben-Ncer, A., Bailey, S. E., Freidline, S. E., Neubauer, S., Skinner, M. M., ... & Gunz, P. (2017). New fossils from Jebel Irhoud, Morocco and the pan-African origin of Homo sapiens. *Nature*, *546*(7657), 289 – 292.

Hrdy, S.B. (2009). *Mothers and Others: The Evolutionary Origins of Mutual Understanding.* Cambridge MA: Harvard University Press.

Kappelman, J., Todd, L.C., Davis, C.A. et al. (2024). Adaptive foraging behaviours in the Horn of Africa during Toba supereruption. *Nature* (2024). https://doi.org/10.1038/s41586-024-07208-3.

Kozowyk, P. R., & Poulis, J. A. (2019). A new experimental methodology for assessing adhesive properties shows that Neandertals used the most suitable material available. *Journal of Human Evolution*, *137*, 102664.

Lahr, M. M., Rivera, F., Power, R. K., Mounier, A., Copsey, B., Crivellaro, F., ... & Foley, R. A. (2016). Inter-group violence among early Holocene hunter-gatherers of West Turkana, Kenya. *Nature*, *529* (7586), 394 – 398.

Levinstein Hallak, K., & Rosset, S. (2024). Dating ancient splits in phylogenetic trees, with application to the human-Neanderthal split. *BMC Genomic Data*, *25*(1), 4.

Longrich, N.R. (2020). War in the time of Neanderthals: how our species battled for supremacy for over 100,000 years. *The Conversation*, November 2, 2020. https://theconversation.com/war-in-the-time-of-neanderthals-how-our-species-battled-for-supremacy-for-over-100-000-years-148205.

MacDonald, K., Scherjon, F., van Veen, E., Vaesen, K., & Roebroeks, W. (2021). Middle Pleistocene fire use: The first signal of widespread cultural diffusion in human evolution. *Proceedings of the National Academy of Sciences*, *118*(31), e2101108118.

Marean, C. W. (2010a). Pinnacle Point Cave 13B (Western Cape Province, South Africa) in context: the Cape floral kingdom, shellfish, and modern human origins. *Journal of Human Evolution*, *59*(3 – 4), 425 – 443.

Marean, C. W. (2010b). When the sea saved humanity. *Scientific American*, *303*(2), 54 – 61.

Marean, C. W. (2015). The most invasive species of all. *Scientific American*, *313*(2), 32 – 39.

Marquet, J.-C., Freiesleben, T.H., Thomsen, K.J., Murray, A.S., Calligaro, M., Macaire, J.-J., et al. (2023) The earliest unambiguous Neanderthal engravings on cave walls: La Roche-Cotard, Loire Valley, France. PLoS ONE 18(6): e0286568. https://doi.org/10.1371/journal.pone.0286568.

Meyer, C., Lohr, C., Gronenborn, D., & Alt, K. W. (2015). The massacre mass grave of Schöneck-Kilianstädten reveals new insights into collective violence in Early Neolithic Central Europe. *Proceedings of the National Academy of Sciences*, *112*(36), 11217 – 11222.

Migliano, A. B., & Vinicius, L. (2021). The origins of human cumulative culture: from the foraging niche to collective intelligence. *Philosophical Transactions of the Royal Society B*, *377*(1843), 20200317. https://doi.org/10.1098/rstb.2020.0317.

Metz, L., Lewis, J. E., & Slimak, L. (2023). Bow-and-arrow, technology of the first modern humans in Europe 54,000 years ago at Mandrin, France. Sci. Adv. 2023; 9: eadd4675.

Neubauer, S., & Hublin, J. J. (2012). The evolution of human brain development. *Evolutionary Biology*, *39*, 568 – 586.

Newson, L. & P. Richerson (2021). *A Story of Us. A New Look at Human Evolution.* Oxford: Oxford University Press.

Nowell, A. (2023). Rethinking Neanderthals. *Annual Review of Anthropology, 52 (1),* 151 – 170.

Page, A. E., Chaudhary, N., Viguier, S., Dyble, M., Thompson, J., Smith, D., … & Migliano, A. B. (2017). Hunter-gatherer social networks and reproductive success. *Scientific Reports*, *7*(1), 1153. https://doi.org/10.1038/s41598-017-01310-5.

Papagianni, D., Morse, M.A. (2015). *The Neanderthals Rediscovered: How Modern Science Is Rewriting Their Story.* London: Thames & Hudson.

Peeters, S., & Zwart, H. (2020). Neanderthals as familiar strangers and the human spark. *History and Philosophy of the Life Sciences*, *42*(3).

Potts, R. (1996). *Humanity's Descent: The Consequences of Ecological Instability.* New York: William Morrow.

Pruetz, J. D., Ontl, K. B., Cleaveland, E., Lindshield, S., Marshack, J., & Wessling, E. G. (2017). Intragroup lethal aggression in West African chimpanzees (Pan troglodytes verus): inferred killing of a former alpha male at Fongoli, Senegal. *International Journal of Primatology*, *38*, 31 – 57.

Radovčić, D., Sršen, A. O., Radovčić, J., & Frayer, D. W. (2015). Evidence for Neandertal jewelry: modified white-tailed eagle claws at Krapina. *PloS one*, *10*(3), e0119802.

Richerson, P.J. and R. Boyd, 2020. The human life history is adapted to exploit the adaptive advantages of culture. *Philosophical Transactions of the Royal Society B*, 20 July 2020, 375: 1803.

Roebroeks, W., MacDonald, K., Scherjon, F., Bakels, C., Kindler, L., Nikulina, A., … & Gaudzinski-Windheuser, S. (2021). Landscape modification by Last Interglacial Neanderthals. *Science Advances*, *7*(51), eabj5567.

Roksandic, M., Radović, P., Wu, X. J., & Bae, C. J. (2022). Resolving the "muddle in the middle": The case for Homo bodoensis sp. nov. *Evolutionary Anthropology: Issues, News, and Reviews*, *31*(1), 20 – 29.

Rozzi, F. R., d'Errico, F., Vanhaeren, M., Grootes, P. M., Kerautret, B., & Dujardin, V. (2009). Cutmarked human remains bearing Neandertal features and modern human remains associated with the Aurignacian at Les Rois. *Journal of Anthropological Sciences*, *87*, 153 – 185.

Russo, G., Milks, A., Leder, D. et al. (2023). First direct evidence of lion hunting and the early use of a lion pelt by Neanderthals. *Sci Rep* 13, 16405. https://doi.org/10.1038/s41598-023-42764-0.

Sankararaman, S., Patterson, N., Li, H., Pääbo, S., Reich, D. (2012). The Date of Interbreeding between Neandertals and Modern Humans. *PLoS Genet 8*(10): e1002947.

Schmidt, P., Koch, T. J., Blessing, M. A., Karakostis, F. A., Harvati, K., Dresely, V., & Charrié-Duhaut, A. (2023). Production method of the Königsaue birch tar documents cumulative culture in Neanderthals. *Archaeological and Anthropological Sciences*, *15*(6), 84.

Shipman, P. (2015). *The Invaders. How Humans and their Dogs drove Neanderthals to extinction.* Cambridge & London: Belknap, Harvard University Press.

Skov, L., Peyregne, S., Popli, D., Lasi, L.N.M., Deviese, T., et al. 2022. Genetic insights into the social organization of Neanderthals. *Nature 610:* 519 – 25. https://doi.org/10.1038/s41586-022-05283-y.

Slimak, L., Zanolli, C., Higham, T., Frouin, M., Schwenninger, J. L., Arnold, L. J., ... & Metz, L. (2022). Modern human incursion into Neanderthal territories 54,000 years ago at Mandrin, France. *Science advances*, *8*(6), eabj9496.

Slimak, L. (2023). *The Naked Neanderthal.* Dublin: Allen Lane.

Slurink, P. (1993). Ecological dominance and the final sprint in hominid evolution. *Human Evolution, 8(4),* 265 – 273.

Slurink, P. (1994). Causes of our Complete Dependence on Culture. In: B. & A. Gardner, The ethological roots of culture, Dordrecht: NATO – ASI series, 461 – 474.

Slurink, P. (1995). Was Homo erectus an ecological dominant species? In: John R.F. Bower & S. Sartono (eds.), *Human Evolution in its Ecological Context*, ch. 17. Leiden: Pithecanthropus Centennial Foundation, DSWO Press, 169 – 176.

Slurink, P. (2002). *Why some apes became humans: competition, consciousness & culture.* Nijmegen: PS Press.

Smith, B. H. (1994). Patterns of dental development in Homo, Australopithecus, Pan, and Gorilla. *American Journal of Physical Anthropology*, *94*(3), 307 – 325.

Taylor, T. (2010). The Artificial Ape; How Technology Changed the Course of Human Evolution. New York: Palgrave Macmillan.

Thieme, H. (1997). Lower Palaeolithic hunting spears from Germany. *Nature*, *385*(6619), 807 – 810.

Vaesen, K., Dusseldorp, G.L. & Brandt, M.J. (2021). An emerging consensus in palaeoanthropology: demography was the main factor responsible for the disappearance of Neanderthals. *Sci Rep* 11, 4925. https://doi.org/10.1038/s41598-021-84410-7.

Vaesen, K., Scherjon, F., Hemerik, L., Verpoorte, A. (2019). Inbreeding, Allee effects and stochasticity might be sufficient to account for Neanderthal extinction. PLoS ONE 14(11): e0225117. https://doi.org/10.1371/journal.pone.0225117.

van der Dennen, J.M.G. (1995) The Origin of War. Groningen: Origin Press.

Van Schaik, C. P., & Burkart, J. M. (2010). Mind the gap: Cooperative breeding and the evolution of our unique features. *Mind the gap: Tracing the origins of human universals*, 477 – 496.

Vandevelde, S., Brochier, J. É., Petit, C., & Slimak, L. (2017). Establishment of occupation chronicles in Grotte Mandrin using sooted concretions: Rethinking the Middle to Upper Paleolithic transition. *Journal of Human Evolution*, *112*, 70 – 78.

Vidal-Cordasco, M., Terlato, G., Ocio, D., & Marín-Arroyo, A. B. (2023). Neanderthal coexistence with Homo sapiens in Europe was affected by herbivore-carrying capacity. *Science Advances*, *9*(38), eadi4099.

Villa, P., & Roebroeks, W. (2014). Neandertal demise: an archaeological analysis of the modern human superiority complex. *PLoS one*, *9*(4), e96424.

Wade, N. (2009). *The faith instinct: How religion evolved and why it endures.* Penguin.

Whiten, A., Biro, D., Bredeche, N., Garland, E.C., Kirby, S. (2021). The emergence of collective knowledge and cumulative culture in animals, humans and machines. *Trans. R. Soc. B* 377: 20200306.

Wrangham, R. W., & Glowacki, L. (2012). Intergroup aggression in chimpanzees and war in nomadic hunter-gatherers: Evaluating the chimpanzee model. *Human nature*, *23*, 5 – 29.

Wrangham, R. (2019). *The goodness paradox: The strange relationship between virtue and violence in human evolution.* Vintage.

Wragg Sykes, Rebecca (2020). *Kindred. Neanderthal Life, Love, Death and Art.* London & Dublin: Bloomsbury

Zanella, M., Vitriolo, A., Andirko, A., Martins, P. T., Sturm, S., O'Rourke, T., ... & Testa, G. (2019). Dosage analysis of the 7q11. 23 Williams region identifies BAZ1B as a major human gene patterning the modern human face and underlying self-domestication. *Science advances*, *5*(12), eaaw7908.

K.J. Kuipers, J. Kloeg, M.A. Soressi

What is 'human' in human evolution: Reconnecting philosophical anthropology and human evolution

Introduction

Helmuth Plessner remarked in 1969 that:

> Our knowledge of man has changed, to a great extent, because of the discovery of pre-historic and early historic skulls, because of a cultural anthropology deepened by psychoanalysis, and above all because of behavioral research. Only philosophy has played no part in this development. But in the long run philosophy cannot avoid the obligation of recognizing these facts, since the question of the nature of man has always been central to it (Plessner 1969, 497/GSVIII, 353).

Plessner's remark appeals to the partial and sometimes defensive reception of discoveries and facts concerning human (pre)history within philosophy itself. At the same time, we may inquire how the sciences Plessner references – palaeontology, cultural anthropology, and behavioural sciences – should relate to philosophy. From a philosophical point of view, anthropological questioning[1] becomes reflexive (see Lindemann 1999; 2005), while from the scientific perspective the theory and practice of science must consider to methodological questioning that necessarily takes them beyond the confines of their own disciplinary limits, including on ontological terrain. Plessner was perhaps one of the first in the philosophical-anthropological tradition to comment on this dynamic interrelation between science and philosophy. This means avoiding both a scientistic reductionism and a philosophically-minded neglect of science; more positively formulated, Plessner's philosophical anthropology is situated against the backdrop of a "multiplicity of reality" (Plessner 2019a, 30) which is the outcome of the more or less independent development of the disciplinary sciences. Plessner's metatheoretical note is that set against this multiplicity, methodological decisions with respect to the categorization of 'humanity' cannot be resolved within the disciplinary frameworks of the sciences themselves. As Plessner notes with respect to evolutionary biology, claims about the point within the 'descent of man' at which we can

This publication is part of the project entitled *Neanderthals and "us": how the golden age of Neanderthal research challenges human self-understanding* with file number 406.21.FHR.011 which is financed by the Dutch Research Council (NWO).

1 In this case two-fold; in the philosophical anthropological paradigm (how do we study human evolution from an epistemological anthropocentric perspective?) and a as a sub-discipline (how do we define 'the human'?).

 https://doi.org/10.1515/jbpa-2022-006

speak of human existence in the full sense require reflection on what specifically human characteristics might be (Plessner 2019a, 37). This leads directly to the terrain of philosophical anthropology, which asks itself the fundamental question of what constitutes human existence. As we discuss below, within the philosophical-anthropological tradition there have been essentialist as well as non-essential approaches to 'the human': it can be stipulated as a timeless ontological given or explored as an open question (see Plessner 2018) in the historical-ontological sense (see De Mul 2004, 146–159). In order to stay true to Plessner's non-reductionist ambition in recognition of the mutual need philosophical anthropology and the sciences of human evolution have of each other, what we describe above as dynamism and reflexivity needs to be sought out and theorized. The resulting position can be phrased, again following Plessner, as a "metabasis" (2019a, 37): a shift to another dimension of inquiry from which we can reflect on implicit and explicit scientific-philosophical positions and assumptions. For the purpose of the present contribution, we are concerned with the category of 'the human' as an implicit or explicit reference point within the sciences of human evolution, as these share a biological orientation with philosophical anthropology while also standing in need of conceptual clarification.

Despite several key publications (e.g. Cartmill 1990; Corbey 2005; Corbey & Roebroeks 2001; Delisle 2006; King 1994; Marks 2015; Ruse 2012; Stoczkowski 2002) addressing the general epistemological framework of human evolution from various angles, the metatheoretical framework has remained largely unchanged. Many issues that have been repeatedly addressed over the last thirty years persist to this day. The field of human evolution still seems to be plagued by conceptual issues, Cartesian dualisms, and metaphysics that are reminiscent of Enlightenment philosophy and the colonial origins of the discipline (Corbey 2005; Porr & Matthews 2019). In this essay we will address these issues from both an inside perspective from the field of human evolution, and an outside perspective, namely that of philosophical anthropology.

As Corbey (2005, p. 94) writes; "In many cases, *hominitas* (being human in the sense of belonging to the biological genus *Homo*) and *humanitas* (being human in the colloquial, moral, and philosophical sense) have not coincided. In contemporary anthropological literature, "human" is still a remarkably random term and a continuous source of confusion". We will argue that this is also the case today in the theoretical framework of human evolution; its many subdisciplines (e.g. evolutionary/biological anthropology, palaeolithic archaeology, ancient DNA studies) seemingly operationalise different conceptualisations of the 'human', which are, often, to a degree mutually exclusive. In other words; although each subdiscipline is looking for 'human' origins, yet there are vastly different understandings between the traditions as to what precisely a 'human' is (or is supposed to be). We hope that more contact between human evolution and anthropological philosophy will help to overcome such problems.

In an attempt to make a clearer distinction between the different groups of 'humans', scholars often use an adjective that is often more heuristically and arbitrarily defined based on some kind of essentialist trait; e.g. 'anatomically modern human';

'behaviourally modern human'; 'archaic human'; 'transitional human' etc. This corresponds t to a 'naïve realism' about humanity, which is also reflected in the trajectory of philosophical anthropology itself. Plessner notes the distinction in terms of his own distance from his erstwhile senior colleague, Max Scheler: for instance by noting how the question inquiring after the 'human place in the cosmos' (the title of a lecture by Scheler, which arguably became the founding document of philosophical anthropology) is overly demanding even in its terminology ('cosmos'), which harks back to a now-lost "precise meaning (…) in the Greco-Christian tradition" (Plessner 1969, 497 / GS VIII, 353). For Scheler, the cut-off between non-human animal life and human existence is captured in terms of a notion of *Geist* or spirit which is supposed to guarantee the distinction as a kind of *deus ex machina*, without itself becoming revisable in terms of scientific discovery. For that reason, Plessner speaks of Scheler's conception of the human in terms of a timeless ontology rather than a full-fledged philosophical anthropology (Plessner GS VIII, 39). Within the disciplinary sciences, similarly non-reflexive, reductionist or essentialist conceptualizations of the human are invoked, even or perhaps especially where they are not explicitly conceptualized. To such rigid conceptualizations of the human, we oppose Plessner's programmatic scepticism, which according to Plessner can only be realized as philosophical anthropology in the reflexive sense (Plessner GS VIII, 41; see also Marquard 1995, 149 – 150) and for that reason counteracts reductionism and essentialism as a matter of principle.

We make three different distinctions in how the term 'human' is (implicitly or explicitly) roughly conceptualised in the discourse of human evolution research based on three different research traditions; biological anthropology, archaeology and genetics. These subdisciplines respectively study human remains, material and features found in excavations, and finally genetic sequences. Genetics is a relatively new addition to the discipline and is more rooted in chemistry and biology than archaeology and biological anthropology. The latter two have historically always been at the core of human evolution and have a more intertwined research history. First, we will discuss the 'human' as everything that falls within the genus *Homo.* Therefore, by extension, the conceptualisation of the genus must be closely examined. Second, we will discuss the cultural definition operated by archaeologists; a 'human' is defined by a set of (cultural) behavioural traits, regardless of species or population. Finally, we will discuss the conceptualisation of the 'modern human' (as opposed to the 'archaic human' as conceptualised by paleogeneticists) and how this has impacted the species concepts within human evolution; geneticists tend to work with populations, not with species. We would like to emphasise that these conceptualisations should be seen as a spectrum. While these conceptualisations all function differently and have some inherent incompatibilities, they do interact and borrow from each other. We will do our best to present a nuanced overview. We will also discuss the research history of these conceptualisations, which will of necessity be a partial account (a full review is beyond the scope of this paper, as the literature on human evolution is multiparadigmatic); we have made a selection of literature that we have found to cover and demonstrate these conceptualisations well). While most of these definitions do share a common his-

tory, they have arrived at a fragmented understanding of what is meant by a 'human' in the different subdisciplines and research traditions.

We see these findings as contributing to an active involvement of philosophical anthropology in human evolution research. While we are in favour of interdisciplinarity and a connection between a 'humanities' perspective from a philosophical angle and more naturalistic-scientific approaches to human evolution, we think the specifics of the case are at least as important. We aim to establish that the conceptualization of the human within human evolution stands to benefit from including philosophical anthropology to respond to the question of what it means to study human evolutions as humans.

Human evolution: *in lieu* of a historical background

Before we describe the different manners in which the term 'human' is operated today, we would like to discuss some key points related to human evolutionary research, with the aim of both emphasising the multi-faceted history of the field and contextualising where some ideas (i. e. those that lead to diverging conceptualisations of the 'human') find their origin. More extensive epistemological and/or historical accounts regarding metaphysics (Corbey 2005), the effect of *a priori* beliefs and imagination on human evolution (Stoczkowski 2002), general paleoanthropological history and epistemology (Corbey & Roebroeks 2001; Delisle 2006) can be found elsewhere. We will now start by discussing some general research history, before we address the different conceptualisations per subdiscipline.

The term *Homo sapiens* for present-day humans was first coined by the Swedish biologist Carl Linnaeus (1707–1778) as part of formalising binomial nomenclature in the 10th edition of his *Systema Naturae* (Linnaeus 1758). Predating Darwin's *On the Origins of Species* (1859) by about a century. Linnaeus' main concern was, based on the Great Chain of Being, categorising God's work by means of comparative characteristics. As such, Linnaeus' work should be seen as inherently essentialist, as species, in his view, were immutable. He is generally considered the 'father of modern taxonomy', as his system of naming species is still operated today. In the 10th edition, Linnaeus categorised the Orang-Outang (as well as some other primates) in the same genus as humans as *Homo sylvestrus orang outang* (Corbey 2005, p. 44). In the 1770s, Blumenbach, a German professor in medicine, separated the genus *Homo* from the other apes (Corbey 2005, p. 50), due to "the uncomfortable closeness of human and ape" (Corbey 2005, p. 50). While in the late 18th and early 19th century, the Chain of Being was largely abandoned, mainly due to the rise of comparative anatomy and later the rise of transformism (a precursor to evolutionary theory), the concept of hierarchy persisted; many of the metaphysical ideas of the Chain of Beings were adopted and transformed by early 19th French naturalists such as Cuvier, Geoffroy and de Blainville (Appel 1980). Darwin was relatively modest in applying hierarchy (Darwin wrote "Never use the word higher and lower" Corbey 2005, p. 66–67) in his theory of natural selection (Darwin 2009; first

published in 1859). However, his European followers, of which the most notable was Ernst Haeckel, who immensely contributed to the influence of evolutionary thinking in Europe, did persist in applying hierarchy. Haeckel was a proponent of a polyphyletic evolution of humankind; all humans had a common ancestor in the *Pithecanthropus alalus*, but then evolved into separate species depending on their geography. Human groups that European colonists discovered were, in Haeckel's eyes, evidence for the gradual evolution of humankind; Australians and Papuans were the closest living relatives of the *Pithecanthropus* (Levit & Hossfeld 2019). What is interesting to note here, is that the *Pithecanthropus alalus*[2] ('the mute ape-man') is a species that was hypothetically formulated. At the time there was no empirical evidence for such a species. This is one of many examples of a postulated 'missing link between apes and man'[3]; a metaphor directly derived from the Great Chain of Being, an intermediate between humankind and its ape ancestors (Corbey 2005, p. 62; Kjærgaard 2011). This should be considered as one of the major formative periods in human evolution discourse as it confronted scholars explicitly with the question where the boundary between the 'human' and the 'non-human' lies[4]. This has a continuity (or reoccurrence) in modern discourse; Nee (2005) exposes our need to (still) see ourselves as the pinnacle of creation, drawing direct parallels between current discourse and theological models from medieval times. Similarly in current discourse we see other hominin species as such; "While we regard them as basically human, we still try to distinguish ourselves as human beings and use these proximate others [other hominins] to define and redefine our own self-image." Peeters & Zwart (2020) write in their investigation of current Neanderthal discourse, "Neanderthals are praised or disqualified in terms of their conformity to a concept of the 'fully human', but affirming full humanity can never go without redefining the model, that is grounded in the exclusion of a vast number of beings, deemed nonhuman or not fully human.". This discourse is reminiscent of Plessner's critique of Scheler; this discussion about 'humanness' seems firmly imbedded in

2 Fossils for this then-hypothetical species were discovered in 1892 by the Dutch anatomist Dubois on Java. These fossils, together with regional varieties of morphologically similar fossils (such as the *Sinanthropus* from China, and the *Atlanthropus* in North Africa), would be folded into the genus *Pithecanthropus* and were eventually all sank into the *Homo erectus* species by Mayr in 1950 (Wood 2000).
3 Stoczkowski (2002) notes that much of Darwin's original nuance is lost in later models; of the twenty-four historical models of human evolution (between 1820–1986) Stoczkowski has analyzed, it becomes apparent that only a small number of them mention a common ancestor of humans and great apes. The rest more or less state that humans are descended from apes. He explains this as constructing the 'human' in such a way that it is in binary opposition to the almost imaginary ape; "(...) if the ape does not think or cooperate or hunt, it is simply because humans do think, cooperate and hunt" (Stoczkowski 2002, p. 44). Stoczkowski notes that the list of 'human' attributes has changed little over the last 150 years, since the 'human' is not defined on empirical terms, but on antithetical terms; the human is everything that 'the animals' are not.
4 Cartmill (1990) and others after him (e. g. Corbey 2005) have referred to this as 'policing the animal-human boundary'. The discussion of what counts and does not count as a human had become a largely symbolic and metaphysical one.

ontology, instead of manifesting itself on valid scientific and/or philosophical notions4. While operating within an ontology is of course inescapable, the idea of the 'human' as the essential exception (or simply put being 'special') is often the axiomatic assumption in formulating research questions (Cartmill 1990). In our opinion, this ontology has often gone unchallenged, without becoming an object of analysis itself (Plessner (2019b), p. 25:"At its heart stands the human. Not as the object of a science, not as the subject of a consciousness, but as object and subject of his life- that is, in the way in which he is object and center to himself").

After this formative period in the nineteenth century, the period around the turn of the century was relatively uneventful, although an increasing number of fossil discoveries did shift the paradigm more towards phylogeny instead of comparative anatomy (Delisle 2006; Dennell 2001). Around the Second World War human evolutionary research went through drastic changes due to a combination of circumstances.

Firstly, the debate of the place of origin was largely resolved; scholars up until this period had hotly debated whether the place of human origin was in Africa or Asia (Delisle 2006; Dennell 2001). Most research before the 1940s had been centred in Europe and Asia, where Asia was considered to be the most likely candidate for the 'birthplace of humankind'. Dennell (2001) identifies four explanations for this paradigm shift; the australopithecines were put forward as direct ancestors of humans; in 1953 the Piltdown hoax was definitively discredited, which allowed the bipedalism to take precedence over brain mass as a human trait (which in turn added to legitimising the Australopitecines as human ancestors. They had small brains but did have largely bipedal locomotion). Thirdly, the British 'old guard' of paleoanthropologists simply passed away without any successors; either they died of old age, pursued different careers, or simply stopped contributing to the field in way or the other (Dennell 2001, p. 56). Lastly, the famous family of paleoanthropologists, the Leakey's, were very successful in unearthing early hominid fossils in East Africa, again strengthening the hypothesis of Africa as the place of human origins.

The second major turning point was the political and ideological aftermath of the War itself (Dennell 2001). The (British) 'old biology' which heavily focussed on studying racial diversity fell largely out of favour due to the atrocities committed by the Nazi regime. The (American) 'new biology' however was quick to incorporate modern techniques such as biometrics and genetics, making it the new dominant paradigm (See also Haraway 1988). The New Biology shifted focus towards human origins, as it found the differences between races trivial. In addition, in 1950 UNESCO published a document called *The Race Question* in which it stated that all extant humans belonged to *Homo sapiens* and are equal before the law (Corbey 2005, p. 100) notes here about this period: "Gradations within "humanity," synchronically as well as diachronically were suspect – which is yet another example of a *humanitas*-ideal influencing the taxonomy of hominids"). It morally condemned racism, and generally summarised what was known about 'race' in a scientific sense.

In 1950 the Harbor Symposium on Quantitative Biology was held with the theme *Origin and Evolution of Man.* One of the major contributors of this symposium and

one of and proponent of this new paradigm was the German-American biologist Ernst Mayr. Mayr (1950) criticised paleoanthropologists on the grounds of seemingly arbitrarily attributing fossils to species up until that point. He collapsed all hominid fossils in one genus; *Homo* (largely based on adaptational/ecological factors) and urged paleoanthropologists to adopt a biological meaningful approach to accurately create taxonomic categories. As White (2009, p. 338) puts it "The anthropologists and anatomists involved in the study of human evolution were thus pulled under the umbrella of the modern synthesis (…)" (but see Delisle 2006, pp. 303–305); palaeoanthropology was quickly brought up to speed on modern biology (see also de Queiroz 2005). This, among other things, also led to a formalisation of what a constitutes a 'human' in the biological sense; scholars began to look for unique hominid adaptations, with bipedality as the main driving force behind human evolution (Wolpoff 1971, p. 601). Mayr (1950) also suggested applying the competitive exclusion principle to human evolution; meaning that at one point in time, there could only be one species of hominid. This later resulted in the single species hypothesis (Brace 1967; Wolpoff 1968, 1971) the idea of a single unilinear evolving human species lineage, although most scholars at that point maintained that there always have been more species of hominids throughout human evolution (Delisle 2006 p. 336).

However, the 'hard data' approach propelled by the 'New Biology' was also not immune to metaphysics, as is demonstrated by Corbey (2012), who made a meticulous analysis of Tobias' (Tobias 1965) discourse about the *H. habilis* (currently the oldest *Homo*). While Tobias contributed immensely to the field, Tobias' controversial attribution of *H. habilis* was in no small part guided by moral and philosophical – in our terms, timelessly ontological as opposed to historically ontological – notions of humanness (humanitas). Tobias' reasoning is reminiscent of the 19th century evolutionists; *habilis* ascended to a fully-fledged human and thus was able to "set itself free from Nature" (Tobias 1965, p. 113).

In the context of its research traditions, and the incredibly low amount of data from the period of the conception of our genus, there is a limit to a responsible interpretation of empirical data (Smith & Wood 2017); researchers should take heed of the subversive metaphysical baggage that the genus *Homo* still carries with it, albeit under the surface. Corbey (2012, p. 114), in discussing Tobias' interpretation of the *H. habilis* however bids us caution; we should neither underplay nor overplay the effects that contextual and theoretical constraints have in interpreting the 'humanness' of fossils, and in a broader sense, any presuppositions that researchers may have of the concept of 'humanness'.

In roughly the same period, some problems with the conceptualisations of 'species' and human taxonomy became apparent (Dobzhansky 1944; Simpson 1963); the biological species concept (i.e. the species concept based on interbreeding populations) is hardly useable when dealing with fossils. Instead, Simpson describes the morphological conceptualities of a species on how it is in practice mostly operated:

> Evidence that the definition [of 'species'] is met is largely morphological in most cases, especially for fossils. The most widely available and acceptable evidence is demonstration of a sufficient level of statistical confidence that a discontinuity exists not between specimens in hand but *between the populations inferred from those specimens.* (Simpson 1963, p. 7)

Many of the issues and concepts addressed in this section will have a continuity in later sections of this article. What is perhaps most important a 'common root' of the conceptualisation of the 'human' in current human evolution research is the shifting focus after the Second World War towards the search for 'human origins'; scholars began looking for the trait that made us 'human' (Cartmill 1990 p. 175–178; Dennell 2001). Human evolution scholars seem to step away from Darwin's gradualism; the idea that the human must be explained through a biological evolutionary mechanism. For example, White (1940, p. 453), actively took a stance against Darwin's idea that the difference between humans and other animals was a matter of quantity, not one of quality., writes: "There is a *fundamental* difference between the mind of man and the mind of non-man" (italics in original text). The discussion of the evolution of humans (categorising and grouping, creating phylogenies, etc.) became a discussion not of human evolution (how did we became what we became?[5]); but the search for the essential human trait, and as such involves an ahistorical or timeless ontology, whether implicitly or explicitly. It is also at this point that the theoretical frameworks started to more noticeably disintegrate into separate sub-disciplines.

We discuss three different domains in which the concept of 'the human' is operated separately in the following sections, based respectively on the identity of the genus *Homo,* identifying human behaviour, and identifying human genetics.

The genus Homo as 'human; The anatomical definition of human'

A relatively pragmatic way to approach the conceptualisation of 'human' is simply to call everything that falls into the genus *Homo* 'human', as practised by some physical anthropologists[6][7]. However, if one takes a closer look at the genus, it seems that this merely displaces the problem as the status of the genus *Homo* is still debated today.

5 Although we feel that it is necessary to point out here that by framing the question like this the issue of "What are we?" is implied and remains unanswered, illustrating exactly what is at the core of the problem addressed in this essay. While the subfields of human evolution essentially focus on 'origins' without a unified determination, Plessner's structural analysis arguably has the opposite shortcoming: see our concluding remarks. Uniting synchronic and diachronic approaches while doing justice to both remains a monumental task.

6 Typically in journal publications physical anthropologists operate jargon (i.e. taxonomic names) to avoid calling something explicitly 'human' (an exception might be Wood & Collard (1999b), who refer to the 'human genus', however, it is unclear whether they mean if the genus *Homo* consists of 'humans',

One of the core debates centres around the transition of the *Australopiticenes* into the genus *Homo.* Kimbel & Villmoare (2016) for example, have argued that the transition between *Australopithecines* and *Homo* are less clear than previously argued. Early *Homo* seems anatomically more similar to the *Australopithecines* than to later *Homo.* They argue this on the size of the brain, and perhaps more so based on tool use(but see Haslam et al. 2016; Proffitt et al. 2016). They put even more weight on the tool use (and perhaps manufacture) of *Australopithecines.* While they are careful in their phrasing ("(…) the 'transition' from Australopithecus to Homo may not have been that much of a transition at all."), this does challenge the status of *Homo*'s place in nature. This is reminiscent of Stoczkowski's (2002) remark that the human is identified in antithesis to something else; the *Homo* makes tools, because the *Australopithecines* do not. The *Homo* has increasing endocranial capacity, because the *Australopithecines* do not. However, as Kimbel & Villmoare (2016) argue, the data is starting to tell a different story. Some authors have gone even further and have suggested based on DNA analysis that the *Homo* genus should include certain great apes ((Curnoe & Thorne 2003; Watson et al. 2001)).

Collard & Wood (2015) on the other hand seem to take the opposite approach revisiting an earlier question; "Is genus *Homo* a "good" Genus?" (Collard & Wood 2015; Wood & Collard 1999●a/b●). Due to the similarities between 'early' *Homo* (specifically *H. habilis* and *H. rudolfensis*) and Austrolopiticenes they reason in the other direction; the genus *Homo* is too big. They operate firmly on the basis of skeletal remains and find the concept of 'culture' not particularly useful or reliable in defining the genus *Homo* (Wood & Collard 1999a). Collard & Wood observe a rather concerning trend in assigning fossils to a genus:

> [T]he course of action followed by most researchers appears to have been to assign new specimens to a fossil hominin genus on the basis of a subset of the diagnostic traits that the researchers in question deem to be key, and to then redefine the other traits of the genus in the light of the morphological and functional attributes of the new specimens. (Collard & Wood 2015, p. 2114)

As such, the definition of the genus *Homo* has often been stretched based on whichever trait takes precedent in the scholar's view at that time. Attribution to the genus *Homo* is often ad hoc and relatively arbitrary, according to Collard & Wood (2015, p. 2114). The *Homo habilis* is an example of this; before the conception of the taxon in 1965 (Leakey

---

or it is simply the genus that 'humans' (i. e. 'modern humans') belong to. In another paper (Wood & Smith 2022) the terms 'human', *Homo*, and hominin seem to be used interchangeably, although 'human' in this sense is only used in the title, referring to the 'human' fossil record. While remaining implicit, similar interchangeability can be found in other works (J. H. Schwartz & Tattersall 2005; Strait et al. 2016; Trinkaus 1990). We find that the term 'human' often refers to the genus *Homo* in a colloquial manner. In formal settings physical anthropologists stick to the scientific jargon.

7 We use the term 'physical anthropology' here more or less interchangeably with 'palaeoanthropology'. We simply wish to indicate researchers who study human skeletal remains from a biological perspective.

et al. 1965), researchers generally agreed that the minimum cranial size of a *Homo* would be no less than 750cc. However, to be able to incorporate *H. habilis* the minimum would be lowered to 638cc (the smallest cranium of the *H. habilis*). This decision remains controversial today (Collard & Wood 2015). Collard & Wood argue for a strictly monophyletic cladistic approach; the genus should be defined on a set of shared traits derived from the most recent common ancestor that distinguishes the clade (the 'branch' in the tree of life) from other organisms. However, there are still some discussions on the application and interpretations of these taxonomic systems in human evolution (Cartmill 2012; J. Schwartz 2016; Villmoare 2018). A more recent example that reignited the debate about the variation within *Homo* phenotype has been the discovery of *Homo naledi* (Berger et al. 2015; Schroeder et al. 2017). This relatively recent *Homo* (236 – 414 kya; Dirks et al. 2017)) discovered in the Rising Star Cave, South Africa, has an even smaller average cranial capacity than the *Homo habilis* (Hawks et al. 2017) ranging from 460 – 610 ml, yet it seems quite 'modern' in morphology. In addition, there has been suggested that this *Homo* buried their dead and made cave art (Berger et al. 2023) making this taxon not only human in the '*hominitas*' sense, but also in the '*humanitas*' meaning of the word, as it would challenge *Homo sapiens* as the sole practitioners of such behaviours. However, these claims are still highly contested (e. g. Martinón-Torres et al. 2023).

The behavioural definition of archaeologists

As opposed to the previous definitions which are firmly embedded in a *sec* biological framework, in the archaeological narrative behaviour takes precedence in what constitutes as 'human'. Archaeologists look for artefacts as a proxy for behaviour. One of the earliest archaeologists who attempted a clear demarcation of humanity based on 'modern' behaviour and cognition was the South African archaeologist Glynn Isaac, a contemporary of Tobias, who roughly operated in the same paradigm (Isaac 1972). According to Isaac, *Homo habilis* and *Homo erectus* should be considered behaviourally human, on the basis of uniquely human adaptations such as bipedalism (although this of course falls into the biological anthropological domain), tool making, complex social structures and a capacity for culture and language.

Although Isaac later moderated his tone placing the dawn of modern humanity to about 100kya, Binford (1985) still found Isaac's interpretation of the data too idealist and 'dehumanised' these earlier hominins (Isaac 1972; Corbey 2005, p. 107), laying the foundation for the *Human Revolution* model (most notably propelled by Klein 1995; Mellars 1989; Mellars & Stringer 1989; Noble & Davidson 1991).

Subsequently the discussion has centred on primarily the concepts of 'Modern Behaviour' (e. g., Bednarik 2011; Binford 1985; Donald 1991; Klein 1995; Lindly et al. 1990; Mellars 1989; Noble & Davidson 1991), and more recently a core component thereof, 'Symbolic Behaviour' (e. g. Bushozi 2020; d'Errico et al. 2005; Finlayson et al. 2012; Henshilwood et al. 2009; Hoffmann et al. 2018; Rodríguez-Hidalgo et al. 2019; Sehasseh et

al. 2021; Zilhão et al. 2010). In a sense, these concepts should be seen as a narrower definition of 'culture'; Klein (1995) for instance, capitalises 'Culture' denoting some sort of discontinuity with 'non-modern modern people'. The people with a capacity for Culture in this case are only *Homo sapiens.*

The concept of Modern Behaviour is mostly present in the context of the *Human Revolution* model and the continuity thereof. The idea of this model is that somewhere around 100kya and 50kya an event happened that led to 'cognitive modernity' or Moder Behaviour, effectively transforming 'Anatomically Modern Humans'[8] (hominins that have the general *Homo sapiens* morphology but are supposedly not capable of MB). The oldest fossil to date with a 'modern' morphology is dated to about 300kya (Hublin et al. 2017)), to fully fledged Modern Humans.

The basis of this theory was the observation that there was a seemingly large shift in behaviour in the archaeological record, best summarised by Mellar's 'modern package' (See Mellars 2002 for an overview). These included among other things; a shift from flake to blade technology, the emergence of personal ornaments, representational art, the development of styles in tool production, the exploitation of a broader variety of food sources, the development of more complex technology, and the use of a broader range of raw materials (see for example Mcbrearty & Brooks (2000 p. 491–493) for a more detailed set of traits). The *Human Revolution* model (Mellars & Stringer 1989) was particularly popular in the late 80s and the 90s of the last century, although there were some criticisms on the concept (or; more generally speaking, on the essentialist discourse of archaeologists and paleoanthropologists(Cartmill 1990; King 1994)).

The model started to falter in the early 2000's, most notably by the publication of Mcbrearty & Brooks, (2000), which convincingly argued that the model is largely based on the European archaeological record, while it ignores most of the African record. The African record, according to Mcbrearty & Brooks, shows that the 'modern package' is in fact more of a gradual assembly on the African continent, stretched over long distances of space and time. As such it took away the 'revolutionary' part of the *Human Revolution.* However, this did not dispel the notion of MB as such, since it was supposedly still unique to *Homo sapiens.* In the years thereafter scholars began to argue that also the Neanderthals were capable of certain aspects of MB (Finlayson et al. 2012; Rodríguez-Vidal et al. 2014; Roebroeks & Soressi 2016; Zilhão 2006; Zilhão et al. 2010). It is important to emphasize here, that the morphology and the behaviour of what is considered 'human' are in this scenario decoupled. As such, in the archaeological context, it is MB that effectively is a proxy discussion of what we consider to be '(fully) human'.

In this behavioural definition, there has been argued by some scholars that Neanderthals should be considered as 'humans' (●ibid.●), or at least that the two material cultures these hominins left in the archaeological record are indistinguishable in a cognitive sense (Villa & Roebroeks 2014, but see Wynn et al. 2016). The *human revolution*

8 This term is currently still in use, but in current discourse it is simply used to indicate hominins that fall within a 'modern' *Homo sapiens* morphology according to physical anthropologists.

being not quite so revolutionary, with the added problem that some of these behaviours did not seem exclusively limited to *Homo sapiens* (then generally considered to be the only 'human') raised an important question; which of these traits should be considered to be at the core of MB (and thus by extension,) as a marker for 'humanness'? Nowell (2010) writes, in reviewing the concept of Modern Behaviour, "(…) there is some sense that what researchers are trying to define is when our species became human in all senses of that word – something that takes us beyond the biological landmarks of bipedality and the like and gets to the essence of what it means to be human.". This definition is almost reminiscent of concepts such as the 'human soul' and is neither descriptive nor explanatory of what a human is on any scientific way. Nowell (2010) argues that for most scholars, it is a symbolic capacity that generally defines MB. However, as ●Kuipers (2022) and ●Kuipers & Soressi (forthcoming) argue elsewhere, that concept is problematic in its own right. Symbolic Behaviour (or symbols in the Peircean sense) is per definition based on social conventions which are not reconstructable in the context of human evolution, because of low resolutions, a lack of continuity and the fact that symbols are per definition arbitrary. Yet there are such behaviours (such as ornamentation, or the burial of the dead) that are heuristically defined as such.

In addition, there is the problem of generalisation and double standards: not all *Homo sapiens* populations express what scholars call MB. Scerri et al. (2021) for example, describe a case where a Middle Stone Age (generally considered to last from 300–30kya, and considered cognitively 'archaic' as opposed to 'modern') persisted until 11kya, dispelling the notion of a unilinear, species wide move to a 'modern package'. On the other hand, when indication are found for a capacity for MB in other 'archaic' populations, they are heavily scrutinised (Corbey & Roebroeks 2001); there is there underlying axiomatic assumption that *Homo sapiens* will somehow in a unilinear fashion develop towards 'modernity' (or has an innate capacity for it in the 'anatomically modern human'), while the same is not assumed for other hominins. This manner of thinking is heavily criticised for being a remnant of the colonial origins of paleoanthropology; Modern Behaviour assumes a linear progression of development based on European conceptions of 'modernity' e.g. (Porr 2010; Porr & Matthews 2017).

Paleogenetics and the 'modern human'

In recent years, there have been some major breakthroughs in the study of ancient DNA (aDNA) revolution which has some drastic effects on the narrative of human evolution. Green et al. (2010) managed to sequence an entire sequence of a Neanderthal genome (created from three individuals), which they then compared with genomes of five contemporary humans. Their results demonstrated that some current day human populations carry a small amount of Neanderthal genome with them. Most notably, the Swedish geneticist Svante Pääbo and his team have published influential works in this field (e.g. Hajdinjak et al. 2021; Pääbo 2015, 2020). In his book *Neanderthal Man: in Search of Lost Genomes* first published in 2014, Pääbo (2020) sketches the fol-

lowing image; there was a 'replacement crowd' that about 50kya swept across the globe and replaced all other living hominins (or human populations). This includes the Neanderthals and the Denisovans. However, it has been demonstrated that there was (at that time[9]) incidental gene flow between these groups, which leads Pääbo to coin the term 'metapopulation' = (earlier suggested by Harding & McVean 2004); the term traditionally is used in ecology, meaning spatially separated populations of the same species. He (Pääbo 2015, p. 313) refers to "limited, but intermittent or sometimes perhaps even persistent" gene flow between 'modern humans' and Denisovans and Neanderthals. As geneticists deal in populations, and not species, they rarely use the term *Homo sapiens*, instead replacing it by the non-taxonomic term 'modern human'. Pääbo (2015) as such here makes the dichotomous distinction between 'modern humans' (humans that are ancestral to *all* humans living today) and 'archaic humans' (the rest, among which Neanderthals and Denisovans). In later publications by geneticists (e.g. Chen et al. 2020; Hajdinjak et al. 2021), the 'modern' in modern human is often omitted. It is simply 'Human', 'Neanderthals' and 'Denisovans'. Ackermann et al. (2016 p. 7) address this; they plea for an elimination of the term 'modern human' and prefer that all these hominins of this metapopulation are referred to as *Homo sapiens* as a complex lineage. While Pääbo seemingly embraces this discourse in his 'metapopulations' concept, he still distinguishes these groups as 'modern' and 'archaic' populations. They suggest avoiding referring to Neanderthals and Denisovans as distinct species (*Homo neanderthalensis* and *Homo Denisova* respectively) but refer to them as 'human ancestors' with regional specific names; 'Denisovans' and 'Europeans'. Yet, the current discourse still seems to operate the dichotomous 'modern' vs. 'ancient' human definitions (e.g. (Bergström et al. 2021). While the remain separate subdisciplines, the population discourse seems to also find its way into the taxonomic discourse; exemplified by Bergström et al. (2021) who describe the 'origin of modern ancestry' as (p. 229); " (...) *H. sapiens* (the fossil lineage that includes modern humans – we make no allusions to species status by the use of these terms)" (...). Similarly, Finlayson et al. (2023) argue for a population approach recognising the "muddling of scientific and heavily charged vernacular names has continued to the present" (Finlayson et al. 2023, Appendix 1); inconsistencies in referring to certain groups of hominins are illustrated by referring to "*Homo neanderthalensis*, Denisovans and Modern Humans (sometimes *H. sapiens*) in the same context" (Finlayson et al. 2023, Appendix 1). If *Homo sapiens* and *Homo neanderthalensis* are not taxonomic species, it makes little sense to maintain this nomenclature.

As such, it remains unclear what the term 'human' in paleogenetics exactly means, apart from indicating 'us' and 'our direct ancestors', which seems to serve little other purpose than to define 'us' antithetically to something else. Peeters & Zwart (2020) address this, again using the Neanderthals as an example; the fundamental and leading

9 Recent evidence suggests that multiple instances of gene flow have taken place between Neanderthals, Denisovans and modern humans; (Bergström et al. 2021; Chen et al. 2020; Hajdinjak et al. 2021)

question of Pääbo's (2020) research is 'what is the difference between modern humans and Neanderthals?'; "Among the few differences one would expect to find in the Neanderthal genome, there must be those that set us apart ... Those few differences must form the biological foundations of the radically new direction our lineage took with the emergence of modern humans: the advent of rapidly developing technology, of art in the form we today immediately recognise as art, and maybe of language and culture as we now know it. If we could study Neanderthal DNA, all this would be within our grasp." (Pääbo 2020, p. 4). Yet, if anything paleogenomics has in recent years effectively blurred the lines between these groups in accordance with the metapopulation concept (Bergström et al. 2021; Groucutt et al. 2021; Scerri et al. 2019), although some scholars still maintain a strict boundary between species (Meneganzin & Bernardi 2023).

Concluding remarks

In summary, in most Human Evolution sub-disciplines the term 'human' (and all its adjectives) seems to fail to create a unified meaningful scientific concept that can be studied interdisciplinary. Not only do each of the subdisciplines operate a different 'working definition' of what a human is, or is supposed to be, the definitions are completely incompatible.

For example, the genetic definition of the 'modern' human seems directly in opposition to the archaeological, behavioural definition. This is exemplified by the remark by Ackermann et al. (2016, p. 7): "(...) referring to e. g. Neanderthals versus 'modern humans' gives the incorrect impression that certain human groups living today are less modern than others.". This is a purely genetic definition set off against a seemingly metaphysical and/or behavioural definition that is reminiscent of the concept of the 'human' that the archaeologists operate (similarly Stringer (2016) states on *Homo sapiens:* "Furthermore, although other researchers, particularly archaeologists, include behavioural factors in their diagnoses of modern humans/H. sapiens, I will not do so here.".). There is no doubt that every archaeologist would agree that all current-day humans are behaviourally modern. Yet the genetic definition of the 'modern human' means something completely different. While this may seem like a semantic issue at first glance, as we have hopefully successfully demonstrated, all the concepts of the 'human' discussed in this essay are not without conceptual problems.

Firstly, the physical anthropologists refer to anything (when not using jargon) that falls within the genus *Homo* as 'human'. *Homo sapiens* is referred to as 'modern human'. While this definition seems relatively straightforward, there is a lot of debate (historically and currently) on which taxa belong to the *Homo* clade, and which do not. In other words, if *Homo* and 'human' are interchangeable, and it is not quite clear which species are *Homo*, and which is not, by extension it is unclear what a 'human' is. Also, despite the seemingly nature philosophical roots of this definition,

some philosophical connotations still seem to drive some underlying axiomatic assumptions.

Secondly, archaeologists use the term 'human' to denote a set of behaviours that would indicate a certain degree of 'cognitive complexity' often referred to as Behavioural Modernity. Recent archaeological debates have been focussing on the behaviour of neanderthals, which according to some scholars should also ontologically be classified as 'Human' due to its supposed capacity for symbolism and other complex behaviours.

Finally, there are the geneticists, who refer to 'human' as *Homo sapiens.* This actively excludes other hominins from being labelled as 'human'. There is however, the species problem, which prevents palaeogeneticists from referring to 'humans' as '*Homo sapiens*'. While this in of itself is not problematic, the operationalisation of the term in this manner causes major contradictions with the other two definitions. While it does make sense from a geneticist's perspective, there are again underlying metaphysical connotations, which in this context to the work of excluding for example Neanderthals and Denisovans from being 'human'.

While great advances have been made in methodology in the sciences of human origins, which in turn produce impressive amounts of data, we would like to once again make a strong argument to actively involve the humanities in the field of human evolution.

While operating a 'working definition' as a means to interpret data within the sub-disciplines of human evolution is not problematic per se while remaining within said sub-disciplines, the lack of a clear overarching determination does become problematic when communicating outside of them. These working definitions also invite shifting conceptualisations based on traits that are perceived as essential or qualitative (Cartmill 1990), further driving the theoretical content and conceptual framework in the sub-disciplines apart. As such, while Human Evolution in various ways answers the diachronic question of 'how did we become what we are?', it seems to struggle with the question with what we precisely are.

These problems will persist if the field of human does not reflect on its own premises in a way that can be attached, implicitly or explicitly, to philosophical anthropology. The inverse problem also exists: Plessner's philosophical anthropology, in laying out a 'material a priori' for the 'vital categories' of different life forms, with the inclusion of human beings, ends up presenting mostly a synchronic perspective. It thereby loses contact with diachronic questions (see De Mul 2014, 17–18; Nauta 1991) concerning the evolutionary coming-to-be of the categories which it describes. This is in part a methodologically as well as politically motivated metatheoretical decision; but if philosophical anthropology seeks to heed Plessner's own advice and learn from the sciences of human origins and development, the next question seems to be how the findings of the latter – including their shortcomings in defining the terms of 'humanity' by themselves – shifts the terms of philosophical anthropology itself.

References

Ackermann, R. R., Mackay, A., & Arnold, M. L. (2016). The Hybrid Origin of "Modern" Humans. *Evolutionary Biology*, *43*(1), 1 – 11. https://doi.org/10.1007/s11692-015-9348-1.

Appel, T. A. (1980). Henri de Blainville and the animal series: A nineteenth-century chain of being. *Journal of the History of Biology*, *13*(2), 291 – 319. https://doi.org/10.1007/BF00125745.

Bednarik, R. G. (2011). The Origins of Human Modernity. *Humanities*, *1*(1), 1 – 53. https://doi.org/10.3390/h1010001.

Berger, L. R., Hawks, J., de Ruiter, D. J., Churchill, S. E., Schmid, P., Delezene, L. K., Kivell, T. L., Garvin, H. M., Williams, S. A., DeSilva, J. M., Skinner, M. M., Musiba, C. M., Cameron, N., Holliday, T. W., Harcourt-Smith, W., Ackermann, R. R., Bastir, M., Bogin, B., Bolter, D., … Zipfel, B. (2015). Homo naledi, a new species of the genus Homo from the Dinaledi Chamber, South Africa. *eLife*, *4*, e09560. https://doi.org/10.7554/eLife.09560.

Berger, L. R., Makhubela, T., Molopyane, K., Krüger, A., Randolph-Quinney, P., Elliott, M., Peixotto, B., Fuentes, A., Tafforeau, P., Beyrand, V., Dollman, K., Jinnah, Z., Gillham, A. B., Broad, K., Brophy, J., Chinamatira, G., Dirks, P. H. M., Feuerriegel, E., Gurtov, A., … Hawks, J. (2023). *Evidence for deliberate burial of the dead by Homo naledi* (p. 2023.06.01.543127). bioRxiv. https://doi.org/10.1101/2023.06.01.543127.

Bergström, A., Stringer, C., Hajdinjak, M., Scerri, E. M. L., & Skoglund, P. (2021). Origins of modern human ancestry. *Nature*, *590*(7845), Article 7845. https://doi.org/10.1038/s41586-021-03244-5.

Binford, L. R. (1985). Human ancestors: Changing views of their behavior. *Journal of Anthropological Archaeology*, *4*(4), 292 – 327. https://doi.org/10.1016/0278-4165(85)90009-1.

Brace, U. of M. C. L. (1967). *The Stages of Human Evolution; Human and Cultural Origins* (M. D. Sahlins, Ed.; First Edition). Prentice-Hall.

Bushozi, P. M. (2020). Middle and Later Stone Age Symbolism: Stone Beads from Mumba Rock-Shelter in Northern Tanzania. *Utafiti*, *15*(1), 1 – 27. https://doi.org/10.1163/26836408-15010020.

Cartmill, M. (1990). Human uniqueness and theoretical content in paleoanthropology. *International Journal of Primatology*, *11*(3), 173 – 192. https://doi.org/10.1007/BF02192868.

Cartmill, M. (2012). Primate origins, human origins, and the end of higher taxa. *Evolutionary Anthropology: Issues, News, and Reviews*, *21*(6), 208 – 220. https://doi.org/10.1002/evan.21324.

Chen, L., Wolf, A. B., Fu, W., Li, L., & Akey, J. M. (2020). Identifying and Interpreting Apparent Neanderthal Ancestry in African Individuals. *Cell*, *180*(4), 677 – 687.e16. https://doi.org/10.1016/j.cell.2020.01.012.

Collard, M., & Wood, B. (2015). Defining the Genus Homo. In W. Henke & I. Tattersall (Eds.), *Handbook of Paleoanthropology* (pp. 2107 – 2144). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-39979-4_51.

Corbey, R. (2005). *The Metaphysics of Apes: Negotiating the Animal-Human Boundary*. Cambridge University Press.

Corbey, R. (2012). 'Homo habilis's' Humanness: Phillip Tobias as a Philosopher. *History and Philosophy of the Life Sciences*, *34*(1/2), 103 – 116.

Corbey, R. H. A., & Roebroeks, W. (2001). Biases and double standards in palaeoanthropology. In R. H. A. Corbey & W. Roebroeks (Eds.), *Studying human origins* (pp. 67 – 76). Amsterdam University Press.

Corbey, R., & Roebroeks, W. (2001). *Studying Human Origins*. Amsterdam University Press. https://doi.org/10.5117/9789053564646.

Curnoe, D., & Thorne, A. (2003). Number of ancestral human species: A molecular perspective. *HOMO*, *53*(3), 201 – 224. https://doi.org/10.1078/0018-442X-00051.

Darwin, C. (2009). *On the origin of species: By means of natural selection, or the preservation of favoured races in the struggle for life* (150th anniversary ed.). Oxford University Press.

d'Errico, F., Henshilwood, C., Vanhaeren, M., & van Niekerk, K. (2005). Nassarius kraussianus shell beads from Blombos Cave: Evidence for symbolic behaviour in the Middle Stone Age. *Journal of Human Evolution*, *48*(1), 3 – 24. https://doi.org/10.1016/j.jhevol.2004.09.002.

de Queiroz, K. (2005). Ernst Mayr and the modern concept of species. *Proceedings of the National Academy of Sciences*, *102*(suppl_1), 6600 – 6607. https://doi.org/10.1073/pnas.0502030102.

Delisle, R. G. (2006). *Debating Humankind's Place in Nature, 1860 – 2000: The Nature of Paleoanthropology.*

De Mul, J. (2004). *The tragedy of finitude: Dilthey's hermeneutics of life.* Yale University Press.

De Mul, J. (2014). *Plessner's philosophical anthropology: perspectives and prospects.* Amsterdam University Press.

Dennell, R.W. From Sangiran to Olduvai, 1937 – 1960: the quest for 'centres' of hominid origins in Asia and Africa. In R. H. A. Corbey & W. Roebroeks (Eds.), *Studying human origins* (pp. 45 – 66). Amsterdam University Press.

Dirks, P. H., Roberts, E. M., Hilbert-Wolf, H., Kramers, J. D., Hawks, J., Dosseto, A., Duval, M., Elliott, M., Evans, M., Grün, R., Hellstrom, J., Herries, A. I., Joannes-Boyau, R., Makhubela, T. V., Placzek, C. J., Robbins, J., Spandler, C., Wiersma, J., Woodhead, J., & Berger, L. R. (2017). The age of Homo naledi and associated sediments in the Rising Star Cave, South Africa. *eLife*, *6*, e24231. https://doi.org/10.7554/eLife.24231.

Dobzhansky, T. (1944). On species and races of living and fossil man. *American Journal of Physical Anthropology*, *2*(3), 251 – 265. https://doi.org/10.1002/ajpa.1330020303.

Donald, M. (1991). *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition.* Harvard University Press.

Finlayson, C., Brown, K., Blasco, R., Rosell, J., Negro, J. J., Bortolotti, G. R., Finlayson, G., Sánchez Marco, A., Giles Pacheco, F., Rodríguez Vidal, J., Carrión, J. S., Fa, D. A., & Rodríguez Llanes, J. M. (2012). Birds of a Feather: Neanderthal Exploitation of Raptors and Corvids. *PLoS ONE*, *7*(9), e45927. https://doi.org/10.1371/journal.pone.0045927.

Finlayson, C., Zollikofer, C., Ponce de León, M., Finlayson, G., Carrión, J., Finlayson, S., Giles Guzmán, F., & Shea, J. (2023). Close encounters vs. missed connections? A critical review of the evidence for Late Pleistocene hominin interactions in western Eurasia. *Quaternary Science Reviews*, *319*, 108307. https://doi.org/10.1016/j.quascirev.2023.108307.

Green, R. E., Krause, J., Briggs, A. W., Maricic, T., Stenzel, U., Kircher, M., Patterson, N., Li, H., Zhai, W., Fritz, M. H.-Y., Hansen, N. F., Durand, E. Y., Malaspinas, A.-S., Jensen, J. D., Marques-Bonet, T., Alkan, C., Prüfer, K., Meyer, M., Burbano, H. A., … Pääbo, S. (2010). A Draft Sequence of the Neandertal Genome. *Science*, *328*(5979), 710 – 722. https://doi.org/10.1126/science.1188021.

Groucutt, H. S., White, T. S., Scerri, E. M. L., Andrieux, E., Clark-Wilson, R., Breeze, P. S., Armitage, S. J., Stewart, M., Drake, N., Louys, J., Price, G. J., Duval, M., Parton, A., Candy, I., Carleton, W. C., Shipton, C., Jennings, R. P., Zahir, M., Blinkhorn, J., … Petraglia, M. D. (2021). Multiple hominin dispersals into Southwest Asia over the past 400,000 years. *Nature*, *597*(7876), Article 7876. https://doi.org/10.1038/s41586-021-03863-y.

Hajdinjak, M., Mafessoni, F., Skov, L., Vernot, B., Hübner, A., Fu, Q., Essel, E., Nagel, S., Nickel, B., Richter, J., Moldovan, O. T., Constantin, S., Endarova, E., Zahariev, N., Spasov, R., Welker, F., Smith, G. M., Sinet-Mathiot, V., Paskulin, L., … Pääbo, S. (2021). Initial Upper Palaeolithic humans in Europe had recent Neanderthal ancestry. *Nature*, *592*(7853), Article 7853. https://doi.org/10.1038/s41586-021-03335-3.

Haraway, D. (1988). Remodelling the human way of life: Sherwood Washburn and the new physical anthropology, 1950 – 1980. In *Bones, bodies, behavior: Essays on biological anthropology.* Madison: Univ. of Wisconsin Press, 1988.

Harding, R. M., & McVean, G. (2004). A structured ancestral population for the evolution of modern humans. *Current Opinion in Genetics & Development*, *14*(6), 667 – 674. https://doi.org/10.1016/j.gde.2004.08.010.

Haslam, M., Luncz, L. V., Staff, R. A., Bradshaw, F., Ottoni, E. B., & Falótico, T. (2016). Pre-Columbian monkey tools. *Current Biology*, *26*(13), R521–R522. https://doi.org/10.1016/j.cub.2016.05.046.

Hawks, J., Elliott, M., Schmid, P., Churchill, S. E., de Ruiter, D. J., Roberts, E. M., Hilbert-Wolf, H., Garvin, H. M., Williams, S. A., Delezene, L. K., Feuerriegel, E. M., Randolph-Quinney, P., Kivell, T. L., Laird, M. F., Tawane, G., DeSilva, J. M., Bailey, S. E., Brophy, J. K., Meyer, M. R., … Berger, L. R. (2017). New fossil remains of Homo naledi from the Lesedi Chamber, South Africa. *eLife*, *6*, e24232. https://doi.org/10.7554/eLife.24232.

Henshilwood, C. S., d'Errico, F., & Watts, I. (2009). Engraved ochres from the Middle Stone Age levels at Blombos Cave, South Africa. *Journal of Human Evolution*, *57*(1), 27 – 47. https://doi.org/10.1016/j.jhevol.2009.01.005.

Hoffmann, D. L., Angelucci, D. E., Villaverde, V., Zapata, J., & Zilhão, J. (2018). Symbolic use of marine shells and mineral pigments by Iberian Neandertals 115,000 years ago. *Science Advances*, *4*(2), eaar5255. https://doi.org/10.1126/sciadv.aar5255.

Hublin, J.-J., Ben-Ncer, A., Bailey, S. E., Freidline, S. E., Neubauer, S., Skinner, M. M., Bergmann, I., Le Cabec, A., Benazzi, S., Harvati, K., & Gunz, P. (2017). New fossils from Jebel Irhoud, Morocco and the pan-African origin of Homo sapiens. *Nature*, *546*(7657), 289 – 292. https://doi.org/10.1038/nature22336.

Isaac, G. (1972) Early phases of Human Behavior in Lower Paleolithic Archaeology. In: D. Clark (Ed.) *Models in Archaeology*, London: Methuen: 167 – 200.

Kimbel, W. H., & Villmoare, B. (2016). From Australopithecus to Homo: The transition that wasn't†. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *371*(1698), 20150248. https://doi.org/10.1098/rstb.2015.0248.

King, B. J. (1994). Evolutionism, essentialism, and an evolutionary perspective on language: Moving beyond a human standard. *Language & Communication*, *14*(1), 1 – 13. https://doi.org/10.1016/0271-5309(94)90016-7.

Kjærgaard, P. C. (2011). 'Hurrah for the missing link!': A history of apes, ancestors and a crucial piece of evidence. *Notes and Records of the Royal Society*, *65*(1), 83 – 98. https://doi.org/10.1098/rsnr.2010.0101.

Klein, R. G. (1995). Anatomy, behavior, and modern human origins. *Journal of World Prehistory*, *9*(2), 167 – 198. https://doi.org/10.1007/BF02221838.

● Kuipers (2022) ●

● Kuipers & Soressi (forthcoming) ●

Leakey, L. S. B., Tobias, P. V., & Napier, J. R. (1965). A New Species of Genus Homo from Olduvai Gorge. *Current Anthropology*, *6*(4), 424 – 427. https://doi.org/10.1086/200629.

Levit, G. S., & Hossfeld, U. (2019). Ernst Haeckel in the history of biology. *Current Biology: CB*, *29*(24), R1276–R1284. https://doi.org/10.1016/j.cub.2019.10.064.

Lindemann, G. "Doppelte Kontingenz und reflexive Anthropologie" *Zeitschrift für Soziologie*, vol. 28, no. 3, 1999, pp. 165 – 181. https://doi.org/10.1515/zfsoz-1999-0301.

Lindemann, Gesa (2005). Der methodologische Ansatz der reflexiven Anthropologie Helmuth Plessners. In Alexandra Manzei, Mathias Gutmann & Gerhard Gamm (eds.), *Zwischen Anthropologie Und Gesellschaftstheorie: Zur Renaissance Helmuth Plessners Im Kontext der Modernen Lebenswissenschaften.* Bielefeld: Transcript Verlag. pp. 83 – 98.

Lindly, J. M., Clark, G. A., Bar-Yosef, O., Lieberman, D., Shea, J., Dibble, H. L., Chase, P. G., Gamble, C., Gargett, R. H., Jacobs, K., Mellars, P., Pike-Tay, A., Smirnov, Y., Straus, L. G., Stringer, C. B., Trinkaus, E., & White, R. (1990). Symbolism and Modern Human Origins [and Comments and Reply]. *Current Anthropology*, *31*(3), 233 – 261. https://doi.org/10.1086/203836.

Linnaeus, C. (1758). *Systema naturae: per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis* (10th ed.). Laurentius Salvius.

Marks, J. (2015). *Tales of the Ex-Apes: How We Think about Human Evolution.*

Marquard, O. (1995). Der Mensch 'diesseits der Utopie', in: *Gluck im Ungluck: Philosophische Überlegungen*, Wilhelm Fink Verlag, 142 – 156.

Martinón-Torres, M., Garate, D., Herries, A. I. R., & Petraglia, M. D. (2023). No scientific evidence that *Homo naledi* buried their dead and produced rock art. *Journal of Human Evolution*, 103464. https://doi.org/10.1016/j.jhevol.2023.103464.

Mayr, E. (1950). Taxonomic categories in fossil hominids. *Cold Spring Harbor Symposia on Quantitative Biology*, *15*, 109 – 118. https://doi.org/10.1101/sqb.1950.015.01.013.

Mcbrearty, S., & Brooks, A. S. (2000). The revolution that wasn't: A new interpretation of the origin of modern human behavior. *Journal of Human Evolution*, *39*(5), 453 – 563. https://doi.org/10.1006/jhev.2000.0435.

Mellars, P. (1989). Major Issues in the Emergence of Modern Humans. *Current Anthropology*, *30*(3), 349 – 385. https://doi.org/10.1086/203755.

Mellars, P. (2002). Archaeology and the origins of modern humans: European and African perspectives. *Proceedings of the British Academy*, *106*, 31 – 47. http://pascal-francis.inist.fr/vibad/index.php?action=getRecordDetail&idt=15171061

Meneganzin, A., & Bernardi, M. (2023). Were Neanderthals and Homo sapiens 'good species'? *Quaternary Science Reviews*, *303*, 107975. https://doi.org/10.1016/j.quascirev.2023.107975.

Nauta, Lolle. 1991. Synchronie und Diachronie in der philosophischen Anthropologie Plessners. In J. van Nispen and D. Tiemersma, eds, The Quest for Man: The Topicality of Philosophical Anthropology. Assen: Van Gorcum, 37 – 46.

Nee, S. (2005). The great chain of being. *Nature*, *435*(7041), Article 7041. https://doi.org/10.1038/435429a.

Noble, W., & Davidson, I. (1991). The Evolutionary Emergence of Modern Human Behaviour: Language and its Archaeology. *Man*, *26*(2), 223. https://doi.org/10.2307/2803830.

Nowell, A. (2010). Defining Behavioral Modernity in the Context of Neandertal and Anatomically Modern Human Populations. *Annual Review of Anthropology*, *39*(1), 437 – 452. https://doi.org/10.1146/annurev.anthro.012809.105113.

Pääbo, S. (2015). The diverse origins of the human gene pool. *Nature Reviews Genetics*, *16*(6), 313 – 314. https://doi.org/10.1038/nrg3954.

Pääbo, S. (2020). *Neanderthal Man: In Search of Lost Genomes.*

Peeters, S., & Zwart, H. (2020). Neanderthals as familiar strangers and the human spark: How the 'golden years' of Neanderthal research reopen the question of human uniqueness. *History and Philosophy of the Life Sciences*, *42*(3), 33. https://doi.org/10.1007/s40656-020-00327-w.

Plessner, H. (1969). De homine abscondito. *Social Research*, 497 – 509.

Plessner, H. (2003). Die Aufgabe der Philosopische Anthropologie, in: *Gesammelte Schriften VIII*, Suhrkamp Verlag, 33 – 51.

Plessner, H. (2018). *Political anthropology* (ed. Seyfert, R., Delitz, H; transl. N. Schott). Northwestern University Press.

Plessner, H. (2019a). *Philosophische Anthropologie: Göttinger Vorlesung vom Sommersemester 1961.* Suhrkamp Verlag.

Plessner, H., & Bernstein, J. M. (2019b). *Levels of Organic Life and the Human: An Introduction to Philosophical Anthropology* (M. Hyatt, Trans.; 1st edition). Fordham University Press.

Porr, M. (2010). Identifying Behavioural Modernity: Lessons from Sahul. *Bulletin of the Indo-Pacific Prehistory Association*, *30*, 28 – 34. https://doi.org/10.7152/bippa.v30i0.12030.

Porr, M., & Matthews, J. M. (2017). Post-colonialism, human origins and the paradox of modernity. *Antiquity*, *91*(358), 1058 – 1068. https://doi.org/10.15184/aqy.2017.82.

Porr, M., & Matthews, J. M. (2019). *Interrogating Human Origins: Decolonisation and the Deep Human Past.*

Proffitt, T., Luncz, L. V., Falótico, T., Ottoni, E. B., de la Torre, I., & Haslam, M. (2016). Wild monkeys flake stone tools. *Nature*, *539*(7627), 85 – 88. https://doi.org/10.1038/nature20112.

Rodríguez-Hidalgo, A., Morales, J. I., Cebrià, A., Courtenay, L. A., Fernández-Marchena, J. L., García-Argudo, G., Marín, J., Saladié, P., Soto, M., Tejero, J.-M., & Fullola, J.-M. (2019). The Châtelperronian Neanderthals of Cova Foradada (Calafell, Spain) used imperial eagle phalanges for symbolic purposes. *Science Advances*, *5*(11), eaax1984. https://doi.org/10.1126/sciadv.aax1984.

Rodríguez-Vidal, J., d'Errico, F., Pacheco, F. G., Blasco, R., Rosell, J., Jennings, R. P., Queffelec, A., Finlayson, G., Fa, D. A., Gutiérrez López, J. M., Carrión, J. S., Negro, J. J., Finlayson, S., Cáceres, L. M., Bernal, M. A., Fernández Jiménez, S., & Finlayson, C. (2014). A rock engraving made by Neanderthals in Gibraltar. *Proceedings of the National Academy of Sciences*, *111*(37), 13301 – 13306. https://doi.org/10.1073/pnas.1411529111.

Roebroeks, W., & Soressi, M. (2016). Neandertals revised. *Proceedings of the National Academy of Sciences*, *113*(23), 6372 – 6379. https://doi.org/10.1073/pnas.1521269113.

Ruse, M. (2012). *The philosophy of human evolution.* Cambridge University Press.

Scerri, E. M. L., Chikhi, L., & Thomas, M. G. (2019). Beyond multiregional and simple out-of-Africa models of human evolution. *Nature Ecology & Evolution*, *3*(10), Article 10. https://doi.org/10.1038/s41559-019-0992-1

Scerri, E. M. L., Niang, K., Candy, I., Blinkhorn, J., Mills, W., Cerasoni, J. N., Bateman, M. D., Crowther, A., & Groucutt, H. S. (2021). Continuity of the Middle Stone Age into the Holocene. *Scientific Reports*, *11*(1), 70. https://doi.org/10.1038/s41598-020-79418-4.

Schroeder, L., Scott, J. E., Garvin, H. M., Laird, M. F., Dembo, M., Radovčić, D., Berger, L. R., de Ruiter, D. J., & Ackermann, R. R. (2017). Skull diversity in the *Homo* lineage and the relative position of *Homo naledi*. *Journal of Human Evolution*, *104*, 124 – 135. https://doi.org/10.1016/j.jhevol.2016.09.014.

Schwartz, J. (2016). What constitutes Homo sapiens? Morphology versus received wisdom. *Journal of Anthropological Sciences = Rivista Di Antropologia: JASS*, *94*, 65 – 80. https://doi.org/10.4436/JASS.94028.

Schwartz, J. H., & Tattersall, I. (2005). *The Human Fossil Record, Craniodental Morphology of Genus Homo (Africa and Asia).* John Wiley & Sons.

Sehasseh, E. M., Fernandez, P., Kuhn, S., Stiner, M., Mentzer, S., Colarossi, D., Clark, A., Lanoe, F., Pailes, M., Hoffmann, D., Benson, A., Rhodes, E., Benmansour, M., Laissaoui, A., Ziani, I., Vidal-Matutano, P., Morales, J., Djellal, Y., Longet, B., … Bouzouggar, A. (2021). Early Middle Stone Age personal ornaments from Bizmoune Cave, Essaouira, Morocco. *Science Advances*, *7*(39), eabi8620. https://doi.org/10.1126/sciadv.abi8620.

Simpson, G. G. (1980). *Why and how: some problems and methods in historical biology* (1st ed.). Pergamon Press.

Smith, R. J., & Wood, B. (2017). The principles and practice of human evolution research: Are we asking questions that can be answered? *Comptes Rendus Palevol*, *16*(5), 670 – 679. https://doi.org/10.1016/j.crpv.2016.11.005.

Stoczkowski, W. (2002). *Explaining Human Origins: Myth, Imagination and Conjecture* (M. Turton, Trans.). Cambridge University Press.

Strait, D. S., Orr, C. M., Hodgkins, J., Spassov, N., Gurova, M., Miller, C., & Tzankov, T. (2016). The Human Fossil Record of Bulgaria and the Formulation of Biogeographic Hypotheses. In K. Harvati & M. Roksandic (Eds.), *Paleoanthropology of the Balkans and Anatolia: Human Evolution and its Context* (pp. 69 – 78). Springer Netherlands. https://doi.org/10.1007/978-94-024-0874-4_5.

Stringer, C. (2016). The origin and evolution of Homo sapiens. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *371*(1698), 20150237. https://doi.org/10.1098/rstb.2015.0237.

Tobias, P. V. (1965). Australopithecus, Homo Habilis, Tool-Using and Tool-Making. *The South African Archaeological Bulletin*, *20*(80), 167 – 192. https://doi.org/10.2307/3887824.

Trinkaus, E. (1990). Cladistics and the hominid fossil record. *American Journal of Physical Anthropology*, *83*(1), 1 – 11. https://doi.org/10.1002/ajpa.1330830102.

Villa, P., & Roebroeks, W. (2014). Neandertal Demise: An Archaeological Analysis of the Modern Human Superiority Complex. *PLoS ONE*, *9*(4), e96424. https://doi.org/10.1371/journal.pone.0096424.

Villmoare, B. (2018). Early Homo and the role of the genus in paleoanthropology. *American Journal of Physical Anthropology*, *165*(S65), 72 – 89. https://doi.org/10.1002/ajpa.23387.

Watson, E., Easteal, S., & Penny, D. (2001). *Homo Genus: A Review of the Classification of Humans and the Great Apes.* Firenze University Press. https://openresearch-repository.anu.edu.au/handle/1885/93291.

White, L. A. (1940). The Symbol: The Origin and Basis of Human Behavior. *Philosophy of Science*, *7*(4), 451 – 463.

White, T. D. (2009). Human Origins and Evolution: Cold Spring Harbor, Déjà Vu. *Cold Spring Harbor Symposia on Quantitative Biology*, *74*, 335 – 344. https://doi.org/10.1101/sqb.2009.74.016.

Wolpoff, M. H. (1968). "Telanthropus" and the Single Species Hypothesis1. *American Anthropologist*, *70*(3), 477 – 493. https://doi.org/10.1525/aa.1968.70.3.02a00020.

Wolpoff, M. H. (1971). Competitive Exclusion Among Lower Pleistocene Hominids: The Single Species Hypothesis. *Man*, *6*(4), 601 – 614. https://doi.org/10.2307/2799185.

Wood, B. A. (2000). The history of the genus Homo. *Human Evolution*, 15(1), 39 – 49. https://doi.org/10.1007/BF02436233.

Wood, B., & Collard, M. (1999a). 'Is Homo defined by culture?' *Proceedings of the British Academy*, *99*, 11 – 23. http://pascal-francis.inist.fr/vibad/index.php?action=getRecordDetail&idt=1555957.

Wood, B., & Collard, M. (1999b). The Human Genus. *Science*, *284*(5411), 65 – 71. https://doi.org/10.1126/science.284.5411.65.

Wood, B., & Smith, R. J. (2022). Towards a more realistic interpretation of the human fossil record. *Quaternary Science Reviews*, *295*, 107722. https://doi.org/10.1016/j.quascirev.2022.107722.

Wynn, T., Overmann, K., & Coolidge, F. (2016). The false dichotomy: A refutation of the Neandertal indistinguishability claim. *Journal of Anthropological Sciences = Rivista Di Antropologia: JASS*, *94*, 201 – 221. https://doi.org/10.4436/JASS.94022.

Zilhão, J. (2006). Neandertals and moderns mixed, and it matters. *Evolutionary Anthropology: Issues, News, and Reviews*, *15*(5), 183 – 195. https://doi.org/10.1002/evan.20110.

Zilhão, J., Angelucci, D. E., Badal-García, E., d'Errico, F., Daniel, F., Dayet, L., Douka, K., Higham, T. F. G., Martínez-Sánchez, M. J., Montes-Bernárdez, R., Murcia-Mascarós, S., Pérez-Sirvent, C., Roldán-García, C., Vanhaeren, M., Villaverde, V., Wood, R., & Zapata, J. (2010). Symbolic use of marine shells and mineral pigments by Iberian Neandertals. *Proceedings of the National Academy of Sciences*, *107*(3), 1023 – 1028. https://doi.org/10.1073/pnas.0914088107.

Étienne Bimbenet

Symbolic behavior in the African Middle Stone Age: A conceptual analysis

New archeological findings in the African Middle Stone Age

The emergence of symbolic behaviors in premodern and modern humans has given rise to many debates in archeology, paleoanthropology and evolutionary psychology over the last twenty years The idea of a cultural "revolution" that would have taken place among anatomically modern humans in the Upper Paleolithic, the sudden appearance in Europe, around 40,000 years bp, of cave paintings and sculpted figurines, jewelry and personal ornaments, musical instruments and decorated bone tools, this dominant paradigm has been widely challenged by new archaeological findings related to the late Middle Stone Age.

Among these discoveries, the most significant are undoubtedly those of the Still Bay layers at Blombos Cave, in South Africa (Henshilwood et al. 2001, Henshilwood and Marean 2003; d'Errico 2003a). A block of ocher with geometrical engravings, perforated and ochred marine shells used as beads for personal ornaments (additionally associated with bone tools and bifacial points): these artifacts, which have been attributed to *H. sapiens* and dated to 72,000 – 77,000 years bp, seem to trace the emergence of a symbolic thought 30,000 years earlier than the European Upper Paleolithic, conventionally placed 40,000 years ago. Some other shell beads were also found in Morocco (Grotte des Pigeons, 82,500 years bp) and Israël (Qafzeh Cave, 92,500 years bp). Both beadwork and pigment can certainly be considered as simple aesthetic ornaments. However, even if some deflationary assumptions tend to emphasize their purely decorative function (Botha 2011; van Mazijk 2023), others tend to see in these ochred pearls socially instituted symbols, depending on collectively agreed-upon meaning. One of the most commonly accepted interpretations of these remains gives them a function of individual and social identification: ochred shell beads could have worked as personal and tribal signature technologies, at a point where demographic changes, with intergroup competition, as well as intra-group specialization, called for better social recognition (Henshilwood and Dubreuil 2011).

These recent discoveries are far from trivial. They have at least three crucial implications. The first one is *archeological.* If one assumes that the first traces of ochre use date back 300,000 years (Barham 2002; Watts 1999), then the emergence of culturally modern humans is getting closer and closer to the appearance of anatomically modern humans. The strange temporal gap that was supposed to separate the appear-

Étienne Bimbenet, Paris 1 Panthéon-Sorbonne University

https://doi.org/10.1515/jbpa-2022-007

ance of anatomical modernity (dated approximately 300,000 years ago) and the explosion of cultural modernity (around 40,000 years ago) tends to be reduced. As d'Errico puts it, "such remote evidence of symbolic culture in southern Africa would conclusively correlate the origin of cultural modernity and modern language with the origin of anatomically modern humans" (d'Errico 2003b, p. 188). In 2003, d'Errico considered that this new "equation" (of biological and behavioral modernity) was "a working hypothesis that needs to be tested" (id., p. 188); the impressive number of publications on the subject over the last twenty years seems to have proved him right.

The second implication of these new findings is *paleoanthropological.* Similar remains have been referred to Neandertals. Marine shells and mineral pigments, found in Spain (Cueva de los Aviones, region of Murcia), dating back 115–120,000 years, seem to demonstrate symbolic behaviors apparently equivalent to those attributed to *H. sapiens* in southern Africa (Hoffmann et al. 2018). Among other comparable findings (concerning burials, cave art or lithic technologies), this Spanish beadwork supports the idea of a real cognitive proximity between anatomically modern humans (*Sapiens*) and anatomically pre-modern humans (Neandertal). Beyond the well-known anatomical differences separating them, these cultural confluences tend to indicate cognitive roots that could be attributed to their last common ancestor, more than half-a-million years ago. "The Neandertal-associated evidence from Cueva de los Aviones [...] leaves no doubt that Neandertals shared symbolic thinking with early modern humans and that, as far as we can infer from material culture, Neandertals and early modern humans were cognitively indistinguishable" (id., p. 4). This is a philosophical point. A significant part of our biological heritage (the specific anatomical traits that set us apart from Neandertals) is relativized in favor of cultural and therefore cognitive proximity. According to their morphology, Neandertals were a separate species; but if one considers their material culture, they were behaviorally humans – or even "behaviorally "sapiens" people" (Zilhão 2007, p. 36). The emergence of behavioral modernity is not a species-specific phenomenon. Before the evolutionary split that separated them, some 500,000 years ago, Neandertals and modern humans might have shared an essential cognitive inheritance. Anatomically modern humans were not the exclusive owners of humanity; nor do *we* have the privilege of humanity. We share it with other species, which can be declared "human" by virtue of largely non-biological criteria. This is one of the fascinating questions raised by all these recent discoveries: what could it mean to belong to genus *Homo* without belonging to the modern *Homo sapiens* species? What is it like to be human without being *sapiens?* How to characterize this common and pre-sapient humanity, this humanity before humanity? Last, but not least: what role did symbolic material culture and symbolic behaviours play in defining such pre-sapient humanity? This is the third implication of these recent discoveries.

What "symbolic" means

The third implication is an *anthropological* one. This is the one we are going to address in this paper. How shall we understand the word "symbolic", in expressions such as "symbolic material culture", "symbolic behavior" or "symbolic thought"?

A fairly common option is to define symbolism by modern, i. e. syntactical language. Often considered to be unique to modern humans, articulated and recursive language was naturally associated with the actors of the European and Aurignacian revolution, about 40,000 years ago (Zilhão 2007, p. 40 – 41; Lenclud and Hombert 2014, p. 344 – 345); then the same "Chomskyan" skill was just as spontaneously attributed to those (*H. sapiens* and Neandertals) who predate the emergence of symbolism, in southern Africa and Iberian Peninsula. Fully syntactical language appeared to be a necessary requisite to articulate and transmit the social meaning of beadworks and geometric engravings (d'Errico et al. 2005; Henshilwood and Marean 2003; Watts 2009). According to this first interpretation of the word "symbolic", the novelty was not conceptual, but merely archaeological: the appearance of syntactical language was only remote (without change) at least 30,000 years back.

But a second and conceptually more demanding option can be defended. The Middle Stone Age scenario implies a more gradual evolutionary process, distributed over various premodern and modern species. As a consequence, one could require a more gradual definition of the symbolic. "Symbolism is a concept that encourages dichotomous thinking: you either have it or you do not, and if you have it, you have modern cognition" (Henshilwood and Dubreuil 2011: Comment by Rossano, p. 387). The criterion of a cognitively "perfect" language, which could be attributed to various evolutionary steps and different human species, may lead us to "an unproductive "are they symbolic or not" debate" (id.). Conversely, the beadwork and its presumably social identifying function could be an opportunity to produce a better and more refined definition of what "symbolic" means. This is for example what van Mazijk argues:

> Addressing the evolution of symbolism in the hominin lineage requires more fine-grained concepts for differentiating various mental processes and correlative meaning apprehensions involved in the sorts of behaviors generically called "symbolic". We thus need to think symbolism in order to make sense of the data. (van Mazijk 2023, p. 7)

This is an exciting theoretical perspective. One of the most fruitful research interpretations in this direction regards the social skills implied in this social identifying function. A fairly obvious way to understand this "bead to status", "bead to clan" or "bead to tribe" connection is to relate it to the possibility of sharing the beliefs of others (Henshilwood and Dubreuil 2011). A bead that refers to a specific status, clan or tribe implies that one can understand the meaning that these beads have for its owner. The latter decided that this bead would stand for a specific hierarchical status, or a certain clan or tribe identity; his or her congeners must unambiguously know how to grasp this social meaning. "A symbolically mediated culture is one in which individuals un-

derstand that artifacts are imbued with meaning and that these meanings are constructed and depend on collectively shared beliefs" (id., p. 368). Henshilwood and Dubreuil interpret this sharing of beliefs within the framework of the so-called Theory of Mind: to understand the meaning of a symbol, one must be able to understand what beliefs or desires the other has in mind. A symbolic behavior involves the ability to adopt another's point of view (id., p. 368–369).

Another psycho-social way to understand early human symbolic behaviors is to refer them to our cooperative abilities, through the so-called "collective intentionality" (Tomasello et al. 2012; Tomasello 2014). Early humans, Michael Tomasello argues, began collaborating with their congeners in their foraging activities; then inter-group competition caused them to conform more strictly to the local customs and social norms of their tribe. According to this "two steps" evolutionary scenario", humans began as "obligate cooperative foragers", and then became cultural and "group-minded" people. At each of these stages, individuals were driven by a collective intentionality that could not be reduced to the sum of their individual intentionalities.

From the very first level, cooperation was more than a mere pragmatic and self-interested interaction. Comparing the collaborative abilities of chimpanzees with 3–4-year-old human children, Tomasello notes that the latter use to engage in collective undertakings (like games) based on the decision to collaborate, the pursuit of a shared goal, the awareness of distinct and complementary roles, the need to "take leave" when deciding to give up, etc. By contrast, chimpanzee group hunting of monkeys seems to imply a mere combination of separate self-interests: one chimp begins to chase a monkey, and the others join in, following a "follow-the-leader" strategy. Being close to the killer increases the chances of getting a larger share of the spoils. In the children's game, the common activity seems to prevail over individual interests, whereas in the hunting of chimpanzees, only a policy of domination and alliances can regulate the competition of individual interests (Tomasello 2014, pp. 188–189). The same goes with the sharing of spoils: while food competition, in chimps, seems to be regulated only by hierarchical power relationships, children on the contrary systematically apply a rule of distributive justice, based on the collaborative commitment of individuals (id.). This rule may or may not be respected; it seems to have been learned by the parents, and may fail; but even when it's not respected, there is always someone to report the cheaters. "Humans have negative attitudes towards free riders who contribute nothing but expect to share in the rewards of others' efforts. Chimpanzees do not like it when others try to take their food, but they do not seem to tie this in any way to the works contribution of those others" (id., p. 190). Thus children seem to be able to consider cooperation, coordination and social commitment *as such*, regardless of their own individual interest.

The second evolutionary step ("culture", after "cooperation") resulted from demographic changes, which probably took place around 100,000 years bp. Increase in population size, formation of larger groups (tribes) organized into clans, made the question of social belonging crucial (id., pp. 191–192). Inter-group competition made tribe's specific norms and culture prevail and give rise to new "group-minded" behaviors. Once

again, the comparison between chimpanzees and children contrasts a "pragmatic" and a "conformist" relationship to group rules. As Tomasello points out, humans don't just learn from others, expecting the useful result, "they actively conform to others, and from early in ontogeny, in ways that other primates do not. This might be based on desire to fit in with the group and/or to avoid negative sanctions from group members who are expecting conformity" (id., p. 191). The desire to follow the majority, the feeling of being looked at by others, the detection of cheaters, make a real difference. Pragmatic logic must now deal with a purely social logic imposed by group-membership: "Contemporary humans have many diverse ways of marking group identity, but one can imagine that the original ways were mainly behavioral: people who talk like me, prepare food like me, and otherwise share my cultural practices are very likely members of my cultural group" (id.).

We are thus faced with two very different interpretative options. On the one hand, symbolism can be defined in an "inflationary" sense, as a direct effect of modern predicative and syntactic language, comparable to the one we speak today. On the other hand, symbolism is interpreted on the basis of its psycho-social foundation, as part of a collective intentionality. We would like to propose a middle interpretation. Collective intentionality is indeed the necessary basis for symbolic artifacts and behaviors, but it's not a sufficient one. To be effective (to counterbalance the pragmatic logic of individual interest), it must be structured by conventional markers (like linguistic ones) capable of fixing collective attention and anchoring it in a perceivable support. Between a psychology of joint attention and a Chomskyan linguistics, between a bare sharing of attention and a language that would have emerged fully armed from a happy neuro-cognitive mutation, it would be necessary to make the case for a medium term: a collective intentionality that would be symbolically scaffolded; or conversely a language defined by its symbolic sharing of attention, rather than by its syntactic articulation.

The symbolic construction of collective intentionality

The ochred beads found in the Iberian Peninsula and in South Africa didn't seem to be idiosyncratic. Similar patterns, recovered from different layers and with different ages, seem to demonstrate a tribal long-lasting tradition. The same can be said about engraved geometrical motifs found on stone, ocher and oistrich eggshell: their stereotyped and abstract forms seem to respond to collective standards (d'Errico et al. 2005). It is conceivable that, at this time, group competition, and hence group affiliation, becoming crucial, generated the need for conventionalized markings to signify individual identity within a clan, or clan identity within a tribe, or tribal identity in relation to strangers. Should we consider that these formal regularities were part of a symbolic language?

If one agrees to define symbolism as a set of arbitrary signs, in the Peircian sense, then these beads didn't seem to function as symbols in the full sense of the word. They may have worked more as "indexes". An index refers to an object through a spatial or temporal association (smoke indicates fire, footprints in the snow refer to the passage of an animal). If the members of a clan always wear the same type of necklace, then this necklace refers indexically to this clan. However, the repetition of the same formal models could be interpreted as the result of a conventionalization process. The colour of the ochres, the arrangement and number of the beads on the necklace, may have had a collectively defined meaning. As Matt Rossano points out, this bead-to-clan connection could be seen as an "artifically constructed index", a combination of indexicality and arbitrariness (Henshilwood and Dubreuil 2011: Comment by Rossano, p. 387). This combination, he adds, "may have served as an important bridging step in moving from simple, naturally occuring indexes (smoke-fire) to entirely constructed, naturally unsupported, cognitively demanding, all-encompassing symbol systems within which human social life is fully and uniquely immersed" (ibid). So, even if they are impure, even if they are entangled with indexicality, the standardized patterns lend strong support to the idea of a conventional agreement.

This use of symbolic artifacts is certainly not an isolated phenomenon. Middle Paleolithic and Middle Stone Age lifestyles were certainly not limited to it; modern and pre-modern humans didn't spend their days painting, sharing their beliefs about life after death, or signifying their social status with beaded necklaces. We nevertheless suggest to view these symbolic activities as an expression, maybe the most prominent expression, of an original kind of intentionality: a "shared" or "collective" intentionality that would be structured by conventionalized regularities; what we propose to call a "conventional intentionality". The signs discovered in Middle Stone Age Africa arose in a particular demographic context where both inter-group competition and increasing population size implied much stronger social agreements. That's why collective intentionality needs to be properly interpreted. There may indeed be an intellectualist and retrospective illusion in considering it as an equitable sharing of vision, or as a discussion of equal points of view around the thing. Such an egalitarian concept misses the point, that is, its conventional and "group-minded" origin. As Tomasello points out in his "two steps evolutionary scenario", such intentionality at the moment of its appearance implies common rules of cooperation and social norms, that impose a collective agreement; it is based on group authority (Tomasello 2014, p. 191–192). It is structured by social convention rather than by individual decision. As a matter of fact, convention is not something that individuals agree with each other, as if they could change it at any time. It is not a contract. It is rather what individuals find *before* them as always *already agreed.* It is an indisputable tradition, the way people have always done it, what is "taken for granted". Doing the right thing the right way is certainly a way for each individual to reach his or her goal more quickly and being pragmatically more efficient. But it's also, and above all, a way of displaying loyalty to the group.

The importance of ritualized behaviors in humans supports this view (Rossano 2015). The repetition of a gesture, its formalization-stylization into a rigid sequence,

makes it a marker of social affiliation. The useful purpose gradually becomes less important than the function of social affiliation: "Finally, and uniquely with humans, ritualized actions also exhibit the quality of goal demotion, where executing the elemental gesture correctly becomes the goal in and of itself" (Rossano 2015, p. 12). This makes a real difference with animal rituals. Many ritualized behaviors have been documented for example in chimpanzees, bonobos or spider monkeys, such as gestures of welcome or reconciliation (including mutual embracing and kissing, collective pant-hooting, submissive bows, begging gestures, and of course grooming (de Waal 1990). But even in those rituals where social reaffirmation seems to prevail over useful function, social behaviors remain focused on individual interests. The ritual regulates a face-to-face interaction made to bring security and social peace for everyone. In human rituals, on the other hand, group membership seems to be sought for itself; it is not primarily a question of pacifying a relationship, but of showing that one is a loyal member of the tribe. Animal rituals are demonstrative, but with the intention of doing something, whereas human rituals are demonstrative by conformism:

> With nonhuman animals, this signal indicates something about the sender's intentions: the "bowing" dog *wants* to play, the "stretching" elk wants to mate, etc. But with humans, the message often goes beyond this [...] Saluting the flag, shaking another's hand, rising when the judge enters court, tossing dirt on the grave – all of these acts embody or physically express the shared values of the community. (Rossano 2015, p. 12–13)

Once again, child psychology makes a strong case for this specifically human group commitment. When being watched, chimps are equally likely to behave selfishly or cooperatively. By contrast, five-year-old children are far more likely to behave cooperatively when watched – especially if the observers are in-group members (Engelmann et al. 2013). Children also protest against the violation of the rules they have learned, even when these violations cause them no personal harm (Rakoczy et al. 2009). They seem to be deeply sensitive to the application of standards "per se" – to the "right" way to behave.

Conventions, in this respect, have a special way of being. They belong to the history of a group; they result from the repetition of particular uses; like the idiosyncratic "culture" of the group, they are fully contingent. And yet they are spontaneously experienced as the only right way to do things. The more a behavior is ritualized and conventionalized, the more it becomes objective and independent of the individual's particular goals. It becomes a general, stimulus-independent behavior, an objective sequence of gestures that everyone should adopt. On the one hand, conventions, like institutional facts in Searle's social ontology, are "ontologically subjective" (Searle 1995, p. 63); they depend on our mental states, i. e. our beliefs and values, which attribute to them a precise function. Social status, kinship, thaumaturgical power, borders are arbitrary and contingent, they could have been different, like the society to which they belong, with its particular history. But on the other hand, they are "epistemologically objective"; they seem to exist independently of us, they are imposed on us, as if they were fully necessary. This objectivity or necessity is less "epistemic" or intellectual

than social or normative: if an institutional fact is "represented as existing", as Searle puts it (id.), it's because it expresses the authority of the group over the individual. This is a phenomenological point. John Searle doesn't claim that institutional facts *are* ("ontologically") objective, or that they necessarily exist, but only that they are *represented* ("epistemologically") as objective or necessary. Conventions always have a particular and contextual empirical content; and yet most of time this content gets forgotten; they are experienced as unavoidable. The border appears as a border for *everyone*; the magician's power is considered *absolutely* valid; among the Achuar of Amazonia, a painted face expresses the *truth* of the person more than a bare face (Taylor 2004).

The ontology of human conventions is thus highly paradoxical. The subjective is experienced as objective; a tribe's particular form of life is experienced as the right and inescapable way of doing things. When one obeys the rules of the group, one doesn't experience them in the first person, as an individual decision to obey or not; nor doesn't one see these rules as part of the idiosyncratic culture of a specific group. One experiences them in the third person, as a set of independent and intangible rules. Collective intentionality in its human sense cannot be reduced to individual or cultural intentionality, because it always seems to be imposed from above. This is what Tomasello calls the "bird's eye view":

> Humans, but not chimpanzees, thus seem to comprehend joint activities and their different roles from a "bird's eye view" in which all roles are interchangeable in a single representational format. This conceptual organization is foundational for everything from bi-directional linguistic conventions to social institutions with their publicly created joint goals and individual roles that can be filled by everyone. (Tomasello 2014, p. 189)

This means that the one who obeys a rule is not *himself*, but *anyone* – a fundamentally impersonal and anonymous being. The bird's eye view of conventional intentionality is a view from nowhere and no one. It is a cognitively opaque view: we blindly obey most of our conventions; they are what everyone (not us in particular) does.

As conventional signs, symbols display the same fundamental ambiguity. They express the arbitrary idiosyncrasy of a local history, the cultural and contingent "choices" of a community. Through them, it is the group that speaks, categorizes, sees, sets its rules – not the individual. As such, they are not cognitively transparent, as are the indexes or icons. They are not grounded in a natural or obvious association (causality or likeness), on which an individual could rely. They are "empty" signs, "dead" words, cognitively opaque "Gavagaï". They are opaque and stimulus-independent, thus seen as objectively valid for everyone. Speak the right way, about the right object and in the right context, makes you just like everyone else. Pronounce a sign properly takes you away from the here and now. The arbitrariness of symbolic conventions is the basis of a third-person intentionality, an intentionality without me.

The conventional intentionality, as we just defined it, is nothing "natural". It is so common that we tend to forget how strange it is. We just don't see it in the face anymore, because it is part of what we are as human beings. In order to "make the natural seem strange", as William James said, and in order to give this intentionality some con-

sistency, we propose to relate it to two types of facts: social learning and language. Humans learn in a unique, strange and excessive way called "overimitation", that can be likened to the authority of symbolic conventions. Besides, humans did not wait for the emergence of a syntactic language to come to a symbolic agreement about their physical and social environment. We can thus assume the existence of a "symbolic" or "pre-syntactic" language, which would have been functional among pre-sapient and sapient humans at Middle Stone Age, and which gives a second echo to the hypothesis of a conventional intentionality.

Social learning by humans

We should remember the strange way in which humans learn what they know. When this learning is "social" (when it involves others), it takes a very strange turn indeed. There is something weird in "social learning" in its human form.

In a pioneering experiment, Andrew Meltzoff noticed that an adult with inappropriate behaviour, illuminating a light-box by leaning forward and touching it with her forehead (rather than with her hands), was copied after one week delay by a majority (67 %) of the 14-months-old infants who had observed her (Meltzoff 1988). Social conformity, even faced with a somewhat awkward behavior, seemed more important than the expected and more efficient gesture. In other types of experiment, the adult model opens a box, but combines her demonstration with functionally arbitrary gestures, like tapping the sides of the bow with a tool, after the box has been open (Nielsen et al. 2014). Once again, children reproduce the redundant action, despite its lack of causal value. This "overimitation" makes a real difference with social learning by apes and monkeys. The famous washing of sweet potatoes among macaques on Koshima Island (Kawamura 1959; Kawai 1965; Galef 1992), but also experiments carried out with chimpanzees (Rossano 2017, p. 6), conclude that "goal emulation" and "stimulus enhancement" are always more important than identification with the model. Macaques, like chimps, end up doing what the model does; but their attention is mostly focused on the useful goal rather than on the sequence of gestures.

We are confronted with an odd primacy of social relationships over practical functions – an *excess* that would be specific to humans and their "ultra-sociality" (Tomasello 2014). How to understand this phenomenon? First explanation: children at this age are not yet familiar with causal relationships; they imitate without knowing that the adult's behavior is inappropriate; they put their trust in her, as a result of their ignorance. Confronted with complex, causally opaque devices such as computers or household tools, children adopt a "blind copying" strategy, in order to acquire the right skills (Lyons et al. 2011). Are children nevertheless so ignorant about the causal connection between actions and their outcomes? In another light-box experiment, when the model's hands are clearly occupied, the rate of children imitating the "head action" falls to 21 %, which tends to prove that the causal problem did not escape them (Meltzoff 1995). Second explanation: direct identification. Novices imitate in order to be like the model

(Over and Carpenter 2009). They trust her, whatever she does; the desire to be (like) her prevails over what they know about the means-goal connection. But identification doesn't say enough. It baptizes the problem, without providing any precise solution. How to define more precisely this desire for social affiliation? What is its underlying motivation? The question of pedagogy and pedagogical learning can give us an interesting indication in this respect.

In a pedagogical framework, when the adult clearly shows the child that something new is about to be taught, the child is particularly receptive. According to the theory of "Natural pedagogy", children are naturally sensitive to the "ostensive" signals (like eye-contact, infant-directed speech, pointing to or showing objects), indicating such a teaching context (Csibra and Gergely 2006; Csibra and Gergely 2009). They will pay more attention to the "teacher's" gestures and they will, for instance, imitatively learn the behaviors that appear intentional, and ignore the accidental ones. What do they expect? They will of course acquire new information. But they will also gain a generalizable knowledge. This point has been widely emphasized by the theory of Natural pedagogy: in ostensive-referential contexts, children expect to learn a general and "kind-relevant" skill. The episodic and particular gestures of the teacher are interpreted in an inductive way, as potentially applicable to other contexts (to new objects, new locations, new occasions): "In such cases, the observer doesn't need to rely on statistical procedures to extract the relevant information to be generalized because this is selectively manifested to her by the communicative demonstration". Human pedagogy, Gergely and Csibra add, is a "short-cut generic knowledge acquisition". (Gergely and Csibra 2009, p. 148). This inferential power of pedagogy then gives rise to a third interpretation of overimitation. Children blindly copy neither by ignorance, nor to identify with the model, but because they are sensitive to a conventional, public and shareable knowledge. The excess of overimitation is based on a desire of social participation. According to this "normative" theory, children are inclined to adopt impersonal behaviors because in this way they will be like all others. The generality of knowledge in pedagogical situations is less epistemologically than socially attractive. It entails a normative dimension: novices tend to do something because "this is how it is done here" (Keupp 2013). In a pedagogical context, ostensive signals are a less determining factor for learning than the adult's implicitly normative attitude. As shown by a set of experiments carried out with 3-year-old children (Schmidt 2010), learning is most effective when the children see the action as a token of a familiar type and when the adult seems to behave according to an existing convention (suggesting that this is "the way it goes", "the right way to do things", "the way things ought to be done"):

> This expression of attitude – intended to indicate familiarity and past (normative) experience – was the most efficient cue for children to conclude that this is the way this act is done [...] This familiarity could have been based simply on past individual experience, but given the nature of normativity and its connection to conventionality – this is the way we in this culture do this – it is also possible that children saw the adult's familiarity with the materials as an indication that these objects and this action had conventional status in the culture. (Schmidt 2010, p. 535 – 536)

In this regard, Nielsen and his colleagues note that the gestures to be learned by children look similar to ritual behaviors. They are "executed in a prescribed manner, repeated to attract and hold attention, and the goal demoted such that the acts performed are ends unto themselves and are not necessarily associated with an instrumental outcome" (Nielsen et al. 2014, p. 192). In both cases, certain gestures are emphasized as a way to demonstrate conventional regularity and group commitment, to the detriment of the useful result.

Our "natural" pedagogy is not wholly natural. Human beings may be naturally sensitive to signals indicating that something new is about to be taught. But the desire to learn is fundamentally cultural: it ultimately refers to the authority of tradition and the appeal of collective norms. Natural pedagogy thinkers hold that our capacity to learn general and stimulus-independent skills is based on our ability to learn within a pedagogical framework (Sterelny 2012, p. 2146). But the opposite may be true: we are good apprentices because we are sensitive to the social prestige of public and shareable skills; children learn so easily because they interpret the model's actions as a conventional activity. Pedagogy is grounded in a group-minded attitude. Our "general mimetic skill", which some consider to be a human characteristic (Donald 1999), ultimately refers to conventional intentionality.

This "conventional stance" is part of our humanity. Some demographic changes may have especially stimulated it around 100,000 years bp, but one can hold that it has gradually developed over a longer term. In this respect, the appearance of the Acheulean lithic industry, around 1.75 million years bp, seems to have represented a significant cognitive leap, compared to the Oldowan industry (Rossano 2017). Even if the latter already involved a certain type of imitative learning, it seems that it did not exceed the cognitive capacities of the great apes (Davidson and McGrew 2005). It's a different matter with the manufacturing of acheulean bifaces (mostly cleavers and handaxes). The knapping behavior is no longer transparent. "The cleaver manufacturing sequence involves several hierarchically organized stages, and to a novice it would not be obvious how some of the earlier stages relate to the finished cleaver" (Shipton and Nielsen 2015, p. 336). The complex sequence of gestures implies that "the early elements of the sequence are not clearly or obviously connected to the final product" (id.); in this regard, acheulean industry is cognitively much more opaque than the comparatively more simpler manufacturing of the Oldowan. As a matter of fact, only an active pedagogy, implying the teaching of generalized, off-line sequences of gestures, can explain such a perfect transmission, for such a long time. In other words, only a faithful and almost blind replication of gestures, that is to say overimitation, can explain the transmission over centuries of such a complex industry. Besides, Acheulean bifaces present stereotyped shapes and inter-site variations, i. e. stylistic and cultural differences (Toth and Schick 1993; Pelegrin 2009), which again strongly supports the hypothesis of learning by overimitation. This is not the case for Oldowan industry. No cultural norms and tribal standardization here suggest something like a blind copying:

> If overimitation was responsible for the transmission of Oldowan knapping skills, evidence of stylistic traditions could be expected when chance varitions became canalized, yet there are no clear traditions within the Oldowan prior to 2 million years ago. (Shipton and Nielsen 2015, p. 334)

To put it in a nutshell, we are clearly dealing with the development, over a long period of time, of a conventional intentionality, which seems to have been increasingly involved in the lithic industry. This deeply conformist inclination had an obvious adaptive value: it allowed our ancestors to make complex and opaque tools; and it still allows us to learn how to use devices that lack perceptual information on how to operate them (Shipton and Nielsen 2015, p. 333).

Language before language

Language evolution may also give us a good argument in favour of conventional intentionality. There are indeed many versions of a two-steps evolutionary story of human language, from the "one-word" utterances of Ray Jackendoff (Jackendoff 1999) to the "protolanguage" of Derek Bickerton (Bickerton 2009), including the "informational" stage of language by Jean-Louis Dessalles (Dessalles 2007). All these different theories take seriously the idea of a first stage of language, an elementary language that would have been already human, but without being fully syntactical: what one could call a "symbolic" language. Predication and syntax would not be the whole story. Underneath them, one may have to count with a more fundamental behavior, a symbolic, conventional and pre-syntactic behavior that would have been a crucial step in language evolution.

What could it mean for a language to be still specifically human, without being syntactically structured? Let us assume the hypothesis of a first language indicating relevant facts or interesting things to the congeners. For example, this is the way Bickerton describes the function of "protolanguage": in a context of active scavenging, pre-sapient *homo* like *H. erectus* had to signal to their congener the presence of a dead animal in a remote place. The animal was so big that it needed collaboration of a group of fellows to be moved. One or two words were sufficient, maybe with the help of a pointing gesture indicating the direction to go, and of a mimetic gesture showing the behavior of the animal, or imitating its cry. This first language was not yet a syntactic-predicative language belonging to a modern human. However, it could have been something already "symbolic", in a Peircian sense: an arbitrary or conventional sign. Our first symbols may have been inseparably linked to indexes and icons; it would have mixed vocal single words, put together in short non-syntactical utterances, with some pointing and mimetic gestures; but these gestures, in order to make communication more efficient, could have been abbreviated and gradually stylized through repetition, i. e. conventionalized. Even though they were fundamentally impure, our first communicative procedures become more and more conventional. If one agrees not to oppose symbols to indexes and icons, like in the semiotic suite of Peirce, then all this first language would

have been gradually "symbolic", i. e. conventional, from stereotyped pointing and mimetic gestures to purely arbitrary words.

Of course, we have very few archeological clues at our disposal to confirm the hypothesis of a first language that would have been fully conventional, without being syntactical. When it comes to the origins of language, one should never forget that we are doomed to speculation. But an interesting clue could be provided by a conceptual analysis of modern language, which has the advantage of being at hand. Without being conclusive, it could reinforce the hypothesis of a first symbolic-conventional stage of language.

The syntactical language we speak appears primarily as a means of predication. What kind of behaviour is this, predication? What is it like to say something about something, to say that "S is p", that "This subject is this predicate"? When I do so, when I say that "This bottle is half-full", I open a conversation of points of view around this bottle – about the subject of predication. One can say that this bottle is half-full; another may say that it is half-empty; and so on. This is what one calls "human conversation". This predicative behavior implicitly involves two different gestures. When I say something about something, I first give my interlocutors a piece of information. It's commonly held that predication carries out a cognitive task, which consists in confronting various predicates about the same subject. But this theoretical, cognitive task presupposes another, which is more fundamental. Under the gesture of predication, under the conversation of predicates around the bottle, a first and elementary gesture is always presupposed. To predicate is *to agree collectively on a subject of predication* – on the theme of our discussion. When I say: "This bottle is half-full", I presuppose that we all agree on the thing we are speaking about. I am implicitly pointing out this bottle, inviting everybody to look at it with me, to share attention to it. This is a referential or declarative gesture, a gesture of joint attention.

These two gestures are totally different. The predicative gesture consists in *knowing that* (that somethig is such or such); it achieves an *epistemological* task. The declarative gesture consists in *knowing what* (what we are speaking about); it achieves an *ontological* task (McDowell 1998, p. 174). At the predicative or propositional level, we play an agonistic and serious game, the game of truth. We tend to the ultimate predicate, the one that will make all the speakers agree together. But at the referential or declarative level we share our attention to the same thing, we conventionally refer to the same thing. Under the "knowledge of truth", the "knowledge of things" is like an ontological, social and elementary basis of language (id.). Now let's note that the predicative level – this is the important point – is logically dependent on the ontological one. As P. F. Strawson pointed out, the declarative or referential gesture is grammatically enclosed in the subject of the proposition (the bottle), while the predicative gesture is enclosed in the predicate (half-empty, half-full…); and he added: "Attributes or properties are ontologically secondary to the objects to which one attributes them, insofar as reference to properties presupposes reference to objects, but not conversely" (Strawson 1992, p. 46). If we want to confront our different predicates with each other, we have to talk about the same thing. We have to agree on our common

reference to be able to disagree in our discussion. The discussion of predicates may or may not take place; but if it is to take place, it must refer to a subject presupposed as existing between us.

Given that public reference is a logical condition for predication, let us assume that the use of reference undoubtedly preceded the appearance of predication; it may have been a first stage in language evolution. On the basis of this logical priority, one is allowed to posit that "syntactic organization may be an emergent property of symbol use" (Davidson 2003); one can imagine an elementary language devoted to this public reference. The power of this pre-syntactic language would not have been primarily cognitive, but rather social; it would have been the power of convention or conventional intentionality. That's what Husserl held in his reflection on predicative judgment: "Every judging, he said, presupposes that an object is on hand, that it is already given to us, and is that about which the statement is made" (Husserl 1973, p. 14). Husserl did not mean that the object is there effectively, but that it is *presupposed* as being there. This presupposition is social in nature: in order to say something about something, we must implicitly *agree* that we are talking about the same thing, and that that thing was there before us. But this agreement, as we saw earlier, is not comparable to a contract that we would have to sign with each new speech. It is based on conventional signs that are older than us, that carry with them the authority of the group and that, as such, give the thing we're talking about a kind of social objectivity. Even an "empty sign" that would be cognitively opaque because it would refer, for example, to a being that is logically contradictory (a square circle), or empirically impossible to find (a mountain of gold), or totally abstract (alienation), continues to presuppose an objective reference. A square circle, a mountain of gold or social alienation, once properly named, do "exist" by virtue of the social power of language conventions. They exist in virtue of the conventional intentionality that may have been at the heart of our first human language. Naming a dead animal when recruiting congeners to fetch its carcass, miming its behaviour or indicating its location: even if these first signs were indexical or imitative, they were swept along in an inescapable process of symbolisation, i. e. conventionalisation. By agreeing conventionally on what they were talking about, early humans were inventing a language that was preceding syntax, predication and knowledge; they were constructing a new world, populated by absent animals, and later by square circles, mountains of gold and alienation. In this sense, displacement (the capacity to evoke spatially or temporally remote things), is only one aspect of a more general property of the use of symbols, which is *detachement:* the capacity to refer to a thing as being seen in common with other people, to comment this thing for itself, in a non-pragmatical or non-egocentrical way. Thanks to conventionaliszed signs, many strange beings began to exist in neither a physical nor a mental sense, but in a social sense – like the "third realm" evoked by Frege (Frege 1956, p. 302). They began to exist by virtue of conventional intentionality.

Conclusion

The various records of symbolically mediated culture at Middle Stone Age place the appearance of behavioral modernity in Africa at a time much earlier than previously accepted. Given that some of them (like the use of ochre) date back to 300,000 years bp, we are far from the Aurignacian cultural revolution traditionally located in Europe 45,000 years bp. These findings also tend to show that this first modernity may have concerned more people than the only anatomically modern human (*H. sapiens*): Neandertals, and why not other pre-modern humans like Denisovans, may have been part of it. Beyond these archaeological and paleoanthropological implications, we focused on a third involvement, of an anthropological type. Symbolic activities, as we have tried to show, must be conceived as a privileged manifestation of a more general attitude: a "conventional intentionality". They could be considered representative of early human societies that, at one point in their history, became increasingly structured by local rules and tribal conventions. We would like to draw two conclusions from this conventionalist hypothesis.

1. The first one regards child psychology, and joint attention theories. It is commonly held that joint attention develops in children aged between 9 and 18 months, in the context of "pre-verbal communication". Dyadic relationships (physical relationships with objects, grasping and manipulating them; and social relationships with others, through expression of emotions), are gradually replaced by triadic relationships: infants begin to interact *both with objects and people*, for example by pointing or holding up the object to show it to the others. Objects in the environment become public objects; others at the same time become intentional minds whose attention can be manipulated. This is the beginning of collective intentionality: children begin to live in a common, public and objective world, which they share with others.

And yet, we should perhaps be wary of an overly intellectualist version of this humanising process. At this age, the different behaviours that give rise to this sharing of attention appear in a social context structured by conventions: even if "gaze following" (looking where adults are looking), "joint engagement" (social interactions mediated by an object), "social referencing" (using adults as social reference points), "imitative learning" (imitate adult behaviour), and "deictic gestures" (pointing or holding up objects to show them to the adult) are commonly considered to be innate behaviors, they are also conventionalized gestures that the child learns in a context structured by habitual repetition and group norms. Objectivity develops first and foremost as a result of social authority, rather than knowledge. Group pressure, the desire to belong and to conform, may play a decisive role in the child's detachment from egocentrism – certainly more decisive than the quest for purely cognitive objectivity. Shared or collective intentionality is primarily a conventional intentionality.

2. The second conclusion we would like to draw concerns the phenomenon of hominisation. The symbolic records of Middle Stone Age/Middle Paleolithic seem to be common to anatomically premodern and modern humans; they make the case for a first

cultural modernity, based on an elementary symbolism that would not yet be the syntactic symbolism of the Aurignacian revolution. If one considers that this first cultural modernity is based on a new "conventional intentionality", then this specific social skill appears to be a possible characteristic of all these culturally early humans. *H. sapiens*, Neandertals, or also Denisovans, for demographic reasons, would have developed group-minded behaviors and social norms, and therefore a new kind of intentionality. Our humanity would have begun with convention rather than reason; with the authority of custom rather than that of the universal.

This conventionalist departure potentially entailed two future and unexpected developments. First and foremost, one might have thought that it would have locked humans into conformity and repetition. But something different was about to happen. Blind copying and overimitation certainly doomed premodern humans to long periods of technical stagnation, as shown by the thousands of years of stereotyped Acheulean transmission. But at the same time, this ultraconformist way of learning allowed our ancestors to make and manipulate complex tools, whose function was perceptually opaque. Surprisingly, overimitation became a great prerequisite for transmission of new practical skills and cultural innovation. It was perhaps the only functionally effective force to take away humans from pragmatical, self-interested and egocentric behaviors.

But conventional intentionality had a second surprise in store. Such intentionality, as we saw, is anything but obvious. On the one hand it results from inter-group competition and cultural dissemination; ritualized behaviors and conventionalized symbols reflect idiosyncratic ways of life; the first effect of a conventional life is to produce the appearance of cultural and "ethnographic" diversification. On the other hand, the institutional facts, as Searle put it, are "epistemologically objective" or "represented as existing". They are *experienced* as general, context-independent behaviors or meanings; they deny their particular or cultural appearance and are seen on the contrary as *absolutely valid* – they are what everyone should do or believe. Local customs are empirically particular, but at the same time they are experienced as the only way to live. Conventional facts have thus a transcendental power, an ability to universalize our forms of life (our local customs are the right customs, our beliefs are not beliefs but the only true knowledge). This transcendental power of convention may have been the core of our first humanity. The first stage in human construction was perhaps the illusion, for each particular humanity, of being the universal humanity.

References

Barham, Lawrence S. (2002): "Systematic Pigment Use in the Middle Pleistocene of South-Central Africa". In: *Current Anthropology.* Vol. 43, No. 1, pp. 181–190.

Botha, Rudolf (2011): "Inferring modern language from ancient objects". In: Maggie Tallerman/Kathleen R. Gibson (Eds.): *The Oxford Handbook of Language Evolution.* New York: Oxford University Press, pp. 303–312.

Bickerton, Derek (2009): *Adam's Tongue. How Humans Made Language. How Language Made Humans.* New York: Hill & Wang.

Csibra, Gergely and Gergely, György (2006): "Sylvia's recipe: the role of imitation and pedagogy in the transmission of cultural knowledge". In: Nicholas J. Enfield/Stephen C. Levinson (Eds.): *Roots of Human Sociality: Culture, Cognition and Human Interaction.* Oxford: Berg Publishers, pp. 229 – 255.

Csibra, Gergely and Gergely, György (2009): "Natural pedagogy". In: *Trends in Cognitive Sciences.* Vol. 13, No 4, pp. 148 – 153.

Davidson, Iain (2003): "The Archaeological Evidence of Language Origins: States of Art". In: Morten H. Kristiansen/Simon Kirby (Eds.): *Language evolution: states of the art.* New York, Oxford University Press, pp. 140 – 157.

Davidson, Iain and McGrew, William C. (2005): "Stone Tools and the Uniqueness of Human Culture". In: *The Journal of the Royal Anthropological Institute.* Vol. 11, No. 4, pp. 793 – 817.

d'Errico, Francesco (2003a): "Archaeological Evidence for the Emergence of Language, Symbolism, and Music – An Alternative Multidisciplinary Perspective". In: *Journal of World Prehistory.* Vol. 17, No. 1, pp. 1 – 70.

d'Errico, Francesco (2003b): "The Invisible Frontier. A Multiple Species Model for the Origin of behavioral Modernity". In: *Evolutionary Anthropology.* Vol. 4, No 12, pp. 188 – 202.

d'Errico, Francesco et al. (2005): "*Nassarius kraussianus* shell beadsfrom Blombos Cave: evidence for symbolic behaviour in the Mid-dle Stone Age". In: *Journal of Human Evolution.* Vol. 48, No 1, pp. 3 – 24.

Dessalles, Jean-Louis (2007: *Why we talk. The evolutionary origins of language*,New York: Oxford University Press.

de Waal, Frans (1990): *Peacemaking Among Primates.* Cambridge (Mass.): Harvard University Press.

Donald, Merlin (1999): "Preconditions for the evolution of protolanguages". In: Michael Corballis/Stephen E. G. Lea (Eds.): *The Descent of Mind: Psychological Perspectives on Hominid Evolution.* New York: Oxford University Press, pp. 139 – 154.

Engelmann, Jan M. et al. (2013): "Young children care more about their reputation with ingroup members and potential reciprocators". In: *Developmental Science.* No 16, pp. 552 – 558.

Frege, Gottlob (1918 – 1919/1956): "The Thought: a logical Inquiry", *Mind.* Vol. 65, No 259, pp. 289 – 311.

Galef, Bennett (1992): "The Question of animal culture". In: *Human Nature.* Vol. 3, No 2, pp. 157 – 178.

Henshilwood, Christoper S., et al. (2001): "Blombos Cave, Southern Cape, South Africa: Preliminary Report on the 1992 – 1999 Excavations of the Middle Stone Age Levels". In: *Journal of Archaeological Science.* Vol. 28, No 4, pp. 421 – 448.

Henshilwood, Christopher S. and Marean, Curtis W. (2003): "The Origin of Modern Human Behavior. Critique of the Models and their Test Implications". In: *Current Anthropology.* Vol. 44, No 5, pp. 627 – 650.

Henshilwood, Christopher S. et al. (2009): "Engraved ochres from the Middle Stone Age levels at Blombos Cave, South Africa". In: *Journal of Human Evolution.* Vol. 57, No 1, pp. 27 – 47

Henshilwood, Cristopher S. and Dubreuil, Benoît (2011): "The Still Bay and Howiesons Poort, 77 – 59 ka: Perspective-taking and the evolution of the modern human mind during the African Middle Stone Age". In: *Current Anthropology.* Vol. 52, No 3, pp. 361 – 400.

Hoffmann, Dirk L. et al. (2018): "Symbolic use of marine shells and mineral pigments by Iberian Neandertals 115,000 years ago". In: *Science Advances.* Vol. 4, No 2, pp. 1 – 6.

Hombert, Jean-Marie and Lenclud, Gérard (2014): *Comment le langage est venu à l'homme.* Paris: Fayard.

Husserl, Edmund (1973): *Experience and Judgement*, Evanston: Northwestern University Press.

Jackendoff, Ray (1999): "Possible stages in the evolution of the language capacity". In: *Trends in Cognitives Sciences.* Vol. 3, No 7, pp. 272 – 279.

Kawamura, Shunzo (1959): "The process of sub-culture propagation among Japanese macaques", In: *Primates.* No2, p. 43 – 60.

Kawai, Masao (1965): “Newly-acquired pre-cultural behavior of the natural troop of Japanese monkeys on Koshima Islet”, In: *Primates.* No 6, pp. 1 – 30.

Keupp, Stefanie et al. (2013): “Why did children overimitate ? Normtivity is crucial”. In: *Journal of Experimental Child Psychology.* No 116, pp. 392 – 406.

Lyons, Derek E. (2011): “The scope and limits of overimitation in the transmission of artefact culture”. In: *Philosophical Transactions of the Royal Society B.* Vol. 366, No 1567, pp. 1158 – 1167.

McDowell, John (1998): *Meaning, Knowledge and Reality.* Cambridge (Mass.): Harvard University Press.

Meltzoff, Andrew N. (1988): “Infant imitation after a 1-week delay: Long-term memory for novel acts and multiple stimuli”. In: *Developmental Psychology.* Vol. 24, No 4, pp. 470 – 476.

Meltzoff, Andrew N. (1995): “Understanding the Intentions of Others: Re-Enactment of Intended Acts by 18-Month-Old Children”. In: *Developmental Psychology.* Vol. 31, No 5, pp. 838 – 850.

Nielsen, Mark et al. (2014): “The perpetuation of ritualistic actions as revealed by young children’s transmission of normative behavior”. In: *Evolution and Human Behavior.* Vol. 36, No 3, pp. 191 – 198.

Over, Harriett and Carpenter, Melinda (2009): “Priming third-party ostracism increases affiliative imitation in children”. In: *Developmental Science.* No 1, pp. 1 – 8.

Pelegrin, Jacques (2009): “Cognition and the emergence of language: a contribution from lithic technology”. In: Sophie A. de Beaune/Frederick L. Coolidge/Thomas Wynn (Eds.): *Cognitive Archaeology and Human Evolution.* Cambridge (Mass.): Cambridge University Press, pp. 95 – 108.

Rakoczy, Hannes et al. (2009): “Young children’s understanding of the context-relativity of normative rules in conventional games”. In: *British Journal of Developmental Psychology.* No 27, pp. 445 – 456.

Rossano, Matt J. (2015): “The Rituals Origins of Humanity”. In: Gerald Hartung/Matthias Herrgen (Eds.): *Interdisziplinäe Anthropologie.* No 3. Wuppertal: Springer, pp. 3 – 25.

Rossano, Matt J. (2017): “Cognitive fluidity and Acheulean Over-imitation”. In: *Cambridge Archaelogical Journal.* Vol. 27, No 3, pp. 1 – 15.

Schmidt, Marco et al. (2010): “Young children attribute normativity to novel actions without pedagogy or normative language”. In: *Developmental Science.* Vol. 14, No 3, pp. 530 – 539.

Searle, John R. (1995): *The Construction of Social Reality.* New York: Free Press.

Shipton, Ceri and Nielsen, Mark (2015): “Before Cumulative Culture: The Evolutionary Origins of Overimitation and Shared Intentionality”. In: *Human Nature.* Vol. 26, No 3, pp. 331 – 345.

Sterelny, Kim (2012): “Language, gesture, skill: the co-evolutionary foundations of language”. In: *Philosophical Transactions of the Royal Society B.* Vol. 367, No 1599, pp. 2141 – 2151.

Strawson, Peter F. (1992): *Analysis and Metaphysics. An Introduction to Philosophy.* New York: Oxford University Press.

Taylor, Anne-Christine (2004): “Corps immortel, devoir d’oubli: formes humaines et trajectoires de vie chez les Achuar”. In: Maurice Godelier/Maurice Panoff (Eds.), *Le corps humain. Conçu, supplicié, possédé, cannibalisé.* Paris: CNRS Éditions.

Tomasello, Michael et al. (2012): “Two Key Steps in the Evolution of Human Cooperation. The Interdependence Hypothesis”. In: *Current Anthropology.* Vol. 53, No 6, pp. 673 – 692.

Tomasello, Michael (2014): “The ultra-social animal”. In: *European Journal of Social Psycholoy.* No 44, pp. 187 – 194.

Toth, Nicholas and Schick, Kathy (1993): “Early stone industries and inferences regarding language and cognition”. In: Kathleen R. Gibson/Tim Ingold (Eds.): *Tools, Language and Cognition in Human Evolution.* Cambridge: Cambridge University Press, pp. 346 – 363.

van Mazijk, Corijn (2023): “Symbolism in the Middle Palaeolithic: A Phenomenological Account of Practice-embedded Symbolic Behavior”. In: Thomas Wynn/Karenleigh A. Overmann/Frederick L. Coolidge (Eds.): *The Oxford Handbook of Cognitive Archaelogy.* Oxford Academic, https://doi.org/10.1093/oxfordhb/9780192895950.013.55.

Watts, Ian (1999): “The Origin of symbolic culture”. In: Robin Dunbar/Chris Knight/Camilla Power: *The evolution of culture: an interdisciplinary view.* Edinburgh: Edinburgh University Press, pp. 113 – 146.

Watts, Ian (2009): “Red ochre, body painting, and language: interpretingthe Blombos ochre”. In: Rudolf Botha/Chris Knight (Eds.): *The cradle of language.* Oxford: Oxford University Press, pp. 62 – 92.

Zilhão, João (2007): “The Emergence of Ornaments and Art: An Archaeological Perspective on the Origins of “Behavioral Modernity””. In: *Journal of Archaelogical Research.* Vol. 15, No 1, pp. 1 – 54.

Davide Vecchi

Human nature in the light of molecular evolutionary biology

Keywords: Human nature; adaptationism; neutralism; human exceptionalism; molecular biology; genomics; human specific genes.

The most general question treated in this contribution concerns how biology might inform philosophical anthropology. My focus is on evolutionary biology. How did evolution mould human nature? I characterise human nature in terms of the set of phenotypes that are: first, peculiarly manifested in our species; secondly, commonly manifested by humans; thirdly, used to characterise human uniqueness.[1] Most conspicuously, I characterise human nature in terms of the phenotypes underpinning our language capacities, our technological prowess as well as our social and cultural life. These are the phenotypes that make us unique in the biological world. In a trivial sense, all species are biologically unique. However, human uniqueness is relevant for philosophical anthropology because it grounds human exceptionalism. Human uniqueness in this biological sense is not related to the anachronistic exceptionalist idea that we are not part or even transcend nature. It rather provides the foundation of the naturalistic interpretation of human exceptionalism, namely, our capacity to control nature for our potential benefit.[2] Claims about human nature need to be consistent with the corpus of growing biological knowledge. The growth of biological knowledge was significantly shaped by the advent of Darwinism.

I acknowledge the financial support of the FCT – Fundação para a Ciência e a Tecnologia (DL57/2016/CP1479/CT0072; Grants N. UIDB/00678/2020 https://doi.org/10.54499/UIDB/00678/2020 and UIDP/00678/2020 https://doi.org/10.54499/UIDP/00678/2020). I would like to thank the editors, Maurizio Esposito and Gil Santos for stimulating comments.

1 The question of whether human nature can be biologically founded in essentialist terms evades the scope of this contribution (see Hull 1986, Kronfeldner et al. 2014). The most significant idea of biological species essence is that there exists a set of genetic and/or phenotypic properties that is distinctive to a species (i. e., there are no homologous traits in other species) and universally distributed among species members (i. e., there is no variation concerning the trait at issue). My general characterization of human nature is compatible with some level of between-species similarity and within-species variation (see section 2).

2 By "control of nature" I mean the human capacity to harness natural resources for our potential benefit. Analogously, Pääbo (2014, p. 216) refers to "… our species' tremendous influence on the whole biosphere", whereby this influence is founded on our technological prowess. Of course, I do not mean that potential benefit is to be equated with actual benefit, as impending nuclear warfare and anthropogenic climate change, for instance, testify.

https://doi.org/10.1515/jbpa-2022-008

1 The legacy of Darwinism for philosophical anthropology: The roots of adaptationist thinking

Darwinism had at least three important implications for philosophical anthropology. The first implication concerns the hypothesis of common ancestry, which came to provide the framework for evaluating philosophical theses that had been articulated in a pre-evolutionary intellectual context. At the time of Darwin, the mere idea of being phylogenetically related to apes was for many sufficient to abhor evolutionism. Today, it is certainly not so. Indeed, common ancestry is compatible with a refined sense of uniqueness. In this sense, the doctrine of common descent brought a tremor rather than an intellectual earthquake for philosophical anthropology. It clearly shook the anachronistic interpretation of human exceptionalism, without however corroding its naturalistic interpretation. Simply appearing as a lineage besides primates in the tree of life does not mean much. The common ancestor between humans and chimpanzees, our more proximate cousins, is estimated to have lived around 10 million years ago, while evidence of gene flow between the two lineages might have endured until 5 million years ago. This leaves at least 5 million years to diversify. Needless to say, this is a long time to acquire characteristically human phenotypes.

A second implication of Darwinism concerns the interpretation of the simile of the tree of life. The idea that we are at the pinnacle of the evolutionary process is the outcome of misrepresenting our position in the phylogenetic tree. Scholars studying systematics continuously stress that no taxa have a phylogenetically higher or lower status. They also stress that the taxa represented on a phylogeny as terminal branches are not more advanced. This misinterpretation is partially a legacy of thinking in the terms of the *Scala Naturae* in a revised form. The tendency to interpret any classification of biodiversity progressively is so natural that, in a form or another, it is not only found in pre-evolutionary thought but also throughout the history of evolutionary thinking, from Lamarck through Teilhard de Chardin to contemporary convergent evolutionism. In Darwinian terms, the misinterpretation would be that humans stand at the top of the tree of life because we are obviously most "complex" (Nee 2005). However, the notion of evolutionary progress is difficult to cash out, if indeed it belongs to evolutionary biology at all. If the "tape of life" is replayed, Gould (1989) argued, we might not be even here today. This is because of historical contingency (i. e., the co-dependence of evolutionary causal chains on interfering events, for instance abiotic events such as meteorites hitting earth, earthquakes, volcanic eruptions etc.). It is salutary to situate our claim to fame among extant life forms in this historical context, as we literally exist as a species because of sheer luck. However, even accepting that we have been a lucky lineage, what remains in need of explanation is why there are no other lineages relying on symbolic language like us, living in extremely complex societies and having sophisticated culture. In brief, to be relevant for philosophical anthropology, evolutionary biology must contribute to give an answer to the question concerning our biological uniqueness.

1.1 Creative natural selection

A third implication of Darwinism plays a preponderant role in this sense: natural selection. There is no denying that natural selection plays an important role in evolution. However, there is a difference between considering natural selection as the supremely important evolutionary process and considering it as part of the big picture. The first interpretation is generally called "adaptationism". Translated to the human case, adaptationism suggests that human nature is characterised by a set of adaptive phenotypes that are unique to our species. Three tenets of adaptationism need to be unearthed in order to properly understand this position.

The first is the supposition that "design" is ubiquitous in the biological world. By "design" is meant the fit between organism and environment, the supposedly obvious fact of the matter that many traits not only have a function, that not only they perform this function rather well but, additionally, that they seem to have been engineered by an intelligent agent who had a plan. Darwin famously substituted the divine source of design with natural selection. This substitution has been elevated to the extreme by adaptationists, who assume that there is only one naturalistic explanation for the ubiquity of design: "Natural selection is the only physical process we know of that can simulate engineering, because it is the only process in which how well something works can play a causal role in how it came to be" (Pinker 2002, pp. 51–2).

The second tenet of adaptationism is that adaptation is the outcome of a particular kind of process of natural selection. In order to grasp this point, it is essential to distinguish between positive and negative selection. The latter process is at the basis of the maintenance of a phenotype in a population. Consider a reasonably fit population of organisms; chances are that most of the genomic changes that the organisms of the population will inevitably endure are not going to be beneficial; the idea of negative selection is just that the less fit phenotypic traits developmentally associated to the above mentioned genomic changes will be eliminated; the population preserves therefore the status quo. You might immediately realise that a process of this kind cannot create anything new. It is purely eliminative. It cannot explain how we diversified from chimpanzees or, to the extreme, even from our most phylogenetically distant unicellular ancestors. Negative selection cannot result in the uniquely human traits contemporary humans possess. In order to explain diversification, you need positive selection. Consider again our population of organisms; while most of the genomic changes that the organisms of the population will endure are not going to be beneficial, some will be; the idea of positive selection is just that the fitter phenotypic traits developmentally associated to the beneficial genomic changes above mentioned will increase in frequency, eventually reaching fixation; iterated, positive selection will accumulate beneficial genomic changes and construct, step by step, novel phenotypes. In this way, the population might undergo significant changes. As such, it might explain how we diversified from chimpanzees and other hominins, how we are so behaviourally and culturally unique. In brief, adaptationism is based on the fundamental idea that cumulative positive selection is creative.

The third tenet of adaptationism is that cumulative positive selection is assumed to eventually mould novel beneficial traits that are locally optimal for the organisms of the population. Local optimality is the idea that the novel trait is superior to any alternative that does not require "redefining" the organism (Orzack and Sober 1994), that is, making it so different as to be unclassifiable as an organism of the same type. Only local optimality is achievable because of the existence of what in the literature have been called "constraints" (Gould and Lewontin 1979). The notion of constraint identifies all the obstacles (e. g., genomic, morphological, physiological) to the acquisition of the globally optimal phenotype (whatever this concept might mean). Notably, the suboptimality of the action of positive natural selection is often forgotten in the adaptationist literature. For some reason, "constrained optimization" is equated with optimization. This is particularly the case in disciplines like evolutionary psychology (Samuels 1998, p. 56).

When applied to the study of human nature, these assumptions nurture the naturalistic interpretation of human exceptionalism. They provide the conceptual scaffold to hypothesise that human nature is constituted by a set of uniquely refined cognitive and behavioural adaptations that radically distinguish us from the rest of nature, thus sustaining the fable of our self-acknowledged superiority. What I shall hereby argue is that there are many biological reasons to consider adaptationism problematic. Before detailing such reasons in sections 3 – 6, let me articulate the foundations of adaptationist thinking about human nature.

2 The foundations of adaptationist thinking about human nature: The "genetization" of human nature

Adaptationism can be applied to the evolution of any kind of trait, from molecular phenotypes to those constituting human nature. Its advocates argue that the adaptationist logic is in principle justified in the case of human nature because it borrows the same kind of legitimate explanatory schema from adaptationist evolutionary biology (Pinker 2002, p. 101). The evolutionary psychology literature abounds with bold hypotheses concerning human traits. One example concerns the tendency towards promiscuity of males and the tendency towards monogamy of females, which are, it is argued, predictable on purely evolutionary grounds (Pinker 2002, p. 112). This kind of predictability is typical of the arguments proposed in this literature. Human aggressiveness is so predictable as to become, by the application of adaptationist thinking, evolutionarily inevitable: "A reputation for toughness and a thirst for revenge were the best defense against aggression in a world in which one could not call 911 to summon the police" (Pinker 2002, p. 53). On this basis, Hobbes was right and Rousseau wrong; consequently, the doctrine of the Noble Savage "… has been most mercilessly debunked by the new evolutionary thinking. A thoroughly noble anything is an unlikely product of natural

selection, because in the competition among genes for representation in the next generation, noble guys tend to finish last" (Pinker 2002, p. 55). The evolutionary inevitability of patriarchy (Goldberg 1973, p. 78) is inferred by the application of the same logic: "Human biology precludes the possibility of a human social system whose authority structure is not dominated by males, and in which male aggression is not manifested in dominance and attainment of position, of status and power". This bold hypothesis has been in the meantime diluted: it is merely the "resource-component" of patriarchy that is the inevitable consequence of the "… co-evolution of women's evolved mate preferences for men with resources and men's co-evolved mate competition strategies to embody what women want … ". This co-evolutionary dynamic can only have one outcome, namely, "Men who failed to obtain resources that were part of what ancestral women sought in mates often failed to succeed in mate competition" (Buss and Schmitt 2011, p. 771). The adaptationist logic, again, is that these men are not our ancestors.

Given that the mere application of the adaptationist logic allows concocting any functionalist just-so-story (Gould 1978), let us consider more complex hypotheses. For instance, Pagel (2012) argues that the capacity for culture has made us human. This capacity consists of two adaptations: social learning and the theory of mind. Social learning allows imitation and refinement of existing forms (e. g., tools), ultimately producing cumulative culture. With a theory of mind we can guess the motivations of others. Both adaptations are unique to humans. We are also unique in exhibiting unparalleled altruism towards non-kin (Pagel 2012, p. 298). Ultra-sociality was the response to what Pagel labels a "visual theft" crisis. Given that we became capable of social learning, innovations could be stolen; however, keeping them secret would have impaired cumulative culture; it is to solve this adaptive problem that we evolved our peculiar altruistic and ultra-social psychology, including our moral attitudes against uncooperative humans. Language also evolved in order to solve the visual theft adaptive problem, as a means for human negotiation and coordination. There is a problem with this hypothesis that is central for the ensuing analysis. Given that adaptations must have genetic bases[3] and, moreover, given that we do not really know much about them, why should we believe adaptive hypotheses in the first place? Adaptive hypotheses seem vacuous when the genetic basis is unknown. This is a general problem for adaptationist hypotheses that transcends evolutionary psychology and pervades all evolutionary biology. Testing adaptationist hypotheses means comparing them with neutral and non-adaptive ones. This requires some hypothetical knowledge concerning the genetic basis of phenotypes. Consider the evolution of the eye. There is a difference between postulating that the eye was formed by the gradual accumulation of 50 small beneficial mutations (adaptationism) or by the accumulation of 30 neutral mutations and 5 beneficial mutations (an hybrid between neutralism and adaptationism) or by 1 macromutation

3 The assumption here is that genetic inheritance is the only relevant inheritance system for characterising the concept of biological adaptation. Other inheritance systems exist, for instance cultural inheritance. But the latter is relevant for "cultural adaptations", not biological ones. In section 7 I shall return to this crucial issue.

with considerable developmental effect (saltationism) etc. In the absence of any knowledge about the genetic bases of phenotypes, any sort of hypothesis postulating a preponderant role of non-adaptive processes over creative selection remains feasible. This point is surely understood by Pagel (2012, p. 299), who tackles the issue head-on:

> There is evidence of an upturn beginning around 40,000 years ago in the degree of positive selection acting on our genes, and involving hundreds of them. It may not be an accident that this coincided with a flourishing of human culture as seen in an explosion of artefacts, art and musical instruments, and in our occupation of the world. These fast-evolving genes constitute our wiring for culture, and they can be identified using the same methods that isolate the genes that cause medical problems.

Pagel is here suggesting that some human specific genes recently underwent accelerated evolution by positive selection and that these genes are identifiable through molecular analysis. We shall return to the evaluation of these hypotheses in section 5. Most importantly, Pagel is also proposing that these human specific genes provide the "genetic wiring" for culture or, more generally, for human nature. Let us now consider this last proposal in specificity.

2.1 The genetic basis of human nature

What are the theoretical grounds for postulating a genetic basis for human nature? The rationale, simply put, boils down to the idea of genomic potential:

> All the potential for thinking, learning, and feeling that distinguishes humans from other animals lies in the information contained in the DNA of the fertilized ovum. This is most obvious when we compare species. Chimpanzees brought up in a human home do not speak, think, or act like people, and that is because of the information in the ten megabytes of DNA that differ between us. (Pinker 2002, p. 45)

In itself, this hypothesis is intuitive. However, it is also vague: "potential" is an ambiguous term, compatible with any kind of significant or insignificant causal contribution of genes to development. The first cell had the potential to evolve to all extant life forms, so much so that it did. However, the causal contribution of the first cell's genome to human nature is surely minimal. When we unpack the rationale of this hypothesis, several problems can be identified.

The first is that the number of genes in the human genome is very limited, estimated today at around 20.000. Thus, either there are many more genes that have not been so far identified in our genome or human phenotypic complexity is not dependent on the scarce number of genes but still somehow dependent on genomic potential. Phenotypic complexity thus probably depends on the ways in which genes are processed and on the genomic potential of the non-coding part of the genome (Pinker 2002, pp. 75 – 78). Many biologists think that, for instance, alternative splicing contributes to account for the mismatch between human coding genome and proteome (i. e., the set of proteins

produced by humans, estimated to be between 80.000 – 400.000). This qualified hypothesis seems reasonable.

The second problem is that, even if we accept the above hypothesis that genomic potential is the key causal factor for accounting for phenotypic complexity, we do not know much about how complex cognitive and behavioural traits develop. After all, genes code for proteins. In this limited sense, it's not very surprising to discover that many aspects of human biology are significantly caused by genes (or lack thereof, such as our inability to synthesise vitamin C). Critics of sociobiology already made this claim long ago:

> We are not denying that there are genetic components to human behavior. But we suspect that human biological universals are to be discovered more in the generalities of eating, excreting, and sleeping than in such specific and highly variable habits as warfare, sexual exploitation of women and the use of money as a medium of exchange. (Allen et al. 1975)

One way out for the adaptationist would be to bite the bullet and focus on the traits whose development is directly linked to well-studied biochemical and molecular processes. For instance, male promiscuity and aggressivity might depend on the regulation of testosterone. What would then be needed is to establish how behavioural traits like promiscuity and aggressiveness are causally linked to other behavioural phenotypes central to human nature. Nobody knows how this could be done but, again, let's assume that we know the chains of developmental causation of the traits constituting human nature in specificity.

A third problem would then be that the chain of developmental causation between genes and human nature phenotypes take years to mature. They are incommensurably more complex than protein synthesis. Hence, a significant extra-genomic causal component seems to be rather obviously required to make sense of such developmental causal chains. The notion of extra-genomic factors encompasses all that goes "beyond genes", including, in the human case, the influence of the social and cultural environment in which we grow up. At this juncture, the "nature vs. nurture" debate emerges with particular force. Nominally, interactionism – the idea that genes and environment co-determine development – is accepted by all. In reality, it is often downplayed in a variety of ways by many adaptationists. The sole rationale of downplaying seems sometimes ideological:

> Though psychology is not as politicized as some of the other social sciences, it too is sometimes driven by a Utopian vision in which changes in child-rearing and education will ameliorate social pathologies and improve human welfare. (Pinker 2002, p. 27)

Nevertheless, for the sake of argument, let us also assume that we know that the genetic basis of the unique human traits is supremely causally significant as adaptationists assume.

A fourth problem is that, even supposing all the above, in order to be part of human nature, the trait not only must be unique to humans, but it also has to be com-

monly distributed among extant humans. The rationale for this view is that the genetic basis of the adaptation must be fixed in the human population, with limited and developmentally insignificant variation or, even better, none. Florio et al. (2015) hypothesise that the gene *ARHGAP11B* – which seems to have arisen in the human lineage from duplication of the *ARHGAP11A* gene present in the chimpanzee's genome – is an active contributor to the expansion of the human neocortex. The developmental evidence in favour of the hypothesis is that expression of *ARHGAP11B* in embryonic mouse neocortex both increases cortical plate area and induces gyrification. This type of hypothesis would identify one specific genetic constituent of human nature (see section 5), a gene that distinguishes our lineage from all others. However, what also needs to be show is that there is no significant genetic variation in the human population, that is, that all humans have roughly the same DNA sequence for *ARHGAP11B.*[4] Nevertheless, for the sake of argument, let's again assume that all the above is unproblematic and that there exist a commonly distributed genetic basis for human nature as adaptationists argue.

To summarise the analysis of this section so far, let us assume that the genome is significantly causally involved in the development of the unique traits characterizing human nature because:

1. We know that, despite humans having a limited repertoire of genes, the genomic potential of the human genome is sufficient to account for our phenotypic complexity;
2. We know the chains of developmental causation of the traits characterising human nature in specificity;
3. We also know that genes are supremely causally important in such developmental causal chains;
4. We also know that the supremely developmental significant genetic bases of these traits are both unique to and nearly universally distributed among humans.

In this context, the remaining issue to support adaptationist thinking about human nature becomes: did the genetic basis of human nature evolve by natural selection? I shall hereby argue that the answer to this question verges on the negative. To support it, I shall start from general theoretical considerations and then move to more specific ones concerning the history of our lineage and what is known today about human specific genes.

4 This explains why universal traits like the inability to synthesise vitamin C are candidates for being part of human nature and why non-universal traits like lactose tolerance are not (independently of the obvious fact that both are insignificant for philosophical anthropology).

3 Questioning the adaptationist narrative about human nature: The mutational-hazard hypothesis and the genomic challenge to adaptationism

During the 1960s, neutralism came to the fore and began to uproot the supposedly secure foundations of adaptationist thinking. To cut a long story short, the comparative analysis of proteins' amino acid sequences showed that mutational events are much more common than predicted by adaptationists and that most of them are neutral or slightly deleterious; given that such neutral or slightly deleterious mutations cannot evolve by positive natural selection (as they lack the necessary fitness advantage), they can only evolve by drift (Kimura 1968, King and Jukes 1969).[5] Mutation and drift would thus be the driving forces in evolution. Nevertheless, neutralism's implications for the evolution of human phenotypes have not transpired. Disciplines like ethology and evolutionary psychology have remained adaptationist. Adaptationists have argued that molecular and phenotypic evolution have different dynamics, with neutralism solely influencing the former. However, another theoretical development has weakened this adaptationist interpretation.

3.1 The mutational-hazard hypothesis

Comparative genomics has rapidly progressed in the last 20 years or so. One of its chief results is that the evolution of many multicellular species, including humans, has a peculiar dynamic. The sequencing of the human genome was critical in this sense. Apart from the already mentioned small number of genes (around 20.000), other significant

5 Random genetic drift is a process of indiscriminate sorting of the organisms of a population. Any sorting process biases (some organisms reproduce more than others) or restricts (only some organisms reproduce) the number of organisms representing genetically the next generation. Natural selection is a discriminate sorting process, as fitter organisms will tend to represent the next generation with higher probability. Drift is an indiscriminate process because the sorting of organisms occurs independently of their fitness. Given that neutral mutations do not contribute to fitness, they can only be indiscriminately sorted. Moreover, the power of drift to sort indiscriminately is dependent on population size. Consider an ideal population of 2 organisms reproducing asexually, with just one trait, with A fitter than B; the probability that B will reproduce more than A is not negligible, as A might die accidentally; if this happens, only B might represent the next generation genetically. The same principle explains why drift has a peculiar role during population bottlenecks. Consider now the above scenario but with a population of 100 organisms, 50 As and 50 Bs; the probability that only Bs will represent the next generation genetically is drastically reduced, as all 50 As must die accidentally; indeed, ceteris paribus, As will represent the next generation genetically more than Bs. The bigger the population, the more difficult for drift to counter discriminate sorting. This also explains why parceled up populations, geographically dispersed into smaller groups (e. g., demes) only partially reproductively connected, are increasingly susceptible to drift the smaller the demes and the lower their interaction.

peculiarities of the human genome are the scarcity of coding regions (1–2% of the total genome) and the complexity of the non-coding part of the human genome. The convoluted architecture of the human genome is the result of an evolutionary dynamic that led to genome bloating. In contrast, the genomes of unicellular prokaryotes, like bacteria and archaea, are streamlined, with mostly coding genome. In order to explain these profound differences in genome architecture, molecular evolutionary biologists propose that the difference-making factor is population size. In brief, the first step in both dynamics is the emergence of genomic complexity by mutation. Mutation or, better, genomic change, is the outcome of the inevitable inaccuracy of the complex process of DNA replication. The second step is the differential ability of negative selection to wipe out genomic changes: in the case of unicellular organism, given their enormous population sizes, negative selection wipes out all deleterious mutations; conversely, in the case of multicellular species, given their limited population sizes, negative selection cannot wipe out all deleterious mutations, which will gradually accumulate in their genomes during evolutionary history, leading to their bloated genomic architectures. Let us now consider some implications of this hypothesis.

The first point to make is that the molecular interpretation of evolution stemming from comparative genomics is a mutational-hazard hypothesis because negative selection is unable to prevent the fixation of genomic changes that are originally maladaptive. In this sense, this hypothesis goes beyond the traditional neutralist hypothesis according to which drift is relevant because it fixes mostly neutral changes: the additional part is that, in multicellular species characterised by low population sizes such as humans, negative selection is unable to prevent the accumulation of deleterious genomic changes. Given that the vast majority of functionally significant genomic changes (i.e., not neutral) are deleterious, human genome bloating "can simply result from an enhanced rate of fixation of mildly deleterious mutations" (Lynch 2007, p. 66). As Koonin argues (2009, p. 1023) in almost poetic fashion, "….complexification begins as a 'genomic syndrome'."

The second point is that the hypothesis does not give a prominent role to selection. It rather centres on its limitations: negative selection is unable to prevent the accumulation of deleterious genomic changes. It is drift that drives the accumulation dynamics. The smaller the population size, the less powerful negative selection, the more powerful the dynamic of increasing genomic complexity by drift. Indeed, at the extreme, population bottlenecks (see note 3) – whereby population sizes are drastically reduced – will strongly impair negative selection and leave space to a powerful role for drift (Koonin 2009, p. 1023). Consequently, in the case of the human species with very low population size and, arguably, a significant history of bottlenecks, drift would be the most relevant sorting process.

The third point is that the hypothesis gives positive selection a role that is largely irrelevant for the explanation of genomic complexity. In this context, the most intriguing implication of the mutational-hazard hypothesis is that it becomes particularly unclear in what sense natural selection can be said to be creative. It is for this reason that molecular evolutionary biologists often question adaptationism and the very idea of

the ubiquity of design. At the molecular level, it is much more difficult to find evidence of optimal design than at the phenotypic level. Molecular processes are convoluted, baroque, unnecessarily complex. The design of molecular traits has been analogised to that of nonsensical Rube Goldberg devices (Gray et al. 2010). Alternative models of constructive neutral evolution based on mutation and drift have on this basis been proposed (Stoltzfus 1999). However, there is a possible way out of this conundrum.

3.2 The genomic challenge to adaptationism

The way out is to postulate that the accumulated genomic potential is related to phenotypic evolution, even though at a later, unspecified stage. Initially, neutral and deleterious genomic changes accumulate because negative selection is impaired given low population size; the phenotypic potential of these accumulated genomic resources will then be actualised or "co-opted" in appropriate environmental circumstances; if these new actualised phenotypes are beneficial, they will be fixed by positive natural selection. This scenario is credible. After all, an intuitive correlation exists between genome size and architecture on the one hand and phenotypic complexity on the other. We seem a chief demonstration of this. Conversely, unicellular organisms, with their streamlined and mostly coding genomes, have mostly evolved metabolically but are morphologically the same as billions of years ago. The mutational-hazard hypothesis is surprising because it ascribes, to the initially maladaptive genomic changes accumulated during evolutionary history, the potential to produce the various phenotypic marvels encountered in the multicellular natural world. If this were the case, the mutational-hazard hypothesis would amount to a storm in a teacup. It does not deny that genomic potential, however contingently acquired, is the biological foundation of human nature. It rather reinforces the same point, even though in a more convoluted way. However, as Sarkar (2015, p. 529) has pointed out:

> No matter whether there is such a potential for the co-option of genomic segments to allow adaptive evolution, the postulated low *Ne* [i.e., effective population size] will equally prevent natural selection from being effective with respect to these traits as it did for genomic architecture: the problem of small effective population sizes will not go away.

Sarkar is here describing the last implication of what he calls the "genomic challenge" to adaptationism stemming from molecular evolution. Sarkar argues that the mutational-hazard hypothesis is relevant for both the evolution of genomic architecture and that of all sorts of phenotypes, including those putatively constituting our human nature. Even if it is assumed that the maladaptive and deleterious genomic changes accumulated in our genome provide the potential to manifest human specific phenotypes, how can the few beneficial ones evolve to fixation if the human population size is so low and, consequently, negative selection is prevented from wiping out the majority of non-beneficial but also co-opted phenotypes? It is more probable that non-beneficial

phenotypes evolve to fixation in such circumstances. Let me elaborate on this crucial but probably elusive point by explaining the concept of effective population size.

Roughly, effective population size (i.e., *Ne*) refers to the genetic variation of the number of breeding individuals in the population, which is different from the census size, usually much bigger. To estimate the effective population size of the human population, what is considered is the amount of genetic variation among the members of our species. Our species is unusually genomically uniform (Lynch 2007, p. 68). Extensive phenotypic human variation in morphology, physiology and behaviour is grounded by a molecular difference that is minimal: two random chromosomes differ by only 0.1% at the nucleotide sequence level. Two humans differ at around 6.000.000 nucleotide sites. What all these exceptionally low values indicate is that the effective population size of our species is very small (between 3.000 and 10.000, see section 4). The human species case perfectly illustrates the scenario described by Sarkar's quotation: negative selection will be prevented from wiping out the majority of non-beneficial co-opted phenotypes, which will thus drift to fixation. In this scenario, the reason why it is so difficult to find the evidence of the action of positive selection sought by adaptationists is that there is probably little.

Let me give a clearer idea of what this means by using a comparison. Eyre-Walker and Keightley (2007) have analysed genomic data pertaining to *Drosophila* (with $Ne \cong 10^6$) and hominids, two taxonomic groups characterised by very different effective population sizes. They conclude that:

> For protein-coding sequences, the proportion of adaptively driven non-synonymous substitutions is estimated to be close to zero between humans and chimpanzees, about 50% between *Drosophila* species, and might be even higher between species of enteric bacteria and some viruses. In hominid non-coding DNA, there is again little evidence of adaptive evolution, but in *Drosophila* it is estimated that ~15% of non-coding substitutions have been a consequence of positive selection. (Eyre-Walker and Keightley 2007, p. 614)

Assuming all these data and estimates are correct, the burden of proof seems to be firmly on the shoulder of the adaptationist to vindicate a strong role of positive selection in the case of human evolution.

Ultimately, the mutational-hazard hypothesis challenges adaptationism in every possible respect. It not only erodes the assumption that optimal phenotypic design is ubiquitous; additionally, it even questions that it is simply common. Evolution "tinkers" with available genomic variation, which consists of a majority of originally neutral and maladaptive genomic changes produced by mutation and accumulated by drift. Arguably most importantly, even assuming that the accumulated genomic potential is causally relevant to produce the phenotypic basis of human nature, positive selection will be prevented to fix these phenotypes when population size is low. This is particularly important when we move to consider the history of the human lineage. Indeed, our history seems to have been characterised by significant population constraints not only concerning population size – on which we have focused so far – but also popula-

tion structure. Together, these population constraints seem to be more conducive to the action of drift than that of positive selection.

4 Questioning the adaptationist narrative about human nature: A history of complex metapopulation dynamics and bottlenecks

Disputes concerning the classification of hominin fossils, the interpretation of the archaeological evidence and that of genomic analyses remain contested. One major issue concerns the time and place of the origin of *H. sapiens.* The second concerns our evolutionary relationship with other hominins. These two issues relate to the postulation of the kind of speciation process leading to the origin of *H. sapiens.* Finally, depending on the speciation scenario, we might infer the nature of the evolutionary processes that led to the formation of our genome. Let us consider these issues in turn.

4.1 African origin

Various models have been proposed concerning the time and location of the origin of *H. sapiens.* These models aim to accommodate the entire panoply of evidential sources available. Two original models are radically opposed: the out of Africa with total replacement and the multiregional models. They are today considered simplified. The first proposes that *H. sapiens* is a new species arisen in Africa, probably around 200.000 years ago. In a seminal analysis, Cann et al. (1987) argued that the common female ancestor of humanity or "Mitochondrial Eve" had lived in Africa around 200.000 years ago. By around 60.000 – 100.000 years ago our ancestors migrated out of Africa, replacing other hominin species with no interbreeding. This hypothesis is frequently accompanied with the speculation that we were better adapted (Relethford 2008, p. 561). It is nonetheless consistent with varieties of molecular evidence. Several molecular studies show that sub-Saharan populations are genetically more diverse, that genetic diversity outside of Africa tends to be a subset of the diversity within Africa and that genetic diversity decreases as the distance from Africa increases (Relethford 2008, p. 558 – 9). Arguably the best explanation for these observations is that sub-Saharan human subpopulations have had longer time to accumulate mutations and are for this reason older. This means that an African origin is most likely, even though the exact temporal origin, geographical location and migration timing are still debated.

4.2 Hominin metapopulation dynamics

The hypothesis of African origin does not tell us much substantive about the metapopulation[6] dynamics (the pattern of migrations following dispersal) that shaped the history of our species. The out of Africa with total replacement model does not allow gene flow. The multiregional model instead proposes that *H. sapiens* is the result of the extensive and continuous gene flow between archaic human populations. Significantly, "All of these changes took place within a single evolutionary lineage. Contrary to some representations of the multiregional model, it does not claim that the appearance of modern humans was due to independent or parallel evolution in different parts of the Old World" (Relethford, 2008, p. 556).[7] Given the extensive palaeoanthropological, archaeological and molecular evidence in favour of the hypothesis of African origin, the multiregional model in its original form is problematic. Amended versions of the model, however, have been proposed. One significant version is Templeton's (2007, figure 4) "trellis" model, which is supported by a complex multi-locus molecular analysis. This model postulates three migrations out of Africa: around 1.9Myr ago (*H. erectus*), around 650.000 years ago (*H. heidelbergensis*) and around 130.000 years ago (*H. sapiens*). Templeton's model tries to accommodate the molecular signature left by archaic humans on our genomes, which is clearly incompatible with the hypothesis of migration out of Africa with complete replacement, proposing an alternative assimilation scenario. Templeton argues that the hypothesis that populations of *H. sapiens* replaced and wiped out other hominin populations during their migrations because of some supposed genetic (e.g., gene *ARHGAP11B*, cf. Florio et al. 2015) or phenotypic (e.g., warfare) advantage do not stand genetic scrutiny. The basic reason is that complete replacement should erase any genetic evidence of past interbreeding with other hominins, while the genomes of living humans have kept track of such encounters. I shall return to this crucial issue in section 6.

4.3 Speciation process

The out of Africa with total replacement model can be associated with a scenario of cladogenetic speciation: *H. sapiens* originated by the branching off from ancestral African hominins as a small peripheral isolated population, through allopatry[8], and evolved its peculiar genome in a very short period after its geographic separation from the parental species. The cladogenetic allopatric origination scenario is based on the rapid occurrence (e.g., before migrating out of Africa) of a "genetic revolution"

6 A metapopulation consists of several spatially discrete local populations interacting through migration.

7 Parallel evolution would vindicate a biological concept of human race. See Templeton 2013 and Winther 2022 on this issue.

8 Allopatric speciation occurs when a physical barrier isolates the parental and daughter species.

(Mayr, 1963:533). As stressed above, the big problem of this hypothesis comes from the molecular signature of interbreeding with other hominins, which contradicts the hypothesis that *H. sapiens* was reproductively isolated when it migrated. Conversely, the significance of Templeton's assimilation model is that it postulates an anagenetic speciation scenario (Relethford, 2008:558). According to Templeton, our extant genome (i. e., of *H. sapiens sapiens*) is the result of the gradual transformation of the original African *H. sapiens* populations through gene flow with other hominin populations encountered during their migrations. The original population of *H. sapiens* is assumed to have lived geographically isolated by the cladogenetic scenario. Even if we discount the possibility that it was probably living in sympatry with other hominin populations and already interbreeding, the current molecular evidence suggests it did not reach reproductive isolation before migrating. Then, through migrations, it has lived in a complex metapopulation context. This "hominin metapopulation" constituted "a web of different hominin populations, including Neanderthals, Denisovans and other groups, who were linked by limited, but intermittent or even persistent, gene flow" (Pääbo 2015, p. 314). Thus, the mechanisms of reproductive isolation evolved over a substantially longer period than that hypothesised by the genetic revolution under the cladogenetic scenario. Under the anagenetic scenario, inter-population interbreeding significantly contributed to generating the genome of our species. The hypothesis of African origin thus fits with at least two incompatible speciation scenarios that offer alternative hypotheses concerning the evolutionary processes that caused the formation of our distinctive genome.

4.4 Processes causing genome formation

The cladogenetic speciation scenario is based on the rapid occurrence of a "genetic revolution". This scenario postulates the accelerated evolution of some genes (see sections 2 and 5). For instance, Pagel's quotation in section 2 refers to fast-evolving genes, even though the time frame Pagel indicates – i. e., the last 40.000 years – does not coincide with the hypothesised occurrence of the genetic revolution, which, according to this scenario, occurred before *H. sapiens* started to migrate, that is, well before the last 40.000 years ago. Let us consider to what extent positive selection might have been responsible for the genetic revolution. One relevant aspect to consider concerns the estimated effective population size of the human population. These estimates vary from between 3.000 and 7.500 (Tenesa et al. 2007) to 10.000 individuals of reproductive age (Relethford 2008 p. 559). This low value might either represent the genetic variation of the very small, isolated founder population or the occurrence of bottlenecks that lowered the effective population size during the period of the genetic revolution. In both cases, a very low effective population size is consistent with powerful drift (see section 3). In the light of the mutational-hazard hypothesis, the role of positive selection remains confined to the fixation of the relatively few selectively advantageous mutations that occurred during the genetic revolution: the shorter this period, the weaker

the case for a human genome moulded by positive selection. The molecular signature of interbreeding remains at odds with this scenario, making it somehow problematic.

The anagenetic origination scenario does not postulate a genetic revolution in a short initial period. Gene flow between hominin populations assumes a fundamental value. This process clearly accounts for the molecular signature of interbreeding. Given a metapopulation scenario, low effective population size is less intuitive to account than in the case of the cladogenetic scenario. One way to account for this is through population bottlenecks, which might have paved our complex history. Global geological events might have produced bottlenecks, for instance the Toba volcanic explosion. This would further demonstrate the relevance of historical contingency in human evolution. Another more local way, which is probably more realistic, would be to consider the fragmented nature of the human metapopulation. In this sense, arguably the most important discriminant to account for low effective population size is to postulate that the human metapopulation had a demic structure, characterised by populations in the low hundreds for much of the lineage history (as postulated by the hominin assimilation scenario, see section 6). These demes were therefore highly susceptible to the vagaries of the environment, from predation to disease to famine. Let us finally consider to what extent positive selection might be responsible under this scenario for the formation of the human genome. The adaptationist might postulate a prominent role of adaptive introgression, i. e., the spread through gene flow of favourable mutations originally emerged in different demes of the hominin metapopulation (Racimo et al. 2015). However, as I shall also reiterate in the next section, this hypothesis seems to be particularly apt to account for the fixation of phenotypes that allowed adaptation to local environments, which are both hardly important to characterise human nature and are unlikely to be commonly distributed. Furthermore, the mutational hazard hypothesis suggests that drift acquires an even more fundamental role in case of demic population structure. These conditions would facilitate the fixation of neutral and maladaptive genomic changes acquired by the members of the deme. When demes interbreed, the neutral and maladaptive changes acquired might pass by gene flow, again reinforcing the non-adaptationist narrative.

In brief, both speciation scenarios make the prominent role of adaptive processes in the formation of our genome difficult to vindicate. One possible way to vindicate such role would be to ascribe prominent evolutionary relevance either to the relatively few selectively advantageous mutations that occurred during the genetic revolution (in the cladogenetic scenario) or to adaptive introgression (in the anagenetic one). In order to evaluate these hypotheses, let us take a look at what is known about our genome.

5 Questioning the adaptationist narrative about human nature: Human specific genes, their developmental roles and their evolution

I shall first focus on the genomic difference between humans and our more proximate primate ancestor. I shall then delve on the crucial issue of human specific genes, their putative developmental role and the way they evolved.

5.1 The human-chimpanzee lineage

In order to consider the issue of our genomic uniqueness, a good point to start concerns the level of genomic difference between humans and chimpanzees. At the nucleotide level, it is famously only 1%. To put this difference into perspective, it is less than the difference between two organisms within any eukaryotic species. 1% difference amounts to around 30.000.000 nucleotide differences. Given that, according to neutralism, a large fraction of these differences are neutral, this leaves a number of genomic sites of functionally significance – i. e., those that can be associated with unique human traits – estimated in the low thousands. As Lynch (2007, p. 64) surmises:

> It is mind-boggling to think that such a tiny number of nucleotides may make all the difference between a species that utterly dominates the global ecosystem and a small hairy ape inhabiting a few remnants forests in Africa.[9]

A variety of adaptationist hypotheses have been proposed to make sense of these data in terms of accelerated evolution. One proposal is that the most significant adaptive genomic differences between humans and chimpanzees concern gene regulation (making us a peculiar lineage uniquely susceptible to extreme mutational changes). Another is to associate behavioural changes to adaptive secondary effects on the genetic basis of morphology and physiology (a Baldwin effect scenario).[10] However, when these hypotheses are tested, both the rate of regulatory and morphological human evolution are, consistently with a neutral model, rather ordinary (Lynch 2007, pp. 64 – 66). Therefore, even if it were demonstrated that the human lineage has evolved more rapidly in some

9 Even though it might be intuitively insignificant, biologists know that a small genetic difference can make a big phenotypic difference. In this sense, it is still possible that genomic difference accounts for phenotypic difference. What is "mind-boggling" is rather than we have no idea how limited genomic difference is developmentally converted into significant phenotypic difference.

10 Baldwin (1896) hypothesized that behaviour could have a primary causal role in evolution. The contemporary interpretation of the Baldwin effect postulates that behavioral change is followed by the process of "genetization" of the new phenotype. West-Eberhard (2003) has generalized this scenario to all phenotypes.

respects (e. g., gene regulation apparatus, morphological, disease resistance, immune responses), the molecular evidence points to the fact that the vast majority of these accumulated genomic changes would be due to the reduced efficiency of negative selection and non-adaptive processes like drift. Interestingly, these adaptationist hypotheses substantially complexify the simple picture of associating rather crudely human genomic differences from chimpanzees to human phenotypic peculiarity, as Pinker (2002, p. 45, see section 2) seems to suggest. After all, gene regulation might be profoundly influenced by extra-genomic causal factors, leading to the relinquishment of the adaptationist assumption (number 3 in section 2) that genes are supremely causal important in development. Instead, a Baldwin effect scenario complexifies the simple adaptationist picture because it postulates that phenotypic change at the behavioural level predates genomic change rather than being its effect. It therefore subverts the adaptationist assumption that the initial cause is genomic, opening the door to the radically different alternative that human peculiarity is accountable in non-genetic terms (section 7).

5.2 Human specific genes

Let us now consider the issue of whether there are human specific genes that significantly contribute to the development of unique *Homo sapiens* phenotypes and that are not shared with other primate or hominin groups. Human specific genes are unique differences distinctive of the *Homo sapiens* genome. These differences might be as minimal as an amino acid substitution. Such mutations might nonetheless have a large effect, for instance if they change regulatory elements or create pseudogenes (i. e., a mutated gene not anymore coding for a protein). Other differences might be the result of genomic changes affecting larger portions of the genome, for instance in case of gene duplications. In principle, any such change has the potential to substantially alter developmental dynamics, engendering new and unique phenotypes (O'Bleness et al. 2012). In a recent exhaustive review of the extant literature, Pollen et al. 2023 provide a useful representative list of phenotypically relevant human-specific genomic changes by indicating gene name, kind of genomic change involved as well as the hypotheses concerning the developmental mechanisms causing the phenotypic change. On this basis, I would like to make three points.

First, few of these genomic differences are related to significant phenotypes for the characterisation of human nature. Most are related to phenotypes that have immune, metabolic or physiological significance, that is, not directly relevant to make sense of our cognitive and behavioural uniqueness. The same can be said about the genes that have supposedly entered the human gene pool by adaptive introgression (Racimo et al. 2015), which mostly concern phenotypes like resistance to disease, pigmentation, altitude resistance, metabolic and digestive functions that, presumably, might have provided an adaptive advantage when *H. sapiens* migrated from Africa and colonised other continents. It is moreover improbable that these phenotypes are nearly univer-

sally distributed across the extant members of our species (violating assumption 4 in section 2). The reason is that phenotypes such as immune responses, disease resistance, altitude resistance, pigmentation and digestive function are highly dependent on the features of the local environment. Thus, unless it is demonstrated otherwise, these genes are hardly related to phenotypes important for human nature (violating assumption 3 in section 2). Therefore, a pivotal challenge for the adaptationist is to clarify the causal link between these genomic changes and the evolution of distinctively unique human phenotypes. Other candidate genes are different. An example is *HACNS1*, an enhancer that has undergone putative accelerated evolution in the human lineage.

This guides me to a second point: what kinds of causal inferences about the role of genes beyond the protein level are legitimate? Developmental processes are complex because based on epistatic (phenogenesis requires the expression of many genes) and pleiotropic (a single gene might be causally involved in the development of many phenotypes) interactions. The adaptationist acknowledges this complexity. Indeed, developmental complexity serves a specific purpose in the adaptationist narrative, as it grounds the hypothesis that human genomic potential is the chief cause of human-specific phenotypes (assumption 3 in section 2). However, developmental hypotheses concerning human-specific phenotypes are generally quite conjectural and difficult to test. For instance, developmental studies suggest that *HACNS1* seems to have a variety of morphological effects, namely, in digit and limb formation as well as in pharyngeal arch patterning. The extrapolation is that *HACNS1* might be "…an important candidate for contributions to human bipedalism and tool making" (O'Bleness et al. 2012, p. 10). However, the hypothesis is not much more than speculative. Basically, we are still supremely ignorant about specific genes' developmental role. At this juncture, it is only developmental biology that can fill the gaps, as comparative genomics is silent on the phenotypic significance of human specific genetic changes:

> Comparative genomics has revealed millions of mutations that accumulated along the human lineage, but apart from a handful of examples, it is still unclear which genetic changes give rise to phenotypic change. (Pollen et al. 2023 p. 705)

Among the candidates that have more potential for characterizing cognitive and behavioural traits unique to humans, as the above quotation testifies, few examples exist. Most are related to encephalization (*ARHGAP11B, NOTCH2NL*), neural development (*HAR1*, regulatory element of *PPP1R17* and *GADD45G*) and language capacities (*FOXP2*). Among these, *FOXP2* is historically quite significant. In fact, it has been hypothesized (starting with Fisher et al. 1998) that this gene is a necessary genetic component for the development of language capacities. Developmental studies show that the gene encodes a transcription factor that is highly expressed in the brain during fetal development, while mutations to *FOXP2* have been shown to be associated with language impairment. There is thus strong developmental evidence that it is a language-related gene, probably a necessary genomic resource to develop language capacities. Nonetheless, exactly what kind of developmental role *FOXP2* plays in language de-

velopment remains unclear. For instance, Varki et al. (2008, p. 13) argue that *FOXP2* is not even a uniquely human gene:

> …. recent studies show that *FOXP2* is also related to vocal learning in birds, in a circuit with functional homology to humans, and is rapidly evolving in bats, which one can speculate might be related to their echolocation capacity. This suggests that the phenotype involved is not language *per se*, but rather the development and function of circuits involved in sensory-motor integration that contribute to vocal motor learning in multiple species.

Even granting that *FOXP2* is a uniquely human gene (as Pollen at al. 2023 do), there is a difference between hypothesizing that the gene is necessary for acquiring the language ability or for developing the neuronal apparatus for language vocalisation. In any case, let us ignore these developmental complexities and focus on the evolutionary issue. *FOXP2* best illustrates the credentials of the adaptationist narrative: a human specific gene with a significant causal role for the development of a crucial human nature phenotype. The last test for the adaptationist is to determine whether the gene evolved by positive selection.

This is the third point I would like to make: it cannot simply be assumed a priori that *FOXP2* (exemplifying the case of candidate genes of human nature relevance) evolved by natural selection. We need at least to test the adaptive hypothesis vis-à-vis the neutral hypothesis that it evolved by drift. *FOXP2* contains two nonsynonymous (i. e., not neutral) substitutions. It has been hypothesized that these mutations are beneficial and were recently driven to fixation by positive selection (during what is called a "selective sweep") in *H. Sapiens.* However, a recent genomic analysis suggests that the hypothesized process of positive selection might not be involved at all in the evolution of the gene:

> In conclusion, we do not find evidence that the *FOXP2* locus or any previously implicated site within *FOXP2* is associated with recent positive selection in humans …. It is possible that these two substitutions were the targets of an ancient selective sweep … We do not dispute the extensive functional evidence supporting *FOXP2*'s important role in the neurological processes related to language production …. However, we show that recent natural selection in the ancestral *Homo sapiens* population cannot be attributed to the *FOXP2* locus and thus *Homo sapiens*' development of spoken language. (Atkinson et al. 2018 p. 1432)

This means that, even the most likely gene involved in the development of a unique human capacity is not – unless Atkinson et al.'s analysis is incorrect – the result of a process of positive selection.

Absence of evidence for adaptationism is not, per se, evidence against adaptationism. The point I have tried to make is rather that testing adaptive hypotheses is very difficult. Molecular studies are instrumental in this sense. My analysis is tailored to emphasise the critical nature of such findings for adaptationism. In the case of the human genome, one problematic aspect is that, when evidence of positive selection is encountered, it concerns organismal functions "… associated with transcription regulation, spermatogenesis, olfaction, nucleotide metabolism, nuclear hormone recep-

tors, and immune responses" (Lynch 2007, p. 68). How to connect these phenotypes to those important for philosophical anthropology remains a mystery. Another problem is that "It is also unclear whether novel traits arose entirely from many mutations of small effect or if several mutations of large effect make outsized contributions to particular traits." (Pollen et al. 2023 p. 705). In the absence of developmental evidence, it is difficult to evaluate the hypothesis of how the genomic potential provided by human specific genes determines human nature. The contingency narrative hereby proposed is tailored to emphasise that the burden of proof is on adaptationism.[11]

6 Questioning the adaptationist narrative about human nature: Replacement and assimilation scenarios in hominin evolution

A missing piece of the human nature puzzle concerns archaic hominins. As anticipated in section 4, at this juncture the basic issue is to make sense of hominin metapopulation dynamics. The starting point of any such analysis is one of the most surprising facts about human evolution: *Homo sapiens* is the only extant hominin species. Why? The answer to this question comes in many possible forms.

The roundest adaptationist form was favoured until 2010, when the genome of Neanderthal was first sequenced (Green et a. 2010), exhibiting a significant molecular trace of interbreeding. Until then, an Out of Africa with total replacement (see section 4) hypothesis was favoured. This hypothesis was not only considered supported by the molecular studies of the time (e. g., Cann et al. 1987). It was also supported by the interpretation of the morphological and archaeological record. The emergence of anatomically modern humans (i. e. AMH) was dated at around 200.000 years ago in Africa. The morphology of other hominin groups was judged too different (despite the paucity of the fossil record, particularly in the case of some archaic groups).[12] Apparently consistently with the biological evidence, the archaeological record did not show enough cognitive sophistication on the part of archaic hominins. Consequently, it was proposed – in analogy with the morphological evidence – that anatomically modern humans evolved in a short period, consistently with the cladogenetic scenario through the postulated "genetic revolution" articulated in section 4. Before starting the out of Africa migration, anatomically modern humans evolved distinctive behavioural and cognitive traits (e. g., inventiveness, complex symbolic and linguistic abilities, more efficient

11 Contingency is not meant in opposition to necessity but, rather, to adaptationism. It emphasizes the causal role of biological processes such as mutation, drift and historicity (i. e., the co-dependence of evolutionary causal chains on interfering events, for instance abiotic events causing population bottlenecks). Mutation, drift and historicity might of course be caused by indeterministic events.

12 For instance, the fossil record of Denisovans consisted of, up to 2018, a single finger bone and three teeth (Wolf and Akey 2018 p. 1).

hunting strategies etc., see Villa and Roebroeks 2014 p. 2 for the various cognitive superiority hypotheses), sharply separating them from archaic hominins. These traits grounded their technological sophistication (e.g., hafting). In short, anatomically modern humans were superior for adaptive reasons. The ultimate effect of migration could only be the demise of archaic hominins. Thus, the replacement-without-interbreeding hypothesis is another piece of the adaptationist puzzle delineated in the previous sections.

Recent comparative genomic studies have problematized the replacement-without-interbreeding scenario. The seminal work by Pääbo and colleagues (Green et al. 2010, Reich et al. 2010) has shown that Neanderthals left a molecular trace in the genomes of all non-African populations of anatomically modern humans.[13] Two important issues remain pending: was the molecular trace more marked in the past? And how was it produced? While the molecular trace was initially estimated at around 2% uniformly, today it is recognised that extant human subpopulations harbour signatures of differing strength.[14] Moreover, it is also recognised that the molecular trace might have been significantly more marked in the past (Wolf and Akey 2018, pp. 2–3). One hypothesis would be that archaic hominins had genomes with several accumulated deleterious sequences (Harris and Nielsen 2016) that, while initially integrated in the genome of anatomically modern humans, have been partially expunged by negative selection in the meantime.[15] The minimal consensus is that there were at least two "pulses" or interbreeding exchanges: one between Neanderthals and an ancestral Eurasian population and another between Denisovans and an ancestral Southeast Asia population (see Wolf and Akey 2018 figure 1). A plurality of pulses might be a more realistic scenario given that "… at least 20–40% of Neanderthal DNA survives in human populations around the world" (Pollen et al. 2023 p. 689).

Alongside molecular studies, recent analyses of the archaeological record have problematized the replacement-without-interbreeding scenario too. In particular, Neanderthals' lack of behavioural and cognitive sophistication has been increasingly questioned. For instance, European Neanderthals had sophisticated hafting technologies in turn based on other sophisticated extraction technologies (e.g., of pitch from bark), indicating cognitive capacities paralleling those of anatomically modern humans (Villa and Roebroeks 2014 p. 5). The analysis of the archaeological record impels Villa and Roebroeks (2014 p. 5) to uncompromisingly state:

13 Whether also African human populations show a molecular trace of interbreeding with archaic populations is an open issue complicated by "…the historical underrepresentation of African populations in large genomic datasets and the absence of reference genomes for archaic African hominins …" Wolf and Akey 2018, p. 6.

14 On this basis, it might be argued – following the replacement adaptationist scenario to its extreme implications – that the human subpopulations (e.g., Europeans) with a stronger archaic molecular signature are cognitively inferior to those with a fainter one (e.g., Africans).

15 Note that this is not an adaptive hypothesis as I have characterised it, as positive selection is not involved.

> We conclude that all the "archaeology-based" explanations for the demise of the Neandertals .... are flawed. They were based on much less data than we have available today and were at least in part the result of a long tradition of thinking in terms of Neandertals-AMH dichotomies.

The alternative to replacement is an assimilation or demic diffusion model, first proposed by Smith et al. (1989). Smith (2011) clarifies that this model is compatible with the African origin of anatomically modern humans. The point of contention is, rather, that ".... the population dynamics of interaction between expanding modern and indigenous archaic Eurasians were far more complex than simple replacement of one species by another." This is essentially Templeton's (2007) anagenetic assimilation scenario (illustrated in section 4) applied to recent human history. This scenario is often resisted for biological reasons, as many evolutionary biologists tend to think in terms of discontinuous diversification. For instance, commitment to the biological species concept – according to which species are discontinuous because they are reproductively isolated groups of organisms – seems to dictate that anatomically modern humans and archaic hominins were members of the same species. However, it might be argued that the biological species concept is consistent with the occurrence of limited interbreeding during the period of time in which reproductive isolation mechanisms are formed. In this sense, it is consistent with some forms of hybridization, especially when characterised by the growing infertility of the hybrids. Indeed, male hybrid sterility has been postulated in the case of the interbreeding between anatomically modern humans and Neanderthals. Nevertheless, commitment to the biological species concept remains inconsistent with the molecular trace, which of course implies some form of hybrid fertility. Furthermore, any species concept assuming a cladogenetic scenario would also have problems in properly accounting for the molecular trace of interbreeding because genuine species are the result of speciation events that, supposedly, preserve their acquired genomic and phenotypic distinctiveness from interbreeding. In brief, the molecular trace of interbreeding remains, in principle, consistent with considering archaic hominins and anatomically modern humans as subspecies of the same species. Therefore, should we endorse an expanded concept of *H. sapiens* and "... remove the taxonomic separations erected purely from the morphology of fossils, and sink *H. heidelbergensis*, Neanderthals and Denisovans into *H. sapiens?*" (Stringer 2012:34). Advocates of assimilation models would respond positively to this question. Indeed, Smith et al. (1989, p. 62) argued that *H. sapiens* is a polytypic[16] species:

> ... we are not convinced that biological reality is best served by thinking of the origin of modern humans as the result of speciation in either a biological or evolutionary species concept sense. Since we do not view the origin of modern human anatomical form as a speciation event, we feel justified in continuing to use such terms as archaic *H. sapiens* and modern *H. sapiens.*

16 Polytypy might provide the biological basis for racial classification in case subpopulations evolve in parallel. However, assimilation models of human evolution are not based on parallel evolution (Templeton 2007). Indeed, they do not reify human subpopulations as biological races (Templeton 2013). See note 7.

Instead, Stringer argues that polytypy is not a good answer for, oddly, "pragmatic reasons". One reason is that thinking in terms of polytypy would, on the one hand, inflate the extent of extant humans' morphological variation and, on the other, downplay the significance of the morphological distinctiveness of anatomically modern humans vis-à-vis archaic hominins. However, it remains possible that our variation estimates will be revised on the basis of more information concerning extant human variation and that of archaic hominins (both of which might be significantly underestimated).[17] Stringer also argues that interbreeding might be ineffectual in an evolutionary sense because, for instance, it is also common among "many closely related species of primates", which are nevertheless considered morphologically distinct. Stringer seems to refer particularly to interbreeding between bonobos, chimps and gorillas. In the case of the interbreeding between the first two species, it might be rebutted that bonobos and chimpanzees are still morphologically very similar (arguably the same) species, even though they might be currently undergoing allopatric speciation. The real issue is, again, whether hybrids are able to reproduce. Given that the molecular trace of interbreeding is acknowledged as genuine and not as a statistical artefact, replacement scenarios remain problematic.

What, then, could be the evidence to adjudicate between the cladogenetic replacement and the anagenetic assimilation scenarios? As anticipated in section 4, I would argue that the main issue concerns the nature of the pattern of migration and interaction between anatomically modern humans and archaic hominins. If the evidence indicates that there were substantial differences between these hominin groups in terms of population size (e. g., with anatomically modern humans overwhelming Neanderthals), then some form of replacement might be a more credible scenario. However, Villa and Roebroeks (2014, p. 6) point out to the lack of "archaeological signatures for AMH on the move", suggesting that migrating groups of anatomically modern humans were generally small. Alternatively, in case the pattern of interaction has been characterized by prolonged coexistence between similarly sized small populations, then it might be argued that an assimilation scenario becomes more likely (or even necessary to avoid extinction, see Smith et al. 1989, p. 61). I shall return to this critical point in section 7.

17 Human morphological variation is extensive (see West-Eberhard 2003, pp. 51–2); likewise for molecular variation, both at the protein-level (see Sarkar and Tauber 1991) and at the genomic level. In the latter case, it is well known that the human reference genome is not mapping all extant variation. Analogous considerations pertain to the reference genome of archaic hominins.

7 The implications of the contingency narrative: Beyond adaptive exceptionalism, archaic hominin replacement and the "genetization" of human nature

The contingency narrative I have articulated so far has one principal target: the vernacular interpretation of adaptationism based on the uncritical endorsement of the optimality assumption. This interpretation nurtures the naturalistic interpretation of human exceptionalism, particularly through the hypothesis that human nature is constituted by a set of uniquely refined cognitive and behavioural adaptations that radically distinguish us from the rest of nature, thus sustaining the fable of our self-acknowledged superiority. The optimality assumption applied to the human case is a naturalistic way to justify our route to glory. The route was not predestined, but natural selection found it. It found it also by moulding adaptations that allowed us to outcompete other hominins. The contingency narrative is salutary because it shows that we carry in our bloated genomes many maladaptive genomic changes, that we are the victims of a "genomic syndrome", that instead of outcompeting other hominin lineages, we might have assimilated them. If the analysis hereby provided is correct, we obviously gained from the oddities of contingent mutational processes, random genetic drift fixations, interbreeding with other hominins of the hominin metapopulation as well as from historical happenstances such as population bottlenecks. Unless otherwise demonstrated, genomic outcomes such as pseudogenization, gene loss and gene duplications – which seem particularly relevant for the evolution of our genome – are initially non-beneficial. Moreover, the low effective population size and demic fragmentation of the hominin metapopulation that might have characterised our species' history provide the ideal terrain for random genetic drift to fix such maladaptive changes. The surprising outcomes of molecular studies supporting the contingency narrative are that our history is not only one of accumulation but also of loss of genomic parts, that it is minimally a history of fixation of beneficial genomic changes and mostly of maladaptive ones, that it is a complex history of assimilation of hominins' genomic resources through interbreeding. If these are the drivers of human evolution, the foundations of adaptationist thinking about human nature are damaged, as the genomic potential for evolving the putatively optimal phenotypes constituting human nature is negligibly a product of creative selection. There is thus no obvious biological reason – pending evidence to the contrary – to make sense of human exceptionalism in terms of optimal adaptations: if any, the naturalistic roots of human exceptionalism are the results of non-adaptive processes. This is the first significant contribution of molecular studies of evolution to philosophical anthropology.

The second significant contribution of molecular studies of evolution to philosophical anthropology concerns the yet unanswered question posed at the start of section 6: why is *Homo sapiens* the only extant hominin species? Perhaps surprisingly, even a

chief discoverer of the molecular trace of interbreeding between anatomically modern humans and archaic hominins propends for a replacement scenario characterised by "… limited, but intermittent or even persistent, gene flow" (Pääbo 2015, p. 314). The crucial term in the above sentence is "limited". This is because Pääbo (2014, p. 218) accepts the orthodox adaptationist interpretations of the morphological and archaeological records in terms, respectively, of anatomically modern humans' morphological distinctiveness and cognitive superiority. Arguably because of this, Pääbo (2014, p. 222) argues that "Cognitive abilities are …. likely to have been positively selected in early modern humans sometime after they separated from ancestors shared with Neandertals and Denisovans …". Moreover, Pääbo (2014, p. 222) also seems to think that the only adaptive contribution of interbreeding to *H. sapiens*' biology concerns non-cognitive aspects, i. e., physiological adaptation to local environments. Consequently, when Pääbo (2014, p. 219 – 220) identifies the (very few) genomic changes specific to *H. sapiens* (i. e., an intron of the *FOXP2* gene and 87 proteins), the adaptationist hypothesis that they were positively selected for their role in brain development naturally follows. However, as related in section 5, not much evidence in favour of such adaptationist hypotheses seems to exist. Moreover, the anagenetic assimilation scenario provides a possible alternative to the orthodox adaptationist interpretations of the morphological and archaeological records on which replacement hypotheses are based. This scenario can be illustrated through an analogy with a more recent historical case:

> An interesting parallel to this complex situation can be found in another "revolution", the so-called Neolithic Revolution, which does not feature explanations in terms of "cognitive" differences. The first farmers swept into Europe from the Near East at about 7500y BP displacing the local Late Mesolithic hunter-gatherers. But the Mesolithic hunter-gatherers, who cannot be described as cognitively inferior, were not submerged by hordes of farmers. Farmers and foragers coexisted for thousands of years in NW Europe … (Villa and Roebroeks 2014, p. 7)

The analogy is that a similar process to that characterising the assimilation of Neolithic farmers and gatherers has characterised the interaction dynamics between anatomically modern humans migrating from Africa and archaic hominins too. The scenario is that similarly sized small populations interacted for long periods and, eventually, extensively cooperated, including reproductively. In brief, in the case of the anagenetic assimilation scenario, there cannot be "extinction" of archaic hominins such as Neanderthals and Denisovans for the simple reason that there never was speciation of the anatomically modern humans in the first place. Moreover, while it is true that *Homo sapiens* is the only extant hominin species, this is because anatomically modern humans and archaic hominins gradually merged by assimilation because their biological identities had never been sufficiently distinctive. Based on an adaptationist interpretation of the morphological and archaeological record, the replacement scenario has created a categorical difference that never existed in the first place: archaic hominins were never a different lineage from that of extant humans. From the assimilation perspective, this adaptationist bias should be corrected by the proper interpretation of the

molecular trace of interbreeding. This is the second significant contribution of molecular studies of evolution to philosophical anthropology.

Returning finally to the initial question concerning the relationship between biology and philosophical anthropology, let me also question the "genetization" of human nature. The very idea of biologising human nature by focusing on the genetic basis of uniquely human traits is pervasive. It can be found at the foundations of adaptationist thinking about human nature (Pinker 2002, Pagel 2012). It also grounds anti-adaptationist hypotheses such as Berwick and Chomsky's (2016) origin of language hypothesis by macromutation. The hypothesis of genetization is, as I have argued in section 2, both intuitive and vague. Most of all, it seems difficult to relinquish it in its totality, as there must be some truth in the hypothesis that the distinctive part of our genome partially causes our phenotypic uniqueness. On this, many agree, adaptationists and non-adaptationists alike. The contribution of molecular studies in this sense pertains to explain why negative selection has been unable to prevent the accumulation of maladaptive genomic changes in the human genome. The gist of several explanations is that this phenomenon depends on simultaneous cultural dynamics. Lynch (2007, p. 66) suggests that:

> ... behavioral sophistication may result in a relaxation of the power of natural selection. Tool use, dietary flexibility, medical procedures, agriculture, and use of domesticated animals are just a few of the ways in which human behavior may reduce the intensity of selection against maladaptive morphological and/or physiological changes.

Varki et al. (2008) focus on the significance of gene loss, which is consistent with the hypothesis that "less-is-more" (Olson 1999), that the human was a "hastily made-over ape". This is because, they argue, gene loss was:

> ... better tolerated by hominids owing to buffering by the increasing dependence of important functions on learned rather than hard-wired behaviour. (Varki et al. 2008, p. 9)

The evolution of human culture, with its reliance on technological innovations transmitted through social learning, has engendered, Varki et al. (2008, p. 15) argue, a different evolutionary scenario:

> ... we must consider the possibility that hominids in general and humans in particular have partially escaped from classic Darwinian selective control of some aspects of the genome, and that humans have even escaped the final stage of Baldwinian genetic hard-wiring of long-standing species-specific learned behaviours.

The pending question concerning this scenario – which, purged of adaptationist biases, is consistent with that proposed by Pagel (2012) – concerns the genetic basis of human phenotypic complexity and behavioural sophistication. Even assuming that genomic potential must be causally involved in the development of our technological proclivity, social learning capacities etc., the big question is: how significant is the genomic con-

tribution to the development of these phenotypes? It is fair to say that we don't know enough. It is also important to note that some significant human behavioural phenotypes do not have a clear genetic basis. Consider the case of fire. We are the only species with the technology to control fire. If there is a genetic basis for fire control, we don't know it. More importantly, the ability to harness fire has been certainly culturally transmitted. This case illustrates a basic point that many philosophical anthropologists might consider trivial: we need to look beyond the genetic basis of cognition and behaviour. The third, somehow ironic, contribution of molecular studies of evolution to philosophical anthropology is that, by suggesting that the history of our lineage is characterised by a reduction in intensity of negative selection or even an "escape" from the strictures of biological evolution, they reinforce the same point: if any, the naturalistic roots of human exceptionalism are to be found in human genomic evolution and cultural prehistory alike.

References

Allen, Elizabeth; Beckwith, Barbara et al. (1975). Against "Sociobiology". *The New York Review of Books*, 13th November. https://www.nybooks.com/articles/1975/11/13/against-sociobiology/.

Atkinson, Elizabeth Grace; Audesse, Amanda Jane et al. (2018). No Evidence for Recent Selection at *FOXP2* among Diverse Human Populations. *Cell* 174(6):1424 – 1435.

Baldwin, James Mark (1896). A New Factor in Evolution. *The American Naturalist* 30(354):441 – 451.

Berwick, Robert C.; Chomsky, Noam (2016). *Why only us: Language and evolution.* Cambridge: MIT press.

Buss, David Michael; Schmitt, David P. (2011). Evolutionary Psychology and Feminism. *Sex Roles: A Journal of Research* 64(9 – 10):768 – 787

Cann, Rebecca L.; Stoneking, Mark; Wilson, Allan C. (1987). Mitochondrial DNA and human evolution. *Nature* 325: 31 – 36.

Eyre-Walker, Adam; Keightley, Peter D. (2007). The distribution of fitness effects of new mutations. *Nature Reviews Genetics* 8:610 – 618

Fisher, Simon E.; Faraneh, Vargha-Khadem et al. (1998). Localisation of a gene implicated in a severe speech and language disorder. *Nature Genetics* 18:168 – 170.

Florio, Marta; Albert, Mareike et al. (2015). Human-specific gene *ARHGAP11B* promotes basal progenitor amplification and neocortex expansion. *Science* 347(6229):1465 – 1470.

Goldberg, Steven (1973). *The Inevitability of Patriarchy.* New York: William Morrow & Co.

Gould, Stephen Jay (1978). Sociobiology: The art of story-telling. *New Scientist* 80:530 – 533.

Gould, Stephen Jay (1989). *Wonderful Life: The Burgess Shale and the Nature of History.* New York: Norton & Company.

Gould, Stephen Jay; Lewontin, Richard Charles (1979). The Spandrels of San Marco and the Panglossian Paradigm. *Proceedings of the Royal Society of London* B 205:581 – 98.

Gray, Michael W.; Lukes, Julius et al. (2010). Irremediable Complexity? *Science* 330:920 – 921.

Green, Richard E.; Krause, Johannes et al. (2010). A draft sequence of the Neandertal genome. *Science* 2010 328:710 – 722.

Harris, Kelly; Nielsen, Rasmus (2016). The Genetic Cost of Neanderthal Introgression. *Genetics* 203(2):881 – 891.

Hull, David Lee (1986). On Human Nature. *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association* 2:3 – 13.

Kimura, Motoo (1968). Evolutionary Rate at the Molecular Level. *Nature* 217:624 – 6

King, Jack Lester; Jukes, Thomas H. (1969). Non-Darwinian Evolution: Most Evolutionary Change in Proteins May Be due to Neutral Mutations and Genetic Drift. *Science* 164:788 – 798

Koonin, Eugene V. (2009). Darwinian evolution in the light of genomics. *Nucleic Acids Research* 37(4):1011 – 1034

Kronfeldner, Maria E.; Roughley, Neil; Toepfer, Georg J. (2014). Recent work on human nature: Beyond traditional essences. *Philosophy Compass* 9(9):642 – 652.

Lynch, Michael (2007). *The origins of genome architecture.* Sunderland: Sinauer Associates.

Mayr, Ernst (1963). *Animal species and evolution.* London: Belknap Press of Harvard University Press.

Nee, Sean (2005). The great chain of being. *Nature* 435:429.

O'Bleness, Majesta; Searles, Veronica B. et al. (2012). Evolution of genetic and genomic features unique to the human lineage. *Nature Review Genetics* 13(12): 853 – 866.

Olson, Maynard V. (1999). When less is more: gene loss as an engine of evolutionary change. *The American Journal of Human Genetics* 64:18 – 23.

Orzack, Steven Hecht; Sober, Elliott (1994). Optimality models and the test of adaptationism. *The American Naturalist* 143: 361 – 380.

Pääbo, Svante (2014). The human condition: a molecular approach. *Cell* 157: 216 – 226.

Pääbo, Svante (2015). The diverse origins of the human gene pool. *Nature Reviews Genetics* 16: 313 – 314.

Pagel, Mark (2012). Evolution: Adapted to culture. *Nature* 482(7385):297 – 299.

Pinker, Steven (2002). *The Blank Slate: The Modern Denial of Human Nature.* London: Penguin Books.

Pollen, Alex A.; Kilik Umut et al. (2023). Human-specific genetics: new tools to explore the molecular and cellular basis of human evolution. *Nature Reviews Genetics* 24:687 – 711.

Racimo, Fernando; Sankararaman, Sriram et al. (2015). Evidence for archaic adaptive introgression in humans. *Nature Reviews Genetics* 16(6):359 – 371.

Reich, David; Green, Richard E. et al. (2010). Genetic history of an archaic hominin group from Denisova Cave in Siberia. *Nature* 468:1053 – 1060

Relethford, John H. (2008). Genetic evidence and the modern human origins debate. *Heredity* 100, 555 – 563.

Samuels, Richard (1998). Evolutionary Psychology and the Massive Modularity Hypothesis. *The British Journal for the Philosophy of Science* 49:575:602.

Sarkar, Sahotra (2015). The genomic challenge to adaptationism. *British Journal for the Philosophy of Science* 66(3):505 – 536.

Sarkar, Sahotra; Tauber, Alfred I. (1991). Fallacious claims for HGP. *Nature* 353: 691.

Smith, Fred H.; Falsetti, Anthony. B.; Donnelly, Steven M. (1989). Modern human origins. *Yearbook of Physical Anthropology* 32:35 – 68.

Smith, Fred H. (2011). Assimilation revisited: Africans, Neandertals and the origins of modern Eurasians. *General Anthropology* 18: 1 – 7.

Stoltzfus, Arlin (1999). On the possibility of constructive neutral evolution. *Journal of Molecular Evolution* 49:169 – 181

Stringer, Chris (2012). What makes a modern human. *Nature* 485:33 – 35.

Templeton, Alan Robert (2007). Genetics and recent human evolution. *Evolution* 61: 1507 – 1519.

Templeton, Alan Robert (2013). Biological races in humans. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 44(3):262 – 271.

Tenesa, Albert; Navarro Pau et al. (2007). Recent human effective population size estimated from linkage disequilibrium. *Genome research* 17(4), 520 – 526.

Varki, Ajit; Geschwind, Daniel H. et al. (2008). Explaining human uniqueness: genome interactions with environment, behaviour and culture. *Nature Review Genetics* 9(10): 749 – 763.

Villa, Paola; Roebroeks, Wil (2014). Neandertal Demise: An Archaeological Analysis of the Modern Human Superiority Complex. *Plos One* 9(4): e96424. https://doi.org/10. 1371/journal.pone.0096424.

West-Eberhard, Mary Jane (2003). *Developmental plasticity and evolution.* New York: Oxford University Press.

Winther, Rasmus Grønfeldt (2022). *Our Genes: A Philosophical perspective on Human Evolutionary genomics.* Cambridge, UK: Cambridge University Press.

Wolf, Aaron B.; Akey, Joshua M. (2018). Outstanding questions in the study of archaic hominin admixture. *Plos Genetics* 14(5): e1007349. https://doi.org/10.1371/journal.pgen.1007349.

Susan Peeters, Marie Soressi, Stine Jensen, Hub Zwart

Close encounters of a human kind

On the need for distinction versus the longing for connection in Neanderthal – Homo sapiens encounters in science fiction

Introduction

From the nineteenth century onward, Neanderthal research provided inspiration for science fiction, exploring a broad range of 'what if' scenarios, suggested by the fossil evidence. Neanderthals coexisted with us more than forty millennia ago (quite recently, from an evolutionary perspective) and we are fascinated by the idea that our ancestors once stood face to face with these familiar strangers. It is this fascination that leads to an urge to novelize, according to Stephen Jay Gould (in Kurtén 1995), 'for a meeting of two truly different human groups is more wonderful than all science fiction' (p15).

In their comprehensive review on Neanderthal research, Papagianni and Morse (Papagianni and Morse 2015) claim that fiction writers often base their stories on minority or out-dated interpretations and stereotypes, so that almost nothing they produce approaches plausibility. A reader who knows only the fictional Neanderthal might believe all Neanderthals worshipped cave bears, had rigidly divided gender roles and elaborate rituals, a canine-like sense of smell and used some sort of telepathic form of communication (p187). Although Papagianni and Morse's overview of the scientific literature is quite impressive, their denigratory comments on Neanderthal science fiction are questionable for two reasons. First of all, palaeoanthropology can likewise be 'tainted' or even hampered by views, narratives, images and prejudices which scientists implicitly or explicitly, consciously or unconsciously endorse. In the tension between paleoanthropological[1] theories (where the word "theory" literally

This publication is part of the project entitled *Neanderthals and "us": how the golden age of Neanderthal research challenges human self-understanding* with file number 406.21.FHR.011 which is financed by the Dutch Research Council (NWO).

1 In this paper, that is part of an interdisciplinary research project entitled *Neanderthals and us*, we use the term "paleoanthropology" rather than "paleoarcheology", as it addresses the narrative of human evolution and the question what makes us human from a philosophical (philosophical anthropology) perspective.

Susan Peeters, **Stine Jensen**, **Hub Zwart**, Erasmus School of Philosophy (ESPhil), Erasmus University Rotterdam, Rotterdam, The Netherlands
Marie Soressi, Faculty of Archaeology, Leiden University, Leiden, The Netherlands

 https://doi.org/10.1515/jbpa-2022-009

means something like vision of viewpoint) and paleoanthropological finds, some theories have proved to be fossil-resistant or even fossil-proof, and shifts in theoretical viewpoints not always involved new fossils, but may also be due to a change of socio-cultural climate, a shift in the narratives in vogue (Lewin 1997). Although we look for windows that give access to the past, Neanderthals often served as mirrors that showed us what we wanted to see (Corbey and Roebroeks 2001). Their story has been described as a parable about insiders and outsiders, savages and the civilized, born out of our wish to see ourselves as more decisively set off from the other animals than we actually are (Cartmill 2012).

Moreover, although there are considerable differences between the novels involved, we will nonetheless conclude that in quite a few Neanderthal novels serious efforts are made to stay in tune with the scientific literature. At the same time, we will argue that 'fiction' or, more generally, imagination, plays a more significant role in Neanderthal science than Papagianni and Morse are willing to acknowledge. The distinction between the domain of fiction and that of facts is not always that clear-cut. Science is a storytelling practice and palaeoanthropology is more imaginative than we might expect. Bones, stones and DNA do not speak for themselves. Scientists bring them to life, using their imagination to explore possible scenarios or interpretations. After all, it takes imagination to look beyond the limitations of what is currently known, and see what could possibly be. Here, the words of Friedrich Nietzsche easily come to mind, who indicated (being trained as a philologist) that, etymologically speaking, the words 'fact' and 'fiction' have similar meanings (Zwart 2019). Fact comes from "facere" (to make), while fiction comes from 'fingere' (to produce with your fingers). Both facts and fictions are fabricated. Facts do not speak for themselves. They have to be interpreted, contextualised, discussed, etc., against the backdrop of an understanding of (a historical narrative about) early human history in vogue at a certain point in time. Both facts and fictions are produced, the former with the help of scientific equipment, but in combination with imagination.

Whereas fossils often raise more questions than they answer, novels can be considered laboratories (Zwart 2008), test-beds for exploring possible scenarios, that may even inspire further research. They may complement the data to construct plausible stories, or question the science and produce an alternative picture. Novels function as spotlights, as they often more explicitly convey stereotypes and ideologies. At the same time, fiction allows us to challenge and rethink the current worldview. It has the capacity to enable its readers to perceive the world and other species in new ways, to step out of the current social configuration and rethink established boundaries (Vint 2012). In this way, literature may function as a complementary source of insight, different rather than deficient, and as a source of inspiration for scientific activities (Zwart 2008).

While we will use academic Neanderthal discourse as a backdrop and frame of reference, we will focus on novels that deal with Neanderthal – Homo sapiens encounters. What happens when humans and Neanderthals meet? What differences or similarities are highlighted, which characteristics are valued, what is silenced? How do writers in

comparison with scientists deal with the ambiguity of Neanderthals, being strange and familiar at the same time, human, but not-us? Explicit attention will be given to literary archetypes such as the role of the exploring, conquering Hero and the opposite side of the archetypical coin, the Orphan, who, abandoned and alone, desires to connect with others and seeks a sense of belonging. This captures a basic ambivalence in establishing identity: the desire to distinguish ourselves versus the longing for connection. An ambivalence that is also relevant for scientific paleoanthropological discourse. Like primatology, which according to Donna Haraway is 'about the construction of self from the raw material of other' (Haraway 1989), palaeoanthropology is concerned with the identity of our own species. Paleoanthropologists are policing and at the same time questioning the boundary between humans and nonhumans, thereby defining and redefining what it means to be human (Cartmill 1990; Roebroeks 1995). In other words, we aim to contextualize Neanderthal science, by indicating how its guiding questions and concerns are actually part of a broader cultural context. The discussion about Neanderthals, we will argue, eventually reveals the need for a reconsideration of established views concerning the role and place of human beings.

The evolution of the encounter in prehistoric fiction

With the discovery of the first 'fossil men' and the publishing of Darwin's *The Origin of Species* (Darwin 1859), the debate during the second half of the 19th century was mostly anthropocentric. How did these findings fit into the tale of human evolution or even human progress? Were these extinct species our ancestors, a missing link between apes and humans, or modern humans with an abnormality, as Rudolf Virchow (1821–1902) argued, who believed that the Neanderthal remains discovered near Düsseldorf belonged to a Homo sapiens, whose deformations were caused by rickets in childhood and arthritis later in life.

In 1861, the posthumously published novel by the French botanist and geologist Pierre Boitard (Boitard 1861) shows what is probably the earliest image of prehistoric man in popular culture (see fig. 1). Boitard describes the 'missing link' as a horrible and brutal species. Although it is a fictional time travel story, it is also a narrative loosely based on Darwin and aiming to describe scientifically the development of the earth and the existence of ape-like fossil men as our ancestors. Set within a framework of fantasy, to be safe from attacks from religious authorities. Fiction here preceded science, as Boitard died in the year *The Origin of Species* was published.

In H.G. Wells' short story *The Grisly Folk* (Wells 2016), published in 1921, the Neanderthal as the prototypical beastly cavemen was pushed to the extreme. Wells paints a picture of the meeting between 'the things that were like men and yet were not men' and the 'true men' that appeared in Europa twenty or thirty thousand years ago. In his story, the Neanderthal is not our ancestor, but a fearsome animal, vanquished by the superior true men. The Neanderthals were stupid, ugly, strong, speechless and solitary

Figure 1: Frontispiece from Boitard 1861.

beasts, who walked with a slouch and ran like a baboon, could not laugh, and preyed on the children of true men.

In the 1950's, the Neanderthal image completely changed. The second half of the twentieth century gave rise to more "anthropomorphic" interpretations of Neanderthals, although primitive stereotypes continued to exist. A major influence was the acceptance of even more 'savage' human ancestors like Homo heidelbergensis and the apish Australopithecus. There was tangible evidence of human antiquity and Neanderthals now seemed much more familiar and less threatening (Trinkaus and Shipman 1993). Moreover, the emergence of the Modern Synthesis (Huxley 1942), which combined genetics with Darwinian natural selection and encouraged lumping of taxonomic categories, together with the debunking of the Piltdown man, cleared the way for the Neanderthal as our ancestor again. William Golding's *The Inheritors* (Golding 1955) appeared after the re-examination of the Chapelle-aux-Saints skeleton and the scientific rehabilitation of Neanderthals. It is the first psychological prehistoric fiction written from the point of view of the Neanderthals. Starting with a quote from Wells, who describes the Neanderthals as monsters, the book is evidently a comment on Well's earlier story. Golding takes us inside a furry, loving, harmless, naive, and childlike being. An endangered species of vegetarians, hunted down by the 'new people'. These thin white people attempt to control the world and kill the 'red devils' (Neanderthals) whom they fear. At the end the last Neanderthal, a baby, referred to as the 'devilish brat', is integrated into the band of modern humans. Although the Neanderthals are

now 'noble' instead of brutish savages, the dichotomy 'same' and 'other' and the relentless enmity between them is unmodified.

A major issue during the 1970s was the question whether Neanderthals were our ancestors or an evolutionary dead-end. Debates between advocates of the 'replacement model', which suggested complete replacement of Neanderthals by invading modern humans, and the 'multiregional model', suggesting regional populations of hominids evolving into modern humans through gene flow and selective pressure, were intense (Trinkaus and Shipman 1993). Replacement without admixture was the general scientific consensus however, and it was only in 1996 that the first article providing evidence for long term coexistence and interactions between the first modern humans and the last Neanderthals in Europe was published (Hublin et al. 1996). In 1980 two novels appeared that explored this coexistence, *Dance of the Tiger* by palaeontologist Bjorn Kurten (the English translation, the original Finnish version was published in 1978) (Kurtén 1995), and Jean Auel's world-famous *The Clan of the Cave Bear* (Auel 1980), that was based on extensive paleoanthropological research. In both novels Neanderthals are presented as comparable to modern humans, although there are differences in character and behaviour. Kurten starts by explaining how he wanted to write a novel because he "felt there is much to be told that simply cannot be formulated in scientific reports', like 'what was it like to meet humans not of your own species?". Kurten describes how a Homo sapiens man, the sole survivor of his tribe, lost and wounded, falls in love with a Neanderthal woman, leader of the Neanderthal clan who rescue him. While for Kurten the differences between Neanderthals and modern humans are superficial, and the extinction of the Neanderthals is caused by interbreeding causing infertile hybrids, Auel's Neanderthals are genuinely a separate species, who are more spiritual and more closely connected to the past, doomed to extinction because of their conservatism. Protagonist Ayla is orphaned at age five after an earthquake, and adopted by a Neanderthal clan. As one of 'the Others', Ayla is physically and intellectually more evolved than the people of the clan, and she struggles to fit in and confirm to the rigid gender norms. She realizes that the clan is oppressive and incapable of change. As Ayla is cast out at the end of the novel, she sets off to to find 'the Others'. Although *Dance of the Tiger* is a love story, the book was not as appealing to the non-specialist reader as was Auel's *Clan of the Cave Bear* and its sequels, who are now considered to be the start of a new subgenre, the prehistoric romance (Ruddick 2012).

Separate and superior, a heroic master identity

Although there are many differences in terms of detail, we do notice some key characteristics which all these Neanderthal novels share to some extent. For instance, all novels at a certain point stage an encounter between 'them' and 'us', between conservative Neanderthals and humans who introduce instances of cultural, behavioural or technical innovation. The division of roles also is remarkably predictable. Humans are explorers or pioneers, entering a territory unknown to them. They seem threatened at first,

but all obstacles (notably the most threatening obstacle, the Neanderthals) are overcome and modern humans emerge from the confrontation as victors. In other words, the humans-Neanderthals encounter follows the hero script. Hackett and Dennell (Hackett and Dennell 2003) analysed well-known works of fiction that focus on the interaction between Homo sapiens and Neanderthals (*The Grisly Folk*, *The Inheritors*, *Dance of the Tiger*, *Clan of the Cave Bear*), showing that the Homo sapiens characters represent the collective hero in a story of struggle and transformation, following Landau's 'hero' narrative (Landau 1984; 1993). This narrative features an initially unassuming hero who departs on a journey of exploration, receives essential aid or equipment from a donor figure, goes through a series of tests and transformations, and finally arrives at a higher (that is, more human) state. The emphasis is on progress in the face of challenges and obstacles, and a sense of purpose. The deficit of Neanderthals is that they do not seem to share this idea of goal-directed progress, which is not only the cause of their own destruction but also serves to highlight the innate superiority of modern humans. A similar narrative structure, with the implicit conclusion that it is better for the world that they died out, could be discerned in academic arguments. According to Hackett and Dennell, the most popular archaeological narratives deal with direct Neanderthal-modern human contact as the primary cause of Neanderthal extinction: such stories appeal to our sense of progress, they explain the nature and purpose of our species, and they reaffirm our uniqueness. We use narrative to separate ourselves from the rest of nature, where the latter includes Neanderthals.

Over the last 20 years, developments in ancient DNA techniques have revolutionized the study of the deep past, making it possible to reconstruct the nuclear Neanderthal genome (Green et al. 2010). This suggested gene flow from Neanderthals into modern humans, implying that, rather than becoming extinct, part of their DNA lives on in people today. Although Neanderthals are now generally included as 'fundamentally human', the quest for a signifying difference, separating them from us continues (Peeters and Zwart 2020). While the details of human origins (e. g. when, where, who) have changed radically over time, the ordering of superior and inferior is more or less left unchanged through the history of the discipline, presenting human evolution as a narrative of the superior Homo sapiens, with male domination at its core (Athreya and Ackermann 2020; Villa and Roebroeks 2014). The assumption that domination through destruction is part of human nature is also present in Yuval Harari's bestseller *Sapiens, A Brief History of the World* (Harari 2015; Bayless 2022). He describes the tension between distinction and connection – "They [Neanderthals] were too familiar to ignore, but too different to tolerate" – as a motivation for what may have been "the first and most significant ethnic-cleansing campaign in history" (p18).

According to philosopher and ecofeminist Val Plumwood, who is known for her critical assessment of anthropocentrism, the master story of western culture sees history in terms of conquest and control, appropriation and exploitation, destruction and incorporation (Plumwood 1993). The basis of this lies in a hyperseparated conception of the human, seeing the essentially human as part of a radically separate and higher order of reason, mind or consciousness, set apart from the lower order of naturalness,

where agency and intelligence are lacking and which comprises the body, the woman, the animal and the pre-human. It is a hierarchical conceptual system for sorting, organizing and understanding the world around us, an effective way to position ourselves and orient our research practices, providing a symbolical order, but also an intellectual basis for human-centeredness and domination, making the latter seem inevitable, self-evident and natural. It creates an illusion of autonomy, agency, and isolation. Humans place themselves in the centre as the source of value or meaning, and all others derive their value or disvalue ultimately from their relationship or lack of relationship to this centre. This master identity is gendered, moreover, as the category of the feminine is constructed in a hierarchical opposition to that of masculinity: the terms on the higher side of the binaries being associated with, and serving to define, masculinity, while those on the lower side are associated with, and serve to define, femininity (Freya Mathews 2017). Our ideas and ideals of maleness and femaleness have been formed within these structures of dominance, in which maleness is equated with superiority, and the dominance of the masculine is naturalized and legitimized. While the master identity is gendered, it is not exclusively male, and particularly revolves around a conception of reason on the one hand and nature on the other. It is a dominator identity, that has a pre-established fit with a certain class of men, historically speaking the class of educated white males (Freya Mathews 2017). It depends on the context however, in a palaeolithic context, a female Homo sapiens might assume the master identity relative to Neanderthals, who will be constructed as irrational and closer to nature.

Our view of Neanderthals has changed during the last decades. This is partly due to new discoveries, but also to our changing narratives and self-images. Paleoanthropology has been driven by the question 'when and why did we break away from the rest of the animal world?' (Lewin 1997), looking for the human mark or spark that separates us. According to Matt Cartmill a large part of what draws people to the study of human origins is the hunger for mythological charters; origin stories that justify our moral judgments about the nature and status and dignity of Man. "We want our origin myths to confirm that human beings are special and tell us what it means to be human" (Cartmill 2002, p196).

The hero archetype

The stories that shape our lives are rarely radically new ones. Most stories are reworkings of myths that are deeply ingrained in human culture, models to understand ourselves and the world around us. The myth of the hero is the most common and best known myth in the world, according to comparative mythology expert Joseph Campell, whose research was inspired by the work of C.G. Jung, notably his concept of archetypes (Campbell 2008).

Already as a psychiatrist working at the famous Burghölzli mental hospital near Zürich, Carl Gustav Jung (1875–1961) became interested in correspondences between

experiences of hospitalised patients and ancient religious or mythological motifs, and this resulted in his core theorem: the collective unconscious, the archaic psychic realm of collective 'complexes' or 'archetypes'. The archetype concept guided Jung's analysis of textual materials, his style of reading, e. g., his interpretation of novels. While Freud and his followers approached documents from a psychopathological perspective (focussing on pathological symptoms of characters or authors or both), Jung apprehends textual materials from a different angle, focussing on the core archetypal ideas at work in them. According to Jung, archetypes can be discerned in the myths of ancient cultures, but also in the dreams, drawings and paintings produced by modern patients, as well as in literary novels, and even in scientific papers. They function like *a priori* templates. They are both *nature* and *nurture* if you like, in the sense that they are key components of our cognitive system, but also key ingredients of our cultural heritage, our socio-cultural environment (Jung 1959; Zwart 2020). The collective unconscious (the aggregate of archetypes) is both a psychic and a cultural concept. Archetypes are congenital mental structures which are activated by experience, by culture. This explains both the tenacious continuity of their basic structure as well as their capacity to evolve. The Mother Earth archetype, for instance, conveys the idea of planet Earth as a living ("maternal") body: a superorganism desiring to bring forth and foster life, an idea which fell into disrepute, but resurged in the Gaia hypothesis (Zwart 2020). But we may also recognise the contours of the Mother archetype in views of Africa as the "cradle" or mother continent of humankind, or in Lucy (the Australopithecus afarensis woman whose skeletal remains were unearthed in 1974) as the 'mother' of humankind. The hero archetype is a motif based on overcoming obstacles (e. g., overcoming monsters of darkness) and achieving challenging goals. In the case of the hero, the mother is often deceased or absent, so that heroes typically commence their journey as orphans. This applies for instance to Siegfried, the hero in the *Ring des Nibelungen*, the orphan whose mother died and who kills the dragon to acquire the infamous ring. Initially he is a blacksmith apprentice, put to work in a forest smithy to extract and liquify metals from Mother Earth.

Jung saw the hero myth as reflecting a stage of development, guiding the transition to adulthood (Meier 2021). Hero stories can in many ways be seen to present a cultural model of ideal human development (Doty 2000). The archetypical hero, proposed by Jung and further developed by Erich Neumann (Neumann 1954) and Joseph Campbell, is an active, creative, courageous protagonist. He is not aggressive, but nonetheless ready for battle and conflict when challenged, if only to discover that such conflicts are basically confrontations with the unconscious. It is a classic solar hero who symbolises daybreak, crosses thresholds and confronts the monster, the demonic, the instinctive within himself, and even when dark clouds gather, he does not succumb. He does not let himself be dissuaded by his fears and doubts or from feelings of guilt and grief; he lives through them. He is neither afraid of experiencing feelings of weakness, nor does he ultimately allow himself to give in. He endures frustration, loneliness, and rejection and follows his conscience and inner compass, his internalised values. Hero stories follow a separation-initiation-return cycle. Campbell describes how "a hero ven-

tures forth from the world of common day into a region of supernatural wonder… fabulous forces are there encountered and a decisive victory is won… the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man" (Campbell 2008, 45).

Problems with the hero narrative

The hero narrative is problematic in several ways. First of all from a scientific point of view, where the evidence of coexistence and admixture is showing a more complicating picture than that of linear progression while overcoming 'inadequate' Neanderthals. DNA evidence reveals a network of connections, described by paleoanthropologist John Hawks as a 'muddy river delta' (Hawks 2016). And recent genetic evidence and archaeological data show that Neanderthals and their modern humans contemporaries were very similar in biological and cultural capacities (Roebroeks and Soressi 2016). The predominant opinion now appears to be that, yes, Neanderthals were people like us, 'our equal in humanity' (Papagianni and Morse 2015: p.13).

Furthermore, the hero narrative generally lacks diversity. The hero's journey is a journey to the self, producing the core realization of the most profound human questions, e.g., who am I? It is not a template for gender roles, yet careful examination of the central human agent shows it is consistently 'male'. Heroism is assigned almost exclusively to men. Analysing Campbell's hero, feminist theorists Pearson and Pope note that, while Campbell initially declares that the hero is universal, he 'then proceeds to discuss the heroic pattern as male and to define the female characters in terms of auxiliary roles, almost always defined in contrast or relation to the active hero. She 'represents' something for him (Nicholson 2011; C. Pearson and Pope 1981).

According to Jung, all humans have a masculine and a feminine side. What characterizes the feminine consciousness is a tendency and capacity for personal relating, in combination with receptivity and openness, while the conscious masculine orientation is dominated by detachment and objectivity. They constitute two halves of a whole, and becoming a whole person entails integrating the unconscious side into consciousness. The two parts should balance each other, but usually, one is developed more dominantly. Most cultures and societies have placed more value on masculine aspects. The dominance of the masculine is so deeply embedded in our culture and language that it is virtually impossible to conceive the world in any other way. Structures of binary opposition have organised our thinking and turned woman into the negative of man.

In *Clan of the Cave Bear*, Jean Auel created the heroine that she didn't have when she was growing up, a woman who is not sitting around for someone to come and save them (Auel 1986). Protagonist Ayla has all the main qualities associated with traditional male heroes, like courage, physical strength, stoicism, independence. This was something that appeared to be difficult to imagine. In 1949, in the major feminist text of the second wave of feminism, *The Second Sex*, Simone de Beauvoir states that prehistoric woman was submitted passively to her biological fate, like domestic animals, ex-

ploited until their death by men for their labour and reproductive capacities (de Beauvoir 2011). When in 1986 the film *Clan of the Cave Bear* was released, based on the novel, the famed film critic Roger Ebert wrote that the movie 'approaches those times with a modern sensibility. It shows us a woman winning respect from a patriarchal tribe, when, in reality, the men would have just banged her over the head real good. It isn't grim enough about what things were probably like back then.'(Ebert 1986)

As Carol S. Pearson observes, what we imagine immediately when we think of the hero really is only one heroic archetype; the Warrior (C. S. Pearson 1989). In palaeoanthropology this is a well-known archetype, corresponding to Man the Hunter who, according to Lacy and Ocobock is a 'Paleo-fantasy' that continues to dominate the literature (Lacy and Ocobock 2023). There is however little concrete fossil or archaeological evidence of gender roles in the deep past, and it does not necessarily correspond to contemporary gender patterns (Fuentes 2021; Nowell and Chang 2014; Coltofean-Arizancu, Gaydarska, and Matić 2021; Lacy and Ocobock 2023; Ocobock and Lacy 2023). Recently, the discovery of ancient female big-game hunters highlights uncritical assumptions about past gender roles (Haas et al. 2020). Another recent example from a stereotyped group in prehistory is the genomic confirmation that the individual buried in a 'archetypal' high-status Viking age warrior grave was not biologically male – as had been assumed since its excavation in 1878 – but female (Hedenstierna-Jonson et al. 2017; Price et al. 2019).

In recent decades a lot of justified attention has been given to rejecting the identity of helpless victims by women, reclaiming power and agency. There has been far less attention however, for reflection on masculinity, and the perils of an identity of heroic masculinity are often less obvious (Kipnis 1994). And although the core pattern of an archetype is tenacious, the archetype nonetheless evolves and continuously changes its shape. According to Meier (Meier 2021), for instance, the hero of today is no longer the shining hero who fights obscurity, who selflessly stands up for the good, but increasingly a negative hero who disrupts. These are narcissistically wounded heroes, who, in Jungian terms, do not confront their shadow but project it onto others, they identify with the demons, are marked by a desire for destruction and revenge as such and are unable to retrieve their values and be transformed. In their quest for identity through heroic autonomy, the current hero is often excessively narcissistic – solitary and self-involved – and lacking connection to his vulnerability (Kipnis 1994). They are immature heroes, driven by the need to assert their individual needs and desires in the world. And although having ego strength is important for the process of individuation, the letting go of it is equally important, being willing and able to sacrifice it for the greater good (Byrne 2000). As described by Robert Segal (in Byrne, 2000, p. 37): "A Jungian hero would return home humbled rather than elevated, wary rather than brash, the saved rather than the saviour."

Additionally, in contemporary culture, facing climate change and global disruption, the archetype of the exploring, invading, conquering male hero has reached its limits and lost its credibility. It has become a symbol or symptom of something we must strive to overcome. The 'heroic identity' may once have been functional for the dominance

and expansion of Western civilisation, in the age of global ecological crisis it is highly dysfunctional, and ultimately suicidal (Plumwood 2002).

The other side of the story, the orphan archetype

In her famous TED Talk *The Danger of a Single Story,* novelist Chimamanda Ngozi Adichie explains the risk of the single story, the one perspective. "The single story creates stereotypes", she contends, "and the problem with stereotypes is not that they are untrue, but that they are incomplete" (Adichie 2009). As was already suggested by Landau (Landau 1993) and Hackett and Dennell (Hackett and Dennell 2003), we need different stories, instead of merely retelling the same hero-centred linear story, narrative structures that perpetuate a masculinity rooted in superiority. Stories that manifest a deeper kind of belonging, broadening the 'us-unit', to include other species, not to mention women, children, and those human groups who have been largely left out of Western accounts. Therefore, the hero archetype is not merely a topic for literary studies, it has acquired global societal relevance. Can our guiding narratives be reframed? Can the story of human history be reframed on the basis of a more inclusive narrative, where otherness is acknowledged as self, in other words where the binary logic of masculine versus feminine, self versus other, human versus not-quite-human is overcome? Now that we have recognised the hidden destructive aspect of the hero archetype, resulting in the undoing of woman, of other species, of 'others', can we become more open to a different narrative which focusses on collaboration and dependence, where difference no longer equals 'negation' and hierarchy?

Archetypical symbols are double-edged swords, and all aspects of the archetype are counterbalanced by their opposites. The hero archetype is inextricably linked to the orphan archetype, they represent both sides of the same archetypal coin. Heroes typically commence their journey as orphans, feeling abandoned and misunderstood, followed by an inflationary stage characterised by arrogance and the conviction that one is something extraordinary (Isaac 2008). We find it interesting to consider this link because the orphan reveals the hero as someone who is vulnerable and dependent, – on woman and other 'others'. Could the figure of the orphan point to other possibilities which are often overlooked in the archetypal hero myth?

In contemporary Western culture the orphan predominantly figures in children's books and films. According to Isaac (Isaac 2008) this might be the only way the independent heroic western spirit can address its inherently vulnerable orphaned condition. These orphan characters are suggested to symbolize the 'pain of isolation' (Kimball 1999) and 'rootlessness of our times' (Isaac 2008), and to compensate for some sort of cultural imbalance (Babb 2006; Punnett 2014). The orphans are separated from their roots and characterized by abandonment and aloneness. They are longing for home, in search of wholeness, and want to connect, be accepted and understood. There is a feeling of unworthiness, comingled with a feeling of guilt, the archaic guilt for being alive. In the story of the orphan, there is a strong emphasis on inferi-

ority, on un-fitness. This is already an interesting aspect because it suggests, in Jungian terms, that the hero's self-confidence or even megalomania is actually a compensation or even overcompensation for a primal experience of inferiority, while the hero's autonomy seem to compensate a more fundamental experience of abandonment.

We idealize Western masculinity as embodied in the archetype of the Hero. In their quest for identity through heroic autonomy, heroic males tend to split off their feeling function (Kipnis 1994). According to psychoanalytic theory, male individuality emerges from rejecting his early identification with the mother. This need to disidentify with the mother can become inextricably entangled with a refusal or rejection of all that is considered feminine. Masculinity then becomes confirming that women are what men do not want or dear to be; vulnerable, dependent. The disidentification with the feminine and denial of vulnerability and dependency go hand-in-hand with a fantasy of sovereignty.

Concluding remarks: Changing the master story by identifying the orphan within

In establishing identity, a core conflict involves the need for self-assertion coupled with the longing for connection. By emphasising the importance of connectedness, the figure of the Orphan may function as a counterbalance to an inflated heroic view of early human history. The ambivalence between distinction (the desire to distinguish ourselves) and connection (the need for connectedness) is also at work in the academic literature, albeit less visible. This means that we can use novels to highlight a tension that is relevant for scientific paleoanthropological discourse as well, allowing us to explicate an aspect of science that in academic literature remains implicit but is nonetheless noticeable. Neanderthal novels reveal the shifts that have occurred in our views on Neanderthals in terms of different or similar, deficient or superior, strange or familiar. Stories can therefore reflect and reveal current anxieties and preoccupations, as well as implicit biases underlying our ideas and ideals of human and humanness, allowing us to understand them more fully.

The fascination for Neanderthals that novelist share with researchers is that they, being human but 'not-us' at the same time, provide a way of defining ourselves by contrasting what it means to be 'us' as opposed to 'them'. We try to understand Neanderthals in terms of their humanity, but confirm our own identity by emphasising the difference between us and them. Defining your identity typically means setting yourself apart from otherness, as Hegel extensively argued, quoting Spinoza's famous dictum that "all determination is negation" (Hegel 1812, p122). We determine our identity by contrasting ourselves with something or someone else who is said to *lack* something which "we" allegedly have. In other words, efforts to identify humanness with some particular features (be it symbolic behaviour, language, innovation, etc.) means *denying* this distinguishing feature to others. Neanderthals are thus usually seen of interest pri-

marily in relation to ourselves, both in novels as in academia, and the focus of attention is on the encounter of late Neanderthals with early modern humans (Hackett and Dennell 2003).

Our self-narrative aims to explain, but also to justify who we are. The prevailing story is one of struggle and competition, of winners and losers. Our self-image is archetypically masculine; competitive and egocentric. Care, community, belonging have been eliminated from our collective values and institutions. Separation from and domination of nature (and those associated with nature, like women, ancient humans, indigenous peoples) is a mark of Western culture. But 'masters of the universe' suffer from a false sense of autonomy and invulnerability, and run the risk of losing their ability to empathise with others. They believe security can be found on the individual level, in tightening control over the hyper-separated and subordinated other (Plumwood 2002). The problem is that the sense of power and autonomy is illusory, and it obscures a real and radical dependency on the Other. Dependency is not a threat but a prerequisite to and component of autonomy, there is no such thing as total independence. To transform our narcissistic search for the self (i. e., seeking confirmation of our view of ourselves as exceptional and superior) into a meaningful quest for identity, we need to relinquish the heroic attitude so prevalent in our culture and identify the orphan within (Isaac 2008). We should not only value power and agency, but also powerlessness, dependency and vulnerability. Rather than on the individual level, we can find security and comfort in the collective, in achieving mutuality based on our interconnected needs.

If we are to survive the Anthropocene, we need a different kind of storytelling. Stories about connectedness, rather than separation, focusing on collaboration and dependence, where difference no longer equals 'negation' and hierarchy. We have to retrieve our roots in the sense of connectedness and belonging. And one way of doing so is to develop a more inclusive understanding of early human history. The hero's autonomy is a response to deprivation and isolation, but rather than trying to secure heroic autonomy at the expense of otherness, we should acknowledge our rootedness and continuous dependence on otherness.

References

Adichie, Chimamanda Ngozi. 2009. "The Danger of a Single Story." Ted talk. https://www.ted.com/talks/chimamanda_ngozi_adichie_the_danger_of_a_single_story#t-1796.

Athreya, Sheela, and Rebecca Rogers Ackermann. 2020. "Colonialism and Narratives of Human Origins in Asia and Africa." In *Interrogating Human Origins: Decolonisation and the Deep Past*, edited by Martin Porr and Jacqueline M. Matthews, 72 – 95. Abingdon, Oxon: Routledge.

Auel, Jean M. 1980. *The Clan of the Cave Bear.* New York: Crown.

Auel, Jean M. 1986. "Jean Auel – Interviews and Memories." Don's Maps. 1986. https://www.donsmaps.com/auel.html.

Babb, Linda Jo Anne. 2006. "The Orphan Archetype in Folk and Fairy Tales." *ProQuest Dissertations and Theses.* M.A., Ann Arbor: California State University, Dominguez Hills. 304936664. ProQuest

Dissertations & Theses Global. https://www.proquest.com/dissertations-theses/orphan-archetype-folk-fairy-tales/docview/304936664/se-2?accountid=13598.

Bayless, Laurel. 2022. "Defining Humanity in the Popular Imagination: The Neanderthal and the Early Modern Human in H.G. Wells and Yuval Noah Harari." *Geographical Bulletin – Gamma Theta Upsilon* 63 (May): 87 – 96.

Beauvoir, Simone de. 2011. *The Second Sex.* New York: Vintage Books, Random House.

Boitard, Pierre. 1861. *Etudes Antédiluviennes. Paris Avant Les Hommes: L'Homme Fossile, Etc.* Passard.

Byrne, Mark Levon. 2000. "Heroes and Jungians." *The San Francisco Jung Institute Library Journal* 18 (3): 13 – 37. https://doi.org/10.1525/jung.1.2000.18.3.13.

Campbell, Joseph. 2008. *The Hero with a Thousand Faces.* Vol. 17. New World Library.

Cartmill, Matt. 1990. "Human Uniqueness and Theoretical Content in Paleoanthropology." *International Journal of Primatology* 11 (3): 173 – 92.

Cartmill, Matt. 2002. "Paleoanthropology: Science or Mythological Charter?" *Journal of Anthropological Research* 58 (2): 183 – 201.

Cartmill, Matt. 2012. "Primate Origins, Human Origins, and the End of Higher Taxa." *Evolutionary Anthropology: Issues, News, and Reviews* 21 (6): 208 – 20.

Coltofean-Arizancu, Laura, Bisserka Gaydarska, and Uroš Matić, eds. 2021. *Gender Stereotypes in Archaeology. A Short Reflection in Image and Text.* Leiden: Sidestone Press.

Corbey, Raymond, and Wil Roebroeks. 2001. *Studying Human Origins: Disciplinary History and Epistemology.* Vol. 6. Amsterdam University Press.

Darwin, Charles. 1859. *On the Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life.* London: John Murray.

Doty, William G. 2000. *Mythography: The Study of Myths and Rituals.* University of Alabama Press.

Ebert, Roger. 1986. "The Clan Of The Cave Bear." *RogerEbert.Com* (blog). 1986. https://www.rogerebert.com/reviews/the-clan-of-the-cave-bear-1986.

Freya Mathews. 2017. "The Dilemma of Dualism." In *Routledge Handbook of Gender and Environment*, edited by Sherilyn MacGregor, 54 – 70. Abingdon, Oxon: Routledge. https://doi.org/10.4324/9781315886572.ch3.

Fuentes, Agustín. 2021. "Searching for the 'Roots' of Masculinity in Primates and the Human Evolutionary Past." *Current Anthropology* 62 (S23): S13 – 25. https://doi.org/10.1086/711582.

Golding, William. 1955. *The Inheritors.* London: Faber and Faber.

Green, Richard E., Johannes Krause, Adrian W. Briggs, Tomislav Maricic, Udo Stenzel, Martin Kircher, Nick Patterson, Heng Li, and Weiwei Zhai. 2010. "A Draft Sequence of the Neandertal Genome." *Science* 328 (5979): 710 – 22.

Haas, Randall, James Watson, Tammy Buonasera, John Southon, Jennifer C. Chen, Sarah Noe, Kevin Smith, Carlos Viviano Llave, Jelmer Eerkens, and Glendon Parker. 2020. "Female Hunters of the Early Americas." *Science Advances* 6 (45): eabd0310. https://doi.org/10.1126/sciadv.abd0310.

Hackett, Abigail, and Robin Dennell. 2003. "Neanderthals as Fiction in Archaeological Narrative." *Antiquity* 77 (298): 816 – 27. https://doi.org/10.1017/S0003598X00061755.

Harari, Yuval N. 2015. *Sapiens: A Brief History of Humankind.* First U.S. edition. New York: Harper.

Haraway, Donna Jeanne. 1989. *Primate Visions: Gender, Race, and Nature in the World of Modern Science.* New York: Routledge.

Hawks, John. 2016. "Human Evolution Is More a Muddy Delta than a Branching Tree." *Aeon.* 2016. https://aeon.co/ideas/human-evolution-is-more-a-muddy-delta-than-a-branching-tree.

Hedenstierna-Jonson, Charlotte, Anna Kjellström, Torun Zachrisson, Maja Krzewińska, Veronica Sobrado, Neil Price, Torsten Günther, Mattias Jakobsson, Anders Götherström, and Jan Storå. 2017. "A Female Viking Warrior Confirmed by Genomics." *American Journal of Physical Anthropology* 164 (4): 853 – 60. https://doi.org/10.1002/ajpa.23308.

Hegel, Georg Wilhelm Friedrich. 1812. *Wissenschaft Der Logik I. Erster Teil: Die Objektive Logik. Erstes Buch.* Gesammelte Werke 5. Frankfurt am Main: Suhrkamp.

Hublin, Jean-Jacques, Fred Spoor, Marc Braun, Frans Zonneveld, and Silvana Condemi. 1996. “A Late Neanderthal Associated with Upper Palaeolithic Artefacts.” *Nature* 381 (6579): 224 – 26. https://doi.org/10.1038/381224a0.

Huxley, Julian. 1942. *Evolution. The Modern Synthesis.* London: Allen and Unwin.

Isaac, Judy Louise. 2008. “Individuation and the Orphan Archetype: A Phenomenological Study.” *ProQuest Dissertations and Theses.* Ph.D., Ann Arbor: Pacifica Graduate Institute. 304824879. ProQuest Dissertations & Theses Global. https://www.proquest.com/dissertations-theses/individuation-orphan-archetype-phenomenological/docview/304824879/se-2?accountid=13598.

Jung, Carl Gustav. 1959. *Archetypes and the Collective Unconscious.* Collected Works IX. London: Routledge & Kegan Paul.

Kimball, Melanie A. 1999. “From Folktales to Fiction: Orphan Characters in Children’s Literature.” *Libr. Trends* 47.

Kipnis, Aaron. 1994. “Men, Movies, & Monsters: Heroic Masculinity as a Crucible of Male Violence.” *Psychological Perspectives* 29 (1): 38 – 51. https://doi.org/10.1080/00332929408404815.

Kurtén, Björn. 1995. *Dance of the Tiger: A Novel of the Ice Age.* Univ of California Press.

Lacy, Sarah, and Cara Ocobock. 2023. “Woman the Hunter: The Archaeological Evidence.” *American Anthropologist* 0 (0): 1 – 13. https://doi.org/10.1111/aman.13915.

Landau, Misia. 1984. “Human Evolution as Narrative: Have Hero Myths and Folktales Influenced Our Interpretations of the Evolutionary Past?” *American Scientist* 72 (3): 262 – 68.

Landau, Misia. 1993. *Narratives of Human Evolution.* New Haven: Yale University Press.

Lewin, Roger. 1997. *Bones of Contention: Controversies in the Search for Human Origins.* New York: Simon and Schuster.

Meier, Isabelle. 2021. “The Classic, Banished, and Negative Hero.” *Jung Journal* 15 (1): 36 – 48. https://doi.org/10.1080/19342039.2021.1862593.

Neumann, Erich. 1954. *The Origins and History of Consciousness.* Translated by R. F. C. Hull. Princeton University Press. https://doi.org/10.2307/j.ctvx5wbkw.

Nicholson, Sarah. 2011. “The Problem of Woman as Hero in the Work of Joseph Campbell.” *Feminist Theology* 19 (2): 182 – 93. https://doi.org/10.1177/0966735010384331.

Nowell, April, and Melanie L Chang. 2014. “Science, the Media, and Interpretations of Upper Paleolithic Figurines.” *American Anthropologist* 116 (3): 562 – 77.

Ocobock, Cara, and Sarah Lacy. 2023. “Woman the Hunter: The Physiological Evidence.” *American Anthropologist* 0 (0): 1 – 12. https://doi.org/10.1111/aman.13915.

Papagianni, Dimitra, and Michael A. Morse. 2015. *The Neanderthals Rediscovered: How Modern Science Is Rewriting Their Story.* Revised and Updated Edition. London: Thames and Hudson.

Pearson, Carol, and Katherine Pope. 1981. *The Female Hero in American and British Literature.* New York: Bowker.

Pearson, Carol S. 1989. *The Hero within: Six Archetypes We Live By.* San Francisco: Harper & Row.

Peeters, Susan, and Hub Zwart. 2020. “Neanderthals as Familiar Strangers and the Human Spark: How the ‘Golden Years’ of Neanderthal Research Reopen the Question of Human Uniqueness.” *History and Philosophy of the Life Sciences* 42 (3): 33. https://doi.org/10.1007/s40656-020-00327-w.

Plumwood, Val. 1993. *Feminism and the Mastery of Nature.* London: Routledge.

Plumwood, Val. 2002. *Environmental Culture: The Ecological Crisis of Reason.* Environmental Philosophies Series. London; Routledge. http://catdir.loc.gov/catdir/enhancements/fy0649/2001049107-d.html.

Price, Neil, Charlotte Hedenstierna-Jonson, Torun Zachrisson, Anna Kjellström, Jan Storå, Maja Krzewińska, Torsten Günther, Verónica Sobrado, Mattias Jakobsson, and Anders Götherström. 2019. “Viking Warrior Women? Reassessing Birka Chamber Grave Bj. 581.” *Antiquity* 93 (367): 181 – 98.

Punnett, Audrey. 2014. *The Orphan: A Journey to Wholeness.* Fisher King Press.

Roebroeks, Wil. 1995. “‘Policing the Boundary’? Continuity of Discussions in 19th and 20th Century Palaeoanthropology.” In *Ape, Man, Apeman: Changing Views since 1600*, edited by Raymond Corbey and Bert Theunissen, 173 – 81. Leiden: Department of Prehistory, Leiden University.

Roebroeks, Wil, and Marie Soressi. 2016. “Neandertals Revised.” *Proceedings of the National Academy of Sciences* 113 (23): 6372 – 79.

Ruddick, Nicholas. 2012. *Fire in the Stone: Prehistoric Fiction from Charles Darwin to Jean M. Auel.* Wesleyan University Press.

Trinkaus, Erik, and Pat Shipman. 1993. *The Neandertals: Changing the Image of Mankind.* New York: Alfred A. Knopf.

Villa, Paola, and Wil Roebroeks. 2014. “Neandertal Demise: An Archaeological Analysis of the Modern Human Superiority Complex.” *PloS One* 9 (4): e96424.

Vint, Sherryl. 2012. *Animal Alterity: Science Fiction and the Question of the Animal.* Vol. 39. Liverpool University Press.

Wells, Herbert George. 2016. *The Grisly Folk.* Read Books Ltd.

Zwart, Hub. 2008. “Understanding Nature: Case Studies in Comparative Epistemology.” *The International Library of Environmental, Agricultural and Food Ethics* 13.

Zwart, Hub. 2019. “Fabricated Truths and the Pathos of Proximity.” *Foundations of Science.* https://doi.org/10.1007/s10699-019-09599-3.

Zwart, Hub. 2020. “Archetypes of Knowledge: The Relevance of Jung’s Psychology of Scientific Discovery for Understanding Contemporary Technoscience.” *International Journal of Jungian Studies* 12: 159 – 79. https://doi.org/10.1163/19409060-01102005.

A. Riethus, D. Welper, M. Wunsch

Neanderthals and the public: How to start a conversation on our human past

Keywords: Public communication, Archaeology, Neanderthals, Participation, Outreach strategies, Science education, Societal impact.

1 Neanderthals, cavemen and other misunderstandings

Neanderthal Museum in Mettmann, Germany is located at the world-famous site where the original Neanderthal specimen was found in 1856. The museum is named after the world-famous fossils, which influenced our knowledge and perspective on human evolution quite significantly. The Neanderthal Museum, with its 180.000 visitors per year, is unique in comparison to other German archaeology museums because of its focus: our exhibition tells our joint story of human evolution from the earliest beginnings to the present day. Evolution is the central core of our permanent exhibition. On 1200 square meters of exhibition space, we communicate about evolution in various ways, as a complex interplay of chance and adaptation depending on climate, geographical conditions and other external influences. Not only does our house deal with the past: the Neanderthal Museum also explores the connection between archaeological and evolutionary research, present societal discussions and future challenges.

The history of the German Neanderthal specimen from Nordrhein-Westfalen is closely linked to the development of the theory of evolution. The sixteen bones found in a small limestone cave in Neander valley in 1856 were regarded as proof of Darwin's theory (published in 1859) that all life developed from earlier forms and did not come about via an act of divine creation. This essential turn within the Western mindset of the 19th century paved the way for groundbreaking research and changes in perspective that developed up to this day. Even if it was not immediately recognized

This publication is part of the project entitled *Neanderthals and "us": how the golden age of Neanderthal research challenges human self-understanding* with file number 406.21.FHR.011 which is financed by the Dutch Research Council (NWO).

We would like to thank all Paleo experts for their highly motivated participation, thoughts and input for the project "Neanderthals & Us". Your initiative and honest excitement for the Palaeolithic, Neanderthals and archaeological research is an invaluable inspiration. – Our museum and research team are always interested in exchanging ideas and networking with other museums and research institutions. Please reach out to research manager Anna Riethus if you are interested in intimating new cooperations, exhibition projects or joint conversations with the public.

A. Riethus, **D. Welper**, **M. Wunsch**, Stiftung Neanderthal Museum, Mettmann, Deutschland

https://doi.org/10.1515/jbpa-2022-010

that the Neanderthal bones were not a predecessor form of humans, doubts about the creation myth could no longer be eliminated. A dispute arose between science and the church, as well as scientific discussions between different scientists. There was, for example, the perspective of Carl Johann Fuhlrott, who was the first scholar to describe the German Neanderthal specimen together with anatomy professor Schaffhausen: he considered the bones to be those of a prehistoric human, a scientific interpretation which into conflict with Rudolph Virchov. Virchov, who was one of the leading researchers of his time, classified the Neanderthal bones from the eponymous valley as the degenerated and pathologically altered bones of a modern human being. However, this initial confrontation with a controversial topic eventually led to important advances in knowledge and became a source of inspiration for scientific disciplines such as Geology, Archaeology and Anthropology. Only the formation of new theses, of innovative assumptions that need to be confirmed or refuted, gives rise to science and knowledge. Stimulating such new ideas and theories is precisely our mission at the Neanderthal Museum.

At the same time, we are experiencing a growing "Science fatigue" as well as a rise of non-scientific social movements in the western hemisphere. For some years now, the Museum staff has experienced a slow but steady increase of doubts about science and the emergence of alternative explanatory models for the origin of life on earth. Originating in the USA, the voices of creationists, evolution critics, evolution deniers and proponents of the Intelligent Design movement have been gaining ground. These groups believe in alternative views on the origin of life which are at odds with scientifically proven theories of evolution. Many creationists and Intelligent Design supporters accept the creation myth as an alternative concept to explain life on earth. The Biblical creation myth from Genesis 1 is accepted as true, in a literal sense. The followers of the Intelligent Design movement assume that only an intelligent creator can be responsible for the creation of life and the planet. According to the followers of the young earth creationists, the age of the earth is set at only 6000 years. This movement is specifically trying to influence early education in schools. It already had quite some successes: in some states in the USA, their alternative conception is already being taught in school lessons as a valid alternative to scientific views, and legitimized by law. The Creation Museum in Petersburg, Kentucky, which communicates a creationist narrative, has had 3.5 million visitors since 2007. We are observing these developments very critically and see it as our task to respond to their message with sound scientific evidence and evidence-based education.

Our international society has the need to know what came before us, how our past created and still influences our modern lives, and which scientifically proven mechanisms are behind evolutionary processes. Regularly, we see public and political discourse picking up argumentations that refer to scientifically incorrect images of our human past, and even using these narratives and images to justify modern-day far-reaching decisions. We want and need to understand what exactly happened thousands and millions of years ago. However, we often tend to prefer simple answers to having to deal with complex explanations. This provides fertile ground for pseudo-

scientific currents, which are spreading rapidly, especially via the internet. Quick information – being reliable or not – from the internet is available at any time. However, the sources are often unclear, the contexts can be misunderstood, beliefs and empirical knowledge are mixed up and peppered with so-called facts that may appear scientific, but are not supported by scholarly research. These current developments emphasise the importance of places of multidirectional discourse, such as our museum. Our key objective is to offer reliable information on a scientific basis, in an entertaining and inclusive way, for a wide and diverse audience. Our exhibitions and projects are intended to counteract the increasing scepticism towards science, especially the science of evolution, and to spark new thoughts and creativity.

We cannot and do not want to break down complex interrelationships to such an extent that there is a simple and irrefutable answer at the end. Because this is not how science works. Science is not static. It is in constant motion, changes and evolves with new discoveries and considerations, and must always be viewed from new perspectives. But at the same time, we humans tend to only grasp what we already know and understand. In research, however, it is important to rethink and build on the ideas of others. We are committed to making these complex processes visible, communicating both the process and the content of scientific discoveries, in order to strengthen our society's trust in science.

Further exciting research results are to be expected in the next few years, which will expand our knowledge of Neanderthals in specific areas such as palaeolithic health, art, gender and childhood in the stone age. All these new insights into our past will inevitably change our ideas about both the lives of people during the Ice Age as well as our current ways of being human. Gaining new information on our ancient relatives improves our understanding of the mechanisms of evolution. This helps us to position ourselves as humans in this evolutionary process and redefine our visions for our future. By looking into the past, we also gain important information about our lives today, including answers to fundamental questions such as: Where do we come from? Who are we? Where are we going?

As a museum, it is our responsibility to initiate and carefully nurture an ongoing dialogue between publics and sciences, as well as bringing experts from various fields together to reflect old results and initiate new theories.

2 Neanderthal Museum as platform for exchange

In light of this, the Neanderthal Museum understands itself as a bridging platform between complex science and socially relevant questions regarding human evolution. Our research and initiatives foster interdisciplinary exchange across archaeological, biological, sociological, and philosophical domains. In our museum's work, we aim to enhance our visitor's, user's and participant's knowledge and awareness of human evolution – both in Germany and for international audiences. In order to reach these goals, research at Neanderthal Museum is always conducted in close collaboration

with our educational activities. The museum's researchers and staff prioritize approachability and clarity, actively engaging in dialogue and participation, especially in visitor research.

Our museological research sets new standards for science communication in Germany, continually improving the accessibility of knowledge for a broad audience. With expertise in archaeology and anthropology, coupled with a diverse range of educational methods, we aimt to stimulate discussions on complex and contemporary societal issues such as migration and climate change. The museum and our research team actively seek collaboration and networking with other museums and research institutions. They support the mobility of their staff in the museum sector, aiding in the development of skills for the job market.

Research topics of the Neanderthal Museum Foundation include human evolution, notably the Palaeolithic and Mesolithic periods, with a focus on Europe and Asia. Specific areas of focus encompass tool culture, aDNA research, flora and fauna, art, lifestyle, childhood and aging, social structures, gender, and migrations and climate change. We also engage in museology, covering visitor research, inclusion, and participation, as well as innovative education and outreach. Additionally, the foundation delves into archaeoinformatics, societal perceptions of Neanderthals and human evolution, and the professionalization of museum operations.

3 The "Paleo experts" – bringing Citizens and science together

In the research project "Neanderthals and us", funded by the NWO (Dutch Research Council) and conducted in close collaboration with Erasmus University Rotterdam and Leiden University, we delve deep into the question of what we can learn about ourselves from Neanderthal research. The collaborative project runs from 2022 up to2025 and explores society's image of ourselves and our past "others": The Neanderthals. Two PhD researchers from the participating universities will reflect on the project's foci from a philosophical and an archaeological perspective (). In order to bring all researchers involved into direct contact and dialogue with an interested audience, we have established the citizen panel entitled "Paleo experts". This panel aims to broaden the perspective of research and, by including "public intelligence", gain new questions, deeper insights, and perspectives from engaged citizens.

Through a call on social media and newspapers from May to June 2023, we successfully recruited 20 interested citizens from the broader Mettmann area. Our group of Paleo experts consists of a versatile selection of interested laypeople ranging from high school students with a keen interest in palaeoanthropology up to a retired choir conductor. Despite their diverse backgrounds, they share an intrinsic motivation to be part of this groundbreaking research and a passionate interest in Neanderthals.

All paleo experts collectively harbour a profound curiosity about our human history and are eager to delve deeper into the intricacies of Neanderthal research. Given the diverse spectrum of ages among these Paleo experts, each individual possesses a unique perspective on Neanderthals. Some have explored our ancient relatives during their high school years, while others have acquired knowledge through literature, magazines, and documentaries more recently.

This diversity is precisely what infuses the discussions with Paleo experts with excitement. Twenty individuals contribute twenty distinct opinions, approaches, and ideas, thereby enhancing the depth and richness of input for the research project. The versatile spectrum of new perspectives from the public is discussed with the project's researchers in the form of 6 workshops and meetings, during which core topics and questions from the researcher's work are jointly explored.

Within the first meeting in September 2023, researchers and citizens came together for the first time. In five additional sessions covering a wide range of archaeological topics, ranging from the challenges of paleo-archaeological fieldwork up to the role of archetypes in depictions and reconstructions of Neanderthals, the Paleo experts have the unique opportunity not only to listen, but also to actively participate in the research of the project "Neanderthals & Us". The captivating journey and experiences of the panel are documented in concise blog articles in a community blog.

The initial session with Karel Kuipers, Marie Soressi and the paleo experts provided an inspiring overview of archaeological practices. They delved into the core activities of archaeologists, particularly focusing on the processes involved in excavating and interpreting archaeological finds, and addressed any queries the Paleo experts had. Additionally, the Paleo experts received an introductory course on the technology of flint tool production from experimental archaeologist Morgan Rousse, which shed light on the techniques employed by Neanderthals and anatomically modern humans in crafting stone tools during the Palaeolithic era.

Following this, the upcoming agenda of "Neanderthals & Us" will lead the Paleo experts into an intriguing discussion with philosopher Susan Peeters. This meeting is dedicated to exploring the conceptualization of Pleistocene encounters of Homo sapiens with Neanderthals, probing into the existing perceptions about Neanderthals and how these perceptions might shift in the event of a direct encounter.

Moreover, the Paleo experts will be provided with opportunities to engage in further activities organized by the researchers. These include a movie night featuring films about Neanderthals and a show-case workshop in collaboration with the famous Paleo artists Adrie and Alfons Kennis, allowing them to share and refine their thoughts and viewpoints in a collaborative setting.

When working together with our Paleo Experts, our focus is not only on the philosophical exploration of our human self-image, but also on addressing the concerns and interests of the Paleo experts in upcoming workshops. It is crucial that the community feels heard and continues to grow, and that all participants receive the insights they hoped for from the project.

From the museum's perspective, it is a priority for us to provide ample opportunities for the Paleo experts to enhance their understanding and engage in meaningful discussions. Additionally, we are keen on understanding the perspectives and 'information consumption' patterns of the public concerning the scientific content which the museum has to offer. Our aim is to foster an inclusive and lively dialogue with our Paleo experts, intending to incorporate valuable insights from their viewpoints into our future endeavours.

4 Neanderthal women, children and the elderly – shedding light on marginalized groups

Our image of Neanderthals is shaped by the "Zeitgeist" and by popular science formats. In contrast to up-to-date results from science, Western society still strongly associates historical stereotypes of wild, strong and uncultivated cave men with the term "Neanderthal". Neanderthal women appear at most as decorative accessories. Both in art and in the first attempts at archaeological reconstruction, male Neanderthals were the main object of depiction and, within modern day societies' logic, functioned as obvious representatives for all Neanderthals. Still, in modern day research, too, there is a tendency towards a male-dominated view of the past.

This is less due to a lack of fossil finds of Neanderthal women – after all, 50 % of the population were Neanderthal women – and children, than to an image that has been developing for 150 years and is only slowly disappearing from people's minds. When archaeologists find tools and weapons, they don't carry a label as to whether they were made or used by a man or a woman. Thus, we need to emancipate our way of thinking about ingrained role models for both female and male roles. Finally, women are slowly becoming visible in research – both as objects of study and as scientists. But what about other marginalized groups like children and the elderly?

A popular science book was recently published by author and archaeologist Dr. Rebecca Wragg Sykes entitled "Kindred. Neanderthal Life, Love, Death and Art", in which she makes precisely these people visible. Inspired by her book, Neanderthal Museum has initiated a cooperation project with Wragg Sykes to create a special exhibition about the mostly invisible and marginalized groups in Neanderthal communities: Women, children and the elderly. Within this special project, we ask questions on how these groups lived, loved and mourned in their communities. The exhibition aims to inspire visitors to experience in a self-reflective way, how they might imagine the way of life in Neanderthal communities.

Thanks to current research and new methods of analysis, our knowledge of past societies is growing rapidly. We are able to reconstruct a diversified picture of the past. The new special exhibition project in German and English is intended to convey an inclusive view of our past to a broad public based on the new findings from archaeological research. The exhibition conveys a fundamentally new perspective on

the past of our ancestors in an accessible and narrative style. Previously overlooked aspects of everyday human life are told in a tangible way in the form of stories that various protagonists live through and in whose roles the visitors can slip into. The emotional narrative is supported by the latest research findings and tactile objects.

The cooperation with author Rebecca Wragg Sykes, who acts as scientific and narrative advisor to the project, has made it possible to create a new exhibition style. Visitors are given access to an approachable human perspective on the past. In addition to the narrative approach, the exhibition builds on interactive and experience-based exhibition elements as well as a strong scenography. Digital offerings, audio installations, tactile content and immersive experiences are used to create a diverse and inclusive information offering typical of the Neanderthal Museum that brings scientific content to a broad public.

The special exhibition "Neanderthaler*in" (working title) will give its debut at Neanderthal Museum from November 2024 to November 2025. After this show period, the exhibition will tour internationally. This project is made possible thanks to funding from *Landschaftsverband Rheinland.* It is partially based on research questions initially brought up in Wragg Sykes' book "Kindred. Neanderthal's Life, Love, Death and Art".

5 Outlook and future projects

With projects such as the Paleo Experts from "Neanderthals & us" and exhibitions as "Neanderthaler*in" (working title), Neanderthal Museum serves society as a mediating platform between complex science and socially relevant questions about human evolution. Our work promotes interdisciplinary exchange between archaeological, biological, sociological and philosophical research. Through these efforts, museums such as our institution strengthen knowledge and awareness of human evolution in Germany and the international society.

Our commitment to fostering a lively exchange on Neanderthals and archaeology is driven further by new cooperations and future projects: in 2026, Neanderthal Museum will celebrate its 30th anniversary with an update for its permanent exhibition on Neanderthals and human evolution, as well as with a new special exhibition on Neander valley on an easily accessible level using the famous toy brand Playmobil. Our museum operates and promotes ongoing research on Neanderthals in Central Asia and Iran through the work of Elham Ghasidian and her team, whose results are then prevented in the permanent exhibition. The paleo experts are planned to be kept active after the end of project "Neanderthals & Us" in order to keep the valuable discussion with the public alive and ongoing. With several future exhibition projects in the making, the Neanderthal Museum will consistently keep on informing and communicating on Neanderthals, archaeology, human evolution and the fascinating story of our joint human past.

Filip Jaroš

Animal cultures: A triumph or pitfall of naturalism?

The central concern of this article is the phenomenon of so-called animal cultures, which are proving to be a critically sensitive point in the problem of the relationship of nature and culture. The discovery of cultural diversification in the behavioral manifestations of apes and other higher animals is considered by evolutionary biologists as a triumph of naturalism: biological science has shown that humans and their culture do not represent an anomaly, as tradition, in the form of handing down skills and customs, also exists among non-human creatures. Empirical findings on the variability of traditions among individual groups of chimpanzees – the species genetically and behaviorally closest to humans – accord well with Darwin's conception of evolution as incremental changes that can be seen in both the physical and mental aspect. At the same time, however, doubts of a theoretical and philosophical nature rise up, exposing the pitfalls of naturalism. Is it admissible to speak of a mental aspect in "full-blooded" naturalism? Is not the concept of animal culture itself somewhat dubious, if naturalism is understood as a transfer of phenomena to the level of physical processes? How does the agenda of naturalism account for the fact that studying the diversity of traditions used by chimpanzee societies in inhabiting the natural world requires an ethnographic approach? Doesn't the use of methods from the domain of the social sciences in the study of chimpanzee societies suggest that this animal has achieved a certain degree of freedom as opposed to natural necessity?

In this article, I assemble arguments to show that animal behavior cannot accurately be described by the means of a physicalistic biology. I do this in two steps: first, I call attention to the indeterminism of individual behavior, which in modern theoretical biology is usually included under the more general concept of *agency.* I then observe that the behavior of many so-called higher animals includes a social component that reflects both the variability of behavioral manifestations among different groups of the same species and their uneven distribution within a given community. In recent decades, the sophisticated social forms and relationships in a range of vertebrate species have been designated as *animal cultures* and have become the subject of intensive study (Laland and Galef 2009).

The impossibility of describing animal behavior in terms of physical systems is related to the view of the organism as having a dialectical relationship with its surround-

I wish to thank Andrew G. Christensen for the translation into English and Jan Kapusta, Jana Švorcová, Michal Hubálek, Iva Svačinová, Márton Dornbach for their helpful comments. This publication was supported by a project of the Czech Science Foundation (GA23-05374S, Reframing Philosophical Anthropology: Searching for an Anthropological Difference Beyond the Nature/Culture Dichotomy) at the University of Hradec Kralove, Philosophical Faculty.

 https://doi.org/10.1515/jbpa-2022-011

ings and its development as being shaped by a full range of epigenetic processes (Švorcová and Markoš 2019, Švorcová 2023). Proponents of the *extended evolutionary synthesis* emphasize that organisms are not passive objects of selection processes, but agents who themselves create selective environments. In the communities of certain higher animals, we can speak of collectively-formed cultural niches, created by a range of behavioral manifestations, through which they inhabit and alter their surroundings (e. g., chimpanzee groups who pass down skills for cracking nuts that grow in their area). In this article, I will defend the belief that this theoretical expansion of the Darwinian modern synthesis represents a suitable framework for philosophical anthropology, which aims to reexamine the position of humans in relation to other organisms.

In the following reflections, I take inspiration from the approach of J. Fischer, who sees philosophical anthropology as an independent school of thought founded by German-speaking researchers in the first half of the twentieth century, particularly Scheler, Plessner, Gehlen, Rothacker, and Portmann (Fischer 2009, p. 154; Fischer 2022, p. 22). The common thread of these approaches is a dual view of man, who is understood as a natural being and cultural being at the same time. This dual designation gives rise to the special position of humans in nature (*die Sonderstellung des Menschen*). Plessner and Portmann were aware that humans, seen as part of nature, are understandable through the means of biology, yet this comes with the danger that a fully naturalistic approach will be applied to the domain of culture as well. Both therefore tried to outline a form of "philosophical biology" that would be open to phenomena associated with the humanities (e. g., expressivity and aesthetic phenomena; cf. Grene 1968). It is precisely as a complement to this type of biology that philosophical anthropology can develop – one that will not place humans in direct opposition to nature but will approach them as a specific part of nature that requires new levels of explanation (cf. Fischer 2005).

Fischer (2014) characterizes philosophical anthropology as a paradigm that seeks a third way between naturalism and culturalism, where naturalism in biology is understood as the application of Darwinian selection theory not only to non-human organisms but to humans as well. Portmann and Plessner were also critical of the tendency toward mechanism and reductionism that was characteristic of mainstream neo-Darwinian thinking at the time. I will demonstrate, however, that Darwin's biological thought can be reasonably interpreted in a *non*-physicalistic way: animals are treated in his work as intentional agents, which is generally in agreement with the approach of Continental biological thinkers in the first half of the twentieth century (H. Jonas, J. von Uexküll, F. J. J. Buytendijk), who directly attributed a space of *interiority* to animals. More significantly, the reciprocity of an organism and its environment that is manifested in developmental processes has become a postulate of the extended evolutionary synthesis, where Darwinian thinking is gradually blunting the edges that irritated philosophical anthropologists in the era of the Modern Synthesis.

Whether the dynamics of human culture can satisfactorily be explained in terms of Darwinian mechanisms is a topic of increasing debate.[1] In his article "Culture extends the scope of evolutionary biology in the great apes" (2017), Whiten further extends this question to animal cultures. A space is opening up to reexamine the assumptions of current cultural primatology through philosophical inquiry. It is no longer merely a question of whether naturalism, given the complexity of human culture and the inexhaustibility of action in a free individual, is a suitable framework for anthropology. We are faced with the fact that the behavior of great apes (and other animals) in collectively formed cultural niches transcends "natural necessity" – naturalism is in need of philosophical reexamination within biology, which can no longer be understood as a purely natural science.

The question of whether animals can be understood purely from the domain of nature has already been raised by Burgat (2006). I share her conviction on the autonomy of animal behavior and, like her, am willing to speak in this connection of various degrees of *freedom.* I also share her belief that the founders of philosophical anthropology (including F. J. J. Buytendijk) underestimated the abilities and social life of animals. Burgat, however, does not refer to the phenomenon of animal cultures – in ascribing freedom to the behavior of animals as well as humans, she seems generally motivated by an ethical conviction that the value of human and animal life is the same, rather than by biological knowledge. This ultimately leads her to avoid naming any difference between humans and non-human animals. My article, on the other hand, assumes the existence of an anthropological difference – i. e., an array of properties or relations that create the particularity of human life and culture.[2] In the spirit of the duality between philosophical biology and philosophical anthropology, I will here focus mainly on the former, particularly on defining a common theoretical framework for animal and human ontogeny. Only against a background that recognizes parallels between human and animal cultures will it be possible to meaningfully rethink the problem of anthropological difference.

1 This problem was the focus of the Sackler Colloquium on the Extension of Biology Through Culture, held at the Beckman Center in Irvine, CA, on November 15–16, 2016. Among its outcomes was the study by Whiten mentioned below.

2 I leave it as an open question whether anthropological difference should be understood as a fundamental break in the evolution of life on earth or rather as one of many differences that set apart individual species or higher taxa and by which we classify the immeasurable diversity of living forms ("diffuse continuities," cf. Brentari 2018). This question is central to the typology of narratives that underpin the approach of a given researcher or disciplinary tradition to non-human animals – not just ethically and pragmatically, but also epistemologically. Philosophical anthropology has traditionally favored the narrative of *transformativism*, which sees in the human relationship to the world a fundamental transformation from the animal relationship to the natural environment (umwelt) (cf. Jaroš and Maran 2019, p. 385, Tab. 1, Jaroš and Brentari 2022, p. 18–19). A suitable theoretical framework for description and analysis of human specifics (e. g., speech) is found in the biosemiotic revision to Uexküll's original concept of umwelt, preferring a completely nonhierarchical description of animal and human cognitive and communication systems (*pluralism*, see Jaroš and Pudil 2020).

Since animal cultures demonstrate a range of characteristics that traditionally have been attributed only to human culture, it is necessary to think more deeply about how the concept of culture has been constructed. The background for the differentiation of positions is the poststructuralist anthropology of P. Descola, which shows that the division of nature and culture is taken to be self-evident only in the modern Western culture. Descola (2013) convincingly demonstrates that this dichotomy is associated with the belief that non-human beings (objects, entities) are not endowed with interiority. This is closely related to the conception of human culture as a unique domain that has no parallel in the animal kingdom. In section 1, I give a precise definition to these two pillars of Western ontology, which Descola calls naturalistic.

The dichotomy that leads to a strict division of the sciences and the humanities has been seen as a problem that could be overcome by programs striving for methodological unity, whether in the form of naturalistic or culturalistic monism. In the course of the 19th and 20th centuries, Darwinism proved the most influential program, striving for a naturalistically founded monism which, in order to be complete, however, would need an explanation of human interiority. I intend to show that Darwin himself did not seek to deny humanism, which is grounded in the existence of human interiority (especially in the area of morality) but also that his evolutionary approach could not get by without methods that recognize interiority in the behavior of higher animals as well (section 2).

Investigation of the space of animal interiority is developing dynamically in connection with observation of various animal cultures. While most naturalistically-oriented philosophers understand Darwinism through a monistic prism, current research into animal cultures takes place against a background of various theoretical approaches, which all, nonetheless, assume a strong role for cultural inheritance. This is usually understood as a counterpart that interacts with genetic inheritance (dual inheritance theory, Richerson and Boyd 2005), though epigenetic approaches that distinguish multiple levels of inheritance (extended evolutionary synthesis, Jablonka and Lamb 2014) are increasingly gaining ground. In any case, the existence of cultural inheritance in animal societies is a factor that casts doubt on human cultural exceptionalism: it is apparent that non-human societies are active creators of the world, which they structure and inhabit in many different ways (on cultural diversity, see section 3).

A recognition of the interiority of animals on one hand and human cultural exceptionalism on the other is a paradigm of the discipline that Fischer (2022) calls philosophical anthropology. In section 4, I introduce the classic approach of philosophical anthropology, famous for its sensitive and empirically-grounded description of animal interiority and its critical comparison of the ontogeny of great apes and humans. A. Portmann recognizes in higher animals an ability to transmit traditions and customs, but he posits a clear distinction between the cultural production of humans and the unconsciously created artifacts of other animals (e. g., birds' nests). In the conclusion, I reflect critically on what the phenomenon of animal cultures and the theoretical understanding of them in the extended evolutionary synthesis means not only for Port-

mann's anthropology but also other programs of cultural exceptionalism based on ontogeny and phylogeny (Tomasello).

1 The Western dichotomy of nature and culture: Naturalism and humanism

Until recently, the intellectual climate of the West has been shaped by a firm belief in the dualism of nature and culture. The line of demarcation lies between the nature of animals "as the place of instincts, impulses and 'necessity'" and the culture of humans "as the domain of rationality, language, choice and freedom" (Michelini 2020, p. 123). Descartes' conviction that man is the only being which, through its own characteristics, has surpassed natural processes became formative for modern science: the world of matter demonstrates regularities that can be described by natural laws, whereas the human mind creates its own immaterial world. At least since the 18th century, human knowledge has been divided in two directions with very different methodologies: physics, supported by mathematics, became the model for the natural sciences, while the humanities relied primarily on records of human thought and action, making comparisons and determining genealogies.

The Frech poststructuralist anthropologist Descola considers a belief in the sharp duality of nature and culture to be a defining feature of Western ontology, which he terms naturalism – to distinguish this from other versions of naturalism, I will consistently refer to this stance as *naturalistic ontology.* In accordance with the general designation of naturalism, Descola's naturalistic ontology is based on the conviction that the world is formed according to universal physical laws. Descola (2013, p. 182) further attributes to naturalistic ontology a belief in the unique position of human culture: cultural specifics are the products of intrinsic capacities unique to humans. Culture and nature are each autonomous, disjunctive domains whose demarcations are mutually dependent.

Descola's characterization of naturalistic ontology is based on his belief that the human mind, everywhere in the world, assesses surrounding objects according to a dualism of interiority and physicality, which he defines thus:

> … 'interiority' refers to a range of properties recognized by all human beings and partially covers what we generally call the mind, the soul, or consciousness: intentionality, subjectivity, reflexivity, feelings, and the ability to express oneself and to dream… . Physicality, in contrast, concerns external form, substance, the physiological, perceptive and sensorimotor processes, even a being's constitution and way of acting in the world, insofar as these reflect the influence brought to bear on behavior patterns and a habitus by corporeal humors, diets, anatomical characteristics, and particular modes of reproduction. (Descola 2013, p. 116)

Different ontologies can be categorized according to whether they assess the interiority or physicality of surrounding objects through the prism of similarity or difference. For

example, among the Amazonian Native American ethnic groups there is a prevalent belief that every object has an inner aspect. The diversity of things comes from their physical aspect – the "bodily garment" that clothes them. Descola calls this ontology, which attributes life to everything from mountains to human artifacts, animism. According to him, Western naturalism uses an orthogonal classification. All objects can be uniformly described in physical terms, whether it be ne natural objects, animals, people, or human artifacts. Modern science typically believes all material objects to be invariably subject to mechanical laws. The heterogeneity of objects unfolds strictly according to the differentiated evaluation of their interiority. For Descola, it is typical of naturalistic ontology to attribute interiority only to humans. Cartesian dualism fits well into this picture, as it sees not only inanimate natural objects and human artifacts, but also animals as extended things. Man alone is endowed with interiority in the form of a soul, which in the Christian context is believed to be immortal.[3]

In Descola's view, naturalistic ontology is dualistic: the world of natural laws does not apply to the domain of the human mind, and therefore the principles of humanism can be cultivated in the realm of values. Traditional humanism arises from the belief that the sphere of human action is an expression of free will, as opposed to natural processes, whose dynamics are independent of humans and which therefore cannot sensibly be subject to moral judgments. Physicalism in the domain of nature and freedom in the domain of culture are reflexive positions that are not mutually exclusive. Although the sharp dichotomy of nature and culture is perceived as a philosophical problem, it is routinely accepted in the realm of ethics and in judicial practice.

In sum, Descola characterizes naturalistic ontology as resting on two pillars. Pillar 1 (physicalism): non-human creatures, natural objects, and human artifacts are not endowed with any sort of interiority. Pillar 2 (cultural exceptionalism): humans are the only species that engenders cultural differences between groups. In the following sections, I will consider to what extent a) Darwin's conception of animal behavior and b) contemporary Darwinism correspond to this characterization of naturalistic ontology in relation to the phenomenon of animal cultures. It turns out, surprisingly, that Darwinism, generally regarded as the most successful naturalistic approach in the West, has helped to undermine both pillars of naturalistic ontology through its treatment of these issues.

3 Descola speaks of naturalism as an ontology that is typical of the modern West but not applied exclusively. Montaigne, for example, raises doubts about the sharp distinction between nature and culture (suggesting a continuity between animals and humans), as does Condillac (suggesting that animals have developed cognitive abilities).

2 Darwin and physicalism

To examine the validity of the first pillar of naturalistic ontology in relation to Darwin's work, we should first ask whether Darwin attributes animals with interiority. The answer depends on how we interpret Descola's assessment of interiority in relation to Darwin's account of animals and humans, which also relates to the question of whether we assess Darwin's epistemology as dualistic or monistic. I submit that an understanding of interiority as the domain of mind, consciousness, and emotion, together with a phenomenal account of animal behavior, will lead us to an affirmative answer: it presupposes the duality of phenomenal description and scientific theory. If, however, we understand Darwin's theoretical thinking on the basis of monism, the duality of physicality and interiority loses its original meaning, and a monistic picture of the world leads not only to a rejection of interiority in animals but can end up casting doubt on the freedom of behavior in humans. I will hereafter refer to this coherent, naturalistically (or materialistically) informed monism as physicalism.[4]

Descola (2013, p. 199) gives preference to the physicalist interpretation when he judges Darwin's *Descent of Man* (1871) to be a canonical version of the agenda of incorporating culture into nature.[5] In accordance with a materialistically-monistic worldview, interiority here no longer has the validity of an independent explanatory principle and can be converted to physicality in the form of mechanical laws. Processes taking place in human culture therefore do not qualitatively differ from processes in the natural world – they can be subordinated to the universal laws of nature, and culture can thus be incorporated into nature. Descola here mentions the principle of natural selection, which Darwin applied both to organic variation and social instincts.

There are further reasons to evaluate Darwin's program through the lens of physicalism. In the first edition of *The Origin of Species*, Darwin cites Whewell's motto on the need for scientific description of the material world to establish general laws (Darwin 1859). Many other instances show that Darwin took physics to be the model for natural

4 Jonas (1966), in the context of the philosophy of the living, points out that the relationship between dualism and monism is more of an inheritance than an actual conflict of ontologies. According to him, the dualism that divides the world into matter and spirit is older than materialist monism, which attempts to explain spirit as an epiphenomenon of matter. While monism destroys the structure of the previous ontology, it preserves and affirms the original element (matter) and amplifies its properties so that it now includes the realm of spirit. Jonas ultimately evaluates materialist monism as unsustainable and internally inconsistent, for if the world is to be taken as mere matter, then spirit must remain beyond the interest of such an ontology. I believe that the same hereditary relation between dualism and monism applies in evaluating Darwin's biology: the dualism that distinguishes physicality and interiority is older than physicalism. Below, I demonstrate the internal contradictions of the monistic evaluation of Darwin's work in relation to the question of human free will.

5 Such an assessment may seem surprising, as it seems to reject the dualism of physicality and interiority on which Descola's poststructuralist anthropology is based. Descola believes, however, that the desire for a universal explanatory principle must lead either to the incorporation of culture into nature (naturalistic monism) or an explanation of nature through cultural specifics (culturalistic monism).

science. Natural selection is presented in *The Origin of Species* as a physical process with universal validity, directing the physical form of organisms as well as their mental constitution and social structures. As for his theoretical view on the nature of mental processes, Darwin believes them to have a physical origin – he suggests, for example, that aesthetic taste can be derived from the physiological properties of the nervous system (Darwin 1871, p. 333).

To this assessment it must be added that in his thinking about humans, Darwin in many ways preserved the agenda of humanism (in Descola's original assessment of naturalistic ontology, the world of natural laws applies to non-human animals but not humans). Darwin was an ardent supporter of the abolition of slavery, as he believed all humans are equally born free. In general, he held predominantly liberal views on moral issues, was an optimist when it came to the development of the human race, and was an enthusiastic proponent of the idea of moral progress in history. [Here and elsewhere, his values are close to Unitarianism (see Reed 2011)]. His reflections did not touch on the space of the human soul – he was far from seeing humans as sophisticated machines lacking free will. Those who accused Darwin of reducing humans to mere apes were mistaken: I will incrementally show that the outcomes of Darwin's work signify the elevation of animals towards humans, rather than the "bestialization" of the human race.

The following reflections are dominated by my conviction that Darwin's primary intellectual legacy – the evolutionary link between humans and animals – is grounded not in a programmatic physicalism but in a dualistic approach to living organisms. It is useful to recall that Darwin, rather than a scientific theorist, was a brilliant expert on animal behavior. One sees this when reading *The Expression of the Emotions in Man and Animals* (1872), the foundational work in comparative psychology and ethology, which still today remains a testament to the great observational talent of the British naturalist. The attribution of a mental life to animals was an important condition for the vision of evolution without supernatural intervention: continuity on the corporeal level only (e. g., the similar anatomy of humans and apes) would leave open the question of the origin of the human mind (cf. Jaroš 2017). Moreover, a direct treatment of what Descola calls interiority is to be found in *The Descent of Man:*

> … man and the higher animals, especially the Primates, have some few instincts in common. All have the same senses, intuitions and sensations – similar passions, affections, and emotions, even the more complex ones; they feel wonder and curiosity; they possess the same faculties of imitation, attention, memory, imagination, and reason, though in very different degrees. (Darwin 1871, p. 48 – 49)

Ethology and comparative psychology necessarily deal with intentionality, feelings, and the ability to express oneself, all of which belongs to Descola's conception of interiority. In the field, ethologists must always rely primarily on their senses and experience in order to grasp the meaning of the events they are witnessing. Significantly, interiority and physicality (which includes morphology, for example) are interconnected; thus, we understand the emotions of animals just as we do with humans – primarily through

expressions and body language. An ethological theory can employ a model that is physicalist (natural selection) or cybernetic (fixed action pattern; Lorenz 1981), but when it is put into action, the scientist must be able to understand phenomena that belong to the preserve of interiority.

Darwin shows himself to be a great thinker of animal interiority. Above all, the "higher animals" appear in his work as true agents: "Animals may constantly be seen to pause, deliberate, and resolve" (Darwin 1871, p. 46). Even if he later decided to downgrade this phenomenal level by portraying it as only an epiphenomenon of physical or neurochemical processes, in terms of his evolutionary vision, he would have to make an analogous reduction in the case of human mental processes and perhaps human culture. In any case, Darwin's treatment of interiority implies a twofold process: firstly, an elevation of interiority in animals toward human behavior, and secondly, a "biologization" of the human mind, which had until then been understood to be voluntaristic.

To summarize thus far: I maintain that the achievements of physicalism in mathematically grasping and describing natural processes by no means extend to the entire realm of nature (*physis*) but only to the inanimate world. Organisms require a separate approach, as closer experience of them reveals a multitude of characteristics that correspond to Descola's conception of interiority. The "certainties of naturalism" (Descola 2013, p. 172) are called into question the moment biologists decide to study animal behavior in the field, which requires a completely different epistemology than laboratory research, experimental organisms can be compared to automatic machines.[6] Biology has been epistemologically emancipating itself from physics since Darwin's time, without being fully aware of it. As a consequence, it will cease to be clear what it means to "naturalize" a given phenomenon, as there can be multiple levels of explanation in natural science (cf. Sterelny 1996). I am inclined to conclude that Darwin's treatment of animal interiority amounts to a challenge to the first pillar of Descola's naturalistic ontology.[7]

6 The need to emancipate biological methods from physics was even proclaimed, perhaps somewhat surprisingly, by E. O. Wilson, whose program is generally considered physicalistically reductive (see Wilson 1995, p. 223).

7 Though Descola considers Darwin a physicalist, he is open to alternative interpretations in the case of his successors. Descola (2013, p. 179) finds that the first pillar of naturalistic ontology breaks down in the case of certain ethologists who do not make a sharp distinction between humans and nonhumans; he specifically cites D. Griffin, the founder of cognitive ethology. Based on analogies between human and animal behavior, Griffin attributes to both groups mind (i. e., interiority), the characteristics of which, according to the Darwinian dictum, differ in degree, not quality.

3 Animal cultures: Between natural necessity and human creativity

When Descola (2013, p. 72–78) describes the autonomy of the domain that inhabitants of the West have traditionally called culture, he relies on the concepts of ethnologists like E. B. Tylor and F. Boaz, whose definitions of culture, however, assume that cultural phenomena are found only among humans. If we want to examine the validity of the second pillar of ontological naturalism (i. e., cultural exceptionalism), we need to use a conception of culture that at least potentially allows for its occurrence in nonhumans. Descola (2013, p. 182) does, in fact, concede something of the sort: "To cut naturalism down to size, it would be necessary to show that the chimpanzees draw upon psychic resources identical to our own when they engage in cultural activities." The problem here, of course, is the word *identical:* in the spirit of Descola's structuralist approach, it would be more appropriate here to ask whether this amounts to *similar* or *dissimilar* psychic resources. Only *dissimilar* psychic resources in humans and chimpanzees can justify the insistence that only humans have culture in the true sense, derived from a categorically different interiority. How then to understand culture so that it is not by definition only human, and how to determine what psychic qualities chimpanzees are endowed with?

A reversal in biological research occurred in 1960 when J. Goodall observed chimpanzees making and using tools. The techniques used turned out to be traditions specific to particular chimpanzee groups, which raised the question of how such knowledge is propagated. Goodall was able to demonstrate the existence of social inheritance across chimpanzee societies – i. e., in cases other than parent–offspring transmission. She eventually realized that the study of chimpanzee societies requires not just observation from a distance, but acceptance by the group during her participant observation and other methods typical of an *ethnographic* approach (see Goodall 1990). By the late 1970s, the phenomenon of ape cultures was recognized by natural scientists and many anthropologists – McGrew and Tutin's 1978 study, published in *Man*, a journal of social anthropology, can be considered a breakthrough in this regard. An ethological definition of culture focuses on the transmission of behaviors in a group: "a cultural behaviour is one that is transmitted repeatedly through social or observational learning to become a population-level characteristic" (Whiten et al. 1999). This approach assumes nontrivial cognitive abilities on the part of individuals who pass cultural practices to each other, but it holds back on statements about the nature of these abilities, maintaining that the mind is an impenetrable black box.

Today, researchers are looking at animal cultures not only in primates but elephants, cetaceans, and birds – cultural behavior is presumed in hundreds of vertebrate species (Laland and Hoppitt 2003). Vocal traditions have been documented in cetaceans (humpback whales are particularly known for this) and passerines. Cebid monkeys and chimpanzees use rocks to crack nuts, and cockatoos can prepare small pieces of wood to use for obtaining food. The grooming hand-clasp performed before mutual grooming

in some chimpanzee societies (de Waal and Bonnie 2009) can also be counted as a cultural sign. As the character of this gesture has no direct physical relationship to the behavior it precedes, it amounts to an arbitrary sign that can be classified as a symbol (cf. Jaroš and Pudil 2020, p. 171).

The existence of ape and other animal cultures presents adherents of Darwinian gradualism an opportunity to examine how human culture may have come about in the first place. In this respect, animal cultures represent a triumph of naturalism: the domain of human culture appears as a special instance of social structures that can be found in higher animals – a domain accessible to natural-scientific inquiry. But the question remains of how to evaluate the psychic makeup of chimpanzees and other great apes in comparison with humans. The answer depends primarily on whether the research is conducted by ethologists (who focus directly on behavior) or comparative psychologists working in the laboratory (who focus on cognition deduced from behavior): while the former tend to look for analogies between animal and human behavior, the latter implicitly proceed with an agenda of finding anthropological difference (cf. Jaroš and Maran 2019).

Field primatologists like Boesch (2012) attribute culture to chimpanzees and other great apes because, given the many analogies (hunting in groups, frequent tool use) and the close evolutionary relationship, it is economical to assume that the minds of humans and apes are similar [de Waal (1999, p. 259) talks about the principle of evolutionary parsimony]. On the other hand, comparative psychologists concentrate on laboratory research into the cognitive processes that underlie the modes of cultural transmission. Tomasello (1999) shows that children, when using tools, copy exactly the sequence and implementations of steps demonstrated by their instructor (imitation), while chimpanzees are able to understand the intention of the demonstrator and then "willfully" employ whatever tactic leads them to this goal (emulation). Humans thus have greater accuracy and fidelity in the transfer of information and skills; this, together with the highly organized nature of their groups, results in the cumulative character of their culture (Tomasello, Savage-Rumbaugh and Kruger 1993; Boyd and Richerson 1996).

Independent of the dispute over the cognitive background of cultural transmission in apes and humans, it is useful here to reflect on the extent to which the phenomenon of animal cultures corresponds to the interpretation of naturalism in this text. I consider the conception of animal mind used in cognitive ethology and comparative psychology to be far from the image of nature as a necessary process whose course is described by the laws revealed by science. This is primarily in regard to the singularity of the moment when a new behavioral trait appears. While neo-Darwinism presupposes a random genetic mutation (or several) in the case of physiological adaptations, which are then fixed by natural selection, behavioral adaptations are not a matter only of genetics but are primarily the result of the activity of the individual. Biologists do not hesitate to speak of innovation, and it is believed that individuals who have a tendency toward exploration and playfulness are distinguished by an ability to produce innovation (cf. Morand-Ferron et al. 2011).

It is also significant that the ethological definition of culture (Whiten et al. 1999) draws on dual inheritance theory, which indicates an opposition of genetic and cultural inheritance. Culturally conditioned behavior characteristically is not an immediate (genetically fixed) reaction to events in the surrounding environment, but is observed in, and learned from, other individuals in the group, different groups producing different variants. The plasticity of animal culture in contrast to genetically determined behavior thus recalls the dualism that Descola and others apply to the dichotomy of culture and nature in the case of humans. If we understand genetic and cultural inheritance as distinct, even if not totally separable processes, on the model of dual inheritance theory, then it is reasonable to conclude that animal cultures transcend biological necessity and open the possibility for a new understanding of the concept of freedom.

An ethological definition of culture rests on a synchronic perspective comparing the behavior and skills of communities separated by space. An individual possesses behaviors that are predetermined by his genetic makeup and skills that he has learned from other individuals in his group (or perhaps he was the first to acquire them). The division of hereditary transmission into two types is complicated, however, when we consider that each skill must be acquired during individual ontogeny in relation to the environment in which the individual develops. This environment, moreover, is not just a physical space, but rather a milieu that is modified by the cumulative influence of the activities of past generations. In this modified view, culture is not in strict opposition to the natural environment, but is progressively woven into it. The developmental definition of culture focuses on the ways in which the social actions of past generations enhance or facilitate what further generations learn in a collectively structured environment (Lewens 2017, p. 5). The actor here is not the individual but the entire (culturally equipped) society. We find an apt example in the environmental engineering of beavers, which demonstrates the active inhabitation of a natural environment (niche construction), rather than just passive presence.

The developmental definition of culture and niche construction are among the important theoretical postulates of the modern movement of evolutionary thought known as the extended evolutionary synthesis. This holds that animals in societies construct niches in which they live and raise future generations – this niche is part of the natural environment but also represents an adjustment to the environment toward the needs of a given animal culture (cf. Laland and Brown 2018). A niche should be understood not just as a physical space but a way in which the surroundings are represented and elements of it are selected as bearers of meaning (Švorcová and Kleisner 2018, p. 236–237). From an ontogenetic perspective, it is essential that the young progressively acquire the skills and traditions of their group – i. e., that they grow up in an environment that is pre-saturated with these activities. This does not only mean that there are objects around that can be used as tools, but that the young can gradually master

the relevant techniques through a combination of observing older individuals and actively experimenting on their own.[8]

A fine example of active maintenance of an animal cultural niche is the cracking and consumption of nuts by chimpanzee groups in the Taï forest (Boesch 2012). An important part of Taï chimpanzees' diet consists of nuts of the Coula tree, which can be cracked only by the use of a wooden stick (hammer) that hits a nut positioned on a stone (anvil) at a proper angle. The technique is transmitted vertically (i. e., across generations) from a mother to her offspring, and its full mastery usually is not acquired before the age of 7. It appears that the space for mastering the technique is actively created through cooperation on the part of mothers, who leave used wooden sticks in the vicinity of the infants and support them in their initial and subsequent attempts to crack nuts. Matsuzawa et al. (2001) call such dynamics an education by master-apprenticeship, which is characterized by assistance rather than active teaching. The crucial component of the education is a stimulating learning environment characterized by an atmosphere of mutuality and tolerance. Apprentices learn by active participation, and when a required technique is not difficult, active teaching by the mother is not necessary.[9]

Rather than intervening, mothers need to develop sensitivity for the progress of their apprentices and correctly assess their skill level and react appropriately. Boesch has divided the transmission of nut-cracking ability into three phases: sharing, stimulating, and facilitating. First, mothers allow their offspring to eat around 25 % of the kernels they have secured from nuts. Infants imitate the acts of their mothers but are not able to crack the nuts due to their limited physical strength; however, they might assist by collecting them and placing them on the anvil. When they reach the age of 3 – 4, their mothers stimulate them by leaving nuts suitably positioned on the anvil, so the infant can crack them by using the hammer while the mother leaves to pick other nuts. When infants reach adolescence at the age of 5 – 8, they have generally acquired the motor-cognitive abilities to crack the nuts all by themselves. Nevertheless, they still have to learn which kinds of wooden branches can be used as hammers. At this stage, mother facilitates their semi-independent activity by leaving them with the hammer and searching for new ones as well as for nuts. The youngster in the Täi forest is provided with hammers and nuts an average of 6 times per 10 minutes in a nut-cracking session (Boesch 2012, p. 136 – 137; Jaroš and Pudil 2020, p. 170 – 171).[10]

8 In the following section I introduce Portmann's concept of the social uterus, which indicates that children undergo suitable motor, mental, and psychological development only in the environment of a group that is favorably inclined toward them. Portmann attributes the phenomenon of the social uterus only to humans.

9 Boesch (2012, p. 143 – 144) reports just two instances of direct interventions by mothers in a nut-cracking context.

10 The two preceding paragraphs contain slightly modified passages from Jaroš and Pudil (2020, p. 170 – 171).

It is useful to summarize here how the possibility of free behavior is involved in animal interiority (section 2) and the active creation of niches (section 3). The first degree of freedom relates to the fact that a species-typical relation of the individual to its environment prefigures modes of behavior but does not determine them. Animal agency should be understood as a palette of behavioral acts that are based on the needs of the animal individual and which cannot be rendered as a physicalistic combination of action and reaction.[11] The concept of freedom in animal culture supposes the mind of animals as a space where invention occurs through ways of behaving toward the physical and social environment. Each society has a different set of customs and traditions that often carry adaptive meaning but which cannot be understood as a result of natural selection – individuals themselves build the selection environment for their group.

In the past few decades, research from the field has upended the conviction that the use and improvement of tools, the intentional transfer of techniques for using them, and the formation of arbitrary signs (symbols) are exclusively human capabilities. The phenomenon of animal cultures challenges the second pillar of Descola's ontological naturalism, which reserves cultural exceptionalism for humans. If, in agreement with the extended evolutionary synthesis, we are going to understand culture as a way in which human or animal societies inhabit the surrounding environment and actively shape it over generations (so-called niche inheritance), then we will stop associating cultural processes by definition with an anthropocentric view of cognition. This section is not meant to conclude whether human mental abilities are unique but to find a phylogenetic framework in which to sensibly formulate the question of anthropological difference. Our next task will be to connect this framework with selected approaches of philosophical anthropology.

4 Portmann's philosophical anthropology: Animal inwardness and the special position of humans[12]

In section 2, I attempted to show that in discussing animal behavior and its social aspects, we cannot overlook the intentionality, emotionality, and spontaneous expression of it. While for naturalistically-minded Darwinists the emergence of these aspects came about as a byproduct of their program of finding an evolutionary transition between animals and humans, for some of the founders of philosophical anthropology, the subject of interiority is a fundamental platform for thinking about living organisms. I will

11 Jablonka and Ginsburg (2022) attempt to show, moreover, that every conscious agent is capable of learning from his own experience. In this view, social transfer of skills is just a special case of the general ability to learn that results from the interaction of a conscious agent with his surroundings (cf. Olteanu 2022).

12 This section contains slightly modified passages from Jaroš (2022, p. 116–120, p. 196–199). For a detailed analysis of Portmann's approach to the anthropological difference and a contextualization of it in the philosophy of biology and anthropology, see Jaroš (2021) and Jaroš and Brentari (2022).

focus here on the ideas of A. Portmann, whose zoological expertise and well-known determination of the developmental type of humans as "secondarily altricial" have made him an authoritative figure for all philosophical anthropologists.

From a theoretical perspective, Portmann's biology can be placed within the organicist movement, which emphasizes the importance of developing a nondeterministic epistemology in order to understand living beings. J. von Uexküll and Portmann postulate that organisms are subjects that actively interpret events in their surroundings. In this connection, Portmann speaks of inwardness (not only of animals but plants also).[13] Inwardness includes the ways in which a given organism relates to the world as well as the realm of experience, which derives from fulfilling the need of self-preservation and from emotional and social motivations. We can include the phenomenon of play here, which shows that an animal's movements are not tied to "purely biological" drives such as hunger or sexuality. Although Portmann (1964, p. 142), in agreement with Uexküll, evaluates animal Umwelten in terms of biologically programmed functional cycles, he nonetheless sees moments of freedom in some animal behavior (*neue Möglichkeit des freieren Verhaltens*, Portmann 1968, p. 18). Thus, the domain of nature is not fully capturable by natural laws – not because human knowledge is insufficiently advanced, but because it is not a domain of necessity.

Portmann considers the complexity of animal social life to be high. He particularly notices in primates an ability of juveniles to adopt behaviors from adult individuals and speaks of their social Umwelt (Portmann 1964, p. 104) and the existence of traditions (Portmann 1990a, p. 57, 67). The fullest extent of these considerations can be found in his 1970 Eranos lecture on a zoosemiotic comparison of human speech and animal communication (available in English translation in Portmann 1990b). Here he explicitly states that animals acquire new habits through imitation and further points out that birds and mammals acquire new habitats through a process of "acculturation."[14]

In the spirit of the posthumanist trend in the contemporary phenomenology of animality, Burgat (2006) observes that Portmann opened the gates of freedom to animal behavior. We must realize, though, that from a different perspective, Darwin contributed more to our understanding of the possibilities of animal behavior than Portmann. In postulating an evolutionary continuity also in the realm of mental abilities and speculating on the origin of human culture via natural (and sexual) selection, Darwin prepared the ground for the undermining of the second pillar of naturalistic ontology. Portmann, on the other hand, supports the thesis of a special position of humans in nature (*die Sonderstellung des Menschen*), which he adopts from M. Scheler. While Scheler developed this position by a philosophical method supported by contemporary

13 It is not without interest that Portmann's term *Innerlichkeit* is usually translated to French as *l'intériorité* (cf. Stamm 1999), which is the same term used by Descola in the French original.

14 This phenomenon is most visible in cases of "wild" species inhabiting human settlements.

findings in biology (especially the primatological studies of W. Köhler), Portmann tries to define human specificity primarily through morphology and ontogeny:

> In spite of the fact that apes are precocial in form, they develop relationships with the environment more slowly than do other precocials – ungulates and whales, for instance. However, no great ape goes through a postpartum phase of transformation in which it does not acquire species-specific posture until it is exposed to social contact. Furthermore, no baby ape experiences the slow metamorphosis to world experience as perceived by the mind as we do in that first, developmentally critical year after birth, a stage that marks a clear division of the entire growth period into three distinct parts. We say that this developmental type is a special kind of ontogeny and call it 'secondarily altricial.' (Portmann 1990a, description to image 5.2)

The presence of a phase of distinct postnatal transformation not found in any other primate leads Portmann to the idea that humans are "prematurely" born compared to other apes – a purely precocial form of development would require the human embryo to continue in its uterine development for a further 9–12 months. The rapid development during this period, which corresponds to the dynamics of embryogenesis in the womb, leads Portmann to believe that the first extra-uterine year of human life is a unique phenomenon in biological evolution.[15] According to Portmann (1990c, p. 132), three key characteristics of humans – upright posture, the beginnings of spoken language, and the foundations of rational thought – are formed during the 7–12 months following birth. This early dynamic phase of human ontogeny occurs in an external environment rich in various stimuli, but one which is also more dangerous than the environment of the womb. To survive, a helpless human infant needs not only the attentive care of a mother but also, given the supremely social form of the human species, the support of the entire community into which it is born. This insight led Portmann to formulate the metaphor of the "social uterus" (*sozialer Uterus*)[16] as the space that allows the child to grow up to become a fully-fledged member of a human group, both physically and mentally.

To the basic triad of upright posture, speech, and a rational relation to the world we must add another related human characteristic – life in societies shaped by culture. Portmann (1968, p. 30) speaks of culture as a mode of expression that goes beyond natural spontaneity. A typical example of controlled expression is human speech, which utilizes symbolic expressions passed down from generation to generation. Portmann contends that culture is essential to humans and criticizes efforts to find an evolution-

15 A. Kurismaa and K. Rosenberg have made important updates to Portmann's theory in the field of anthropology. Kurismaa (2021, 107), in the context of the qualitative difference of human neurobiological plasticity, writes that certain functions essential for infant survival that were biologically determined in our evolutionary ancestors came gradually to be ensured by culture (sociocultural scaffolding – e. g., providing thermoregulation, protection, nutrition). Rosenberg (2021), in accordance with Portmann, concludes that physiologically premature birth is an advantage for the human species; as opposed to altricial species, human newborns have open eyes and ears, and thus shortly after birth their neurological system develops in dialogue with an environment rich in stimuli.

16 The first instance is apparently in Portmann (1953).

ary phase in which they belonged anatomically and morphologically to the species *Homo sapiens* yet were not endowed with a complex social and symbolic life.

Here we see skepticism of the Darwinian concept of transitional links, whose hypothetical existence corresponds to the assumption of a continuous transition between individual species. According to Portmann, human culture differs from the transmission of traditions in animal societies in that it can pass on the stories of past generations to which we can consciously relate – only in the case of humans can we speak of this kind of *history* (Portmann 1990a, 11).

5 *In lieu* of conclusion: Animal cultures as a challenge for philosophical anthropology

One goal of this article was to show how modern biological thought has enriched our conception of the animal. It is evident that in order to understand animal behavior, it is expedient to replace the physicalist interpretation with the concept of agency. The phenomenon of differentiation of social, material, and symbolic life across various communities of a given species, known as animal culture, lies on the border between the research domains of the sciences and humanities. This is reflected primarily in the realm of methodology – for example, in the field of cultural primatology, natural scientists are literally required to live among primate communities in order to identify their habits and understand their significance. It can be said with some exaggeration that the discovery of chimpanzee culture signaled the end of biology's status as a purely natural science.[17] Many interdisciplinary fields are being established today such as multispecies ethnography and human-animal studies, which represent a mix of various approaches from natural science and the humanities. These methodological transformations reflect a deeper ontological shift in the approach to animal behavior.

Finally, let us ask what this shift in the understanding of culture means for philosophical anthropology. Of the founders of philosophical anthropology, Portmann was the one most concerned with the nature of the social world of animals (see namely Portmann 1964), so it seems useful to respond to his reflections on the position of humans in relation to animals, which were introduced in the previous section. Without questioning the validity of the overall program of seeking a special position for humans in nature, I would draw attention to some moments where I believe Portmann underestimated the analogy between great apes and humans. As primatologists learn more about emotional and social factors during the early years of ontogeny in chimpanzees and other great apes and their interconnection with the cognitive and so-

17 Portmann also was unwilling to label biology a purely natural science (*Naturwissenschaft*) and speaks of it rather as research of nature (*Naturforschung*), which aside from determining causality must also be concerned with interpretation of meaning (*Bedeutung*). On Portmann's division of biological research into *Kausalforschung* and *Bedeutungsforschung*, see Klouda (2021) and Wild (2021).

cial intelligence of adult individuals, it is clear that developmental plasticity plays an important role in our closest relatives (Bard et al. 2014). The importance of physical and psychological contact in rearing infants is a constant in all primates; Bowlby's theory of the emotional bond between a child and its caregiver is merely a special case of general need for a close emotional connection between an infant and the individual providing care. Moreover, the assumption that the rearing of an infant is bound to the biological mother is not true even in great apes, as shown by the phenomenon of adoption in chimpanzees (Goodall 1990) and gorillas (Morrison et al. 2021). Chimpanzee infants engage in play with other members of the group, including adult males, at a very young age, and their frequently disruptive behavior is tolerated specifically thanks to a general ability to perceive them as immature individuals. In light of a certain degree of acculturation seen in young apes with human foster caretakers, it is also necessary to revise Portmann's view that "in the well-protected, newborn ape no essentially new possibilities for behavior and movement or for means of communication arise" (Portmann 1990a, p. 57). A space is opening up in which we can also glimpse the development of young apes through the prism of a kind of "social uterus," since their maturation, too, is not a simple fulfillment of biological dispositions and has a fundamentally social character.

It is worth emphasizing that while current deliberation in comparative psychology and cultural evolution studies takes place within a Darwinian paradigm, the specificity of human culture is rarely questioned. Most mainstream authors speak of the unique dynamics of human cultural evolution, which they designate as cumulative, yet there are indications that skills are accumulated in some chimpanzee cultures as well (Whiten 2017, p. 7794). In connection with this question, specific qualities of humans are being sought in the field of social cognition. Most influential in this regard is Tomasello's hypothesis that the anthropological difference derives from the capacity for shared intentionality. Even though he does not discuss the relationship of his work on natural history to the foundational works of philosophical anthropology, Tomasello's linking of the agenda of a special position of humans in nature with a nonreductive naturalism won him the Helmuth Plessner Prize (cf. Fischer 2016). According to J. Fischer and H.-P. Krüger, Tomasello's natural history of anthropogenesis fulfills the postulate of Plessner's philosophical anthropology, which sees humans as natural and cultural beings at the same time (*natürliche Künstlichkeit*, Plessner 1975, p. 338).

The strength of Tomasello's investigation of the anthropological difference is its merging of ontogenetic and phylogenetic considerations. In the face of new knowledge about animal cultures and so-called humanized chimpanzees, however, Tomasello's conception requires a similar kind of revision as Portmann's views, namely his underestimation of the abilities of chimpanzees, particularly in the area of social cognition. This may be due to his chosen method of laboratory research, where the abilities of chimpanzees are compared to those of children without consideration of the differences in individual ontogeny (children grow up in an environment rich in objects and activities that are unknown to the chimpanzees being tested). Leavens (2004) convincingly demonstrates that, through enculturation, chimpanzees are able to understand and

actively use hand pointing as declarative gestures. This raises doubts about Tomasello's postulate on the Machiavellian intelligence of chimpanzees, who are able to solve complex problems but are supposedly motivated by the pursuit of individual advantage, usually a better position in the group or access to sexual partners. When we consider their formation of affective bonds and wider coalitions, however, the image of chimpanzees as egoistic manipulators with selfish inclinations seems too one-sided (cf. de Waal and Bonnie 2009). Field primatologists like J. Goodall and C. Boesch have observed chimpanzee cultures of hunting monkeys that demonstrate true cooperation and culminate in sharing of the prey. In the end, I am convinced that Tomasello's hypothesis of shared intentionality must be theoretically reexamined by means of the extended evolutionary synthesis – social-cognitive abilities are influenced by prior ontogenetic trajectories, and the relationship of the individual to the environment has a social-cultural component.

In closing, I would like to propose a path for philosophical anthropology if it will consider moving beyond the modern dichotomy of non-human nature and (exceptionalistic) human culture. I have attempted to show that the ontogenetic-phylogenetic approach, increasingly prevalent these days in the extended evolutionary synthesis, is a suitable framework for thinking about animals and humans. This approach links the space of interiority with the environment in which the relevant society lives and, at the same time, shows that the methods by which a group modifies its environmental niche are transmitted from generation to generation. Animal cultures thus represent a type of phylogenetic memory that must continually be updated in the ontogeny of the members of a given group. Redefining culture does not have to mean abandoning the search for the anthropological difference, though its place must lie outside the traditional nature–culture dichotomy. In establishing the position of humans in evolution, we must take into account the fact that not only humans but also the "higher animals" have biological predispositions to free themselves from the "natural necessity" seemingly encoded in their species-typical genetic makeup.

References

Bard, K. A., Bakeman, R., Boysen, S. T., Leavens, D. A. (2014). Emotional engagements predict and enhance social cognition in young chimpanzees. *Developmental Science*, *17*(5), 682 – 696.

Boesch, C. (2012). *Wild cultures. A comparison between chimpanzee and human cultures.* Cambridge: Cambridge University Press.

Boyd, R., Richerson, P. J. (1996). Why culture is common, but cultural evolution is rare. *Proceedings of the British Academy, 88*, 77 – 93.

Brentari, C. (2018). From the hiatus model to the diffuse discontinuities: A turning point in human-animal studies. *Biosemiotics, 11*(10), 331 – 345.

Burgat, F. (2006). *Liberté et inquiétude de la vie animale.* Paris: Kimé.

Darwin, C. R. (1859). *On the origin of species.* London: J. Murray.

Darwin, C. R. (1871). *The descent of man, and selection in relation to sex.* New York: D. Appleton.

Darwin, C. R. (1872). *The expression of the emotions in man and animals.* London: J. Murray.

Descola, P. (2013). *Beyond nature and culture.* Chicago: The University of Chicago Press.

de Waal, F. B. M. (1999). Anthropomorphism and Anthropodenial: Consistency in Our Thinking about Humans and Other Animals. *Philosophical Topics*, Vol. 27, No. 1, 255 – 280.

de Waal, F. B. M., Bonnie, K. E. (2009). In tune with others: The social side of primate culture. In K. Laland, B. G. Galef (Eds.), *The question of animal culture* (pp. 19 – 39). Cambridge, MA: Harvard University Press.

Fischer, J. (2005). Biophilosophie als Kern des Theorieprogramms der Philosophischen Anthropologie. Zur Kritik des wissenschaftlichen Radikalismus. In Alexandra Manzei, Mathias Gutmann & Gerhard Gamm (eds.), *Zwischen Anthropologie Und Gesellschaftstheorie: Zur Renaissance Helmuth Plessners Im Kontext der Modernen Lebenswissenschaften.* Transcript Verlag. pp. 159 – 182.

Fischer, J. (2009). Exploring the core identity through the works of Max Scheler, Helmut Plessner and Arnold Gehlen. *Iris*, *1*, 153 – 170.

Fischer, J. (2014). Philosophical anthropology. A third way between Darwinism and Foucaultism. In J. de Mul (Ed.), *Plessner's philosophical anthropology. Perspectives and prospects* (pp. 41 – 54). Amsterdam University Press.

Fischer, J. (2016). Michael Tomasello und Helmuth Plessner. Zwei Protagonisten der modernen Philosophischen Anthropologie. In J. Fischer, *Exzentrische Positionalität. Studien zu Helmuth Plessner* (pp. 319 – 342). Weilerswist: Velbrück Wissenschaft.

Fischer, J. (2022). *Philosophische Anthropologie. Eine Denkrichtung des 20. Jahrhunderts.* Münich, Freiburg: Karl Alber.

Goodall, J. (1990). *Through a Window: 30 years observing the Gombe chimpanzees.* London: Weidenfeld & Nicolson; Boston: Houghton Mifflin.

Grene, M. (1968). *Approaches to a philosophical biology.* New York: Basic Books.

Jablonka, E., Ginsburg, S. (2022). Learning and the Evolution of Conscious Agents. *Biosemiotics* 15, 401 – 437.

Jablonka, E., Lamb, M. J. (2014). *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life.* Cambridge, MA: MIT Press.

Jaroš, F. (2017). Darwin, Dawkins, and de Waal: Animals Like Persons or Machines? In M. Škorić, A. Kišjuhas (Eds.), *Atheism and Moral Progress* (pp. 143 – 168). Novi Sad: University of Novi Sad, Faculty of Philosophy. ISBN 978-86-6065-405-4

Jaroš, F. (2021). Portmann's view on anthropological difference. In F. Jaroš, J. Klouda (Eds.), *Adolf Portmann: A thinker of self-expressive life* (pp. 119 – 142). New York: Springer.

Jaroš, F. (2022). *Portmannova filosofická biologie a antropologie.* Praha: Togga.

Jaroš, F., Brentari, C. (2022). Organisms as subjects: Jakob von Uexküll and Adolf Portmann on the autonomy of living beings and anthropological difference. *History and Philosophy of the Life Sciences* 44, 36.

Jaroš, F., Maran, T. (2019). Humans on top, humans among the other animals: Narratives of anthropological difference. *Biosemiotics*, *12*(3), 381 – 403.

Jaroš, F., Pudil, M. (2020). Cognitive systems of human and non-human animals: At the crossroads of phenomenology, ethology and biosemiotics. *Biosemiotics, 13*(2), 155 – 177.

Jonas, H. (1966). *The Phenomenon of Life: Toward a Philosophical Biology.* New York: Harper & Row.

Klouda, J. (2021). The "new morphology" between biology and philosophy: The hermeneutic dimension of Portmann's thought. In F. Jaroš, J. Klouda (Eds.), *Adolf Portmann: A thinker of self-expressive life* (pp. 199 – 218). New York: Springer.

Kurismaa, A. (2021). Revisiting basal anthropology: A developmental approach to human evolution and sociality. In F. Jaroš, J. Klouda (Eds.), *Adolf Portmann: A thinker of self-expressive life* (pp. 89 – 118). New York: Springer.

Laland, K. N., Brown, G. R. (2018). 'The Social Construction of Human Nature', in Elizabeth Hannon, Tim Lewens (Eds.), *Why We Disagree About Human Nature.* Oxford: Oxford University Press.

Laland, K. N., Galef, B. G. (Eds.) (2009). *The question of animal culture.* Cambridge, MA: Harvard University Press.

Laland, K. N., Hoppitt W. (2003). Do animals have culture? Evolutionary Anthropology: Issues, News, and Reviews 12, 150 – 159.

Leavens, D. A. (2004). Manual deixis in apes and humans. *Interaction Studies: Social Behaviour and Communication in Biological and Artificial Systems, 5*(3), 387 – 408.

Lewens, T. (2017). Human nature, human culture: the case of cultural evolution. *Interface Focus* 7: 20170018.

Lorenz, K. Z. (1981). *The Foundations of Ethology.* Vienna: Springer.

Matsuzawa, T., Biro, D., Humle, T., Inoue-Nakamura, N., Tonooka, R., Yamakoshi, G. (2001). Emergence of culture in wild chimpanzees: Education by master-apprenticeship. In T. Matsuzawa (Ed.), *Primate origins of human cognition and behavior* (pp. 557 – 574). Tokyo: Springer.

McGrew, W. C., Tutin, C. E. G. (1978). Evidence for a social custom in wild chimpanzees? *Man, 13*, 234 – 251.

Michelini, F. (2020). The philosopher's boredom and the lizard's sun: Martin Heidegger's interpretation *of* Jakob von Uexküll's Umwelt theory. In: Francesca Michelini, Kristian Köchy (Eds.): Jakob von Uexküll and Philosophy. London, New York: Routledge, pp. 122 – 140.

Morand-Ferron, J., Cole, E. F., Rawles, J. E., Quinn, J. L. (2011). Who are the innovators? A field experiment with 2 passerine species. *Behavioral Ecology* 22, 1241 – 1248.

Morrison, R. E., Eckardt, W., Colchero, F., Vecellio, V., Stoinski, T. S. (2021). Social groups buffer maternal loss in mountain gorillas. *eLife*, *10*, e62939.

Olteanu, A. (2022). Learning as Becoming Conscious: A note on Jablonka and Ginsburg's Notion of Learning. *Biosemiotics* 15, 457 – 467.

Plessner, H. (1975). *Die Stufen des Organischen und der Mensch.* Berlin, New York: de Gruyter.

Portmann, A. (1953). Das Kind vom Standpunkt der Anthropologie. *Kölner Zeitschrift für Soziologie*, *6*, 441 – 446.

Portmann, A. (1964). *Das Tier als soziales Wesen.* Freiburg i. Breisgau: Herder.

Portmann, A. (1968). Die Biologie und das Phänomen des Geistigen. In A. Portmann, *Biologie und Geist* (pp. 9 – 49). Frankfurt a. M.: Suhrkamp.

Portmann, A. (1990a). *A zoologist looks at humankind.* New York: Columbia University Press.

Portmann, A. (1990b). The path leading to words: Levels of living communication. In *Essays in philosophical zoology by Adolf Portmann: The living form and the seeing eye* (pp. 97 – 124). Lewiston NY: The Edwin Mellen Press.

Portmann, A. (1990c). Human beings in the perspective of the theory of evolution. In *Essays in philosophical zoology by Adolf Portmann: The living form and the seeing eye* (pp. 125 – 144). Lewiston NY: The Edwin Mellen Press.

Reed, C. M. (2011). *'Till the Peoples All Are One'. Darwin's Unitarian Connections.* London: Lindsey Press.

Richerson, P. J., Boyd, R. (2005). *Not By Genes Alone: How Culture Transformed Human Evolution.* University of Chicago Press.

Rosenberg, K. (2021). The evolution of human infancy: Why it helps to be helpless. *Annual Review of Anthropology, 50*(1), 423 – 440.

Stamm, R. A. (1999). L'intériorité, dimension fondamentale de la vie. *Revue Européenne Des Sciences Sociales, 37*(115), 55 – 73.

Sterelny, K. (1996). Explanatory Pluralism in Evolutionary Biology. *Biology and Philosophy* 11, 193 – 214.

Švorcová, J. (2023). Transgenerational Epigenetic Inheritance of Traumatic Experience in Mammals. *Genes*, 14, 120.

Švorcová, J., Kleisner, K. (2018). Evolution by Meaning Attribution: Notes on Biosemiotic Interpretations of Extended Evolutionary Synthesis. *Biosemiotics*, 11, 231 – 244.

Švorcová, J., Markoš, A. (2019). *Epigenetic processes and evolution of life.* CRC Press.

Tomasello, M. (1999). *The Cultural Origins of Human Cognition.* London: Harvard University Press.

Tomasello, M., Savage-Rumbaugh, S., Kruger, A. (1993). Imitative learning of actions on objects by children, chimpanzees and enculturated chimpanzees. *Child Development, 64*, 1688 – 1705.

Whiten, A. et al. (1999). Cultures in chimpanzees. *Nature*, 399, 682 – 685.

Whiten, A. (2017). Culture extends the scope of evolutionary biology in the great apes. *PNAS* 114. No. 30, 7790 – 7797.

Wild, M. (2021). Portmann, Goethe and modern biology: Two and a half ways of looking at nature. In F. Jaroš, J. Klouda (Eds.), *Adolf Portmann: A thinker of self-expressive life* (pp. 145 – 158). New York: Springer.

Wilson, E. O. (1995). *The Naturalist.* Harmondsworth: Penguin.

Wiktor Stoczkowski, Anne Collinot

Neanderthals and the sustainable economy

The fashionable notion of a *sustainable economy* refers to an economy that accepts some limits to run for a long time without compromising the ability of future generations to survive and thrive. When it comes to economic sustainability, Neanderthals set a record (at least 300,000 years) that Modern Humans have yet to match, while alarmist forecasts are already predicting an impending ecological apocalypse. What was the secret of the longevity of the Neanderthal world?

A victory over nature?

"Raw nature is hideous and moribund", and only man may "make it pleasant and alive", wrote the French naturalist Buffon in 1764 (Buffon 1764, xxiij). This was merely a late expression of one of the founding beliefs of Western civilisation (Stoczkowski 2002). The history of our species has been represented traditionally as the conquest of a hostile nature that humans tame and bend to their needs. An inhospitable Earth was to be transformed into a peaceful garden. It wasn't so long ago that some engineers seriously considered nuclear explosions to level mountains and change the course of rivers. Such arrogant dreams seemed to be the culmination of the success story of *Homo sapiens* who appeared in Africa 200,000 years ago, at first a humble hominid among others who had already trodden that continent, he ended up colonising all climes and creating artificial environments that made the surface of the planet unrecognisable. But, there were no signs yet of this metamorphosis when, around 80,000 years ago, Modern Humans arrived in the Levant and encountered their older relatives, the Neanderthals. At that time, the Moderns did not seem to show any superiority over the Ancients. However, the Neanderthals were to disappear 50,000 years later, giving way to the newcomers, whose adaptability and extraordinary inventiveness set in motion a multifaceted cultural process that has accelerated ever since. *Homo neanderthalensis* lost, *Homo sapiens* won.

But the confidence of the proud winner is beginning to fade. Our vision of nature is no longer that of Buffon. Overpopulation, the depletion of energy resources, the merciless extinction of many living species and the catastrophic pollution of natural habitats dampen the contentment of our species. Today, nearly seven billion people seek the ambiguous pleasures of consumption, while the concentration of plastic particles in the oceans sometimes exceeds that of plankton. Such is the contemporary world built by Modern Humans.

Wiktor Stoczkowski, Laboratoire d'anthropologie sociale, École des hautes études en sciences sociales;
Anne Collinot, Centre Alexandre-Koyré, Centre national de la recherche scientifique.

https://doi.org/10.1515/jbpa-2022-012

The Club of Rome sounded the alarm in 1972 (Meadows *et al.* 1972), and there have been countless warnings since. A forthcoming ecological and demographic apocalypse is no longer mere science fiction. Never have we been more aware than in the last five decades that there should be limits to the development of human civilisation. We now speak of *sustainable development* and a *sustainable economy*. These new notions refer to a development and an economy that accepts limits rather than compromise the ability of future generations to live on the planet.

The Neanderthal record for economic longevity

We are thus beginning to admit that the success of our species should no longer be measured by our ability to grow endlessly and subdue nature, but rather by our capacity to preserve our world over time. In this respect, Modern Humans cannot be sure of having been more successful than the Neanderthals. Although not precise, genetic data place the appearance of the Neanderthal lineage in the vast interval between 530,000 and 315,000 years before the present (Endicott, Ho, Stringer 2010). Even if we take the lower figure, it means that the Neanderthal species, which disappeared around 30,000 years ago, managed to prosper for almost 300,000, perhaps even 500,000 years. This is an achievement that has yet to be matched by Modern Humans who, after 200,000 years of their history, are now worrying about their future, having inflicted brutal transformations on the entire planet.

Let's admit it: the Neanderthal species set a longevity record that is still unequalled. The Neanderthals colonised Europe, the Middle East and part of Western Asia, where they were able to cope with several major ecological upheavals. They were capable of adapting not only to the temperate forests of the Eemian interglacial when hippopotamuses were splashing about in the waters of the Rhône and average temperatures in Europe were higher than today's, but also to the tundra and steppes of the Riss glaciation, which were home to mammoths, reindeer and woolly rhinoceroses. The Neanderthals were carnivorous predators. Most of their food came from hunting. Analysis of the isotopic composition of their bones shows that the proteins they consumed came mainly from large herbivores (Richards & Trinkaus 2009). The Neanderthals concentrated their efforts on capturing a few selected species: Horse, Mammoth, Deer, Aurochs, Steppe Bison, Ibex, Reindeer and Merck's Rhinoceros; on some archaeological sites in Eastern Europe as much as 90 % of the bones of their prey belong to a single species.

This specialised economy seemed to offer Neanderthals a rather rustic way of life. The lack of variety in their diet may have been responsible for the high infant mortality rate and low life expectancy. Their massive, muscular bodies, which required them to absorb a large amount of food, imposed severe limits on their demographic growth. It is estimated that the Neanderthal population never exceeded 157,000 individuals (Roebroeks, Hublin & MacDonald 2011), despite the large area they occupied (10 million square kilometers). This means that their global population was at most equivalent to

the number of residents of a mid-sized European town, such as Dijon, Oxford, Haarlem or Heidelberg. The density of the population must therefore have been very low, making the entire species vulnerable. The Neanderthals' adaptation was all the more fragile because their material culture, although varied and quite sophisticated, was marked by great conservatism. In an age when innovations are transforming our material environment with every passing decade, it seems inconceivable that a technological culture could remain almost unchanged for hundreds of thousands of years. Nevertheless, Neanderthals were able to cope with major ecological changes by mobilising their relatively stable technical repertoire.

Despite disadvantages, the Neanderthals managed to invent a way of life that allowed them to survive for at least 300,000 years. Their economy was sustainable, but there were drawbacks. They had to limit their needs, reduce innovation, reproduce moderately and, above all, give up the idea of improving their undoubtedly simple existence. Perhaps this is the price of a sustainable economy.

Stoics in prehistory

Some researchers believe this particular way of life was due to a cognitive difference between Neanderthals and Modern Humans. The prehistorian Thomas Wynn and the psychologist Frederick L. Coolidge speculate that Neanderthals had a "working memory" that was less efficient than ours. The underdevelopment of this memory, which stores the information needed to perform complex cognitive tasks – such as reasoning, understanding or learning – is supposed to explain the extreme cultural conservatism of Neanderthals and their reduced capacity for innovation. This cognitive peculiarity is thought to have determined the psychological character of the Neanderthal who would have been stoic and able to endure the boredom of a monotonous existence (Wynn & Coolidge 2004).

Does a sustainable economy require the practice of stoic virtues? The Stoics of the Hellenistic period recommended rejecting artificial desires and limiting oneself to a few rare natural needs, to find the peace and happiness of a simple existence in harmony with the course of nature. Such an attitude requires a fatalism that accepts the world as it comes rather than trying to change it. In this way, the Neanderthals could indeed be described as Stoics *avant la lettre.* Did their stoicism stem from a cognitive deficit? There is no hard evidence for this. It is also possible that the limitations specific to their demography and economy were the result of a cultural choice, maintained over hundreds of thousands of years by a stubborn tradition. Whatever its causes, this limitation did not prevent Neanderthals from surviving major climatic and ecological changes. It only became a handicap when they had to adapt to the arrival on their territory of a new hominid, unwilling to impose stoic limits on himself, determined to innovate and equipped with all the cognitive means to do so. This was the beginning of the end of the formerly sustainable Neanderthal economy.

Fascinated by the prospect of infinite progress, modern civilisation had little use for the stoic ideal. Buffon, who was an eloquent spokesman for this culture of progress in the 18th century, made the following observation about the self-limitation that some philosophers praised in savages: "What is necessary to be happy, if not to desire nothing? [...] If this is so, let us claim at the same time that it is sweeter to vegetate than to live, to have no appetite rather than to satisfy one's appetite, to slumber in an apathetic sleep than to open one's eyes to see and feel; let us consent to leave our souls deaf and our minds in the dark, never to use either of them..." (Buffon 1758, p. 27). Today, aware of the risks of unlimited progress, we would hesitate to agree with Buffon. Yet we continue to talk about sustainable development, which is a watered-down version of the ideology of growth, an imaginary development with the advantages of development, but miraculously devoid of its perils. The future will show whether our species can thrive for long, wanting both development and sustainability. The future will also show whether our hyperactive cognition will enable us to lay the foundations for an economy as sustainable as the one developed by those Neanderthals we assume were cognitively deficient. The survival of our species depends on it. We have not yet beaten the record for longevity set by our older relatives, who were perhaps too stoic to compete for survival with their more frantic younger cousins.

References

Buffon, Georges-Louis Leclerc, comte de (1758): "Des animaux carnassiers", In: *L'Histoire naturelle, générale et particulière.* Paris: L'Imprimerie royale, vol. 7, pp. 3 – 38.

Buffon, Georges-Louis Leclerc, comte de (1764): "De la nature", In: *L'Histoire naturelle, générale et particulière.* Paris: L'Imprimerie royale, vol. 12, pp. iij-xvj.

Endicott, Phillip E., Ho, Simon Y. W., Stringer, Chris (2010): "Using genetic evidence to evaluate four palaeoanthropological hypotheses for the timing of Neanderthal and modern human origins", In: *Journal of Human Evolution*, vol. 59, n°1, pp. 87 – 95.

Meadows, Donnella H., *et al.* (1972): *The Limits to Growth. A Report for the Club of Rome's Project on the Predicament of Mankind*, Washington D.C., Potomac Associates.

Richards, Michael P., Trinkaus, Erik (2009): "Isotopic evidence for the diets of European Neanderthals and early modern humans", In: *Proceedings of the National Academy of Science*, vol. 106, n° 38, pp. 16034 – 16039.

Roebroeks, Wil, Hublin, Jean-Jacques, MacDonald, Katharine (2011): "Continuities and discontinuities in Neandertal presence", In: *Developments in Quaternary Science*, vol. 14, pp. 113 – 123.

Stoczkowski, Wiktor (2002): *Explaining Human Origins. Myth, Imagination and Conjecture*, Cambridge: Cambridge University Press.

Wynn, Thomas, Coolidge, Frederick L. (2004): "The expert Neandertal mind", In: *Journal of Human Evolution*, vol. 46, n° 4, pp. 467 – 487.

Hugh Desmond

Between beasts and gods: Human exceptionalism and the egalitarian narrative

1 Introduction: The narrativist approach to human uniqueness

The question of human uniqueness – Are humans unique among animal species, and if so, what makes them unique? – is older than philosophy itself, and is a driving theme across creation myths (Leeming, 1994/2010). However, today, asking about "the human place in the cosmos" (Scheler, 1928/1969), seems at best antiquated, and perhaps even suspect.

One important reason for this perception is that, from a generic post-Darwinian vantage point, the question is simply trivial. From this perspective, a species is "unique" when it possesses biological traits or properties that no other species possesses. On this definition, humans are indeed unique, because no other species can walk, talk, or build tools like humans can. However, no other species can sing in the way blue whales can, or thrive in human intestines to the same extent *E. coli* can. They too are unique. Thus humans are unique, but trivially so, since every species is unique.

More generally, in biologically informed discussions of human uniqueness (see e. g. Gee 2013) the "place" of humans tends to be defined as the *taxonomic* place in the tree (or web) of life. And then one must draw the conclusion that humans are but one small offshoot (*Homo sapiens*) of a much larger phylogenetic tree that includes the family of great apes (*Hominidae*), the class of mammals *(Mammalia),* the animal kingdom (*Animalia*), and so on. Like our physical place in the universe, our taxonomic place in the biosphere does not seem to be privileged or even remarkable. In fact, to believe that "man's place in nature" is privileged seems, from the generic post-Darwinian vantage point, to evince the bias of *anthropocentrism.* This is how asking the question of human uniqueness can come to be viewed as suspect.

The term "anthropomorphism" is used frequently, but its genealogy is most revealing. The term gained ascendency in the 1860s and 1870s, and was used in explicit analogy to "geocentrism". The analogy between Darwin and Copernicus was immediately apparent to, for instance, Thomas Huxley in one of the first book reviews of the *Origin*, where he coins the term "Darwinism" in comparing Darwin to Copernicus (Huxley, 1860). A few years later, William Draper in his 1863 *A History of the Intellectual Development of Europe* explicitly mentions "anthropocentrism" as an illusion that is overcome with scientific progress (Draper, 1863, p. 537). The idea that Darwin dispelled the illusion that humans were at the centre of life, just as Copernicus dispelled the illusion that humans were at the centre of the universe, thus arose immediately with

 https://doi.org/10.1515/jbpa-2022-013

Darwin's contemporaries – and to this day, anthropocentrism carries the connotations of being a prescientific attitude.

Even so, anthropocentrism seems to be alive and well in popular science today in a way that could not be said of geocentrism. Consider, for instance, the reporting of research on Neanderthals by science journalists: the focus tends to be on how different (or similar) they are to "us" (meaning: *Homo sapiens*), with titles such as "Neanderthals, like humans, may have had long childhoods" (in *Science:* Gibbons, 2017) or "Neanderthal vs Homo Sapiens: How Are Neanderthals Different From Humans?" (in *Discovery Magazine:* Scharping, 2023). There seems to be a continuing interest into what makes humans "different". This tendency in popular communication is at odds with the mounting evidence of the similarities of the Neanderthals with *Homo sapiens* (as demonstrated in Peeters & Zwart, 2020). Is this remaining interest simply evidence of a recalcitrant anthropocentric bias (e.g., Peeters & Zwart, 2020)? Or is the anthropocentric tendency driven by the more sinister motive to defend animal cruelty (e.g., Chapman & Huffman, 2018)?

This paper is motivated by a dissatisfaction with these types of view. Anthropocentrism originated as a rhetorical term among science advocates, and even if some beliefs in human uniqueness evince a prescientific egocentrism, that does not mean that other such beliefs may have at least some rational grounds. Regarding geocentrism, philosophy of science has long (at least since Kuhn, 1962) moved beyond the simplistic analysis of the view as a mere self-centered bias. After all, there were *some* good explanatory reasons in favor of geocentrism: we do not feel the Earth to be moving; when we look up at the sky, we see the Sun and the stars moving around us; and so on. Because of flaws in Copernicus's model (e.g., he assumed orbits were circular), it is now readily recognized that it was quite a subtle question, at least until Kepler, as to whether geocentrism or heliocentrism was the better scientific explanation of the motion of heavenly bodies. By contrast, even a century and half after Darwin's *Origin*, a similarly balanced treatment of the question concerning "human uniqueness" has not gained the same mainstream currency, and instead the question is viewed as merely resulting from irrational and/or immoral biases such as anthropocentrism and, as we will later discuss, speciesism.

Of the dead nothing but good is to be said: this is true for ideas as much as it is for people. Perhaps this is why philosophers are more even-handed in their treatment of geocentrism than in that of anthropocentrism. However, why does anthropocentrism refuse to die? I would venture at least two reasons. The first, and most obvious, is that the issue of biological anthropocentrism is much more morally charged than that of cosmological anthropocentrism. It is not analyzable as a merely empirical issue, and hence cannot be as easily debunked as geocentrism was. The second, stronger reason is that beliefs in human uniqueness are simply not debunkable. Geocentrism concerns the movements of physical objects. By contrast, "human uniqueness" is often perceived to be about *identity.* To construe claims of human uniqueness as falsifiable claims of taxonomy or morphology simply misses the target: any subsequently claimed debunking therefore loses persuasive force.

Consider the existential-phenomenological approaches to human uniqueness in the tradition of philosophical anthropology. Many of the core ideas in that tradition seek to characterize humans through particular structures of their experience, whether that is will-to-power (Nietzsche), *agape* (Scheler), *durée* (Bergson), or *Dasein* (Heidegger). All interpret the metaphysical question "What is man (anthropos)?" in existential-phenomenological terms, in terms of some defining feature in how humans *experience* the world.[1]

Concepts such as *durée* or *Dasein* were explicitly intended by Bergson and Heidegger to escape the reaches of the methods of mathematical science. Their existential-phenomenological approaches were intended to maintain a certain autonomy from science. Consequently, their positivist contemporaries such as Russell or Carnap rejected such concepts as decidedly nonsensical. And today in the 21st century, with the epistemic primacy of science arguably greater than it was in the early 20th century (Gieryn, 1999), the existential-phenomenological path is difficult – perhaps too difficult. I will not go down it in this paper.

Instead, this paper adopts a third path, which is neither positivist nor existential-phenomenological. The starting point of this path is to view the question of human uniqueness as bridging science and ethics, and in particular as bridging biological science and animal/environmental ethics. Views on human uniqueness (or the lack thereof) define "narratives" or "worldviews" that selectively represent the scientific state-of-the-art in such a way as to have *normative* implications on how humans *ought* to behave towards other species. They define our *default moral stance* towards other animals, by which I mean: a standard expectation (from which we can deviate according to the particular circumstance) about the degree to which we should attach weight to what is valuable to other species. In other words, views on human uniqueness may *appear* to be metaphysical views, but they serve an ethical function of offering moral guidance in our interactions with other species.

The key *analysans* in this approach is not the measurable observation (as it is for positivism) or the subjective experience (as it is for phenomenology), but rather the informed action. The metaphysical "What is man" is neither construed as "What is *Homo sapiens*" nor as "Who am I", but rather as "How ought I, as *Homo sapiens*, act?". As an evolved species, our origins influence without determining how we ought to act towards other species. There is thus a strong pragmatic element in this approach, but for purposes here I dub it the 'narrativist approach', because selective representations of science are what inform our actions. This approach has precedents in the sociology and history of science (Hesketh, 2022) but has, to my knowledge, not been systematically developed in either applied ethics or the philosophy of science.

---

1 For instance, consider Bergson in *Evolution créatrice:* "With man, consciousness breaks the chain [of automatism]. In man, and in man alone, it sets itself free." (Bergson 1911, p. 225). In Heidegger's *Sein und Zeit* we find asimilar remark that human beings are uniquely characterized by certain self-reflexivity: "Dasein … is ontically distinguished by the fact that in its being this being is concerned about its very being." (Heidegger, 1926/1996, p. 10). Or

To return to the recalcitrant interest in human uniqueness: on the narrativist approach, this interest is not viewed as manifesting some irrational and/or immoral bias, but rather as a response to a *genuine ethical uncertainty* about how we should morally orient ourselves towards the rest of nature. The very real conflicts of interest that arise in interactions between humans and non-humans will be something that this paper highlights: in these conflicts, it matters a great deal how we conceptualize the moral status of non-humans relative to our own moral status.

The goal of this paper is to identify, analyze, and evaluate one science-based narrative in particular, namely the "egalitarian narrative". This narrative is, today, the standard one, and holds that humans are not unique, that this view is supported by science, and to think otherwise evinces unscientific and/or immoral biases (anthropocentrism and/or speciesism). This paper expansively analyzes the different facets of the egalitarian narrative in section 2.

In section 3, the egalitarian narrative is critiqued in light of human ecological dominance. Human beings are by far the most dominant large-bodied species. Moreover, their dominance is intertwined with agency, and there is good reason to doubt whether "egalitarianism" is the best representation of what ethical relations between humans and non-humans should look like.

Due to length considerations, this paper will refrain from discussing what alternatives to the egalitarian narrative are available, and how their strengths and weaknesses versus the egalitarian narrative should be evaluated. (There is no such thing as a narrative with no weaknesses.) However, there is one evaluative criterion I feel compelled to touch on, namely whether a narrative can be used as a cover for animal cruelty and environmental exploitation. After all, one of the core reasons we still hold on to the egalitarian narrative is, arguably, because its *in*egalitarian counterparts seem to open the door to cruelty and exploitation. This issue will be touched on in the concluding discussion (section 4).

2 The egalitarian narrative of human-animal interaction

Narratives that are both science-based and action-oriented may seem, at first, to be hybrid monsters that cannot justifiably be used. They may recall creation myths which combine theoretical and moral statements on (1) how humans originated, (2) what is the source of present evil, (3) how humans ought to act in the future. Nonetheless, while we do not rely on creation myths today, certain parallels can be discerned in how we package and communicate science through narratives that both explain human origins and attempt to motivate us to change our attitudes and behaviors towards the natural world. As an illustration, here is one engaging formulation:

> Human beings are a part of the animal kingdom not apart from it. The separation of "us" from "them" creates a false picture and is responsible for much suffering. It is part of the in-group/out-group mentality that leads to human oppression of the weak by the strong as in ethic, religious, political, and social conflicts. Let us open our hearts to two-way relationships with other animals, each giving and receiving. This brings pure and uncomplicated joy. (Bekoff 2007, p. 370 – 371)

This is a formulation of what can be called the "egalitarian narrative". It touches on all three points that many creation myths touch on as well: (1) humans are "part" of the animal kingdom; (2) speciesist oppression is what is going wrong in our interaction with animals; (3) the way forward lies in rejecting speciesism. This section will be dedicated to disentangling the descriptive, causal, and ethical-normative content of this passage.

However, before doing so, I would like to give two further examples to give a sense of the authority with which the egalitarian narrative is posited, one from an explicitly activist context, and one from an explicitly academic context. The first is the mission statement of *People for the Ethical Treatment of Animals* (PETA), the largest animal rights organization today:

> PETA opposes speciesism, a human-supremacist worldview, and focuses its attention on the four areas in which the largest numbers of animals suffer the most intensely for the longest periods of time: in laboratories, in the food industry, in the clothing trade, and in the entertainment business. (PETA, 2023a)

Note that PETA explicitly defines speciesism in parallel to sexism and racism:

> Speciesism – like sexism, racism, and other forms of discrimination – is an oppressive belief system in which those with power draw boundaries to justify using or excluding their fellow beings who are less powerful. (PETA, 2023b)

These quotes give an initial illustration of "species egalitarianism" which is the normative component of the egalitarian narrative (to be analyzed in more detail later).

The last illustration of the egalitarian narrative shows its roots in intellectual history. Here is Peter Singer appealing to evolutionary theory and Enlightenment values to motivate his ethical views:

> Once the *weight of scientific evidence* in favor of [evolutionary] theory became apparent, practically every earlier justification of our supreme place in *creation* and our dominion over the animals had to be reconsidered. (…) Only those who prefer *religious faith* to beliefs based on reasoning and evidence can still maintain that the human species is the *special darling of the entire universe*, or that other animals were created to provide us with food, or that we have *divine authority* over them, and divine permission to kill them. (…) Yet, the human "hand of tyranny" is still clamped down on other species… here we see most clearly the ideological nature of our justifications of the use of animals. It is a distinctive characteristic of an ideology that it resists refutation. (Singer 1975/2015, pp. 299 – 300; my emphasis)

It would take us too far to parse this text and the wealth of assumptions in the background, but most readers will readily recognize generic Enlightenment dichotomies at play in this passage: religion versus science, ideology versus reason, ignorance versus evidence, tyranny versus freedom. These are also the motifs that are at play in the egalitarianism as *worldview:* species egalitarianism is not portrayed as just another -ism in the taxonomy of moral views, but as an heir of the Enlightenment concerns with liberalism, democracy, and science. This is a rhetorically powerful strategy, and will later be analyzed as the "meta-narrative" component of the egalitarian narrative.

In light of this quote, I would like to discuss three components of the egalitarian narrative: a scientific component (i. e., how evolutionary science is represented), a normative component (i. e., the moral lessons that are drawn from the science), and a meta-narrative component, by which I mean how the egalitarian narrative situates itself against its philosophical rivals.

2.1 The normative content: Species egalitarianism

The egalitarian narrative is first and foremost a set of normative claims, where scientific content is marshalled in order to motivate humans to behave in certain ways towards other species. Without the scientific content, the egalitarian narrative loses much of its persuasive force; however, the normative content can be evaluated on its own. For this reason I present the normative content before the scientific content.

The normative content of the egalitarian narrative, I propose, is to be understood negatively, not as the endorsement of equality, but rather as the rejection of speciesism. Speciesism is an immoral prejudice where humans unjustifiedly privilege the interests of members of their own species over those of members of other species. Species egalitarianism, as the rejection of speciesism (see e. g. PETA's mission statement), therefore does not necessarily imply treating other species as moral *equals.* Not everyone will agree with this characterization of species egalitarianism; this is why I will motivate this decision in the current subsection. This requires some some background from political philosophy.

2.1.1 Why is species egalitarianism a form of egalitarianism?

In the literature on the moral status of animals, some commentators such as Shelley Kagan have used the term "unitarianism" to capture the belief that humans and non-humans (and all living beings) share the same *moral status*[2], which in turn

2 An entity has *moral standing* when its interests are worthy of moral consideration (for instance, on some accounts only sentient creatures have moral standing: a table does not have moral standing). The *moral status* of an entity – at least as I will understand the term – comes in degrees and is a measure of the degree of moral consideration given to an interest of that entity. Thus, if a human has a higher de-

means that their interests (or goods) are worthy of *equal consideration* (Kagan, 2019, p. 2). This corresponds closely to the normative content of what I have called species egalitarianism. Kagan, by contrast, reserves the term "egalitarianism" as the view that prescribes that distributions of goods (such as welfare) should be *equal* distributions. It contrasts with views such as "prioritarianism", which prescribe goods to be primarily distributed to those who need them most, even if this involves inequality (Kagan, 2019, pp. 60 ff).

Why do I not follow Kagan's terminology, and speak of the "unitarian narrative" or "species unitarianism"? First, "species egalitarianism" parallels a general usage of "egalitarianism" as the protean view that "all human persons are equal in fundamental worth or moral status", which can spawn different views according to how "fundamental worth" is understood (see Arneson, 2013). Equality may be construed as a universal respect for fundamental rights (e. g. Locke, 1690), or an equal concern for the well-being of all humans (e. g. Bentham, 1789), or justice-as-fairness where each citizen (in principle) contributes equally to the "rules" of distribution (Rawls, 1971/1999).

In this way, egalitarianism is less of a set of doctrines and more like a *philosophical project* to understand what "genuine equality" means. Humans are not *literally* the same – they have different capacities and needs. Thus they cannot be *literally* treated as the same, and this is not what is at stake. Genuine equality is often intuited as the ideal that *only certain differences* are ignored in decisions how to value human needs: differences in class, ethnicity, sex, gender, sexual orientation, or family relation. Genuine equality does not mean that adults and children, rich and poor, men and women, and so on, should be treated in the same way. In fact, egalitarianism can be viewed as the philosophical search for understanding what forms of *de facto in*equality are compatible with, or even mandated by, genuine equality.

In this regard, egalitarianism parallels liberalism in that "genuine freedom" cannot mean a *literal* lack of interference from others, since human flourishing requires contribution from others (whether through families, friendships, economic transactions, and so on). Liberalism is the search for what forms of interference are compatible with, or even mandated by, genuine freedom.

My point here is not to engage in a discussion about the different meanings of equality: that is a whole field unto itself. Rather, it is to point to the standard understanding of egalitarianism – both in academia and in public discourse – as the rejection of forms of inequality based on the biases of classism, racism, sexism, nepotism, and so on.

---

gree of moral status than a duck, then human interest in avoiding uncomfortable cold takes moral precedence over the duck's interest in avoiding uncomfortable cold.

2.1.2 Species egalitarianism as the rejection of speciesism

Species egalitarianism, then, can be understood as the philosophical project that seeks to understand what forms of *de facto* inequality between humans and non-humans are compatible with, or even mandated by, "genuine equality" between humans and non-humans. Or yet again, species egalitarianism is the rejection of *speciesism*, which leads to unjustified inequality between humans and non-humans. The preference utilitarianism of Peter Singer is an example of this understanding of species egalitarianism. Singer holds that human and non-human interests should be given equal consideration. However, at the same time, Singer holds that human life is typically more valuable than non-human life, because humans typically have *more and more valuable interests* than non-humans: humans are self-aware, can have meaningful relations with others, and can plan for the future in a way that non-humans cannot (see Singer 1975/2015, pp. 52ff). This means that killing a (healthy) bear is morally preferable to killing a (healthy) human.

Similarly, Tom Regan, who extends the notion of fundamental rights to non-human animals, holds that that a human life ought to be saved over a non-human one (he considers the case of a dog[3]). And as a last example, Martha Nussbaum in her "capabilities approach" deems that the lives of "more complex forms of life" with "more and more complex capabilities" are comparatively worth more. (Nussbaum 2004, p. 308). Humans are the ones who happen to be the more complex forms of life. The judgment that human lives are more worthy of protection than non-human lives is a moral intuition that is reproduced across egalitarian frameworks, whether these are grounded in utilitarianism, deontology, or virtue ethics.

This way of presenting the issue highlights a fundamental tension – or at least, a serious question mark – for species egalitarian frameworks. On the one hand, they hold that humans and non-humans are fundamentally equal, but when a decision needs to be made between saving a human and saving a non-human, they all opt for the former. Human and non-humans are *worthy* of equal moral consideration, but somehow they do not actually *receive* equal moral priority. There are exceptions – Singer famously proposed that less consideration should be given to humans with dementia compared to some animals (Singer 1983) – but absent pathologies or other circumstances, the lives of humans are deemed of superior moral value to those of non-humans.

This inevitably gives rise to the suspicion that species egalitarianism does not differ so greatly from the human exceptionalism it so strongly sought to reject. This has generated a large literature (e.g., Menta, 1992; Singer & Regan, 1985) and recent in-

3 "Now, the harm that death is, is a function of the opportunities for satisfaction it forecloses, and no reasonable person would deny that the death of any of the four humans would be a greater prima facie loss, and thus a greater prima facie harm than would be true in the case of the dog." (Regan, 1983, p. 324)

depth discussions (Kagan, 2015, 2016, 2019). We will touch on this issue later in connection to human dominance.

In sum, species egalitarianism does not entail that human and non-humans have lives of equal worth, but holds that they are fundamentally equal and formulates this as the rejection of speciesism (in the way that egalitarianism rejects racism and sexism).

2.2 The scientific content: Common descent

Without scientific content, the egalitarian narrative would just be a thin normative position in animal ethics. However, the egalitarian narrative is a *thick* description of human-animal relations, and describes how these relations came to be through a scientific lens. This subsection concerns how exactly the egalitarian narrative marshals evolutionary science in support of its normative positions.

2.2.1 Two scientific hypotheses: Evolution and the Tree of Life

First, the primary framing decision involved in the egalitarian narrative is to foreground the evolutionary hypothesis (all species evolved gradually from other species) and the Tree of Life hypothesis (all species share a common ancestor). These entail two intuitively rich empirical-causal claims: humans evolved from non-humans, and humans share many similarities with non-humans. Let us take each in turn.

The hypothesis of evolution – descent with modification – establishes that humans were not created *ex nihilo* by a divine entity. Instead, the human species has a causal origin in the animal kingdom: the origin of humans can be traced back to non-human animals. Or, to put the issue more tangibly: if one were to go back a sufficient number of generations, one would find a non-human ancestor for every member of *Homo sapiens* alive today. This fact of origin in itself suggests strongly that the transition from non-human to human was gradual. It's in principle *possible* that, from one generation to the next, suddenly "humans" were born from "non-human" parents, but to insist on that view just raises further questions about the underlying concept of "humanity".[4] A gradual transition is by far the more plausible view.

4 It seems reasonable to suppose that "human" is a gradual label that comes in degrees. On this understanding, for instance, *Homo neanderthalensis* would be considered "at least partially human". (In fact, whether *Homo sapiens* and *Homo neanderthalensis* constitute two distinct species is controversial, since they interbred and thus are two subpopulations of the same species according to the biological species concept.) It also seems reasonable to assume that if *Homo neanderthalensis, Homo erectus* or even *Ardipithecus* were not extinct, our pre-reflective moral judgments about the difference between human and non-human species would need to be much more fine-grained.

The second, related, hypothesis is that of common descent or the Tree of Life hypothesis.[5] Common descent holds that all living organisms today share a common ancestor. This means, literally, that humans and all the non-human species form a huge, sprawling family. This also implies that homologies may be expected, due to the inheritance of the same characters (with modifications) from a common ancestor. Humans and non-humans thus form a sprawling family replete with family resemblances.

Taken together, the two hypotheses point to two ways in which the difference between humans and non-humans is eroded: the ancestors of humans were non-human, and humans and non-humans form a family replete with mutual resemblances. They highlight the *similarity* between humans and non-humans. Of course, similarity is not equality qua moral status, so how exactly does this scientific content "support" the normative content of species egalitarianism?

2.2.2 An abductive inference from science to species egalitarianism

The nature of the "support" here cannot be one of deductive inference. One can point to any number of similarities between humans and non-humans; yet, it remains possible for a commentator to hold that these similarities do not qualify the non-humans to an equal moral status. As discussed later (and see Gee, 2013), traditional ways of conceiving of human uniqueness pointed to language, rationality, creativity, sense for justice or beauty, and so on, but other species possess capacities for signaling, problem-solving, some type of fairness, pleasure, and so on. The question is whether these exhibited animal capacities count as manifestations of "genuine" language, rationality, and so on. It is possible to deny that they do – and some in fact do deny this (Glock, 2012; Hacker, 2011). One can endorse all that evolutionary theory has to say about human origins, and through some concept of human uniqueness (or "the anthropological difference" as it is sometimes known: Glock, 2012), still reject species egalitarianism and hold that humans are of superior moral worth in virtue of some property (or capacity) unique to humans.

What about similarities with regard to sentience – the capacity of pain and pleasure? Do the facts regarding sentience not rationally coerce an endorsement of species egalitarianism? On the utilitarian view, going back to Bentham[6], it is only the trait of

5 There is ongoing discussion to what extent all phylogenies form a tree-like topology: since horizontal gene transfer is an important process, especially among bacteria and archaea, some propose that evolutionary history should be primarily represented by a web-like structure (Bapteste & Huneman, 2018; Soucy et al., 2015). Be this as it may, for the "recent" human evolutionary past (i. e., the past 100 million years), which is what is primarily relevant for the purposes of animal ethics, one may assume the accuracy of the tree of life hypothesis.

6 The oft-cited passage here is Bentham's "The question is not, Can they reason?, nor Can they talk? but, Can they suffer? Why should the law refuse its protection to any sensitive being?". (Bentham, 1789, Ch 17. n.122)

sentience that determines whether, and to which extent, an organism is worthy of moral consideration. And here the hypotheses of evolution and common descent have been viewed as providing a default support for sentience attributions to other species, with further justification depending on the actual behaviour of such species. Take for instance Singer's discussion of this question, where he explicitly appeals to the hypothesis of common origin:

> The nervous systems of animals evolved as our own did (...) It is surely unreasonable to suppose that nervous systems that are virtually identical physiologically, have a common origin and a common evolutionary function, and result in similar forms of behavior in similar circumstances, should actually operate in an entirely different manner on the level of subjective feelings. (Singer 1975/2015, p. 42)

Homology with respect to the nervous system is thus *prima facie* evidence that other species possess sentience. In recent years, the interest in sentience has markedly increased, but one sees the same use of the hypothesis of common descent (together with a general precautionary principle) in order to justify lowering the evidential bar of sentience attributions to other species (Birch, 2017; see discussion in Mikhalevich & Powell, 2020).

Even such arguments for the existence of sentience in non-humans need not persuade the human-exceptionalist skeptic. For instance, a skeptic may insist on distinguishing between two types of sentience, a human kind and a non-human one, with the former carrying more moral weight than the latter. This is less ad-hoc than it sounds. For instance, one could argue that the presence of intentionality, advanced memory, or heightened self-awareness in humans means that it is worse for humans to feel pain than for organisms lacking such capacities. Such a skeptic could agree with the Benthamites in rejecting animal cruelty, but simply insist that cruelty towards humans is worse than cruelty towards non-humans. So also here, the advancing of the empirical science on sentience cannot force rational commentators to reject human exceptionalism.

However, this does not mean that the egalitarian narrative's marshalling of scientific hypotheses to support egalitarian moral stances is simply fallacious. The argument can also be interpreted as elliptical. What the narrative does is to put beliefs in human exceptionalism on the defensive by highlighting previously unknown similarities between humans and non-humans and thus gradually removing the empirical support for human uniqueness.[7] Species egalitarianism can take on the role of a progressive Lakatosian research program – continually confirmed by new observations – whereas the human exceptionalism view plays the role of a degenerative program, forced to

7 I will use the term "human uniqueness" in a minimal sense, as referring to a property in *Homo sapiens* that does not occur in other species. "Human exceptionalism" refers to the belief that a uniquely human trait is also *morally significant*, allowing *ceteris paribus* greater moral consideration to be given to humans compared to non-humans.

keep up with new observations through ad-hoc hypotheses, continually adjusting what it means to be human so as to preserve the belief in human uniqueness.

Here is one way of construing the argumentative support that science offers (or rather, is *perceived* to offer) for species egalitarianism: the science is used to support an inference to egalitarianism as the "most compatible" with the stream of results coming out of comparative biology and ethology, which seem to continually uncover new surprising capabilities of organisms. This could be viewed as a type of *abductive* support. It is not deductive support, and one source of disagreement occurs when different commentators might disagree on what "most compatible" means – or whether that even matters for an ethical view.

If one were to formalize this argument in the form of an argument scheme, a first rough characterization might look like the following:

1. [Expectations of similarity] Evolutionary theory, through the Tree of Life hypothesis, establishes the expectation that any human property will either be shared by non-humans, or have a homologue in non-humans.
2. [Observations of similarity] Biological research continually produces novel observations of previously unknown animal capacities that were thought to be unique to humans.
3. [Undermining of human exceptionalism, from 1 and 2] One can expect that some belief in human exceptionalism – i. e., that humans are morally superior in virtue of some trait T – will be undermined by future observations of similarity.
4. [Abductive inference] The belief in species egalitarianism should be endorsed, as it fits better with the flow of scientific understanding than the belief in human exceptionalism.

There is more going on in this argument than can be conveyed by this argument scheme; attempting to analyze it further would bring us too far. My purpose is merely to show how science can be marshalled to support a moral position in a way that is not deductive but also not fallacious. Insofar as the Lakatosian dynamic can also be applied to competing ethical beliefs, this argument scheme makes explicit how the egalitarian narrative portrays the belief in human exceptionalism as a degenerative ethical belief increasingly unable to deal with the onward march of science.

2.3 The meta-narrative

There is another way in which the egalitarian narrative undermines human exceptionalism, namely by portraying its place in intellectual history in a particular way. This is the *meta-narrative* component, the narrative of narratives. More concretely, it is a representation of the history of ideas that situates the egalitarian narrative with regard to rival narratives.

In the meta-narrative of the egalitarian narrative, the most important rival narrative is the so-called "Judeo-Christian worldview" or "Judeo-Christian belief system".

Today, in the 21st century, it may seem strange to many readers to attach this degree of importance to Christianity, but until recently this played a very important role in the way the egalitarian narrative was portrayed. For instance, Goodall and Bekoff give it significant attention:

> And all those raised in the *Judeo-Christian belief system* have taken it for granted that Earth and all its riches, including animals, were created for our benefit. Western science gradually distanced itself from religion, especially in light of Charles Darwin's theory of evolution – but the belief in humankind's superiority remained. (Goodall & Bekoff, 2003, my emphasis)

In this meta-narrative, the primary rival of the egalitarian narrative is the "Judeo-Christian" worldview, from which it differs in two properties: creationism and speciesism.

Closely related is the label of "Western views" or "traditional Western views". As a case in point, Peter Singer repeatedly contrasts his views with "Western thought" or "Western attitudes" or "Western ideas" which are categorized as speciesist (Singer, 1975/2015, on pp. 271–277, 291, 300, 304–305, 309, 340). Singer explicitly follows the commonplace of understanding "Western" as rooted in Judaism and Greek antiquity, and united in Christianity, so on this understanding "Western" and "Judeo-Christian" more or less coincide.

There is a kernel of truth here in that human exceptionalism – the belief that humans have greater moral worth in virtue of one or multiple unique traits – *does* in fact characterize Judeo-Christian worldviews as well as swathes of Western thought and religion. However, it is important here to avoid the laden terms of anthropocentrism or speciesism, as these already contain a value judgment on human exceptionalism. As representative of the Judeo-Christian worldview, consider the two following sentences in *Genesis* 1:26–27

> Then God said, "Now we will make humans, and they will be like us. We will let them rule the fish, the birds, and all other living creatures."

These two sentences unambiguously entail a worldview where humans have an exceptional moral position (here, because of their property of being created in a certain way). Also the specifically *Christian* part to the Judeo-Christian worldview seems to subscribe to human exceptionalism. The following passage from the Bible is cited by Peter Singer in *Animal Liberation* (Singer, 1975/2015, p. 280):

> And the demons begged [Jesus], saying, "If You *are going to* cast us out, send us into the herd of pigs." And He said to them, "Go!" And they came out and went into the pigs; and behold, the whole herd rushed down the steep bank into the sea and drowned in the waters. (Matthew 8:31–33, New American Standard Bible)

This does seem indeed to be evidence that a much higher moral value is assigned to humans compared to non-human animals in the Christian worldview.

Then, turning to the so-called "Western" worldview, one see evidence for the belief in human exceptionalism, at least insofar we can generalize about this complex history of ideas by examining a number of key figures. Aristotle, for instance, does appear to privilege humans over animals, most obviously so in the opening remarks in *Politics*, where in order to establish some basic facts of hierarchy between humans, he appeals to the asymmetry in reasoning between humans and animals.[8] Kant – another canonical figure that could arguably be perceived as representative of "Western" thought – fits the mold as well.[9] More recently, the thinkers cited earlier – Bergson and Heidegger – endorsed some form of human exceptionalism or held views compatible with it. By contrast, some non-Western attitudes or ideas are not exceptionalist to quite the same extent, such as in Hindu religions, where some non-human animals (or all living creatures in the case of Jainism) are viewed as sacred.

The presentation of the belief in human exceptionalism as *prescientific* (or "traditional Western", hearkening to a time when public attitudes were not informed by science) also possesses a kernel of truth. Belief in human superiority *does* seem to be a feature of folkbiology. For instance, one study documented that participants were twice as likely to agree with the statement "trees produce oxygen so that humans can breathe" compared to the statement "trees produce oxygen so that leopards can breathe" (Preston & Shin, 2021). This suggests some of us are indeed predisposed to believing that other organisms exist for our benefit. Here speciesism is combined with a naïve anthropocentric teleological thinking. And such thinking may indeed be difficult to dispel.[10]

Note that, being part of the Christian worldview or of folkbiological thinking is not grounds for rejecting a belief. The belief that one should be kind to strangers is not undermined by the fact that it is a Christian and commonsensical belief. What is of interest is not the strength (or weakness) of the rational argument, but rather the rhetorical force of situating human exceptionalism as religiously motivated or folkbiological. Recall here the remark of Singer: "those who prefer religious faith to beliefs based on reasoning and evidence can still maintain that the human species is the special darling of the entire universe" (Singer 1975/2015, pp. 299–300). Such a sentence mainly fulfills a function in the *meta-narrative*: remaining beliefs in human exceptionalism, in a post-Darwinian age, are explained as resulting from religion and/or folkbiology.

Recently, there are some signs of a shift in the meta-narrative, where human exceptionalism is associated with *animal cruelty* (and not just "religious superstition").

8 "If therefore nature makes nothing without purpose or in vain, it follows that nature has made all the animals for the sake of men." (Aristot. Pol. 1.1256b)

9 "The fact that the human being can have the "I" in his representations raises him infinitely above all other living beings on earth. Because of this he is a *person*, and (…) through rank and dignity an entirely different being from things, such as irrational animals, with which one can do as one likes." (Kant, 1798/2006, p. 15)

10 Another study reported resistance against the (perceived) implications of evolutionary theory that humans can be animal-like and animals human-like (Newall & Reiss, 2023).

For instance, some have suggested that "Claims of human superiority are used to justify human cruelty toward animals [and] mirror how claims of ethnic superiority are used to justify atrocities and even genocide against people trying to escape from famine or violence" (Chapman & Huffman, 2018, p. 4). Such rhetoric emphasizes the similarities between speciesism and racism and between animal slaughter and genocide, and is of course also implicit in Singer's early work. It can be viewed as another aspect of the egalitarian narrative's meta-narrative that is distinct from the association of human exceptionalism with religion.

This aspect of the meta-narrative establishes the *norm* or *expectation* that human exceptionalist views in the post-Darwinian context are likely either irrational or immoral. This positions species egalitarianism and its rejection of speciesism as both the "science-based" and "moral" view (see Figure 1). Both the onward march of science and the Benthamite onward march of morality (towards ever greater circles of moral concern) point towards the egalitarian narrative.

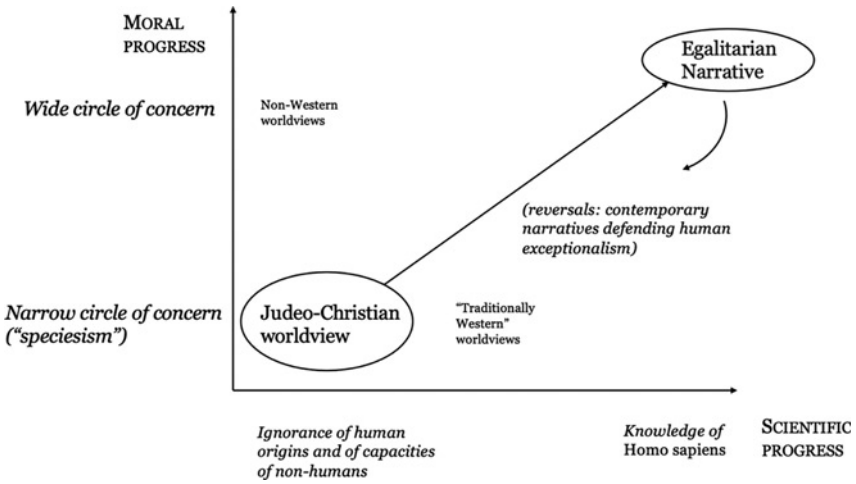

Figure 1: The implied taxonomy of views on "humanity's place in nature" according to proponents of the egalitarian narrative, where both scientific and moral progress point towards the egalitarian narrative. Its antithesis is the Judeo-Christian worldview, which is creationist and human exceptionalist, two attributes that are understood as "anthropocentric" (i. e., pre-scientific) and "speciesist" (i. e., immoral) within the egalitarian narrative. In this set-up, to defend some concept of human exceptionalism is to reverse the trends of moral and scientific progress.

Note that I do not endorse Figure 1's representation of the history of ideas; no scholar would. However, that does not mean that such representations do not *implicitly* hold currency in (semi-)public discourse. Figure 1 makes explicit the framing decisions concerning how alternative narratives are to be represented, and hence, how the egalitarian narrative can be positioned as the strongest one.

3 The blindspot: Ecological dominance

The egalitarian narrative focuses strongly on the phylogenetic fact of common descent, which is closely related (via the phenomenon of homology) to the expectation of resemblances between human and non-human species. It makes any belief in human exceptionalism seem like a phylogenetic "anthropocentrism", a term coined to cast such beliefs as analogous to the pre-Copernican belief that the Earth was at the center of the universe.

However, by foregrounding phylogeny, it backgrounds ecology, and there is a vast and empirically obvious ecological asymmetry between human and non-human species. Humans, namely, are "uniquely" ecologically dominant. Ecological dominance does not evince any one capacity in the way, for instance, speaking evinces the capacity for language; it is rather a state of affairs concerning the human population size, its spread across the globe, and perhaps most importantly, its appropriation of the net primary production of ecosystems. One need not argue about whether or not humans are "the most dominant" of all species. Many other clades can claim exceptional ecological dominance too (ants, tardigrades, bacteria), even if one could quibble that these clades do not in fact form single species. There are over 20.000 species of ant (Ward, 2006), 1000 species of tardigrades (Weronika & Łukasz, 2017), and a vast but unknown number of bacterial species, with some estimates coming in at 1 billion (Dykhuizen, 2005) even though others have called into question the very notion of bacterial species (Doolittle, 2012). Moreover, these organisms have a body size that is multiple orders of magnitude smaller than that of a typical human being, and thus inhabit very different ecological niches. In fact, a human body houses about as many bacterial cells as it does human cells, even though the former are much smaller and have a total weight of 200 g (Sender et al., 2016). There is a case to be made that the *Homo sapiens* is a uniquely dominant species, but it is uncontroversial to say that it is uniquely dominant compared to similar-sized organisms.

In subsection 3.1 I document human dominance and suggest it can be used as a new approach to understanding the "uniqueness" of the human species. In subsection 3.2 I acknowledge how the egalitarian narrative in its way accounts for human dominance: as a moral phenomenon to be overcome by moral progress. In subsection 3.3 I argue why human dominance is intertwined with human agency, and this implies that it is neither plausible, coherent, nor morally desirable to seek to a whole-scale reduction in human dominance to a level that would be expected given species egalitarianism.

3.1 How dominance matters for uniqueness concepts

Historical understandings of human uniqueness, at least the way in which they are commonly represented (e. g., Gee, 2013), tended to foreground a particular capacity

that seemed to be unique to the human species: rationality, language, opposable thumbs, and so on. The most fundamental problem with this line of thought is that the principle of natural selection, the most salient theoretical resource in evolutionary theory, does not imply that any species-unique trait allows for the organism as a whole to also to be considered as "better" in some unqualified sense (i. e., having a higher moral status). Cheetahs are the fastest land animal, and humans may (collectively) be the most "intelligent" but neither humans nor cheetahs are "more fit" or "more adaptive" than the other. They simply inhabit *different* selective environments (Brandon, 1990; Desmond, 2022). Jack Sepkoski once phrased the matter in a way that clarified the causal nature of natural selection while also undermining most concepts of human uniqueness: "Running fast in a herd while being as dumb as shit, I think, is a good adaptation for survival" (Ruse, 1996, p. 486). The belief that humans are "unique" because of some trait (rationality, language) cannot be supported by the principle of natural selection.

However, there is more to evolutionary science (understood broadly) than the principle of natural selection. Ecological metrics *do* allow for cross-species comparisons. And here there is a clearly demonstrable asymmetry between the human species and other species across the metrics of population size, geographic breadth, and biomass appropriation. These metrics are related: by appropriating resources from a range of ecosystems, a larger population size can be supported; this in turn allows both cultural variations to be maintained as well as for increasingly complex cultural traits to be developed, partially through division of labor (Henrich, 2004); this sophisticated know-how finally allows humans to thrive in even more diverse ecosystems; this in turn allows for yet further appropriation; and so on. The human species now appropriates a vast share of the "net primary production" (the amount of carbon produced each year by plant growth) of ecosystems (in 2005, this was 25 % of net primary production according to Krausmann et al., 2013). The current talk that we are now living in the "Anthropocene", a new geological epoch (though this remains controversial: see review in Santana, 2019), is in fact the resurrection of the older "Age of Man" terminology.[11]

Such ecological metrics are species-neutral: they are not cherry-picked so that the human species happens to come out on top. Dominant species (and clades) have come and gone over evolutionary history. It is no more "anthropocentric" to say that the human species has a remarkable ecological dominance (relative to large animals), than it is geocentric to say that the Earth has a uniquely large amount of liquid water (relative to other planets in the Solar System).

In this way, ecological metrics seem to offer a non-anthropocentric way of analyzing the "anthropological difference": if some combination of traits (or capacities) *cau-*

11 Old textbooks and natural history museums used to divide evolutionary history into different epochs: "Age of Amphibians", "Age of Reptiles", "Age of Mammals", and "Age of Man" (see e. g., Osborn, 1923)

sally explains the uniquely large ecological dominance of *Homo sapiens,* this combination of traits is a candidate for understanding what makes humans "unique". In fact, much work in evolutionary anthropology follows this explanatory project (following Boyd & Richerson, 1985), of looking for capacities and types of interaction with the environment (mainly social learning and cumulative culture figure) that would causally explain why humans became so ecologically dominant (see also Demps & Richerson, 2023; Henrich, 2016).

Human uniqueness concepts, as suggested by the narrativist approach, mainly matter (or perhaps even *only* matter) because of their ethical implications: they guide us on how to weigh our interests against animal interests. The question then arises, why the traits that are responsible for human dominance should also be morally significant traits. This is a different question, and should be subject to its own dedicated paper. However, a rough, intuitive answer can be intimated: human agency is causally responsible for human ecological dominance, and insofar as moral agency (and moral status) are grounded in human agency, the causes of human ecological dominance ultimately are relevant for the questions of animal and environmental ethics. While we will return to the connection between dominance and agency later, it is beyond the scope of the paper to further systematically explore and defend this novel human uniqueness concept.

The first reason I nonetheless suggest the possibility for such a concept, is in order to make the more limited negative argument: it is not "prescientific" to believe that there is a kernel of truth to prescientific ideas about human uniqueness. Ancient peoples were not wrong in looking at what was happening after the agricultural revolution, and coming to the conclusion that they were the "ruler" over other species. The reason for this, we would now say, lies in the particular dynamics of cultural evolution rather than in divine intervention. However, the intuition that there is something unique to the human species remains, and is not at all debunked by evolutionary science.

The second reason for drawing attention to human ecological dominance is to prepare a critique of the egalitarian narrative. The fact of human ecological dominance sits uneasily with the egalitarian narrative, where it tends to be presented as an avoidable moral evil.

3.2 Human dominance as a moral phenomenon?

Recall that the discovery of similarities between humans and non-humans seems to undermine belief in human exceptionalism. However, if we bring human ecological dominance into consideration, this undermining argument loses much of its force. Comparative biology may continue to discover surprising and hitherto unknown similarities between humans and non-humans, but this in itself does not answer the question: why did *Homo sapiens* become so massively dominant? In fact, the discovery of similarities between humans and non-humans makes the question even more pressing: what ex-

plains human dominance *despite* the many similarities with non-humans? Proponents of the egalitarian narrative rarely (if ever) draw attention to human ecological dominance in this way, and instead highlights similarities between humans and non-humans. The asymmetry between human and non-human ecological dominance challenges the egalitarian narrative by bringing attention to the anthropological difference.

In an indirect way, the egalitarian narratives does attempt to explain human dominance in way that suits its goals. Instead of understanding it as an outcome of evolutionary processes, it instead categorizes human dominance as a morally undesirable feature of our evolutionary heritage that we can and should overcome through education and reform. Like evolved tendencies towards jealousy or violence, we should strive to minimize human dominance. Conceptually, there are two broad options within the egalitarian narrative. The first is to conceptualize human dominance as a *moral evil:* one for which we may be held culpable and one which we can act to avoid. The second is understanding human dominance as a *natural evil,* for which we ourselves may not be directly responsible, but towards which we have a duty to choose an appropriate response. In either case, human dominance is a moral phenomenon: undesirable and in principle avoidable through human action.

As an example of how human dominance is viewed through the lense of the egalitarian narrative, consider the following passage by Jane Goodall and Marc Bekoff:

> Our domination of other animals is all but absolute. Not only can we kill them in the wild and destroy their homes, but also we can exert control over even the greatest of them. We know how to use pain to subdue and control. "There are bulls, pigs, and camels with rings through their noses. There are cattle prods to send cruel stabs of pain through rebellious captive bodies. There are capture guns to anesthetize. There are whips and spurs to strike and goad. And, as a last resort, guns that kill." (Goodall & Bekoff, 2003)

This passage acknowledges the dominance of humans, but illustrates the meaning of this dominance through examples of cruelty and exploitation that seem eminently avoidable. On this view, a defender of the egalitarian narrative may indeed agree that humans are "uniquely dominant", and may indeed agree that dominance behaviors are very difficult to stamp out. However, the defender will not view continued manifestations of dominance as evidence that egalitarian ideals are empty abstractions, but rather as evidence of both the difficult and importance of striving to realize those ideals.

3.3 Human dominance as grounded in agency

In this subsection, I criticize the egalitarian stance on human dominance from various angles. First, empirically, human dominance is ubiquitous and there is no evidence of it decreasing, despite a half century of egalitarian ideals. Second, conceptually, human dominance is not like a morally undesirable cultural practice (like foot-binding or female genital mutilation) that can be avoided through careful reform and education.

Rather, it results from two facts: human interests often do not align with non-human interests, and humans have a larger degree of agency. Human dominance cannot be avoided as long as humans have a larger degree of agency. Third, morally, human dominance (and agency) are, on the whole, morally neutral: some manifestations of it are morally desirable and some are morally undesirable.

In sum, human dominance is a reflection of human agency: we have a vastly greater capacity to deliberate on what actions further our own good compared to animals' capacity to act to further *their* good. Human ecological dominance is a fundamental phenomenon that calls for more sophisticated thinking than is on offer in the egalitarian narrative.

3.3.1 The ubiquity of human dominance

Peter Singer published *Animal Liberation* in 1975. Since then meat consumption has not gone down, even in industrialized countries, and we use (and likely kill) more animal test subjects than ever for scientific research. For precise numbers and references, see (Desmond, 2024). When moral ideals are so disconnected from actual human behaviour, one must consider the possibility that they are not *demanding* but actually *empty abstractions.* Considering the true ubiquity and inevitability of human dominance , the latter seems more plausible.

To this end, consider how our dominance over other species is so complete that it is often invisible to us. For instance, when we search for food – a fundamentally important type of ecological interaction with the environment – most of us today do not hunt or even farm. We go to an artificial shelter that is filled with food (a "supermarket") and hand over a form of social credit ("money") in exchange for being allowed to bring the food back to other artificial shelters ("houses"). We go to yet other shelters ("pharmacies") to buy medicines that address some ailment, and we fully expect that medicine to be safe to use. In both cases, we often do not realize the degree of ecological dominance necessary to support such behaviors. Our use of medication requires extensive animal testing in order to avoid humans being exposed to significant risks. Our feeding behaviors require the maintenance of highly uniform environments ("farmland") at the expense of diverse (but less controllable) ecosystems; this in turn requires individual humans (farmers, loggers, environmental engineers) to exert dominance over other species.

In sum, daily actions that we entirely take for granted – indeed, we consider access to food and medicine to be a *basic human right* (United Nations, 1948, article 25) – are possible only because of an environment that has been reshaped thanks to vast human ecological dominance over other species. Our dominance is so integrated in our social and cultural lives that it has become a prerequisite for "normal" human action, and hence it is invisible to us. On the whole, barring a self-inflicted collapse in the human population size, there is little reason to think that our ecological dominance

over other species – even just in the way we appropriate a vast tract of Earth's habitable surface for our own species – will diminish.

However, this does not mean that *some* forms of dominance can in fact decrease. In order to make such more nuanced judgments, and at the same time, to better identify what types of dominance cannot so simply be categorized as avoidable moral evils, it is necessary to distinguish between at least two types of dominance.

3.3.2 Clarification: Human agency and two types of dominance

There is a difference between attributing dominance to an *individual* and attributing dominance to a *population.* In the context of evolution and ecology, it is population-level dominance that matters. The various ecological metrics – population size, geographic range, appropriation of net primary production – are attributable to populations, not individuals. Cancers, too, can be considered as ecologically dominant in the intraorganismic environment, since they absorb nutritional resources, grow exponentially in population size, and colonize new environments within the organism (i. e., metastasis). Such *population-level dominance* is thus a primarily amoral, ecological phenomenon – one that co-opts agential language for natural populations[12], but that *at most* is justifiable as a heuristic that reflects the metaphorical "preferences" and "favored outcomes" of evolutionary dynamics.[13] That does not mean that population-level dominance cannot raise other morally relevant questions, such as whether such dominance should be minimized or embraced as "evolutionary success" (for an analysis of the moral ambivalence of "success" see Hourdequin, 2023). However, any natural phenomenon can raise such morally relevant questions. Population-level dominance is, strictly, an *amoral* type of dominance.

However, humans are not just machine-like entities that replicate behaviors driven by social learning mechanisms. Humans are not like cancers. Human beings have desires, intentions, know-how, problem-solving capacities, and so on. Humans are not just dominant, but *actively dominate.* So when an individual human being dominates a farm animal, one cannot fully explain this through population-level dynamics: one needs to integrate the individual human (with their perceptions and goals) into the explanans.

In this way, individual-level dominance reflects *individual agency,* which for purposes here can be understood as the capacity of an individual to carry out actions

12 Designating a particular ecological state of affairs as "dominance" is to adopt an agential language, as if populations "want to" crowd out rival populations. (Godfrey-Smith, 2009)

13 Whether any global trends arise from evolutionary dynamics is controversial, with the default consensus view being that evolution is a "blind" contingent process. However, biologists such as Van Valen have interpreted the concept of fitness as a type of "growth" that is favored by the evolutionary process (Van Valen, 1989, pp. 5 ff). See also the discussion in (Desmond, 2021).

that prioritize its own preferences. Agency and dominance are not quite the same thing, since dominance involves an element of conflict:

> *Individual-level dominance.* The dominance of an individual is proportional to its agency, and is exhibited when it acts to realize preferences that run counter to those of other individuals.

Understanding the nature of human agency is a whole philosophical subfield unto itself (the philosophy of action); non-human agency is more controversial, but some have reconstructed the ways in which agency attributions to non-humans are justified (Desmond & Huneman, 2020; Walsh, 2015). In this sense, non-humans too may be (and even are likely) capable of individual-level dominance over other organisms.

However, what concerns us here is the individual-level dominance of humans, and it should be uncontroversial to note that humans have a far greater degree of individual-level dominance compared to that of non-human organisms: they succeed to a far greater degree in choosing courses of action that maximize the realization of their own preferences, even when these come at great cost to other organisms.

As an example, consider breeding. All organisms need to eat, and breeding animals and plant species is essential to human farming and human population-level dominance. However, breeding is at its core a manifestation of individual-dominance and human agency: humans decide which non-human individuals are "more desirable" (whether stronger, meatier, or cuter), and then create conditions such that desirable males mate and produce offspring with desirable females. Animals do not breed humans. Animals have zero capacity to carry out actions that would artificially select which humans can reproduce. In fact, the possibility of dogs or horses breeding humans is comically absurd. The only scenario where humans have *actually* been bred was when they were bred by other humans (this was the eugenics movement in the late 19th and early 20th centuries). The breeding relation between humans and non-humans is thus vastly asymmetrical. In the breeding relation, humans have a vastly greater degree of agency thanks to their ability to understand and control parts of reality (e.g., animal mating behaviors and animal development). With that greater degree of agency has come a larger degree of individual dominance.

This does not mean one should be monolithic in comparisons of degrees of agency. Other species have a superior individual-level dominance over humans in some circumstances. For instance, if confronted with a large-bodied predators (bears, wolves, lions) with no possibility of escape or of using a tool, humans would have an inferior ability to carry out actions that prioritized the human good of survival. Why can one still judge humans to be more dominant, even at the individual level? Because, in most contexts today, humans have tilted the environment in their favor. They have created artifacts (weapons such as guns) that only humans know how to use, such that even the physically weakest humans can kill or maim the physically strongest bears. Humans have also massively engineered their environments, by clearing forests and constructing urban environments, which are much less hospitable to bears and much more hospitable to human purposes. The likelihood that a human today will be con-

fronted with a large-bodied predator with no possibility of escape is simply very low – or at least, it is much lower than it was 100 000 years ago.

Population-level dominance is primarily what environmental ethicists are concerned with, whereas individual-level dominance would be most relevant to questions for animal ethicists. Even so, while these notions are distinct, it is important to note that they cannot be separated in the human species. This is most powerfully demonstrated by the theory of cultural evolution (Boyd & Richerson, 1985; Henrich, 2016; Sterelny, 2012). How so? Through a feedback between cultural innovation and increased population size. Cultural evolution provides tools to enhance human agency, which allows for greater individual-level dominance (cultural innovations are termed "cognitive gadgets" by some (Heyes, 2018)). However, greater individual dominance means more efficient interactions with the environment, which allows for greater resource extraction and greater population-level dominance – including increases in population size. Such increases allow for increased division of labor, which in turn allows for greater cultural innovation (e.g., a greater development, manufacture, and spread of tools and technological innovations).

This feedback loop between individual-level and population-level dominance is possible through group-level culture. In other species, the same feedback is not nearly as strong. Even if a bear population grows to be ecologically dominant, individual bears will retain all their previous traits and will not reorganize so as to increase the individual agency of the next generation. Humans do reorganize their groups and educate the next generation in novel ways. Because of this intertwining between individuals and groups, it is not too inaccurate to simply speak of "human dominance" as such.[14]

3.3.3 Human dominance is, on the whole, unavoidable

Can we *avoid* our dominance? Authors such as Jane Goodall or Marc Bekoff give the impression that dominance is about cruelty, and it would suffice to avoid cruelty and to treat non-humans with "compassion". However, this is a one-sided analysis of dominance, as a mere individual-level phenomenon.

First, this approach does not acknowledge how individual level dominance is intertwined with population-level dominance. Without human ecological dominance, humans would be marginal predators for whom many other animals would constitute mortal ecological threats. Prehistoric humans may have *respected* animals more than we do today but, if we are to take creation myths as evidence (Leeming, 1994/2010), this was because certain animals were viewed as *sacred* and as manifesting some type of *divinity*. This does not correspond to the type of care and respect intended by the egalitarian narrative, as evident in statements such as "two-way relationships

14 Going forward I will therefore not always specify whether I mean individual-level dominance or population-level dominance in the context of the human species.

with other animals, each giving and receiving" or "pure and uncomplicated joy [between humans and animals]". This type of care presupposes that we are able to act without fear for our own survival. This is possible today only because we have achieved ecological dominance: we have not just re-engineered the environment with cages and shelters, but have appropriated the vast majority of habitats of large predators (so they do not come wandering into our gardens), and in the rare instances where our continued survival is genuinely threatened, we can rely on pharmaceuticals or mechanical weapons. From this perspective, the issue at stake does not seem to be *avoiding* dominance, but rather *reshaping* dominance into morally desirable forms. To avoid all dominance would strictly imply turning back the clock of human evolutionary history.

More fundamentally, individual dominance behaviors encompass a much broader category than simply "cruelty": they include breeding for instance, but also caring behaviors and conservation measures. In general, actions that humans undertake to promote animal welfare are themselves expressions of human agency and human dominance in particular. We do not expect animals to independently take measures to ensure their own well-being. Animal welfare legislation – starting with the 1822 Cruel Treatment of Cattle Act in the UK (Martin, 1822) – effectively involves humans exerting dominance over other humans, in order protect non-human animals. The field of animal ethics and the movement of animal welfare activism presupposes that humans will vastly dominate non-humans unless held in check by other humans.

Even if a human does not explicitly act against the (apparent) preference of an animal, many actions that humans undertake to promote animal welfare require substantial reflection and analysis by humans. Zoo staff may puzzle over why giant pandas are not mating (Zhang et al., 2004), or why elephants kill their infants (Clubb et al., 2008). Clearly there is something in the zoo environment that is causing distress for the pandas or elephants, but it may not at all be clear what it is. Even so, one course of action unavailable to zoo staff is to *ask* zoo animals what they want. As with human infants (*in-fans:* not able to speak), humans must reason about what is good for the animals and take action accordingly. They will need to make complex decisions about how to structure the environment in captivity, including what types of interaction the animals are exposed to. To state the obvious, it is zoo staff who deliberate and choose a course of action; not the animals. This is a paradigmatic example of a paternalistic relation – not an egalitarian relation. Thus, even when we act out of care and in line with egalitarian ideals, this presupposes human dominance through expressions of a powerful human agency.

3.3.4 Human dominance is intertwined with moral good

Not only can humans not help being dominant, but dominance and care are much more intertwined than proponents of the egalitarian narrative realize. It is part of the egalitarian narrative's meta-narrative that previous generations of humans saw other animals as a resource to be exploited. However, caring for animals did not

arise in the second half of the twentieth century. Given previous testimonials, as well as the respect accorded to animals in many creation myths (Leeming, 1994/2010), it would seem to make more sense to believe that humans have *always* cared about the well-being of other species. Here is Plutarch decrying the cruelty of his fellow Romans:

> … but for the sake of some little mouthful of flesh, we deprive a soul of the sun and light, and of that proportion of life and time it had been born into the world to enjoy. And then we fancy that the voices it utters and screams forth to us are nothing else but certain inarticulate sounds and noises, and not the several deprecations, entreaties, and pleadings of each of them, as it were saying thus to us: "I deprecate not thy necessity (if such there be), but thy wantonness. Kill me for thy feeding, but do not take me off for thy better feeding." O horrible cruelty! (Plutarch, 1874)

While the history of human cruelty towards animals may be long, this in and of itself does not imply that the history of human respect and compassion towards animals may not be equally long, even if respect and compassion may not have been as widespread and/or institutionalized as they are today. Insofar as care presupposes human agency, one can assume that care towards animals has been around for as long as conflictual dominance towards animals has been.

However, sometimes human and non-human interests really do compete. In some contexts, choosing to treat animals as moral equals would entail endorsing cruel actions towards humans. One such context is the use of animals in scientific research. Animal ethics regulations often are organized around the "3 R's": reduction, refinement, and replacement. These chart a path forward to reduce the use of animals in research, refine their use (e.g., through use of anaesthetics), or replace their use altogether (through computer models or in vitro cultures). This strategy is easily applicable to some pharmaceutical interventions, such as dermatological creams. However, for many medical interactions, some doubt that the use of animals can be avoided, reduced or refined beyond a certain point (Kiani et al., 2022). Popular model organisms for surgical research today include zebrafish, chicken, sheep, pigs, and non-human primates (Hennessy & Goldstein, 2019); Hennessy and Goldstein note that primate models in particular allow for "unparalleled insight" and that "For preclinical testing, few models offer better insight into human biology." (Hennessy & Goldstein, 2019, p. 207). Their scientific usefulness is due to their similarity to humans, and this is precisely the reason why their use is ethically fraught (Hennessy & Goldstein, 2019, p. 207).

This, in a nutshell, illustrates a very real trade-off between human interests and non-human interests. A ban on animal testing would require either direct testing on human test subjects, or a ban on new, potentially risky interventions. The first is often morally unacceptable because it violates a condition that tends to be viewed as the ethical gold standard for clinical trials: clinical equipoise (this means, roughly, that trial participants are exposed to additional risks: for an overview, see Folefac & Desmond, 2022). The second is so undesirable as to be unacceptable as well, given the large benefits (including prolongation of healthy life, quicker restoration to health, avoidance of premature deaths) accrued to humanity due to medical progress.

A similar analysis could be done for other ethical dominance behaviors include the breeding of companion animals for the blind, or pest control to maintain healthy living environments. Such examples demonstrate that it sometimes it is not a moral evil to dominate non-human animals, even when it means manipulating, maiming or even killing them: sometimes it may even be a *moral obligation* to do so.

The broad lesson to be drawn from this section is that human dominance is intertwined with human agency in so many different ways, and just as agency entails the freedom to act (both in morally desirable and morally undesirable ways), human dominance not only *cannot* be avoided but also should not be avoided. Human dominance is at odds with egalitarian ideals, and hence this suggests strongly that egalitarian ideals are relatively empty ideals when it comes to their capacity to provide moral guidance for how humans should treat non-human animals, especially when human and non-human interests conflict.

To truly and lastingly avoid human dominance would seem to require that humans undertake actions that have the effect of diminishing their agency – for instance by physically intervening on their brain through ingesting potent drugs. Perhaps one could claim that such actions benefit the welfare of animals: after all, there is rarely any measure as beneficial for (large-bodied) non-human species as the complete absence of humans, as demonstrated by the flourishing of wildlife in the Chernobyl exclusion zone (Deryabina et al., 2015). This line of thought leads us to a Sophocles-like anti-natalist conclusion that it would be best if humans would not have been born at all. This is a profoundly paradoxical idea in the context of biology, for humans are the only species capable of morally evaluating and endorsing that anti-natalist conclusion. (If a state of affairs arises without any possibility of organisms morally evaluating it, is it morally valanced?) We need not further pursue this line of thought. What matters for the purpose of the paper is that, if a genuine reduction in human dominance requires a misanthropic value system, this is not at all what the egalitarian narrative promotes. In representing human dominance as a morally regrettable and avoidable state of affairs, the egalitarian narrative fails to accurately convey the deep roots of human dominance. Human dominance is a problematic blind-spot for the egalitarian narrative.

4 Discussion: Between beasts and gods

The egalitarian narrative creates the expectation that a world of perfect equality, entirely absent of human dominance, can be achieved. It portrays human dominance as a temporary stage in human evolution as science and morality march onward to species egalitarianism. However, in reality, we consume more animals than ever before, experiment on them, and dispossess them of their habitats when the economic exigency is sufficiently great. And once one analyzes the phenomenon of dominance dispassionately, it is hard to escape the conclusion that dominance is intertwined with human agency, which is much more powerful than non-human agency, as evinced

in the phenomena of breeding, companionship, and even conservation. It is not only implausible and morally undesirable to seek a whole-scale reduction in human dominance, it is not even *coherent*, because such a reduction requires humans to take paternalistic conservation measures, which themselves are expressions of human agency and human individual-level dominance.

Such considerations paint a picture of human-animal relations that is reminiscent of the old adage that humans are neither beasts nor gods. In the *Timaeus*, the Platonic dialogue focusing on the nature of the physical world, the demiurge was the cause of the universe: it took formless matter and then shaped it according to the templates of the Ideas. Humans may not sculpt formless matter according to eternal forms, but we have taken species and through breeding have in another sense *shaped* them according to human needs and desires. We have shaped the Eurasian wolf into thousands of anatomical varieties, each tailored to specific human needs (hunting, herding, guarding, etc.). We have shaped wild apple trees (Malus sieversii) such that their fruit is much larger and juicier, and have engineered different varieties, some sweet, other sour, to suit the wide variety of human tastes. Humans dominate animals and plants to the extent that the very bodies of many animals and plants have been reshaped in light of human wishes.

When Darwin adopted the term "natural selection", it was in analogy with breeding or "artificial selection", and he worried it would come across as too anthropomorphic. However, the direction of the metaphorical comparison can here be reversed: in breeding, humans are acting like a force of nature on the animals, setting the fitness of some individuals to zero while elevating the fitness of others to the maximum. Like a force of nature for prehistoric humans, breeding happens beyond the control and comprehension of animals. Similar points could be made about other important types of interaction: the use of animals for clinical trials, or for companionship. Saying that humans have a Demiurge-like agency compared to animals captures an important kernel of truth.

Does this critique of egalitarianism establish human exceptionalism? Humans may be like Demiurges, and be *capable* of prioritizing their interests over non-human interests, but is it *just* that they do so? The power of humans may indeed vastly exceed that of animals, but this in and of itself does not make them morally superior, any more than power differentials between human groups imply that the powerful have greater moral worth than the less powerful. Surely it is insufficient to merely point to dominance without further distinguishing between *morally justified* and *morally unjustified* forms of dominance. To resurrect Thrasymachus's challenge: does might make right?

A sufficient exploration of this question is not possible for a paper-length treatment, but as promised in the introduction, I wish nonetheless to gesture at an answer in order to point readers in the direction of how the question would be resolved. And it turns on an implicit assumption in my argument, namely that the agency of an organism correlates with its moral status (i. e., the degree of moral consideration that should be given to the interests of that organism). I have not argued for this assumption, even though there are precedents in the literature on animal ethics (Donaldson & Kymlicka,

2011; Purves & Delon, 2018; Wilcox, 2020). However, one would need to take this assumption on board to accept the conclusion that human dominance is a problem for the egalitarian narrative: human dominance is *evidence* of a greater degree of agency (as demonstrated in this paper), and because agency is correlated with moral status (the implicit assumption not argued for), human dominance is evidence that humans and non-humans are *not* moral equals.

This has two important consequences. The first is that humans, with a greater capacity to choose their actions, also have greater moral responsibility and culpability for their actions. This is, of course, common sense, but the issue of culpability is often somewhat overlooked in discussions of non-human moral status. It is also important because it clarifies why establishing a higher moral status does not entail a justification of animal cruelty. (In fact, to insist that the rejection of egalitarianism leads to moral regress is to repeat part of the meta-narrative of the egalitarian narrative.) Rejecting egalitarianism means that human interests carry a stronger weight than non-human interests; it does not mean that humans should not give any consideration to non-human interests. Thus, with the implicit assumption that agency grounds moral status, the critique of egalitarianism implies (moral) paternalism.

Second, if agency comes in degrees, so does moral status, and even if species egalitarianism may be rejected *in general,* it may still be endorsed as *approximately true* for specific cases. For instance, species such as chimpanzees are remarkably human-like in their capacities to communicate, show affection, and form communities. It seems appropriate to treat chimpanzees as near-equals qua moral status. And it may be no coincidence that the prominent proponents of the egalitarian narrative, such as Jane Goodall, have in fact been primatologists.[15]

Such a stance would be *a fortiori* appropriate for other *Homo* species, should they still be alive today. Admittedly, it is not known why *Homo sapiens* and not the other *Homo* species became ecologically dominant. Was it because they were not capable of cumulative culture, or not equally capable, and thus at a competitive or adaptive disadvantage? Or did some chance event set a virtuous feedback in motion for the *Homo sapiens?* According to some models, competitive exclusion is indeed the best explanation of the distribution of *Neanderthal* and *Homo sapiens* remains over space and time, given known climatic variability (Timmermann, 2020). However, even if there was some difference in degree of dominance (whether individual-level or population-level), it is clear that the comparison is multidimensional. Given fossil evidence, we know Neanderthals shared many morphological traits, including salient visual and anatomical characteristics such as bipedality or opposable thumbs. Also, given other archeological evidence (tools, artefacts), Neanderthals must have been capable of symbolic behavior and language (Meneganzin & Killin, 2024; Peeters & Zwart, 2020). And

15 Conversely, it may also not be a coincidence that the proponents of sociobiology such as E. O. Wilson – who promoted a worldview that flirted with forms of inegalitarianism, not just between species, but also within the human species (see Wilson, 1975/2000, p. 562 and the discussion in Desmond et al., 2024) – was an entomologist.

finally, given DNA evidence, we know that Neanderthals and *Homo sapiens* interbred, and are not even distinct species according to the biological species concept (Green et al., 2010). While one should not read too much into this – interbreeding events were likely rare (Neves & Serva, 2012) and need not have involved a form of egalitarian "love" – it is also quite significant in that copulation events would be evidence that *Homo sapiens* and *Neanderthals* individuals must have seen each other as very similar. The egalitarian narrative seems to be relatively appropriate here.

These remarks, again, should be read as gestural and not as rigorously demonstrative. The main purpose of this paper has been to critique the egalitarian narrative in light of human dominance. While I have not offered a concrete alternative to the egalitarian narrative in this paper, the discussion of human dominance can be interpreted as setting *desiderata* for alternative narratives. We need a narrative that does not represent human dominance as a pathological behavior to be overcome, and instead acknowledges the ways in which dominance is intertwined with agency. Dominance has been a crucial part of the human evolutionary trajectory; contemporary human life (including the safeguarding of basic rights) presupposes it; it is the result of a greater human capacity for understanding and controlling reality; and in some contexts, dominance can only be avoided if we endorse cruelty towards other humans. It is true that we form a family with other animal species, but it is also true that we are exceptionally dominant over our evolutionary family members, sometimes cruel, sometimes selfish, and sometimes caring.

To conclude: we are *a part of* the animal kingdom – but in an important sense, we also are *separate from* the animal kingdom. The combination of both metaphors – being a part of, and being separate from – is necessary in order to convey a crucial ambiguity (and perhaps *the* crucial ambiguity) in the human condition. From this perspective, there was a certain wisdom in the philosophical tradition going back to Aristotle and Plato to assign tripartite souls to humans. Today it has become much more difficult to recreate this understanding, both because evolutionary science has uncovered many similarities with non-humans and because dominance has come to possess many troubling ethical connotations. Yet we need to seek narratives that recreate this between-ness in humanity's place in nature.

References

Arneson, R. (2013). Egalitarianism. In E. N. Zalta (Ed.), *The Stanford Encyclopedia of Philosophy* (Summer 2013). Metaphysics Research Lab, Stanford University. https://plato.stanford.edu/archives/sum2013/entries/egalitarianism/.

Bapteste, E., & Huneman, P. (2018). Towards a Dynamic Interaction Network of Life to unify and expand the evolutionary theory. *BMC Biology, 16*(1), 56. https://doi.org/10.1186/s12915-018-0531-6.

Bekoff, Marc. 2007. *Animals Matter: A Biologist Explains Why We Should Treat Animals with Compassion and Respect.* Shambhala Publications.

Bentham, Jeremy. 1789. *The Principles of Morals and Legislation.* London: T. Payne and Son.

Bergson, Henri. (1911). *Creative Evolution.* Translated by Arthur Mitchell. New York: Henry Holt and Company.

Birch, J. (2017). Animal sentience and the precautionary principle. *Animal Sentience*, *17*(1). https://animalstudiesrepository.org/cgi/viewcontent.cgi?article=1200&context=animsent.

Boyd, R., & Richerson, P. (1985). *Culture and the Evolutionary Process.* The University of Chicago Press.

Brandon, R. N. (1990). *Adaptation and Environment.* Princeton University Press.

Chapman, C. A., & Huffman, M. A. (2018). Why do we want to think humans are different? *Animal Sentience*, *3*(23). https://doi.org/10.51291/2377-7478.1358.

Clubb, R., Rowcliffe, M., Lee, P., Mar, K. U., Moss, C., & Mason, G. J. (2008). Compromised Survivorship in Zoo Elephants. *Science*, *322*(5908), 1649–1649. https://doi.org/10.1126/science.1164298.

Demps, K., & Richerson, P. J. (2023). A Gene-Culture Coevolutionary Perspective on Human Success. In *Human Success: Evolutionary Origins and Ethical Implications.*

Deryabina, T. G., Kuchmel, S. V., Nagorskaya, L. L., Hinton, T. G., Beasley, J. C., Lerebours, A., & Smith, J. T. (2015). Long-term census data reveal abundant wildlife populations at Chernobyl. *Current Biology*, *25*(19), R824–R826. https://doi.org/10.1016/j.cub.2015.08.017.

Desmond, H. (2021). The selectionist rationale for evolutionary progress. *Biology & Philosophy*, *36*(3), 32. https://doi.org/10.1007/s10539-021-09806-1.

Desmond, H. (2022). Adapting to Environmental Heterogeneity: Selection and Radiation. *Biological Theory*, *17*, 80–93. https://doi.org/10.1007/s13752-021-00373-y.

Desmond, H. (2024). Dominion: To take care of the Earth, humans must recognise that we are both a part of the animal kingdom and its dominant power. *Aeon.* https://aeon.co/essays/human-dominance-is-a-fact-not-a-debate.

Desmond, H., Ariew, A., Huneman, P., & Reydon, T. (2024). The Varieties of Darwinism: Explanation, Logic, and Worldview. *The Quarterly Review of Biology*, *99*(2), 77–98. https://doi.org/10.1086/730667.

Desmond, H., & Huneman, P. (2020). The Ontology of Organismic Agency: A Kantian Approach. In A. Altobrando & P. Biasetti (Eds.), *Natural Born Monads: On the Metaphysics of Organisms and Human Individuals.* (pp. 33–64). De Gruyter.

Donaldson, S., & Kymlicka, W. (2011). *Zoopolis: A political theory of animal rights.* Oxford University Press.

Doolittle, W. F. (2012). Population genomics: How bacterial species form and why they don't exist. *Current Biology: CB*, *22*(11), R451–453. https://doi.org/10.1016/j.cub.2012.04.034.

Draper, J. W. (1863). *A History of the Intellectual Development of Europe.* Harper.

Dykhuizen, D. (2005). Species Numbers in Bacteria. *Proceedings. California Academy of Sciences*, *56*(6 Suppl 1), 62–71. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3160642/.

Folefac, C., & Desmond, H. (2022). Clinical equipoise: Why still the gold standard for randomized clinical trials? *Clinical Ethics*, 147775092211211. https://doi.org/10.1177/14777509221121107.

Gee, H. (2013). *The Accidental Species: Misunderstandings of Human Evolution.* University of Chicago Press.

Gibbons, A. (2017). Neanderthals, like humans, may have had long childhoods. *science.org.* https://www.science.org/content/article/neandertals-humans-may-have-had-long-childhoods.

Gieryn, T. F. (1999). *Cultural boundaries of science: Credibility on the line.* University of Chicago Press.

Glock, H.-J. (2012). The Anthropological Difference: What Can Philosophers Do To Identify the Differences Between Human and Non-human Animals? *Royal Institute of Philosophy Supplement*, *70*, 105–131. https://doi.org/10.1017/S1358246112000069.

Godfrey-Smith, P. (2009). *Darwinian populations and natural selection.* Oxford University Press.

Goodall, J., & Bekoff, M. (2003). *The Ten Trusts: What We Must Do to Care for The Animals We Love.* HarperOne.

Green, R. E., Krause, J., Briggs, A. W., Maricic, T., Stenzel, U., Kircher, M., Patterson, N., Li, H., Zhai, W., Fritz, M. H.-Y., Hansen, N. F., Durand, E. Y., Malaspinas, A.-S., Jensen, J. D., Marques-Bonet, T., Alkan, C., Prüfer, K., Meyer, M., Burbano, H. A., … Pääbo, S. (2010). A Draft Sequence of the Neandertal Genome. *Science*, *328*(5979), 710–722. https://doi.org/10.1126/science.1188021.

Hacker, P. M. S. (2011). *Human Nature: The Categorial Framework.* John Wiley & Sons.

Heidegger, M. (1996). *Being and Time* (J. Stambaugh, Trans.). State University of New York Press. (Original work published 1926)

Hennessy, M. L., & Goldstein, A. M. (2019). Animal Models in Surgical Research. In G. Kennedy, A. Gosain, M. Kibbe, & S. A. LeMaire (Eds.), *Success in Academic Surgery: Basic Science* (pp. 203 – 212). Springer International Publishing. https://doi.org/10.1007/978-3-030-14644-3_13.

Henrich, J. (2004). Demography and Cultural Evolution: How Adaptive Cultural Processes Can Produce Maladaptive Losses – The Tasmanian Case. *American Antiquity*, *69*(2), 197 – 214. https://doi.org/10.2307/4128416.

Henrich, J. (2016). *The secret of our success: How culture is driving human evolution, domesticating our species, and making us smarter.* Princeton University Press.

Hesketh, I. (Ed.). (2022). *Imagining the Darwinian revolution: Historical narratives of evolution from the nineteenth century to the present.* University of Pittsburgh Press.

Heyes, C. M. (2018). *Cognitive gadgets: The cultural evolution of thinking.* The Belknap Press of Harvard University Press.

Hourdequin, M. (2023). Human Success: A Contextual and Pluralistic View. In H. Desmond & G. Ramsey (Eds.), *Human Success* (1st ed., pp. 66 – 88). Oxford University PressNew York. https://doi.org/10.1093/oso/9780190096168.003.0004.

Huxley, T. H. (1860). The Origin of Species. *The Westminster Review*, *April*, 569. https://www.gutenberg.org/files/2929/2929-h/2929-h.htm.

Kagan, S. (2015). Singer on Killing Animals. In T. Višak & R. Garner (Eds.), *The Ethics of Killing Animals* (pp. 136 – 153). Oxford University Press. https://doi.org/10.1093/acprof:oso/9780199396078.003.0009.

Kagan, S. (2016). What's Wrong with Speciesism? (Society for Applied Philosophy Annual Lecture 2015): What's Wrong with Speciesism? *Journal of Applied Philosophy*, *33*(1), 1 – 21. https://doi.org/10.1111/japp.12164.

Kagan, S. (2019). *How to Count Animals, More or Less.* Oxford University Press.

Kant, I. (2006). *Anthropology from a Pragmatic Point of View* (R. B. Louden & M. Kuehn, Eds.). Cambridge University Press. https://www.cambridge.org/core/books/kant-anthropology-from-a-pragmatic-point-of-view/69EBBC53F8C020D0F28735E62FB62817 (original work published 1798).

Kiani, A. K., Pheby, D., Henehan, G., Brown, R., Sieving, P., Sykora, P., Marks, R., Falsini, B., Capodicasa, N., Miertus, S., Lorusso, L., Dondossola, D., Tartaglia, G. M., Ergoren, M. C., Dundar, M., Michelini, S., Malacarne, D., Bonetti, G., Dautaj, A., … Bertelli, M. (2022). Ethical considerations regarding animal experimentation. *Journal of Preventive Medicine and Hygiene*, *63*(Suppl 3), E255–E266.

Krausmann, F., Erb, K.-H., Gingrich, S., Haberl, H., Bondeau, A., Gaube, V., Lauk, C., Plutzar, C., & Searchinger, T. D. (2013). Global human appropriation of net primary production doubled in the 20th century. *Proceedings of the National Academy of Sciences*, *110*(25), 10324 – 10329. https://doi.org/10.1073/pnas.1211349110.

Kuhn, T. S. (1962). *The structure of scientific revolutions* ([2d ed., enl). University of Chicago Press.

Leeming, D. A. (2010). *Creation myths of the world: An encyclopedia* (2nd ed). ABC-CLIO. (Original work published 1994)

Locke, J. (1690). *Second Treatise Of Government, by John Locke* (C. B. MacPherson, Ed.). Hackett, 1980 edition (public domain on The Project Gutenberg). https://www.gutenberg.org/files/7370/7370-h/7370-h.htm.

Martin, R. (1822). An Act to Prevent the Cruel and Improper Treatment of Cattle. *The Statutes Project.* https://statutes.org.uk/site/the-statutes/nineteenth-century/1822-3-george-4-c-71-cruel-treatment-of-cattle-act/.

Meneganzin, A., & Killin, A. (2024). Beyond reasonable doubt: Reconsidering Neanderthal aesthetic capacity. *Phenomenology and the Cognitive Sciences.* https://doi.org/10.1007/s11097-024-10003-0.

Menta, T. (1992). Commentary on Justice, Caring, and Animal Liberation. *Between the Species: An Online Journal for the Study of Philosophy and Animals*, *8*(2). https://doi.org/10.15368/bts.1992v8n2.12.

Mikhalevich, I., & Powell, R. (2020). Minds without spines: Evolutionarily inclusive animal ethics. *Animal Sentience*, *5*(29). https://animalstudiesrepository.org/animsent/vol5/iss29/1.

Neves, A. G. M., & Serva, M. (2012). Extremely Rare Interbreeding Events Can Explain Neanderthal DNA in Living Humans. *PLOS ONE*, *7*(10), e47076. https://doi.org/10.1371/journal.pone.0047076.

Newall, E., & Reiss, M. J. (2023). Evolution hesitancy: Challenges and a way forward for teachers and teacher educators. *Evolution: Education and Outreach*, *16*(1), 5. https://doi.org/10.1186/s12052-023-00183-9.

Nussbaum, Martha Craven. 2004. "Beyond 'Compassion and Humanity': Justice for Nonhuman Animals." In Animal Rights: Current Debates and New Directions, edited by Cass R. Sunstein and Martha Craven Nussbaum, 299 – 320. Oxford: Oxford University Press.

Osborn, H. F. (1923). *The Hall of the Age of Man in the American Museum.* American Museum of Natural History. https://babel.hathitrust.org/cgi/pt?id=osu.32435010965168&seq=3.

Peeters, S., & Zwart, H. (2020). Neanderthals as familiar strangers and the human spark: How the 'golden years' of Neanderthal research reopen the question of human uniqueness. *History and Philosophy of the Life Sciences*, *42*(3), 33. https://doi.org/10.1007/s40656-020-00327-w.

PETA. (2023a). *About PETA.* PETA. https://www.peta.org/about-peta/.

PETA. (2023b). *Join PETA's Campaign to End Speciesism Now!* PETA Headlines. https://headlines.peta.org/end-speciesism/.

Plutarch. (1874). *De esu carnium I* (W. W. Goodwin, Ed.; W. Baxter, Trans.). Perseus Digital Library (Boston: Little, Brown & Co., 1874). http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A2008.01.0378%3Asection%3D4.

Preston, J. L., & Shin, F. (2021). Anthropocentric biases in teleological thinking: How nature seems designed for humans. *Journal of Experimental Psychology: General*, *150*(5), 943 – 955. https://doi.org/10.1037/xge0000981.

Purves, D., & Delon, N. (2018). Meaning in the lives of humans and other animals. *Philosophical Studies*, *175*(2), 317 – 338. https://doi.org/10.1007/s11098-017-0869-6.

Rawls, J. (1999). *A Theory of Justice* (Revised edition). The Belknap Press of Harvard University Press. (Original work published 1971)

Regan, T. (1983). *The Case for Animal Rights.* University of California Press.

Ruse, M. (1996). *Monad to man: The concept of progress in evolutionary biology.* Harvard University Press.

Ryder, R. D. (2004). Speciesism revisited. *Think*, *2*(6), 83 – 92. https://doi.org/10.1017/S1477175600002840.

Santana, C. (2019). Waiting for the Anthropocene. *The British Journal for the Philosophy of Science*, *70*(4), 1073 – 1096. https://doi.org/10.1093/bjps/axy022.

Scharping, N. (2023). *Neanderthal vs Homo Sapiens: How Are Neanderthals Different From Humans?* Discover Magazine. https://www.discovermagazine.com/planet-earth/how-are-neanderthals-different-from-homo-sapiens.

Scheler, M. (1969). *Man's Place in Nature.* Farrar, Straus and Cudahy. (Original work published 1928)

Sender, R., Fuchs, S., & Milo, R. (2016). Revised Estimates for the Number of Human and Bacteria Cells in the Body. *PLoS Biology*, *14*(8), e1002533. https://doi.org/10.1371/journal.pbio.1002533.

Singer, P. (1983). Sanctity of Life or Quality of Life? *Pediatrics*, *72*(1), 128 – 129. https://doi.org/10.1542/peds.72.1.128.

Singer, P. (2015). *Animal Liberation.* Open Road Integrated Media. (Original work published 1975)

Singer, P., & Regan, T. (1985, April 25). The Dog in the Lifeboat: An Exchange. *The New York Review of Books*, *32*(7). https://www.nybooks.com/articles/1985/04/25/the-dog-in-the-lifeboat-an-exchange/.

Soucy, S. M., Huang, J., & Gogarten, J. P. (2015). Horizontal gene transfer: Building the web of life. *Nature Reviews Genetics*, *16*(8), 472 – 482. https://doi.org/10.1038/nrg3962.

Sterelny, K. (2012). *The Evolved Apprentice.* MIT Press.

Timmermann, A. (2020). Quantifying the potential causes of Neanderthal extinction: Abrupt climate change versus competition and interbreeding. *Quaternary Science Reviews*, *238*, 106331. https://doi.org/10.1016/j.quascirev.2020.106331.

United Nations. (1948). *Universal Declaration of Human Rights.* United Nations; United Nations. https://www.un.org/en/about-us/universal-declaration-of-human-rights.

Van Valen, L. (1989). Three Paradigms of Evolution. *Evolutionary Theory*, *9*, 1–17. http://www.philbio.org/wp-content/uploads/2010/11/VanValen_Paradigms.pdf.

Walsh, D. (2015). *Organisms, Agency, and Evolution.* Cambridge University Press. https://doi.org/10.1017/CBO9781316402719.

Ward, P. S. (2006). Ants. *Current Biology*, *16*(5), R152–R155. https://doi.org/10.1016/j.cub.2006.02.054.

Weronika, E., & Łukasz, K. (2017). Tardigrades in Space Research – Past and Future. *Origins of Life and Evolution of the Biosphere*, *47*(4), 545–553. https://doi.org/10.1007/s11084-016-9522-1.

Wilcox, M. G. (2020). Animals and the agency account of moral status. *Philosophical Studies*, *177*(7), 1879–1899. https://doi.org/10.1007/s11098-019-01289-x.

Wilson, E. O. (2000). *Sociobiology: The New Synthesis.* Harvard University Press. (Original work published 1975)

Zhang, G., Swaisgood, R. R., & Zhang, H. (2004). Evaluation of behavioral factors influencing reproductive success and failure in captive giant pandas. *Zoo Biology*, *23*(1), 15–31. https://doi.org/10.1002/zoo.10118.

Joachim Fischer

Exzentrische Positionalität oder ‚tanzendes Tier'

Moderne Philosophische Anthropologie als dritter Weg zwischen Naturalismus und Kulturalismus

Die Absicht des Beitrages ist es, die Philosophische Anthropologie als eine spezifische Theorietechnik zu präsentieren, um einen adäquaten Begriff des Menschen zu erreichen, und zwar eine Theoriestrategie angesichts des cartesianischen Dualismus – also des Dualismus zwischen Naturalismus *und* Kulturalismus. Die These ist, dass moderne Philosophische Anthropologie eine spezifische (und vermutlich wichtige) Theorie deshalb ist, weil sie vom Ansatz her einen Kurs zwischen Naturalismus und Kulturalismus steuert, oder in andern Worten, zwischen Darwinismus und Foucaultismus. Helmuth Plessner würde gesagt haben: zwischen Darwin and Dilthey, aber heute erscheint Philosophische Anthropologie als ein Paradigma, das zwischen den Theorien von Darwin und von Foucault agiert. Dieses Paradigma baut eine Brücke zwischen der Biologie einerseits und den Sozial- und Kulturwissenschaften anderseits, eine Brücke, die weder durch Darwin (und seine Nachfolger:innen) noch durch Foucault (und seine Nachfolger:innen) konstruiert werden kann. Dabei erlaubt diese Brücke, diese beiden Paradigmen des Naturalismus und des Kulturalismus durchaus als Denkansätze zu akzeptieren, indem sie zugleich deren Geltungsansprüche als Teilwahrheiten limitiert.[1]

Diese Philosophische Anthropologie wird hier vor allem mit Bezug auf Plessners „Stufen des Organischen und der Mensch" rekonstruiert und insbesondere mit Rückbezug auf seinen raffinierten Schlüsselbegriff „exzentrische Positionalität" (Plessner 1975 [1928]). „Exzentrische Positionalität" ist der Kategorienvorschlag der Philosophischen Anthropologie für den Menschen, für seine so genannte „Sonderstellung" unter den Lebewesen (der im Grundsatz von allen Protagonisten des Denkansatzes geteilt wurde). So viel kann man vorweg sagen. Der Terminus ist nicht schwieriger als ‚Transzendentalität' oder das ‚Apriori' oder ‚Adaptivität' oder ‚Autopoiesis' oder ‚Diskurs' oder ‚Dispositiv' also Begriffe, mit deren Orientierungswert in der wissenschaftlichen Öffentlichkeit bereits gespielt wird, bietet aber möglicherweise mehr Erschließungskraft der menschlichen Lebenswelt als die Kunstbegriffe z. B. von Kant, Darwin, Maturana, Luhmann oder Foucault. Und „tanzendes Tier" ist ein glücklicher Anschauungsbegriff, eine Art Übersetzung für ‚*exzentrische* Positionalität„ – also ein sich ‚verrückendes' Lebewesen, dem im individuellen und kollektiven Lebensprozess eine Verrückung im evolutionären Leben zukommt, die dieses Lebewesen von Natur aus zu einer be-

1 Der Beitrag ist die deutsche, umgearbeitete und erheblich erweiterte Fassung des englischen Aufsatzes „Philosophical Anthropology: A Third Way between Darwinism and Foucaultism" (Fischer 2014a). Vgl. auch zu ersten Überlegungen Fischer 2010.

https://doi.org/10.1515/jbpa-2022-014

stimmten Art von Lebensführung, nämlich Kultur nötigt bzw. diese in der Natur ermöglicht.

1 Philosophische Anthropologie: Disziplin *und* Paradigma

Wichtig ist zu Beginn folgende Unterscheidung: Wenn hier von Philosophischer Anthropologie gesprochen wird, dann wird darunter das gleichnamige *Paradigma*, nicht die *Disziplin* unter demselben Titel verstanden (man kann das graphisch unterscheiden, indem man ‚philosophische Anthropologie' als Disziplin klein- und ‚Philosophische Anthropologie' als Denkansatz oder Paradigma großschreibt). In den 1920er Jahren gab es zwei philosophische Projekte in dem neuen philosophisch-anthropologischen Feld, wodurch zwei Bedeutungen desselben Terminus entstanden. 1928 tauchte zunächst eine *neue Disziplin* innerhalb der Philosophie auf unter dem Titel „philosophische Anthropologie", z. B. in dem Buch des Dilthey-Schülers Bernhard Groethuysen „Philosophische Anthropologie" (Groethuysen 1931 [1928]), ein disziplingeschichtlicher Impuls, der später den 1950er Jahren in geistesgeschichtlicher Manier durch Michael Landmanns „Philosophische Anthropologie. Menschliche Selbstdeutung in Geschichte u. Gegenwart" (Landmann 1976) fortgesetzt wurde.[2] Diese neue Disziplin kreist um die Frage: Wer oder was ist der Mensch? Unter dem Titel „philosophische Anthropologie" entwickelt sie sich zu einer organisierten Sammlung von Antworten auf diese Frage in der zunächst europäischen Überlieferung, um später ihren Horizont noch zu erweitern (Hartung 2008) und systematische Fragen zu unterscheiden (Thies 2004). Die Disziplin reicherte sich zudem an durch verschiedene Beiträge aus differenten zeitgenössischen Denkrichtungen wie der Psychoanalyse, der Philosophischen Hermeneutik, der Existenzphilosophie, der Leibphänomenologie, der Anthropologie bei Feuerbach und Marx und andere. Die Disziplin „philosophische Anthropologie" entwickelte Fragestellungen und Regeln eines interdisziplinären Rahmens für verschiedene einschlägige Humanwissenschaften.[3]

Unterschieden davon tauchte unter demselben Titel ‚Philosophische Anthropologie' (das man in diesem Fall großschreiben sollte) zur gleichen Zeit ein *neues Paradigma* auf: Ein eigensinniger Denkansatz mit einem bestimmten Verfahren, welches eine adäquate Theorie des Menschen dezidiert im Umweg über eine philosophische Biologie des Lebendigen zu erreichen suchte. Dieses Paradigma wurde demonstriert, zeitgleich zur Eröffnung der Disziplin 1928, in den Schriften von Scheler (Scheler 1976 [1928]) und Plessner (Plessner 1975 [1928]). Dieses sich entwickelnde Paradigma wurde dann unter dem Terminus der „Philosophischen Anthropologie" von verschiedenen Denkern und Forschern ausgestaltet: Neben Scheler und Plessner später Rothacker (1964) und Gehlen

2 Zu Ursprung und Geschichte der *Disziplin* „philosophische Anthropologie" vgl. Fischer (2021a).

3 Einschlägige Sammelbände zur Disziplin „philosophische Anthropologie" z. B. Nispen/Tiemersma 1992; Weiland 1995 – Zur Disziplin ‚philosophische Anthropologie' vgl. auch Wunsch 2014.

(1993 [1940/50]), vor allem immer auch von fundiert von den biologisch besonders gut informierten Forschern Buytendijk (1958a; 1958b) und Portmann (1956). Dieses Denkerensemble ist nicht Thema des Beitrages, aber die Vielköpfigkeit sollte erwähnt werden, so dass Plessner nicht etwa als solitäre, sondern als eingebettete Figur in diesem intellektuellen Feld erscheint. Obwohl sie eine teilweise unterschiedliche Terminologie einführten und differente inhaltliche Interessen verfolgten und auch politisch differente Schicksale hatten, teilten die verschiedenen Denker und Denkerinnen den Ansatz der Philosophischen Anthropologie in einer mitunter streitenden Rivalität um Originalität.[4] Zu dieser erweiterten Denkergruppe gehören mit bestimmten Werken dann ab den 1940er Jahren auch Köpfe wie Karl Löwith (1981 [1957]), Ernst Cassirer (2010), Hans Jonas (1973; 1994), Günther Anders (2018), Hans Blumenberg (2006), Odo Marquard (1995), aber auch die amerikanische Philosophin Marjorie Grene (1965; 1974) und – indirekt – der französische Philosoph Edgar Morin (1965).

Die aufgeklärte Äquivokation des Terminus ‚philosophische Anthropologie'/‚Philosophische Anthropologie' als Disziplin einerseits, als Paradigma andererseits, ermöglicht der philosophischen Forschung zwei Anschlussmöglichkeiten. Man kann die *Disziplin ‚philosophische Anthropologie'* mit anderen Disziplinen der Philosophie vergleichen (wie der Erkenntnislehre oder Epistemologie, mit Ethik, mit Sozialphilosophie, mit philosophischer Psychologie, mit Ästhetik, mit Metaphysik etc.) und man kann außerdem das *Paradigma ‚Philosophische Anthropologie'* vergleichen mit anderen Theorien bzw. Paradigmen (wie dem Neukantianismus, dem Naturalismus, dem Existentialismus, der Phänomenologie, der Kritischen Theorie der Gesellschaft, der Philosophischen Hermeneutik, dem Strukturalismus und Poststrukturalismus, der Systemtheorie etc.). Insofern erweist sich die aufgeklärte Äquivokation als produktiv für die weitere Forschung. Natürlich gehören Plessner und die anderen erwähnten Denker, die das neue Paradigma erfanden, mit diesem auch zur neuen Disziplin ‚philosophische Anthropologie', aber ihre eigentliche Leistung besteht in der Innovation des ‚Philosophische Anthropologie' als Paradigma.

Es geht hier im Folgenden allein um dieses Paradigma, die moderne Theorierichtung der Philosophischen Anthropologie, die seit dem 20. Jahrhundert mit den Namen Max Scheler, Helmuth Plessner, Arnold Gehlen und weiteren Autoren verknüpft ist. Es dreht sich um die Theoriestrategie der Philosophischen Anthropologie – der Terminus ‚Theoriestrategie' meint hier dann tatsächlich eine Strategie, einen begrifflichen Plan, einen konzeptionellen Feldzug innerhalb des Ringens verschiedener Konzeptionen um die angemessene Erschließung der menschlichen Lebenswelt, man könnte auch sagen: einen Feldzug zur produktiven Besetzung, zur begrifflichen Okkupation der menschlichen Lebenswelt, die ihre Komplexität so umfassend wie möglich zur Sprache bringen soll. Um diesen Theorietypus der Philosophischen Anthropologie zu erläutern, muss man zunächst das Spannungsfeld aufmachen, innerhalb dessen Philosophische An-

4 „Philosophische Anthropologie" als ein Paradigma einer Denker- und Forschergruppe wird rekonstruiert bei Habermas 1958; Gehlen 1975; Fischer 2022 [2008]; 2009. Vgl. auch Rehberg 2008, 2009; Thies 2008; 2018; Borsari 2009; Dries 2018.

thropologie als eine Theoriestrategie überhaupt plausibel, prägnant und markant werden kann.

2 Cartesianischer Dualismus: Naturalismus und Kulturalismus oder Darwinismus und Foucaultismus

Dieses Spannungsfeld ist der *cartesianische Dualismus* in der Beschreibung der menschlichen Lebenswelt, der sich bereits zu Beginn des 20. Jahrhunderts verwandelt hatte und der sich zu Beginn des 21. Jahrhunderts noch einmal radikalisiert. Wie man weiß, bestimmt der cartesianische Dualismus seit dem 17. Jahrhundert in immer neuen Varianten die Ordnungen des Wissens, ursprünglich mit der Trennung der denkenden Substanz von der ausgedehnten Substanz, also zwischen denkendem Subjekt einerseits, der physikalischen Natur (einschließlich des Körpers) andererseits. In der Folge kann alles Wissen (einschließlich des Wissens vom Menschen) entweder vom denkenden, autonomen Ich aus entfaltet werden (als Idealismus) oder umgekehrt von der Natur, von der Physik her (als Materialismus oder Naturalismus).

Aus dem Cartesianismus gehen zwei sich fortwährend erneuernde verschiedene Paradigmengruppen hervor. Wissenschaftstheoretisch stehen nun seit dem 19. Jahrhundert der *neuere* Naturalismus des Darwinismus einerseits – als Kernparadigma der Naturwissenschaften, in jedem Fall als Kernparadigma aller Lebenswissenschaftler:innen – und der kulturphilosophisch gestützte *neue* Kulturalismus innerhalb der Kultur- und Sozialwissenschaften andererseits in einem Exklusionsverhältnis. Es kommt ja im 19. Jahrhundert gleichzeitig zum Aufstieg der Lebenswissenschaften zum Durchbruch der Gruppe der Geisteswissenschaften. Darwin *oder* Dilthey, Darwin *oder* Cassirer, Darwin *oder* Foucault, das sind die Alternativen innerhalb der Wissensordnung, die einander ausschließen. Für den Darwinismus ereignet sich nämlich die Unterscheidung von Natur und Kultur in der Natur selbst, sie ist eine Naturtatsache, für den Konstruktivismus ist die Unterscheidung von Natur und Kultur hingegen eine Apriorileistung der Kultur. Man kann deutlich erkennen, dass beide Theorieansätze in der Erbschaft des Cartesianismus stehen, des cartesianischen Dualismus, also der seit Descartes strikten Trennung zwischen der denkenden Substanz und der ausgedehnten, körperlichen Substanz: das evolutionsbiologische Paradigma auf der Seite des Körpers, der Kulturalismus auf der Seite des Mentalen. Im 20. Jahrhundert werden mit der Biologie einerseits, den Sprach- und Sozialwissenschaften andererseits charakteristische Neubesetzungen der jeweiligen Flügel des Cartesianismus vorgenommen: Statt der Physik des unbelebten Körpers nun die evolutionären Mechanismen der Organismus und statt des denkenden Bewusstseinssubjekts nun die Sprache als inter- oder transsubjektives Medium des Denkens. Der cartesianische Dualismus verwandelt sich angesichts der evolutionsbiologischen Herausforderung in wechselseitige Übernahmeversuche der jeweiligen extremen Perspektiven: Der über den Materialismus hinausgehende Evolu-

tionismus des Organischen übernimmt aufklärend die sozio-kulturelle Lebenswelt; umgekehrt kassiert der Kulturalismus das evolutionsbiologische Paradigma als ein bloß kulturelles Deutungsschema.

Um es vorwegzunehmen: Philosophische Anthropologie als ein dritter Weg, als ein weiteres, originäres Paradigma ist ein tiefer Einstieg in die Welt des Naturalismus, ohne selbst ein naturalistischer Ansatz zu sein; zu ihrem konzeptionellen Kern gehört eine philosophische Biologie als Antwort auf den evolutionsbiologischen Naturalismus, so dass eine Kultur- und Sozialwissenschaft möglich wird, die der Komplexität der spezifisch menschlichen Lebenswelt entspricht – und damit der komplexen Erfahrung menschlicher Lebewesen gerecht wird. Dieser Anspruch, eine Einheit des Verschiedenen, eine Übersetzung innerhalb des cartesianischen Alternativprinzips zu leisten, steckt im Terminus ‚Philosophie' – deshalb muss dieses Paradigma ‚*Philosophische* Anthropologie' heißen.

Zunächst werden kurz die zwei Flügel des Cartesianismus erläutert – die naturalistische Vorgehensweise *und* die kulturalistische –, dann der Theorietypus der Philosophischen Anthropologie an Hand von Plessners Kategorie „exzentrische Positionalität". Abschließend werden die Erschließungsmöglichkeiten der menschlichen Lebenswelt durch diese philosophisch-anthropologische Theoriestrategie zwischen Naturalismus und Kulturalismus skizziert.

2.1 Naturalismus: Darwinsche Theorie als Herausforderung

Darwins Evolutionstheorie hat sich seit ihrer Erstveröffentlichung erstens als *die* Theorie innerhalb der Biologie durchgesetzt und – in der von ihm selbst schon gezogenen Konsequenz – zweitens als eine biologisch fundierte Theorie innerhalb der Anthropologie angeboten, wissenschaftlich und publizistisch. Kein moderner Denker, kein moderner Mensch – so die Vermutung der darwinistischen Theoretiker – kann es vermeiden, in wesentlichen Vermutungen seines Weltbildes letztendlich Darwinist zu sein (Mayr 1988; 2005). Theoriestrategisch ist die Darwinsche Theorie eine Rakete, bei der man zwei Phasen der Zündung unterscheiden muss: die Theorie des Lebens überhaupt (Darwin 1983), und darin eingefügt, die Theorie des menschlichen Lebens (Darwin 2002).

Darwins Theorie des Lebens rekonstruiert alle – jetzt lebenden und bereits wieder verschwundenen – verschiedenen Arten des Lebens der Pflanzen- und Tierwelt als Resultat einer immanenten Evolution. Demnach sind die jetzt vorhandenen Arten von Organismen nicht Ergebnis einer parallel verfahrenden transzendenten Setzung, einer Setzung kraft einer Transzendenz, Geschöpfe einer schöpferischen Kraft (Gott), sondern Resultat eines Entwicklungsprozesses, der bestimmten kausalen Mechanismen folgt: Der Abweichungen und Fehler im Reproduktionsprozess, also der Variation erstens, der natürlichen Selektion von Varianten von Organismen, denen die Anpassung gelingt oder die durch Misserfolg aus der Reproduktion ausscheiden, zweitens, schließlich die relative Stabilisierung von erfolgreichen Varianten in konstanten Arten von Organismen.

Entscheidend ist das Deutungsmuster: Alle differenten Organe und Leistungen, alle Verhaltensweisen der individuellen Organismen (bei höheren Arten), alle Verhaltensbereitschaften bzw. inneren Gestimmtheiten und Orientierungsprozesse werden als Funktionen eines solchen diversifizierten Anpassungsprozesses aufklärbar. Und: alle Organismen hängen – auch über bereits verschwundene Zwischenglieder – in einer Abstammungsgeschichte zusammen. Insofern kann man die Darwinsche Theorie Evolutionstheorie, aber auch Umwandlungstheorie oder Abstammungstheorie des Lebens nennen.

Und hier greift die zweite Phase des Flugs der Theorierakete, den Darwin selbst noch 1871 in seinem Buch ‚The Descent of Man' eröffnet hat. Das überwältigende anschauliche Forschungsmaterial der vergleichenden Anatomie und der vergleichenden individualorganismischen Entwicklungsphasen führen Darwin zu der These, dass Menschen und andere organischen Lebensformen vergleichend zu betrachten sind, zur These der „gemeinsamen Abstammung" von Pflanze, Tier *und* Mensch bzw. der Abstammung des menschlichen Lebewesens aus dem Reich der höheren Primaten. Diese systematische Einbeziehung des Menschen in die lebendige Welt – oder der *Anthropologie in die Biologie* – wird von Darwin selbst hinsichtlich der so genannten menschlichen Monopole, den klassischen Ausweisen seiner von ihm – dem Menschen – behaupteten Sonderstellung gegen das Reich des Lebendigen, also der Vernunft, der Sprache und der Moral durchgeführt: Der leistungsfähige Verstand entwickelt sich demnach aus niedrigen Vorformen, die Sprache aus der sog, Lautsprache von Vögeln und Säugetieren, die moralischen Empfindungen aus Sozialinstinkten. Anders gesagt: Entgegen der „Anmaßung, die unsere Vorfahren erklären ließ, dass sie von Halbgöttern abstammten" (Darwin 2002, S. 32), ermöglicht die Evolutionsbiologie systematisch die Rückführung, die Reduktion der idealistisch behaupteten Monopole in die Mechanismen des Lebens selbst, die begriffliche Reduktion anthropologischer Begriffe in biologische Begriffe. Darwins gradualistischer Kernsatz dieser Theoriestrategie lautet: Es geht darum, zu zeigen, „dass die geistigen Fähigkeiten des Menschen und der niederen Tiere nicht der Art nach, wennschon ungeheuer dem Grade nach von einander abweichen. Eine Verschiedenheit des Grades, so groß sie auch sein mag, berechtigt uns nicht dazu, den Menschen in ein besonderes Reich zu stellen." (Darwin 2002, 6. Kap., S. 199) So groß also die Verschiedenheit an Geist zwischen dem Menschen und den höheren Tieren sein mag, so ist es entsprechend dem evolutionsbiologischen Paradigma doch nur eine Verschiedenheit des Grads und nicht der Art – es gibt keine Sonderstellung. Das Theorem der bloß graduellen Verschiedenheit in der Entwicklung des Lebens garantiert nun, dass die Impulse des Lebens – Selbsterhaltung der individuellen Organismen und Arterhaltung durch Reproduktion – sowie die kausalen Mechanismen des Lebens Variation, Selektion und Stabilisierung auch auf der Ebene des menschlichen Lebewesens ungebrochen in Kraft sind und *in letzter Hinsicht* ausschlaggebend sind: sie sind es, die auch das Erklären aller Phänomene der soziokulturellen Lebenswelt des Menschen anleiten; alle Verhaltensweisen, alle symbolischen Interaktionen, alle seelisch-geistige Verfasstheit lassen sich insofern als bloße Epiphänomene der Selbst- und Art- (oder Gen-)erhaltung entlang der Mechanismen Variation, Selektion und Stabili-

sierung erklären. Man könnte sagen: Evolutionsbiologie postuliert ‚Biomacht' bis hinein in das menschliche Lebewesen, aber in einem ganz anderen Sinn als der französische Poststrukturalist Michel Foucault eingeführt und in Umlauf gebracht hat: nicht die kulturkonstruktivistischen Diskurse und Praktiken bemächtigen sich je verschieden des Lebens, üben Macht über das Leben aus, sondern im Darwin-Code ist das Leben selbst eine steuernde Größe, Biomacht ist die Macht des Bios bis in alle Konstruktionen und Diskurse des Menschen. Aus dem biologisch rekonstruierten Evolutionsgeschehen lassen sich dann alle Themen der sozio-kulturellen Lebenswelt des Menschen ‚biologisieren' oder in der evolutionären Natur ‚verwurzeln', d. h. von der evolutionsbiologischen Theorie des Lebens her beobachtet und beschreibt man, wie das ‚Leben' selbst bis in die Kapillaren des Psychischen, Sozialen und Kulturellen steuernd vordringt. Mit einer eigenen Psychobiologie, Soziobiologie und Kulturbiologie, Evolutionäre Erkenntnistheorie, insgesamt einer ‚evolutionären Anthropologie' dringt das bioevolutionäre Theorieprogramm vom Phänomen des Lebens aus zur Erschließung der sozio-kulturellen Lebenswelt vor (vgl. exemplarisch Dawkins 2014; Eibl 2007). Die Maxime des Paradigmas lautet: „Der Darwin-Code. Die Evolution erklärt unser Leben" (Junker/Paul 2009).

2.2 Die Konstruktivismus und Kulturalismus: die herausfordernde Antwort auf den Naturalismus

Was gibt es für Möglichkeiten, mit dieser Herausforderung des Naturalismus, der Darwinschen Theorie des Lebens einschließlich des Menschen umzugehen? Was haben sich für Denkmöglichkeiten seit dem letzten Drittel des 19. Jahrhunderts entwickelt? Man kann hier zunächst zwei Antwort-Strategien unterscheiden: *Darwin oder Gott* und *Darwin oder Foucault.*

Der öffentliche Diskurs, die öffentliche Debatte wird beherrscht von der ersten Alternative: Darwin *oder* Gott, Evolution *oder* Schöpfung (Klose/Oehler 2008). Angesichts des ‚Wunders' des Lebens und der Unwahrscheinlichkeit des komplexen Phänomens Mensch bleibt die prinzipielle Denkmöglichkeit, an einem schöpfungstheologischen Programm festzuhalten: Dann ist das Leben, wie die Natur überhaupt, einschließlich des Menschen eine Setzung, eine Kreation von Kreaturen, die Seinsmitteilung einer Gott zu nennenden Transzendenz, die in der Schöpfung sich selbst erkennt und bejaht.

Aber innerhalb der Wissenschaften spielt die Alternative ‚Evolution oder Schöpfung' keine bedeutende Rolle. ‚Darwin oder Gott' ist ein Streit für die Öffentlichkeit, aber Darwin *oder* Foucault ist der Streit innerhalb der Wissenschaften. Wissenschaftsintern hat sich nämlich als Alternative zur naturalistischen Herausforderung des Darwinismus die Denkmöglichkeit des *Konstruktivismus* oder *Kulturalismus* mit seinem breiten Spektrum an Varianten ausgebildet – darauf liegt jetzt die Konzentration, um dann die Theorietechnik der Philosophischen Anthropologie zu demonstrieren. Es ist klar, dass z. B. im Darwin-Jahr 2009 weltweit das Darwin-Paradigma als gesetzt galt – aber es gibt ein ganz anderes modernes Paradigma in verschiedensten Varianten, das hier jetzt in diesem intellektuellem Raum dagegengesetzt wird – nicht weil es hier vertreten wird,

sondern um überhaupt den Spalt für die Theoriestrategie der Philosophischen Anthropologie als einer dritten Position zu öffnen. Die zeitgenössisch konstruktivistische Antwort auf die erstmalige Darwinsche Herausforderung im 19. Jahrhundert war der Neukantianismus (eine erste Form des Konstruktivismus), eine andere der Historismus bzw. die hermeneutische Philosophie (Dilthey) – heute heißt dasselbe Theorieprogramm kultureller Sozialkonstruktivismus. Es ist also das Paradigma des transzendental-historischen Konstruktivismus – eben Dilthey gegen Darwin oder Foucault gegen Darwin. Man kann auch an den Strukturalismus von Claude Levi-Strauss oder an den linguistic turn im 20. Jahrhundert insgesamt denken. Der Titel einer großen Dresdner Jubliläums-Tagung 2009 *Darwin – die Evolutionsbiologie und unser heutiges Bild vom Menschen* (Oehler 2010) würde also aus der Perspektive der modernen Kultur- und Sozialwissenschaften weltweit gänzlich anders lauten: *Lévi-Strauss, Foucault und Butler – Die Diskursgeschichte und unser heutiges Bild von den Menschen.*

Was ist die Grundannahme dieser Varianten des kulturellen Konstruktivismus? Gleich ob die denkende Vernunft im Menschen oder die Sprache, die symbolische Ordnung oder die Schrift, die symbolischen Formen, das historische Apriori oder die Episteme einer jeweiligen Welt- und Selbstbegegnung, immer ist im kulturphilosophischen oder sozio-konstruktivistischen Theorieprogramm der Ansatzpunkt der Rekonstruktion die immanente Ordnung des Denkens und Sprechens (Foucault 1974), die *als* intellektuelle oder symbolische, linguistische Ordnung vom Phänomen des Lebens selbst unberührt ist (zum Theorieprogramm des Kulturalismus insgesamt vgl. Reckwitz 2006: Moebius/Reckwitz 2008). Aus dieser Perspektive ist dann auch die ‚Evolutionsbiologie' ein Diskurs, eine historisch kontingente symbolische Form, ein diskursives Konstrukt *über* das ‚Leben' – nach Maßgabe einer rationalen oder historisch-diskursiven Konstruktion, Teil einer diskursiven ‚Biomacht'. Der theoriestrategische Schachzug des kulturellen Konstruktivismus ist, die Unterscheidung zwischen Natur und Kultur als nur innerhalb der Kultur für möglich zu halten, nach Maßgabe eines rationalen oder historischen Aprioris. ‚Leben' und menschliches Leben kommen überhaupt nur nach Maßgabe einer Konstruktion, durch kulturelle Bildgebung, durch begriffliche Semantik, durch Symbolisierungen, durch kontingent gesetzte sinnhafte Ordnungsstrukturen, durch Diskurse, durch ‚Biopolitik', also durch ‚Biomacht' ins Spiel – ins Spiel der menschlichen Lebenswelt. Es sind also die Diskurse oder symbolische Formen, die überhaupt erst Menschen zu Menschen formieren, diskursformatierte Subjekte generieren; menschliche Lebewesen sind so gesehen allein diskursgeborene Akteure, die historisch-sozial „Grenzen des Sozialen" ziehen[5], die andere ‚Menschen' leben lassen oder sterben lassen, die entscheiden, wer zum Leben gehört, wer oder was nicht – also diskursive ‚Biomacht' ausüben. Man kann es auch so sagen: Wenn Darwinismus als Naturalismus sagt: alles ist sex, sagt der Foucaultismus als Kulturalismus: alles ist

5 Zu den kulturalistisch-konstruktivistischen Ansätzen gehört auch die produktive Variante einer „reflexiven Anthropologie" von Lindemann 2005, die Plessners *Philosophische* Anthropologie menschlicher Lebewesen methodologisch durch eine historistisch-soziologistische Rekonstruktion der jeweiligen „Grenzen des Sozialen" ‚reflexiv' überbieten – oder unterlaufen möchte. Vgl. Fischer 2022.

gender. Entweder folgt alle menschliche Lebenswelt der naturalen Geschlechterdifferenz und ihren Reproduktionsimperativ oder *alle* Geschlechterdifferenz ist eine kulturelle Ordnung der Geschlechter, eine Interpretation, wer oder was als welches Geschlecht zu gelten und zu leben habe. Und Naturalismen wie die Evolutionsbiologie können dann als Diskursstrategien oder Narrative dekonstruiert und damit in ihrer Geltungsbehauptung für die menschliche Sphäre eingeklammert werden (für eine solche, bei aller Differenzierung zwischen Foucault und Darwin letztlich doch diskursanalytisch verfahrende Dekonstruktion Darwins und des Darwinismus vgl. Sarasin 2009).[6]

3 Philosophische Anthropologie als Theoriestrategie: der dritte Weg als Umweg

Damit ist das Spannungsfeld präpariert, um die Philosophische Anthropologie als eine eigene bestimmte Theoriestrategie zu erläutern. Alle ‚Philosophischen Anthropologen' halten Menschen grundsätzlich für der kulturellen Konstruktion fähige Wesen, alle idealistischen Selbstvermutungen, die Menschen über sich hegen, werden nicht von vornherein als Täuschungen oder Epiphänomene der Natur abgebaut: insofern ist für sie, also für die sich als Philosophische Anthropologen identifizierenden Denker die Darwinsche Theorie, die alle Monopole des Menschen in ein Naturgeschehen zurückzuführen beabsichtigt, eine Herausforderung, der sie sich *nicht* anschließen, der sie aber auch *nicht* – wie der Kulturalismus – ausweichen wollen. Sie akzeptieren nämlich am evolutionsbiologischen Ansatz die Immanenzerklärung aus der Natur, den gleichsam zur neuzeitlichen Philosophie passenden Versuch, ohne theologische Modelle *und* auch ohne Teleologiemodelle einer Zweckmäßigkeit der Natur insgesamt eine immanente Aufklärung des Phänomens Leben in der Natur zu leisten – also von der Biologie aus zu operieren. Die Philosophische Anthropologie ist ein dritter Weg als Umweg über eine philosophische Biologie, um die Sphäre der soziokulturellen Lebenswelt adäquat ansprechen zu können – denn die *sinnhaft aufgebaute Lebenswelt* ist eingebettet in eine *sinnliche Welt des Lebendigen.*

3.1 Die Schlüsselrolle der philosophischen Biologie

Der springende Punkt in der Theorietechnik der Philosophischen Anthropologie ist deshalb der theorieinterne Bezug zur Biologie (Grene 1965). Entscheidend oder konstitutiv ist der Bezug zur Biologie, weil nur darüber die moderne Herausforderung des

6 Unter dem Titel des „Postkonstruktivismus" gibt Gertenbach einen instruktiven Überblick über die Kritiken am Konstruktivismus innerhalb der Philosophie und der Sozialwissenschaften, die sich neuerdings der Dominanz des linguistic turns argumentativ zu entziehen suchen (Gertenbach 2019).

Naturalismus bzw. Darwinismus angenommen werden kann. Die Philosophische Anthropologie differenziert deshalb innerhalb ihres Denkansatzes bei den Autoren jeweils eine philosophisch konzipierte Biologie aus, einer „Biophilosophie“ (Fischer 2005), über die sie – die Philosophische Anthropologie – sich wiederum als Kultur- und Sozialtheorie entfalten kann.[7] Die Pointe ist, dass diese Philosophische Anthropologie als Anthropologie nicht mit dem Menschen anfängt, sondern, bevor sie vom Menschen spricht, von einer Theorie des Lebens handelt. Der operative Impuls dabei ist, die basale Selbsterfahrung der Menschen, vernunft- und sprachvermittelte, diskursvermittelte Wesen zu sein, denen Selbstdistanz eignet, im Sprechen über das „Leben“, das Organische – also das Andere der Vernunft und des Diskurses – nicht preiszugeben. Aus der Sicht der Philosophischen Anthropologie ist nichts falsch an der Evolutionsbiologie, außer dass sie der Phänomenalität des Organischen nicht vollständig gerecht wird *und* dass sie ungeeignet ist für eine Theorie des Menschen, weil sie dessen Eigenerfahrung nicht aufklären kann. Das Credo der *Philosophischen* Anthropologie ist: Die Philosophie ist selbst verantwortlich dafür, eine triftige philosophische Biologie zu entwickeln, die mit der allgemeinen empirischen Theorie des Lebens vereinbar ist, aber zugleich geeignet ist für die Aufklärung über die Spezifität menschlicher Lebewesen. Das ist die Aufgabe einer „Philosophischen Anthropologie im biologischen Zeitalter“ (Illies 2006), in dem sich die Reflexion befindet. Es soll im biologisch informierten Sprechen über das Organische dessen Phänomenalität so angesetzt werden, dass – wenn dann von unten her über eine rekonstruktive Aufstufung des Organischen die Sphäre des menschlichen Lebewesen erreicht wird – sich die Ausgangserfahrung der Selbstdistanz *nicht* als Täuschung, nicht als bloßes Epiphänomen erweist. Anders gesagt: Die Theoriestrategie der Philosophischen Anthropologie als dritter Weg zwischen Naturalismus und Kulturalismus ist, im Umweg über eine immanent angelegte Theorie des Lebens, über den kontrastiven Pflanze-, Tier-, Menschvergleich einen vollen, nicht-reduktiven Begriff des Menschen auszuweisen (die klassischen Autoren der modernen Philosophischen Anthropologie setzten sich in den zwanziger Jahren intensiv bereits mit der damals einsetzenden systematischen Primatenforschung auseinander: Köhler 1973 [1917]).

In gewissem Sinn arbeiten alle Philosophischen Anthropologen wie Detektive, die in den Funden der empirischen Biologie nach Entdeckungen suchen, die es ihnen erlauben, bei aller erfahrungswissenschaftlichen Nüchternheit einen reichen Begriff des Lebens *und* die Sonderstellung von menschlichen Lebewesen herauszuarbeiten. Man könnte von einer *reflexiven Biologie* im Hinblick auf die empirische Biologie sprechen. Daher spielen die Biologen und Zoologen innerhalb der philosophisch-anthropologischen Denkergruppe eine prominente Rolle. Alle Philosophischen Anthropologen sind tief interessiert an den Entdeckungen und Erläuterungen von Driesch (1921)[8], Uexküll (2014 [1921]), Bolk (1926), Buytendijk (1958a; 1958b), Portmann (1948; 1956; 1957; 1990),

7 Zu diesem Verfahren einer philosophischen Biologie bei verschiedenen kontinentaleuropäischen Autoren vgl. die amerikanische Philosophin Marjorie Grene: Approaches to a Philosophical Biology (1965).
8 Vgl. Toepfer 2015.

deren empirisch gehaltvolle biologische Beschreibungen von Pflanzen, Tieren und Menschen Türöffner für eine adäquate philosophische Biologie und Anthropologie sind.[9] Die Linienführung des Paradigmas lässt sich noch genauer bestimmen: Vorausgesetzt, dass die Darwinsche Theorie des Menschen entweder der Typ einer vertikalen Reduktion i.S. einer wissenschaftlichen Reduktion ist, die konzeptionell alle theologischen oder philosophischen Behauptungen über den Menschen in Behauptungen der biologischen Wissenschaft bzw. biologische Zustände zurückführt; oder die Darwinsche Theorie des Menschen ist der Typ einer vertikalen Reduktion im Sinne einer ontologischen Reduktion, in deren Ergebnis der Mensch nichts weiter ist als ein bloßer Körper in der Natur – dann dreht die Philosophische Anthropologie den Spieß um, in dem sie die Abbaubewegung in eine Aufbaubewegung transformiert. Kurz gesagt, operiert sie als eine Theorie der vertikalen Emergenz innerhalb einer Theorie der Natur und des Lebens, die – ohne Rekurs von Theologie oder Teleologie – Stufen lebendiger Organisationsweisen unterscheidet.[10] Durch diese Theorie vertikaler Emergenz (Thies 2004) oder Supervenienz in der Natur kann die Sonderstellung menschlicher Lebewesen präzise charakterisiert werden[11], ohne den anderen Organismen ihre Eigenart vorzuenthalten.[12]

Hat man die Schlüsselstellung der philosophischen Biologie für das philosophisch-anthropologische Paradigma identifiziert, dann werden in der jüngeren Forschung zunächst alle die Bemühungen einschlägig, die erneut die philosophischen Biologien bzw. Organismustheorien der klassischen Autoren freilegen (Hans Werner Ingensiep 2004 mit Bezug auf Plessner; Francesca Michelini 2015 mit Bezug auf Jonas; Francesca Michelini/Kristian Köchy 2020 mit Bezug auf Uexküll; Julia Gruevska 2019 mit Bezug auf Buytendijk; Filip Jaroš/Klouda 2021 mit Bezug auf Portmann). Darüber hinaus sind dann diejenigen Biologen und Philosophen interessant, die aktiv an Anschlüssen zur neueren Biologie arbeiten, um die Dignität der Biophilosophie zu erneuern (Christian Illies 2006; Kristian Köchy 2008; 2015; Filip Jaroš/Timo Maran 2019; Filip Jaroš/Carlos Brentari 2022).

9 Alle Protagonisten waren beeindruckt von Henri Bergson und seinem philosophischen Umgang mit der Darwinschen Evolutionstheorie – das Werk ‚L'évolution creatice' oder die „Schöpferische Evolution" (2014 [1907]) war ein Vorbild für ihre eigenen Versuche eines ähnlichen Unternehmens. Vgl. Delitz 2015.

10 Zur Programmatik einer solchen philosophischen Biologie vgl. auch Jonas 1994 [1966].

11 *Der* zeitgenössische deutschsprachige Philosoph einer ontologischen Emergenz- und Supervenienz-Theorie ist Nicolai Hartmann, der innerhalb der „Kölner Konstellation" (Scheler, Hartmann, Plessner) seit Mitte der 1920er Jahre mit seiner schichtenontologischen Konzeption vom „Aufbau der realen Welt" (1965 [1940]) erheblichen Einfluss auf die philosophisch-anthropologischen Konzeptionen von Max Scheler und Helmuth Plessner ausübte (Vgl. Fischer 2021b; Kalckreuth/Schmieg/Hausen 2019).

12 So aufgestellt, kann man mit einem Blick sehen, dass z. B. theoriegeschichtlich die Anthropologie von Feuerbach nicht zu diesem philosophisch-anthropologischen Paradigma gehört, weil sie das Verfahren des Reduktionismus teilt. Feuerbach, als Materialist, kann deshalb nicht als Vorläufer der modernen Philosophischen Anthropologie gelten.

3.2 Exzentrische Positionalität als Schlüsselbegriff der Philosophischen Anthropologie

Die philosophisch-anthropologische Theoriestrategie kann man am besten an Plessners Schlüsselkategorie der „exzentrischen Positionalität“ (für den Menschen) zeigen.[13]

Plessner, der selbst Biologe war und den man als solchen innerhalb der Philosophischen Anthropologie noch viel ernster als bisher nehmen sollte, setzt in seiner Theoriestrategie damit an, dass er das Organische vom Anorganischen unterscheidet, indem er nüchtern, aber zugleich äußerst folgenreich oder anschlussfähig das „lebendige Ding“ als ein „grenzrealisierendes Ding“ markiert (Plessner 1975 [1928], S. 99 f.), es also in seiner Eigenphänomenalität als ein Ding kennzeichnet, das durch eine Grenzleistung, im Grenzverkehr mit der Umwelt Eigenkomplexität aufbaut; der Stein hört am Rand auf, der Organismus geht aus seiner Grenze über sie hinaus und kehrt durch sie in den Organismus zurück. Das gibt Plessner nicht nur die Möglichkeit, innerhalb seiner ‚philosophischen Biologie‘ die Merkmale des Lebendigen von dieser Bestimmung des Lebens her zu explizieren, sondern auch Stufen der Lebensorganisation zu verfolgen, Organisationsniveaus der Grenzregulierung. Indem er grenzrealisierende Dinge als „Positionalitäten“ umdefiniert, also anonyme „Gesetztheiten“ in der Natur, unterscheidet er Stufen des Organischen, offene und geschlossene Formen, azentrische von zentrischer Positionalität mit jeweils zugeordneten Positionsfeldern oder Umwelten, wobei letztere – die zentrische Positionalität – als senso-motorisch-neuronal ausdifferenzierte bereits die Primaten verständlich machen will. Typisch für die philosophisch-anthropologische Denkoperation und begriffstechnisch auf den Punkt gebracht ist jetzt Plessners Begriff für den Menschen: „Exzentrische Positionalität“ (Plessner 1975, S. 288). Mit diesem Begriff drückt Plessner die Unterbrochenheit des Lebens im menschlichen Lebewesen aus, das als Lebewesen zugleich auf neue Formen der Überbrückung dieser Diskontinuität angewiesen ist, um am Leben zu bleiben. Man könnte sagen: Im Begriff „Exzentrische Positionalität“ werden die 0,6 oder 1,2 % genetische Differenz zwischen Menschen und Menschenaffen, die von den evolutionären Anthropologen oft als Beweis des Kontinuums innerhalb der Primaten einschließlich des so genannten ‚Menschen‘ angeführt werden, anders gewichtet: die „Exzentrizität“ der Positionalität bringt diese minimale genetische Differenz zum Ausdruck, dieses Minimum, das in jeder Hinsicht ein Novum im Leben ausmacht. Exzentrizität meint: „Abstand im Körper zum Körper“, das ist Plessners Übersetzungsformel für „exzentrische Positionalität“, oder Abstand im Leben zum Leben (das ist theorierelevante Unterscheidung zum cartesianischen Alternativprinzip: einerseits Vernunft/Sprache; andererseits Natur/Leben): Die Naturgeschichte ist im Menschen eine Abstandnahme von der natürlichen Umwelt und der Körperlichkeit (der „Positionalität“), eine Abstandnahme in der Natur, die in die Kultur führt, aber in der Natur gelebt werden muss. Exzentrische Positionalität kennzeichnet das Lebewesen, das – im Unterschied zu allen anderen Lebewesen einschließlich der

13 Vgl. zur Theorietechnik der Kategorie: Fischer 2016 [2000].

Schimpansen und anderen großen Menschenaffen – in der Natur im Modus der „natürlichen Künstlichkeit" sein Leben führen muss, anders gesagt: im Modus der „vermittelten Unmittelbarkeit", das heißt nur im Umweg über künstliche Medien, Institutionen und Instrumente die natürlichen Impulse des Lebens zum Vollzug und zur Darstellung bringen kann (Plessner 1975, S. 309 – 340). Von dieser körperlichen Grundstruktur des Menschen her – ‚natürliche Künstlichkeit', ‚vermittelte Unmittelbarkeit', ‚utopischer Standort' – klärt die Philosophische Anthropologie die komplexen Phänomene der menschlichen Lebensform, „die spezifischen Monopole, Leistungen und Werke" auf: „Sprache, Gewissen, Werkzeug, Waffe, Ideen von Recht und Unrecht, Staat, Führung, die darstellende Funktion der Künste, Mythos, Religion, Wissenschaft, Geschichtlichkeit und Gesellschaft" (Scheler 1976, S. 67) – man kann noch ergänzen: Lachen und Weinen (Plessner 1961 [1941]), das Lächeln und alle ekstatischen Phänomene wie z. B. Tanz.

3.3 Können die modernen Philosophischen Anthropologen Tore schießen? Philosophische Anthropologie als Leitfaden zur Erschließung der menschlichen Lebenswelt

„Philosophische Anthropologie im biologischen Zeitalter" (Illies 2006) heißt als Theoriestrategie verstanden die Umdrehung des Spießes des Reduktionismus: Statt Abbau höherer Kategorien auf niedere der Aufweis des Auftritts höherer Kategorien im Feld niederer, unterer Kategorien (Hartmann 2014 [1925/26]). Mit dieser Theoriestrategie sind Idealismus oder Konstruktivismus – die Selbstmacht des setzenden Geistes oder des sprachlichen Diskurses – ebenso in Schach gehalten wie der Naturalismus – Eigenmacht der Natur; es ist eine Theorietechnik zwischen Foucault und Darwin; ebenso – um das nebenbei anzumerken – eine Theorietechnik zwischen Darwin und Gott, denn ein schöpfungstheologischer Ursprung der Teleologie des Lebens oder des Menschen ist für diese Theoriestrategie nicht denknotwendig.

Innerhalb des Theorieprogramms der Philosophischen Anthropologie ist die Pointe einer Transformation des cartesianischen Alternativprinzips der konstitutive Einbau einer ‚philosophischen Biologie' in und vor eine solche Philosophische Anthropologie. „Dieser notorische Rekurs auf eine Philosophie des Lebendigen als Bedingung der Möglichkeit eines vollen, alle Aspekte erschließenden Begriffs des Menschen unterscheidet das Theorieprojekt von Plessner und Scheler charakteristisch von anderen prominenten zeitgenössischen Denkprojekten: vom Neukantianismus, von der Phänomenologie der Bewußtseinsintentionalität, von der Existenzphilosophie, von der Kritischen Theorie der Gesellschaft, vom sprachlogisch operierenden Wiener Kreis. An der jeweiligen philosophischen Biologie, die in ihrer Machart zugleich von jedem Naturalismus (der Darwinschen Evolutionsbiologie) sich abhebt, erkennt man die Texte der Philosophischen Anthropologie." (Fischer 2015, S. 273). Dabei kommt es konsequenterweise im nächsten Schritt zu *„Funktionen und Folgen der philosophischen Biologie für die*

Philosophische Anthropologie“: „Die Philosophie des Lebens muss und soll – auch darin waren sich Scheler und Plessner einig – notwendig Folgen für die sozial- und kulturwissenschaftliche Erschließung konkreter Phänomene der menschlichen Lebenswelt haben, sie übernimmt eine nachhaltige Funktion für die Analytik des Konkreten, damit der cartesianische Dualismus nicht nur im Theorieansatz […] überwunden ist.“ (Fischer 2015, 274) Insofern lässt sich beobachten, wie sowohl bei Plessner wie bei Scheler Figuren der Ontologie des Organischen ihre jeweiligen sozial- und kulturwissenschaftlichen Erschließungen präfigurieren: Der Grenzcharakter des lebendigen Dinges, in dem es sich nach außen manifestiert, taucht z. B. verwandelt wieder in der soziologischen Theorie der Rollenhaftigkeit und Darstellungsverwiesenheit menschlicher Existenzen voreinander wieder auf; das Regenerationspotential des Organischen erscheint in transformierter Weise in den salutogenetischen Grenzreaktionen des Lachens und Weinens, um die lebendige Person vor Pathologien in Krisen des Geistes zu schützen. Scheler veranschlagt hingegen die heterogene Triebstruktur des Organischen (Hunger, Sexualität, Macht) für die institutionellen Stabilisierungsprozesse von geistigen Wissensformen und –ideen.

Von dieser philosophisch-anthropologischen Theoriestrategie aus lassen sich nun insgesamt *anthropologische Kategorien gewinnen als Umbruchbegriffe des Vitalen* – und das könnte interessant und anschlussfähig sein für die Kultur- und Sozialwissenschaften im biologischen Zeitalter, wenn sie der Natur oder dem Lebendigen nicht ausweichen wollen. Anthropologische Kategorien, also Grundbegriffe, die für menschliche Lebewesen reserviert wären, wären dann keine Wesensbegriffe, sondern Transformationsbegriffe, solche, die einen eigenen Status zwischen den Kategorien der Biosphäre, den Vitalkategorien einerseits, und den Begriffen einer je spezifisch geschichtlichen soziokulturellen Welt der Menschen, den hermeneutischen und historischen Begriffen andererseits haben – den historisch variablen Stilbegriffen des Menschen, wie man sagen könnte. Alle prägnanten anthropologischen Kategorien sind aufgebrochene und neuvermittelte Lebenskreislaufbegriffe. Anthropologische Begriffe sind dann als Umbruchbegriffe des Lebens zu finden und so zu formulieren, dass in ihnen das Vitalitätsmoment als dynamischer Hintergrund erkennbar und zugleich in seiner historisch-variablen Bestimmtheit für die Kultur- und Sozialwissenschaften ansprechbar bleibt.

Um ein Beispiel zu geben: die von Marx und Engels prominent gebrauchte Kategorie der „Arbeit“ ist in diesem Sinne eine genuin *anthropologische* Kategorie. Die Schrift von Engels heißt ja: „Der Anteil der Arbeit an der Menschwerdung des Affen“ (Engels 1962) – und sie heißt nicht à la Darwinismus: ‚Der Anteil der Arbeit an der Fortsetzung des evolutionären Reproduktionsgeschehens‘, oder: ‚der Anteil der Arbeit an der Fortwirkung der großen Menschenaffen im Menschen‘. Gerade indem sich Engels in diesem Fragment gebliebenen Text aktuell auf Darwin bezieht, setzt er sich (und Marx) dezidiert von Darwins naturalistischer Konzeption ab. Die Kategorie ‚Arbeit‘ haben Marx und Engels ja gerade nicht von Darwin, sondern von Hegel, und sie wenden dessen idealistische Setzung – Arbeit als ‚Arbeit‘ des Geistes – in eine realistische Sonderstellungskategorie des menschlichen Lebewesens. In der Arbeit steckt demnach das Vitalmoment, die Vitaldynamik des Stoffwechsels, auch des tätigen Stoffwechsels der Pri-

maten – aber die Kategorie der ‚Arbeit' ist ein Umbruchbegriff: nur das menschliche Lebewesen „arbeitet", insofern in seinem Subjekt-Objekt-Verhältnis die Hand des sich aufrichtenden Lebewesens sich „formt" – oder „bildet". Arbeit bildet dieses Lebewesen als spezifisch menschliches, weil die erfundenen Werkzeuge die Hand schulen und die gesamte Psyche und sozialen Koordination zur Disziplinierung bringen. Es wäre ein theoriegeschichtliches Missverständnis, wollte man Marx und Engels in ihrer Arbeits-Anthropologie der Darwinschen Evolutionsbiologie zuschlagen – vielmehr gehören sie gerade in diesem Punkt zum Paradigma einer Philosophischen Anthropologie avant la lettre. „Arbeit" ist also nur einem exzentrisch positionierten, zu sich selbst in Distanz gebrachten Lebewesen möglich – darin folgen Marx und Engels gerade nicht Darwin, sondern Plessner.

Die materialistische Anthropologie im Sinne von Marx und Engels unterscheidet sich also paradigmatisch von einer evolutionären Anthropologie im Sinne Darwins – eben weil eine auf die Sonderstellung zielende Theorie sich vom Ansatz her von einem strikt gradualistischen Theorieprogramm unterscheidet. Aber natürlich ist eine materialistische, eine marxistische Anthropologie zu eng, weil sie die Menschwerdung allein über den Mechanismus der ‚Arbeit' und damit über die Ökonomie laufen lassen will und insofern alle anderen Monopole von diesem einen Merkmal ableitet. Die *Philosophische Anthropologie* unterscheidet sich davon, insofern sie systematisch die Sonderstellung des Menschen von Beginn an in einem Geflecht von nicht aufeinander rückführbaren anthropologischen Kategorien begreift – von denen ‚Arbeit' nur eine unter mehreren ist.

Diese anthropologische Kategorien kennzeichnen also die spezifischen Phänomene der menschlichen Sphäre weder als Graduierung bzw. Fortsetzung der Mechanismen des Organischen mit anderen Mitteln (wie das evolutionsbiologische Paradigma) noch durch vollkommene Abtrennung von der Vitalsphäre (wie das sprach- und kulturkonstruktivistische Paradigma), sondern als Sprung- und Umbruchphänomene im Feld des Lebens selbst. Insofern sind diese anthropologischen Begriffe immer auch Abgrenzungsbegriffe zum Tier (die zur Dämpfung einer Anthropomorphisierung des Tieres führt): also Begriffe der „Sonderstellung" des menschlichen Lebewesens, Humanspezifika, oder um diesen Begriff der ‚Sonderstellung' zu variieren: seiner Sondersinnlichkeit, der Sonderexpression, der Sonderzeitlichkeit, der Sonderinteraktion, der Sonderbewegung, der Sondersterblichkeit: Tiere sind stoffwechselnd tätig, aber sie *arbeiten* nicht; Tiere können sehen, aber sie kennen nicht das erzeugte *Bild*; sie können sich verlauten und hören, aber nicht *musizieren*; sie kennen Gegnerschaft, aber nicht *Feindschaft*; sie sind aggressiv, aber nicht *gewalttätig*; sie bewegen sich virtuos, aber sie *tanzen* nicht; sie kommunizieren, aber sie haben keine *Sprache*; sie haben einen biologischen Lebenslauf, aber keine *Bio-graphie* i.S. einer Sonderzeitlichkeit; sie stocken und erstarren für Lebensmomente, aber sie fallen nicht ins *Lachen* oder *Weinen* für sich und voreinander; sie verenden, aber sie *sterben* nicht und *begraben* einander nicht als leblose Körper. Auch die neueren Forschungen von Tomasello setzen indirekt diese Linienführung der Philosophischen Anthropologie fort: Schimpansen führen einander ihr Verhalten im Vollzug vor, aber sie zeigen nicht auf äußere Gegenstände, sie halten keine Gegenstände hoch, um auf sie zu zeigen – kurz sie kennen keine *Deixis*, kein „*Instruktionslernen*";

junge Schimpansen kennen hinsichtlich des Einsatzes von Mitteln ein „Emulationslernen“, aber kein „*Imitationslernen*“, das sich in die Zielbestimmung und die Vorgehensweise des anderen Lebewesen hineinversetzt, um sie dann für eigene Ziele zu rekombinieren (Tomasello 2002, S. 21).

Die Pointe des philosophisch-anthropologischen Grundbegriffes der ‚exzentrischen Positionalität‘ ist, das nicht Sprache oder Vernunft als Monopole des Menschen gegenüber den sprach- bzw. vernunftlosen Tieren postuliert wird – sondern die *Sonderstellung* auf *allen* Ebenen des Lebens. So könnte man auch von einer ‚Sonderbeweglichkeit‘ des menschlichen Lebewesens sprechen. Den Menschen als das ‚tanzende Tier‘ kennzeichnen ist möglicherweise aufschlussreicher als ihn in erster Linie als das sprechende Tier zu kennzeichnen – weil die Dynamik des Bios, der Lebensschwung (der ‚elan vital‘ bei Bergson) des evolutionären Lebens überhaupt im Menschen bewahrt und zugleich umgebrochen ist im Modus des Tanzes, des Ekstatischen. Zugleich gibt es gar nicht *den* Tanz des menschlichen Lebewesens, sondern im Respekt für die kulturelle Differenz immer nur verschiedene Stile des Tanzens, Tanzstile als je verschiedene *Lebensstile*, als historische Aprioris der Selbst- und Welterschließung und der sozialen Interaktion, als je spezifische Erscheinungsformen der menschlichen Lebewesen voreinander – den Jagdtanz, den Tanz der Derwische, das Menuett, den Reigen, die Polka, die Polonaise, die Tarantella, den Breakdance etc. D.h. eine anthropologische Kategorie wie Tanz (die damit wie Arbeit, Sprache, Lachen und Weinen, Musik, Bilderzeugung, Gewalt etc. für menschliche Lebewesen reserviert wäre) ist nicht nur verschieden von reinen Vitalkategorien (wie Bewegung), sondern immer auch offen zu den spezifisch hermeneutischen Begriffen der Kultur- und Sozialwissenschaften, also zu den jeweiligen Epochen, geschichtliche Aprioris, Epistemen, Diskursformationen (menschlicher Lebenswelt), auf deren jeweilige ‚Differenz‘ der kulturalistische Ansatz allen Wert legt (Stile der Bewegungen). In der anthropologischen Kategorie des ‚Tanzes‘ stecken also das Vitalmoment und zugleich die Differenzierung in je verschiedene soziokulturelle Stile. Das Wahrheitsmoment des Naturalismus ist gewahrt, um das Wahrheitsmoment des Kulturalismus erreichen zu können. Die relativ stabilen anthropologischen Kategorien, die (je in einem Aspekt) eine Transformation des Vitalen auf den Begriff zu bringen suchen, sind also zugleich offen für hermeneutische Begriffe (z.B. historische Stilbegriffe), in denen das jeweilige Moment eine jeweilige historisch-kontingente Auslegung und Stilisierung der Lebensverhältnisse erzwingt und gewinnt. Durch die anthropologischen Kategorien, die die hermeneutischen Begriffe tragen, wird also eine Vergleichbarkeit von verschiedensten Kulturen und Gesellschaften in ihrer Differenz gewonnen.

Unter dieser theorietechnischen Voraussetzung anthropologischer Kategorien als Umbruchbegriffen des Vitalen in der sozio-kulturellen Lebenswelt haben verschiedene Autoren des Paradigmas schließlich auch „philosophisch-anthropologische Konzepte zur Menschheitsgeschichte“ vorgelegt. Die Rekonstruktion dieser komplexen Linie „von archaischen Menschengruppen zur Moderne“ (Fischer 2014b) findet sich in Plessners „Anthropologie der geschichtlichen Weltansicht“ (1931), in Gehlens „Urmensch und Spätkultur“ (2016 [1956]), in Claessens historisch-ethnologischen Studien „Das Konkrete und das Abstrakte“ (1980), in Dux’ „Historisch-genetischer Theorie“ der Kultur (2000)

und bei Popitz' „Aufbruch zur artifiziellen Gesellschaft" (1995). Anders als oft vermutet bringt die moderne Philosophische Anthropologie aus den Voraussetzungen ihres Theorieprogramms selbst eine Theorie der Geschichte und Geschichtlichkeit hervor. Die fünf erwähnten Konzepte sind je für sich beeindruckende Entwürfe – in jedem Fall bei Plessner und Gehlen, „aber auch die in der bundesrepublikanischen Soziologie der 60er bis 90er Jahre prägnanten und prominenten Soziologen Dieter Claessens, Günter Dux, Heinrich Popitz sind ‚Heroen' einer philosophisch-anthropologischen Menschheitsgeschichtsschreibung, insofern sie sich jeweils mit enormen Aufwand und Ernst im empirischen Material auf die kognitive Durchdringung einer Menschheitsgeschichte eingelassen haben." (Fischer 2014b, S. 299)[14] Der philosophisch-anthropologische Deutungsschlüssel muss sich in allen neueren paläoanthropologischen Befunden der Menschwerdung immer erneut bewähren (Lequin 2019).

3.4 Naturalismus und Kulturalismus aus der Perspektive der exzentrischen Positionalität

Moderne Philosophische Anthropologie ist ein Denkansatz, der – wie gezeigt – zwischen Naturalismus und Kulturalismus, zwischen Darwin und Dilthey operiert und – reaktualisiert – als faszinierender Ansatz zwischen Dawkins und Foucault wieder auftaucht. Plessners Schlüsselbegriff der exzentrischen Positionalität kann die Denkmöglichkeiten des Naturalismus oder Kulturalismus als cartesianische Radikalismen aufklären: Naturalismus ist von der exzentrischen Positionalität aus gesehen die radikalisierte, isolierte Perspektive der ‚Positionalität', Kulturalismus die radikalisierte, isolierte Perspektive der ‚Exzentrizität'. Philosophische Anthropologie operiert hingegen mit der Verschränkung von Positionalität und Exzentrizität und könnte die Theorietechnik sein, um die Ansprüche bzw. Anmaßungen des Darwinismus und des Foucaultismus zu kontrollieren und zu limitieren. Über den Umweg über eine philosophische Biologie entfaltet die Philosophische Anthropologie als dritter Weg die sozio-kulturelle Dimension der menschlichen Lebenswelt.

14 Entscheidend ist, dass die moderne Philosophische Anthropologie als dritter Weg zwischen Naturalismus und Kulturalismus aus ihrem spezifischen Ansatz des Umweges über eine Naturphilosophie eine eigene Theorie der Geschichte und Geschichtlichkeit generieren kann. Mit diesem Beweis lässt sich eine erneute *dualistische* Interpretation der Philosophischen Anthropologie – und insbesondere der von Plessner – vermeiden, die einen *gleichrangigen* ‚vertikalen Zugang' (über die Naturphilosophie) des Vergleichs von Organisationsstufen des Lebens von einem ‚horizontalen Zugang' (über die Geschichtsphilosophie) von verschiedenen Kulturen supponiert (vgl. Krüger 2019). Plessner hat die Begriffe horizontaler vs. vertikaler Zugang nur für das werkgeschichtliche Verhältnis des früheren Werkes „Einheit der Sinne" zum späteren Buch „Stufen des Organischen und der Mensch" verwendet (in den ‚Stufen') und danach für die Entfaltung seines ab 1928 naturphilosophisch situierten Ansatzes der Philosophischen Anthropologie keinerlei Gebrauch mehr von dieser Unterscheidung gemacht – vermutlich um jeden Rückfall in den cartesianischen Dualismus zu vermeiden. Vgl. zur Argumentation Fischer 2021c; 2022.

Um auf den Anfang des Beitrages zurückzukommen, wo „Philosophische Anthropologie“ als Paradigma von „philosophischer Anthropologie“ als Disziplin unterschieden wurde: Wenn die Theorietechnik funktioniert, ist Philosophische Anthropologie nicht nur selbstverständlich ein Paradigma innerhalb der Disziplin ‚philosophische Anthropologie‘ (neben anderen Paradigmen), sondern bildet auch ein interessantes Paradigma innerhalb anderer Disziplinen – etwa der Epistemologie (Plessner 1923; Scheler 1926), der Sozialphilosophie (Scheler 1973 [1926]), der Psychologie (Buytendijk 1958b; Straus 1960), der Technikphilosophie (Gehlen 1961; de Mul 2003; 2010; Fischer/Spreen 2014), der Kulturwissenschaft (Cassirer 2010; Blumenberg 1981; 2006), der Soziologie (Scheler 1973, Gehlen 2016 [1956]; Plessner 1983; Claessens 1980; Tomasello 2002; 2008), der Geschichtswissenschaft (Gehlen 2016 [1956], Claessens 1980, Dux 2000, Popitz 1995), der Naturphilosophie (Portmann 1961; Grene 1974) und der Ökophilosophie (Peterson 2010; Block 2016), eventuell sogar innerhalb der modernen Metaphysik (Scheler 1968 [1927]).

Literatur

Anders, Günther (2018): „Die Weltfremdheit des Menschen“. *Die Weltfremdheit des Menschen. Schriften zur philosophischen Anthropologie.* Hrsg. v. Christian Dries unter Mitarbeit von Henrike Gätjens. München: Beck, S. 11 – 47

Bergson, Henri (2014 [1907]): *Schöpferische Evolution.* Hamburg: Meiner.

Block, Katharina (2016): *Von der Umwelt zur Welt. Der Weltbegriff in der Umweltsoziologie.* Bielefeld: transcript.

Blumenberg, Hans (1981): Anthropologische Annäherung an die Aktualität der Rhetorik. In: Ders.: *Wirklichkeiten in denen wir leben. Aufsätze und eine Rede.* Stuttgart: Reclam, S. 104 – 136.

Blumenberg, Hans (2006): *Beschreibung des Menschen.* Frankfurt a. M. Suhrkamp.

Bolk, Louis (1926): *Das Problem der Menschwerdung.* Jena: Fischer.

Borsari, Andrea (2009): Notes on ‚Philosophical Anthropology‘ and Contemporary German Thought. *Iris. European Journal of Philosophy and Public Debate.* N. 1: pp. 113 – 130.

Buytendijk, Frederik J.J. (1958a [1928]): Anschauliche Kennzeichen des Organischen. In: Ders.: *Das Menschliche. Wege zu seinem Verständnis.* Stuttgart: Köhler-Verlag, S. 1 – 13.

Buytendijk, Frederik J.J. (1958b): *Mensch und Tier. Ein Beitrag zur vergleichenden Psychologie.* Reinbek b. Hamburg: Rowohlt.

Cassirer, Ernst (2010): *Versuch über den Menschen. Einführung in eine Philosophie der Kultur.* Hamburg: Meiner.

Claessens, Dieter (1980): *Das Konkrete und das Abstrakte. Soziologische Skizzen zur Anthropologie.* Frankfurt a. M.: Suhrkamp.

Darwin, Charles (1983 [1859]): *Die Entstehung der Arten durch natürliche Zuchtwahl.* Stuttgart: Kröner.

Darwin, Charles (2002 [1875]): *Die Abstammung des Menschen.* Stuttgart: Kröner.

Dawkins, Richard (2014): *Das egoistische Gen.* Mit einem Vorwort von Wolfgang Wickler. Heidelberg/Berlin: Springer Verlag.

Delitz, Heike (2015): Helmuth Plessner und Henri Bergson. Das Leben als Subjekt und Objekt des Denkens. In: *Zwischen den Kulturen. Plessners ‚Stufen des Organischen‘ im zeithistorischen Kontext.* Hrsg. v. Kristian Köchy/Francesca Michelini. Freiburg i. Br.: Alber, S. 193 – 214.

Dries, Christian (2018): Von der Weltfremdheit zur Antiquiertheit des Menschen. Günther Anders’ negative Anthropologie. In: Günther Anders: *Die Weltfremdheit des Menschen. Schriften zur philosophischen Anthropologie.* Hg. v. Christian Dries unter Mitarbeit von Henrike Gätjens. München: Beck, S. 437 – 535

Driesch, Hans (1921 [1908]): *Philosophie des Organischen:* Gifford-Vorlesungen gehalten an der Universität Aberdeen in den Jahren 1907 – 1908. 2. Aufl. Leipzig: W. Engelmann.

Dux, Günter (2000): *Historisch-genetische Theorie. Instabile Welten. Zur prozessualen Logik im kulturellen Wandel.* Frankfurt a. M.: Suhrkamp.

Eibl, Karl (2007): *Animal poeta. Bausteine der biologischen Kultur- und Literaturtheorie.* Paderborn: Mentis.

Engels, Friedrich (1962): Der Anteil der Arbeit an der Menschwerdung des Affen. In: Karl Marx/Friedrich Engels: *Werke.* Bd. 20. Berlin: Dietz, S. 444 – 455.

Fischer, Joachim (2005): Biophilosophie als Kern des Theorieprogramms der Philosophischen Anthropologie. Zur Kritik des wissenschaftlichen Radikalismus. In: Gerhard Gamm/Alexandra Manzei/Matthias Gutmann (Hrsg.): *Zwischen Anthropologie und Gesellschaftstheorie. Zur Renaissance Helmuth Plessners im Kontext der modernen Lebenswissenschaften.* Bielefeld: transcript, S. 63 – 86.

Fischer, Joachim (2009): Exploring the Core Identity of Philosophical Anthropology through the Works of Max Scheler, Helmuth Plessner, and Arnold Gehlen. *Iris. European Journal of Philosophy and Public Debate* I (1): pp. 153 – 170.

Fischer, Joachim (2010): Tanzendes Tier oder Exzentrische Positionalität – Zur Theoriestrategie der Philosophischen Anthropologie zwischen Darwinismus und Kulturalismus. In: *Der Mensch – Evolution, Natur und Kultur.* Hrsg. v. Jochen Oehler. Heidelberg/Berlin: Springer-Verlag, S. 233 – 246.

Fischer, Joachim (2014a): Philosophical Anthropology: A Third Way between Darwinism and Foucaultism. In: Jos de Mul (Ed.), *Plessner's Philosophical Anthropology: Perspectives and Prospects*, Amsterdam: Amsterdam University Press, pp. 41 – 56.

Fischer, Joachim (2014b): Von archaischen Menschengruppen zur Moderne. Philosophisch-anthropologische Konzepte zur Menschheitsgeschichte (Gehlen, Claessens, Dux, Popitz). In: Volker Steenblock/Hans-Ulrich Lessing (Hg.), *Vom Ursprung der Kultur. Mit einem Gespräch mit Günter Dux*, Freiburg/München: Alber, S. 289 – 335.

Fischer, Joachim (2015): Helmuth Plessner und Max Scheler. Parallelaktion zur Überwindung des Cartesianischen Dualismus. Funktionen und Folgen der philosophischen Biologie für die Philosophische Anthropologie, in: Kristian Köchy/Francesca Michelini (Hg.): *Zwischen den Kulturen. Plessners ‚Stufen des Organischen' im zeithistorischen Kontext*, Freiburg/München: Alber, S. 273 – 304.

Fischer, Joachim (2016 [2000]): Exzentrische Positionalität. Plessners Grundkategorie der Philosophischen Anthropologie. In: Ders., *Exzentrische Positionalität. Studien zu Helmuth Plessner.* Weilerswist: Velbrück, S. 115 – 148.

Fischer, Joachim (2021a): „Philosophische Anthropologie" versus „philosophische Anthropologie" – Paradigma und Disziplin? Groethuysen als Gründer der Disziplin. In: *Bernhard Groethuysen. Deutsch-französischer Intellektueller, Philosoph und Religionssoziologe*, hg. v. Richard Faber/Claude D. Conter. Würzburg: Ergon, S. 21 – 42.

Fischer, Joachim (2021b): ‚Philosophische Anthropologie' und ‚Neue Ontologie'. Die ‚Kölner Konstellation' zwischen Max Scheler, Nicolai Hartmann und Helmuth Plessner als philosophiegeschichtliches Ereignis im 20. Jahrhundert. In: Erik Norman Dzwiza-Ohlsen/Andreas Speer (Hrsg.): *Philosophische Anthropologie als interdisziplinäre Praxis. Max Scheler, Helmuth Plessner und Nicolai Hartmann in Köln – historische und systematische Perspektiven*, Paderborn: mentis, S. 3 – 23.

Fischer, Joachim (2021c): „Stufen des Organischen und der Mensch" (1928) und „Macht und menschliche Natur" (1931). Über ein vermeidbares Missverständnis in der Plessner-Interpretation. In: *Thaumàzein – Online Journal of Philosophy*, 9 (2): Helmuth Plessner. Philosophy and Life, S. 51 – 93.

Fischer, Joachim (2022): „Stufen des Organischen und der Mensch" (1928) und „Macht und menschliche Natur" (1931): Eine Kontroverse um das Verhältnis zweier Plessner-Bücher. In: Jonas Barth/Anna Henkel (Hrsg.), *Leib. Grenze. Kritik. Festschrift für Gesa Lindemann zum 66. Geburtstag.* Weilerswist: Velbrück, S. 45 – 60.

Fischer, Joachim (2022 [2008]): *Philosophische Anthropologie. Eine Denkrichtung des 20. Jahrhunderts.* Freiburg/München: Alber. 2. durchges. Aufl.

Fischer, Joachim/Dierk Spreen (2014): *Soziologie der Weltraumfahrt* (mit Gastbeiträgen von Heike Delitz und Helmuth Plessner). Bielefeld: transcript.

Foucault, Michel (1974): *Die Ordnung des Diskurses.* München: Hanser.

Gehlen, Arnold (1993 [1940/50]): *Der Mensch: Seine Natur und seine Stellung in der Welt.* Textkritische Ausgabe. Hrsg. v. Karl-Siegbert Rehberg. Frankfurt a. M.: Klostermann.

Gehlen, Arnold (2016 [1956]): *Urmensch und Spätkultur. Philosophische Ergebnisse und Aussagen.* Bonn: Klostermann.

Gehlen, Arnold (1961): Die Technik in der Sichtweise der Anthropologie. In: Ders.: *Anthropologische Forschung. Zur Selbstbegegnung und Selbstentdeckung des Menschen.* Reinbek b. Hamburg: Rowohlt, S. 93 – 103.

Gehlen, Arnold (1975): Rückblick auf die Anthropologie Max Schelers. In: *Max Scheler im Gegenwartsgeschehen der Philosophie.* Hg. v. Paul Good. Bern/München: Francke, S. 179 – 188.

Gertenbach, Lars (2019): Postkonstruktivismus in der Kultursoziologie. In: *Handbuch der Kultursoziologie*, hg. v. Stephan Moebius/Frithjof Nungesser/Katharina Scherke, Bd. 2. Wiesbaden: Springer, S. 53 – 76.

Grene, Marjorie (1965): *Approaches to a Philosophical Biology.* New York/London: Basic Books, Inc.

Grene, Marjorie (1974): *The Understanding of Nature: Essays in the Philosophy of Biolology.* Dordrecht/Boston: Reidel Pub. Co.

Groethuysen, Bernhard (1931 [1928]): *Philosophische Anthropologie.* München: Oldenbourg.

Gruevska, Julia (2019): Von der Tierphysiologie zur Psychologie des Menschen. Ein Einblick in Werk und Wirken Frederik Buytendijks. In: *Internationales Jahrbuch für Philosophische Anthropologie*, Bd. 8, S. 87 – 106.

Habermas, Jürgen (1958): Anthropologie. In: *Fischer Lexikon Philosophie*, hg. v. Alwin Diemer/Ivo Frenzel. Mit einer Einleitung von Helmuth Plessner. Frankfurt a. M.: Fischer, S. 18 – 35.

Hartmann, Nicolai (2014 [1925/26]): Kategoriale Gesetze. In: Ders.: *Studien zur Neuen Ontologie und Anthropologie.* Hrsg. v. Gerald Hartung/Matthias Wunsch. Berlin: de Gruyter, S. 117 – 176.

Hartmann, Nicolai (1965 [1940]): *Aufbau der realen Welt. Grundriß der allgemeinen Kategorienlehre.* Berlin: de Gruyter.

Hartung, Gerald (2008): *Philosophische Anthropologie.* Stuttgart: Reclam.

Illies, Christian (2006): *Philosophische Anthropologie im biologischen Zeitalter. Zur Konvergenz von Moral und Natur.* Frankfurt a. M.: Suhrkamp.

Ingensiep, Hans Werner (2004): Lebens-Grenzen und Lebensstufen in Plessners Biophilosophie. Perspektiven moderner Biotheorie. In: Ulrich Bröckling/Benjamin Bühler/Marcus Hahn/Mathias Schöning/Manfred Weinberg (Hrsg.): *Disziplinen des Lebens. Zwischen Anthropologie, Literatur und Politik.* Tübingen: Narr, S. 35 – 46.

Jaroš, Filip/Timo Maran (2019): Humans on Top, Humans among the Other Animals: Narratives of Anthropological Difference. *Biosemiotics* 12 (3), pp. 381 – 403.

Jaroš, Filip/Carlo Brentari (2022): Organisms as subjects: Jakob von Uexküll and Adolf Portmann on the autonomy of living beings and anthropological difference. *History and Philosophy of the Life Sciences*, 44 (3), Article number: 36.

Jaroš, Filip/J. Klouda (2021): *Adolf Portmann: A Thinker of Self-Expressive Life*, Cham: Springer Nature Switzerland AG,

Jonas, Hans (1973): *Organismus und Freiheit. Ansätze zu einer philosophischen Biologie.* Göttingen: Vandenhoeck & Ruprecht.

Jonas, Hans (1994 [1966]): *Das Prinzip Leben. Ansätze zu einer philosophischen Biologie.* Frankfurt/M./Leipzig: Insel.

Junker, Thomas/Sabine Paul (2009): *Der Darwin Code. Die Evolution erklärt unser Leben.* München: Beck.

Kalckreuth, Moritz von/Gregor Schmieg/Friedrich Hausen (Hg.) (2019): *Nicolai Hartmanns Neue Ontologie und die Philosophische Anthropologie. Menschliches Leben in Natur und Geist*, Berlin/Boston: De Gruyter.

Klose, Joachim/Jochen Oehler (Hg.) (2008): *Gott oder Darwin. Vernünftiges Reden über Schöpfung und Evolution.* Berlin/Heidelberg: Springer.

Köhler, Wolfgang (1973 [1917]): *Intelligenzprüfungen an Anthropoiden* 1. Abhandlungen der Königlich-preußischen Akademie der Wissenschaften (Phys.-Math. Klasse Nr. 1). Heidelberg: Springer.

Köchy, Kristian (2008): *Biophilosophie zur Einführung*, Hamburg: Junius.

Köchy, Kristian/Francesca Michelini (Hg.) (2015): *Zwischen den Kulturen. Plessners ‚Stufen des Organischen' im zeitgenössischen Kontext.* Freiburg: Alber.

Krüger, Hans Peter (2019): *Homo absconditus. Helmuth Plessners Philosophische Anthropologie im Vergleich.* Berlin: de Gruyter.

Landmann, Michael (1976 [1955]): *Philosophische Anthropologie. Menschliche Selbstdeutung in Geschichte und Gegenwart*, 4. überarb. u. erw. Aufl. Berlin/New York: de Gruyter.

Lequin, Mathilde (2019): *Bipédie et origines de l'humanité: Philosophie et histoire de la paléoanthropologie.* Paris: Hermann.

Lindemann, Gesa (2005): Der methodologische Ansatz der reflexiven Anthropologie Helmuth Plessners. In: Gerhard Gamm/Mathias Gutmann/Alexandra Manzei (Hg.): *Zwischen Anthropologie und Gesellschaftstheorie. Zur Renaissance Helmuth Plessners im Kontext der modernen Lebenswissenschaften.* Bielefeld: transcript: S. 83 – 98.

Löwith, Karl (1981 [1957]): Natur und Humanität des Menschen. In: Ders., *Menschen und Menschenwelt. Beiträge zur Anthropologie* (Sämtliche Schriften, Bd. 1). Hg. v. Klaus Stichweh/Marc B. de Launay. Stuttgart: Metzler, S. 259 – 294.

Marquard, Odo (1995): Der Mensch ‚diesseits der Utopie'. Bemerkungen zur Geschichte und Aktualität der philosophischen Anthropologie. In: Ders.: *Glück im Unglück. Philosophische Überlegungen.* München: Fink, S. 142 – 155.

Mayr, Ernst (1988): *Towards a new philosophy of biology: observations of an evolutionist.* Cambridge (Mass.): Belknap.

Mayr, Ernst (2005): *Konzepte der Biologie.* Stuttgart: Hirzel.

Michelini, Francesca (2015): Helmuth Plessner und Hans Jonas. Geschichte einer verpassten Begegnung, in: *Zwischen den Kulturen. Plessners ‚Stufen des Organischen' im zeithistorischen Kontext.* Hrsg. v. Kristian Köchy/Francesca Michelini. Freiburg i. Br.: Alber, S. 323 – 358.

Michelini, Francesca/Kristian Köchy (eds.) (2020): *Jakob von Uexküll and Philosophy. Life, Environments, Anthropology.* Abingdon/New York: Routledge.

Moebius, Stephan/Andreas Reckwitz (Hrsg.) (2008): *Poststrukturalistische Sozialwissenschaften.* Frankfurt a. M.: Suhrkamp.

Morin, Edgar (1965): *Das Rätsel des Humanen. Grundfragen einer neuen Anthropologie.* Vorwort zur deutschen Ausgabe von Adolf Portmann. München/Zürich: Piper.

Mul, Jos de (2003): Digitally mediated (dis)embodiment. Plessner's concept of excentric positionality explained for Cyborgs. *Information, Communication & Society* 6 (2): 247 – 265.

Mul, J. de (2010): *Cyberspace Odyssey. Towards a Virtual Ontology and Anthropology.* Castle upon Tyne: Cambridge Scholars Publishing.

Nispen, Joris van/Douwe Tiemersma (ed.) (1991): *The Quest for Man. The Topicality of Philosophical Anthropology. Die Frage nach dem Menschen. Die Aktualität der philosophischen Anthropologie.* Assen/Maastricht: Van Gorcum.

Oehler, Jochen (Hg.) (2010): *Der Mensch – Evolution, Natur und Kultur.* Heidelberg/Berlin: Springer-Verlag.

Peterson, Keith R. (2010): All That We Are: Philosophical Anthropology and Ecophilosophy. In: *Cosmos and History: The Journal of Natural and Social Philosophy*, Vol 6, No 1, S. 60 – 82.

Plessner, Helmuth (1923): *Die Einheit der Sinne. Grundlinien einer Ästhesiologie des Geistes.* Bonn: Cohen.

Plessner, Helmuth. (1975 [1928]): *Die Stufen des Organischen und der Mensch. Einleitung in die philosophische Anthropologie.* 2. Aufl. Berlin: de Gruyter.

Plessner, Helmuth (1931): *Macht und menschliche Natur. Zur Anthropologie der geschichtlichen Weltansicht.* Berlin: Duncker u. Humblot.

Plessner, Helmuth (1961 [1941]): *Lachen und Weinen. Eine Untersuchung nach den Grenzen menschlichen Verhaltens.* Bern/München: Francke.

Plessner, Helmuth (1983): Die Frage nach der Conditio humana. In: Ders., *Gesammelte Schriften.* Bd. VIII. Hrsg. v. Günther Dux/Odo Marquard/Elisabeth Ströker. Frankfurt a. M.: Suhrkamp, S. 136 – 217.

Popitz, Heinrich (1995): *Der Aufbruch zur artifiziellen Gesellschaft.* Tübingen: Mohr u. Siebeck.

Portmann, Adolf (1948): *Die Tiergestalt. Studien über die Bedeutung der tierischen Erscheinung.* Basel: Verlag Friedrich Reinhardt.

Portmann, Adolf (1956): *Zoologie und das neue Bild des Menschen. Biologische Fragmente zu einer Lehre vom Menschen.* Reinbek b. Hamburg: Rowohlt Verlag.

Portmann, Adolf (1957): „Die Erscheinung der lebendigen Gestalten im Lichtfelde". In: Klaus Ziegler (Hg.): *Wesen und Wirklichkeit des Menschen. Festschrift für Helmuth Plessner.* Göttingen: Vandenhoeck u. Ruprecht, S. 29 – 41.

Portmann, Adolf (1961): *Neue Wege der Biologie.* München: Piper.

Portmann, Adolf (1990): *The living form and the seeing eye. Essays in philosophical zoology.* Translated, with an interpretive essay by Richard B. Carter. Lewiston Lampeter: Edwin Mellen.

Reckwitz, Andreas (2006): *Die Transformation der Kulturtheorien. Zur Entwicklung eines Theorieprogramms.* Weilerswist: Velbrück.

Rehberg, Karl-Siegbert (2008): *Eine Philosophie des Menschen und die Herausforderung der Evolutionsbiologie: Max Scheler, Helmuth Plessner, Arnold Gehlen.* In: Joachim Klose/ Jochen Oehler J (Hg.); *Gott oder Darwin? Vernünftiges Reden über Schöpfung und Evolution.* Berlin/Heidelberg: Springer, S. 235 – 248.

Rehberg, Karl-Siegbert (2009): Philosophical Anthropology from the End of World War I to the 1940s and in a Current Perspective. In: *Iris. European Journal of Philosophy and Public Debate* I (1): pp. 131 – 152.

Rothacker, Erich (1964): *Philosophische Anthropologie.* Bonn: Bouvier.

Sarasin, Philipp (2009): *Darwin und Foucault. Genealogie und Geschichte im Zeitalter der Biologie.* Frankfurt a. M.: Suhrkamp.

Scheler, Max (1968 [1927]): Philosophische Weltanschauung. In: Ders., *Philosophische Weltanschauung.* Bern: Francke, S. 5 – 15.

Scheler, Max (1973 [1926]): Wesen und Formen der Sympathie. In: Ders., *Gesammelte Werke*, Bd. 7. Hrsg. v. Manfred Frings. Bern: Francke, S. 7 – 258.

Scheler, Max (1926): *Versuche zu einer Soziologie des Wissens.* Leipzig: Duncker u. Humblot.

Scheler, Max (1976 [1928]): Die Stellung des Menschen im Kosmos. In: Ders., *Gesammelte Werke*, Bd. 9. Hrsg. v. Manfred Frings. Bonn: Bouvier, S. 7 – 71.

Straus, Erwin (1960): *Psychologie der menschlichen Welt. Gesammelte Schriften.* Berlin/Göttingen/Heidelberg: Springer Verlag.

Thies, Christian (2004): *Einführung in die philosophische Anthropologie.* Darmstadt: Wissenschaftliche Buchgesellschaft.

Thies, Christian (2008): *Philosophische Anthropologie als Forschungsprogramm*, in: Ada Neschke/Hans Rainer Sepp (Hg.), *Philosophische Anthropologie und Lebensphilosophie. Ursprünge und Aufgaben.* Reihe: Philosophische Anthropologie. Themen und Positionen. Bd. 1. Nordhausen: Bautz, S. 230 – 248.

Thies, Christian (2018): *Philosophische Anthropologie auf neuen Wegen.* Weilerswist: Velbrück.

Toepfer, Georg (2015): Helmuth Plessner und Hans Driesch. Naturphilosophischer versus naturwissenschaftlicher Vitalismus. In: *Zwischen den Kulturen. Plessners ‚Stufen des Organischen' im zeithistorischen Kontext.* Hrsg. v. Kristian Köchy/Francesca Michelini. Freiburg i. Br.: Alber, S. 91 – 121.

Tomasello, Michael (2002): *Die kulturelle Entwicklung des menschlichen Denkens.* Frankfurt a. M.: Suhrkamp.

Tomasello, Michael (2008): *Origins of human communication.* Cambridge: Mass.: MIT Press..

Uexküll, Jakob v. (2014 [1921]): *Umwelt und Innenwelt der Tiere*, hg. v. Florian Mildenberger/Bernd Herrmann. Heidelberg/Berlin: Springer-Verlag.

Weiland, René (Hg.) (1995): *Philosophische Anthropologie der Moderne.* Weinheim: Beltz.

Wunsch, Matthias (2014): *Fragen nach dem Menschen. Philosophische Anthropologie, Daseinsontologie und Kulturphilosophie*, Frankfurt a. M.: Klostermann.

Book Reviews / Buchrezensionen

Andreas Höntsch

Womit muss der Anfang der Sozialtheorie gemacht werden?

Rezension zu: Joachim Fischer: *Tertiarität. Studien zur Sozialontologie*, Weilerswist: Velbrück Wissenschaft 2022, 321 S.

Mit dem 2022 veröffentlichten Band *Tertiarität: Studien zur Sozialontologie* legt Joachim Fischer seine gesammelten sozialtheoretischen Aufsätze vor. Das Buch gibt einen Überblick über seine seit mehr als zwanzig Jahren anhaltende Arbeit an einer Sozialtheorie des Dritten. Es umfasst neun bereits veröffentlichte und teilweise erweiterte Aufsätze aus den Jahren 2000 bis 2020 sowie neun Originalbeiträge, die etwa ein Drittel des Gesamtumfangs ausmachen. Die Wiederveröffentlichungen richten sich in der Mehrzahl auf die Sozialtheorie, während sich der größte Teil der Originalbeiträge der Gesellschaftstheorie widmet.

Die Einleitung enthält die zentrale These: Während im 19. und 20. Jahrhundert mit Grundbegriffen wie Herr/Knecht, Ego/Alter oder Sender/Empfänger dyadische Konzeptualisierungen des Sozialen etwa als Kampf, Intersubjektivität oder Kommunikation dominierten, bahne sich mit der Wiederentdeckung triadischer Theorien der Sozialität mit Grundbegriffen wie Beobachter, Störer oder Richter seit einiger Zeit ein Paradigmenwechsel an. Im Gegensatz zu Theorien, die Sozialität als „*das Dritte*“, d. h. als objektiver Geist, Kollektivbewusstsein, Struktur, Diskurs oder System konzipieren, erscheint bei Fischer „*der/die Dritte* als eine personale und positionale Größe“ (S. 8). Die Theorie des personalen und positionalen Dritten sei somit eine dritte Theorieform gegenüber den beiden wechselseitig aufeinander verweisenden Theorieformen der interaktionsnahen Dyadik und der sachlich-apersonalen Drittheit.

Zugleich spannt die thematische Exposition einen Bereich zwischen soziologischer Sozialtheorie und philosophischer Sozialontologie auf. Während die Sozialontologie philosophisch nach dem Sein des Sozialen frage, um dies in Form von Sozialphilosophien auszuarbeiten, gehörten die sozialtheoretische Frage nach der Konstitution von Sozialität sowie die gesellschaftstheoretische Frage nach der Struktur der gegenwärtigen Gesellschaft der Soziologie als Fachwissenschaft zu. Fischer macht einen kontinentaleuropäischen und einen US-amerikanischen Ursprung der Sozialontologie aus: zum einen Michael Theunissens *Der Andere. Studien zur Sozialontologie* (1965) sowie John Searles *The Construction of Social Reality* (1995). Die soziologische Sozialtheorie andererseits sei deutlich älteren Ursprungs und habe die Philosophie – ähnlich wie im 18. Jahrhundert die Naturwissenschaft die Erkenntnistheorie – unter Druck gesetzt, das Soziale philosophisch zu reflektieren. Sozialontologie und Sozialtheorie seien daher nicht dasselbe, weil sie in unterschiedlichen disziplinären Traditionen stehen, es gebe jedoch „inhaltlich keinen so großen Unterschied“ (S. 15). Mit dem Terminus Sozialontologie im Untertitel positioniert der Band in der Frage der disziplinären Zurechnung auf der Seite der Philosophie; mit dem als Schlüsseltext ausgewiesenen Aufsatz „Ter-

https://doi.org/10.1515/jbpa-2022-015

tiarität. Soziologie als Schlüsseldisziplin“ (S. 140. ff.) hingegen wird der Dritte als Konstitutionstheorie der Sozial- und Kulturwissenschaften der Federführung der Soziologie zugewiesen: „die Philosophie ist an der Ausarbeitung der ‚Sozialtheorie‘ mit beteiligt, aber eben alles in allem sekundär“ (S. 144). Es gibt gute Argumente dafür, dass sich Sozialtheorie und Sozialontologie weder der Soziologie noch der Philosophie eindeutig zuordnen lassen, sondern dass ein gemeinsames Grenzgebiet existiert. So haben die von Fischer herangezogenen Klassiker *als Soziologen* auf *philosophische* Theorien zurückgegriffen: Simmel und Weber auf den Neukantianismus, Schütz und Luhmann auf die Phänomenologie, Berger und Luckmann auf Phänomenologie und philosophische Anthropologie.

Mit der Philosophischen Anthropologie liegt noch eine dritte Möglichkeit der (Selbst-)Positionierung des Verfassers als Sozialontologe/Sozialtheoretiker nahe. In dem Aufsatz „Der Dritte. Zur Anthropologie der Intersubjektivität“ (S. 88 ff.) werden die Begriffe „Anthropologie bzw. Ontologie“ (S. 89; vgl. S. 88 u. S. 106 ff.) weitgehend synonym verwendet, möglicherweise entsprechend Fischers schichtenontologischer Auslegung der Plessner’schen Anthropologie (vgl. Fischer 2021a). Innerhalb von Plessners Unterscheidung von Innenwelt, Außenwelt und Mitwelt entspräche damit der Sozialontologie des Dritten die Frage nach dem mitweltbegründenden Sein des Dritten: denn „der Dritte [*verkörpert*] den beiden Anderen gegenüber die ‚exzentrische Position‘“ (S. 109; vgl. S. 203). Wenn der Dritte ein „Positionsbegriff“ (S. 147) ist, dann auch und vor allem im Sinne der exzentrischen Positionalität. Die Studien zur Sozialontologie können daher parallel mit dem Band *Exzentrische Positionalität: Studien zu Helmuth Plessner* (Fischer 2016) gelesen werden. Von der Philosophischen Anthropologie her – deren Protagonisten Plessner und Gehlen ja als Philosophen soziologische Lehrstühle besetzten – wird der vorgeschlagene Schulterschluss zwischen Sozialontologie und Sozialtheorie plausibel.

Zur weiteren Verdeutlichung von Fischers Standpunkt kann auf Gesa Lindemanns Ansatz einer „reflexiven Anthropologie“ verwiesen werden, der gleichfalls auf der Grundlage von Plessners Theorie der exzentrischen Positionalität und ebenso in Auseinandersetzung mit Luhmann die sozialtheoretische Relevanz des Dritten herausstellt (vgl. nur Lindemann 2006b). Diese „Parallelaktion“ führte nicht zuletzt zu einer gemeinsamen Publikation mit Thomas Bedorf (vgl. Bedorf/Fischer/Lindemann 2010). Die gesellschaftstheoretische Funktion des Dritten besteht nach Lindemann darin, in historisch variabler Weise den Kreis derer festzulegen, die gesellschaftlich als exzentrische Positionalitäten anerkannt und damit als Personen adressierbar sind (vgl. Lindemann 2006a). Während in nicht-modernen Gesellschaften auch nicht-menschliche Wesen – Geister, Pflanzen, Tiere, Götter – Adresse von Kommunikation sein könnten, lasse das „Grenzregime“ der modernen Gesellschaft nur Menschen zu. Grundsätzlich sei exzentrische Positionalität aber nicht auf Menschen beschränkt. Der Begriff der exzentrischen Positionalität sei damit gegenüber dem Begriff des Menschen der allgemeinere Begriff. Für Fischer hingegen steht fest, dass die exzentrische Positionalität exklusiv dem Menschen vorbehalten sei. Aufgrund der Vorordnung der Gesellschaft vor die exzentrische Positionalität trage Lindemanns Ansatz „deutlich Züge einer *soziologischen Anthropologie*“ (Fischer 2021b, S. 62). Fischer fasst demgegenüber die Funktion des

Dritten enger: der Dritte sei nicht die Instanz der gesellschaftlichen Anerkennung variabler Wesen als exzentrische, personale Positionalitäten, sondern der internen Ordnung des Sozialen, genauer: der Ausdifferenzierung gesellschaftlicher Funktionssysteme.

Die sozialtheoretische Auseinandersetzung wird in erster Linie mit Luhmanns Systemtheorie geführt, die zugleich als positiver Bezugspunkt wie als dauernder Anlass zur Abgrenzung dient. Es soll gezeigt werden, dass das Theorem der doppelten Kontingenz nicht ausreiche, um die Etablierung von Erwartungserwartungen einsichtig zu machen. Es müsse vielmehr ein personal zurechenbarer leiblicher Dritter zur doppelten Kontingenz zwischen Alter und Ego hinzukommen, damit sich die Erwartungserwartungen von der Situation doppelter Kontingenz wirklich abheben lassen und Strukturen eines – dann nur so möglichen – sozialen Systems bilden können. Dass hier auch ein systemtheoretisches Problem vorliegt, wird durch eine Stelle in Luhmanns Rechtssoziologie belegt, an der dem Dritten genau diese Funktion zugesprochen worden war (vgl. Luhmann 1987, S. 64 ff.), bevor Luhmann diesen Gedanken wieder fallenließ, so dass er später in der allgemeinen Theorie sozialer Systeme nicht mehr auftaucht (vgl. Luhmann 1984).[1] Fischer versucht nun, Luhmanns ursprüngliche Einsicht konsequent auf die Begriffe der doppelten Kontingenz, des sozialen Systems und der Erwartungsstruktur zu beziehen. Der bestimmende Begriff wäre dann nicht mehr in den doppelt-kontingenten Erwartungserwartungen des sozialen Systems zu sehen, sondern in den ‚Übereckerwartungen' des Dritten. Dieser bildete zugleich den Übergang zur Gesellschaftstheorie.

Gesellschaftstheoretisch orientiert sich Fischer primär an Luhmanns Theorie der funktionalen Differenzierung (vgl. bes. S. 214 ff.). Wiederum soll gezeigt werden, dass sich die Ausdifferenzierung der Funktionssysteme ohne die Figur des Dritten nicht beschreiben lässt. *In dieser Sichtweise kann es letztendlich keine* anonymen *Strukturen geben, vielmehr sind – anders als in der Systemtheorie – auch Funktionssysteme adressabel, denn d*er Dritte steht für die „Ausdifferenzierung funktional differenzierter sozialer Teilsysteme" bzw. genauer im Sinne Fischers: Funktionssysteme sind Ausdifferenzierungen „dreifacher Kontingenz" als „Ausdifferenzierung dyadischer *und* triadischer Akteursfigurationen" (S. 214). Mit Mut zur Reduktion werden die Grundlinien einer solchen Gesellschaftstheorie im letzten Teil des Buches in großen Linien vorgezeichnet. An manchen Stellen wäre indes eine detaillierter Ausarbeitung wünschenswert gewesen, etwa mit Blick auf Luhmanns Unterscheidung von Publikums- und Leistungsrollen, die verschiedenen Alter-Ego-Konstellationen der symbolisch generalisierten Kommunikationsmedien oder die Funktion des Beobachters. Jedenfalls tritt Luhmann an dieser Stelle einmal nicht als Projektionsfläche drittentheoretischer Kritik, sondern neben Simmel, Freud, Elias und Berger/Luckmann als weiterer Gewährsmann auf den Plan. Seine Analyse der Funktion des Dritten als Richter für die Genese des

1 Auch von einzelnen Systemtheoretikern wird konzediert, dass hiermit eine „theoretisch ernste, weil die Theorie wirklich in einer ihrer Kernarrangements betreffende Grundsatzfrage" (Göbel 2011, S. 150) verbunden ist.

Rechts (S. 228 ff.) dient als Vorbild für die darauf folgende Reihe von funktionssystembezogener Darstellungen der Ökonomie (die Konsumenten als lachende Dritte der Marktkonkurrenz) (S. 240 ff.), der Politik (Feindschaft bzw. demokratische Majorität/Minorität als Drittenkonstellationen) (S. 252 ff.), der Massenmedien (der Bote als Medium) (S. 263 ff.), Familiarität (Triangulierung als Quellpunkt des Sozialen als Kombination von Dyadik und Triadik) (S. 276 ff.) sowie der Liebe (die exklusive Dyade umstellt von Dritten) (S. 293 ff.). Neben dem gleich noch zu besprechenden Kapitel über das Politische sei das Kapitel zur Familie herausgehoben, das die Argumentationslinien in der These zusammenführt, dass „Familiarität unvermeidlich der Quellfonds aller Formen ‚doppelter Kontingenz' und ‚dreifacher Kontingenz'" (S. 287) sei, die „alle dyadischen und triadischen Beziehungsmuster überhaupt" (S. 286) enthalte. Die Familie würde somit die Gesellschaft aus dem Dritten als Verkörperung der exzentrischen Position gleichsam immer wieder neu entfalten. Andererseits könnte dies gerade ein Argument dafür sein, die Familie nicht als ein Funktionssystem anzusehen.

Indem Fischer an die Stelle von Meads Begriff der Gesellschaft als generalisiertem Anderen den Begriff „des ‚generalisierten Dritten'" (S. 199) setzt, behauptet er gegen Luhmann nicht nur die Adressabilität von Funktionssystemen, sondern auch der Gesellschaft. Die schwerwiegende Frage, die der Verfasser damit aufwirft, lautet dann, wie Gesellschaft unter dem Strukturprimat funktionaler Differenzierung als repräsentierbar gedacht werden kann – eine Frage, die Luhmann mit dem Hinweis auf die Unmöglichkeit der Repräsentation der Identität einer funktional differenzierten Gesellschaft strikt zurückgewiesen hat. Eine Antwort wird mit dem Hinweis auf Hobbes, einen „der bedeutendsten theoriegeschichtlichen Vorläufer der Drittentheorie" (S. 209; vgl. S. 256 f.), angedeutet. Im Stellvertreter als einer ‚künstlichen Person' werde Gesellschaft repräsentierbar: „[…] in den Stellvertretern als Verkörperungen von Körperschaften, in den Repräsentanten oder Oberhäuptern beziehungsweise den Botschaftern von ‚Völkern' oder Staaten treten sich Körperschaften in den Formen des Tausches, des Kampfes, der Koalitionen, der Unterwerfung gegenüber" (S. 210). Doch schwebt hierbei vermutlich nicht die Gleichsetzung von Gesellschaft und Staat vor. Vielmehr lässt der Text die auf den modernen Staat bezogene Repräsentationsfunktion nahtlos auf politische Einheiten jenseits des Staates übergehen: „Auf der Ebene von Kulturkreisen oder ihren Kernstaaten werden die interagierenden Mächte untereinander und von den Beobachtern je nach ihren Hauptstädten (Rom, Karthago) oder Hauptakteuren (Scipio, Hannibal) markiert und aufgerufen. Das Repertoire alltäglich vertrauter Beziehungskategorien zwischen individuellen Akteuren wird wie selbstverständlich auf die Wechselwirkungen zwischen Kollektiven übertragen (‚Entente cordiale' (herzliches Einverständnis) für das Bündnis zwischen Frankreich und England ab 1904 gegen das das Deutsche Reich; ‚Heilige Allianz'; ‚Ausscheidungskämpfe'; ‚Siegermächte' etc.)." (S. 210) Mit dieser Andeutung schließt der Artikel. Doch beginnen mit der Frage nach dem Verhältnis von Staaten, Kulturkreisen und Imperien zur Gesellschaft die Schwierigkeiten nicht erst?

Zur Klärung ließe sich das Kapitel „Politik: Majorität/Minorität als die politische Drittenfiguration der Demokratie" heranziehen. Abweichend von der wiederholt angeführten Ahnengalerie der Theorien des Dritten wird hier auch Carl Schmitts Schrift

Der Begriff des Politischen als Meilenstein der Theorie des Dritten einbezogen. Die These lautet, dass nicht nur der Gesellschaftsvertrag der Hobbes'schen Staatstheorie (vgl. S. 257), sondern auch der Begriff des Politischen als über den Begriff des Staates hinausweisende Unterscheidung von Freund und Feind eine triadische Struktur besitzt: „diese Definition des Politischen [erscheint] nur auf den ersten Blick als eine dualistische Figuration, konstituiert sich aber faktisch als eine Dreieckskonstellation zwischen den eher Befreundeten bzw. miteinander Vertrauten und den eher Befremdeten, wenn man Schmitts Bestimmung im Blick behält: ‚Der Feind ist nur der öffentliche Feind' (Schmitt 1963, 29). Nicht gemeint ist Alter Ego in dieser Definition des ‚Politischen' als ein (direkter, gleichsam privater) Feind von Ego […]" (S. 258). Der Feind ist gerade nicht alter Ego, nicht privater Gegner innerhalb der Gesellschaft, sondern der Dritte gegenüber den Vertrauten bzw. Befreundeten – doch zugleich ist der Dritte nach Schmitt aus dem Politischen ausgeschlossen, denn den „extremen Konfliktsfall können nur die Beteiligten selbst unter sich ausmachen" (Schmitt 1963, S. 27). Deshalb stehen „sich dann tatsächlich dyadische Feinde als miteinander kämpfende Feindverbände, als Kollektive gegenüber – aber basal ist die ‚Freund-Feind-Unterscheidung eine Drittenkonstellation, die Verschränkung einer Assoziations- mit einer Dissoziationsbeziehung" (S. 259). Auch die „Demokratie als moderne[] Ausdifferenzierung des Politischen" (S. 260), d. h. nun: als eines „politischen Systems" (S. 252) basiere auf einer spezifischen Drittenkonstellation, nämlich der von Mehrheit/Minderheit. Auch dies sei „[n]ur scheinbar […] eine dualistische Figuration", denn „das Majoritätsprinzip demokratischer Herrschaft braucht die dritte, die ausschlaggebende Stimme: In der Dyade zwischen Ego und Alter kann es das Prinzip der Mehrheit als Form von Wechselwirkung nicht geben" (S. 258). Mit Simmel lässt sich hierzu die Rückfrage stellen, ob es sich bei Feindschaft und Majorität tatsächlich um zwei strukturell ähnliche Drittenkonstellationen handelt. Denn Simmel stellt mit Blick auf „das gemeinsame Verhältnis isolierter Elemente zu einer außerhalb ihrer gelegenen Potenz" sowohl im Fall der „Verteidigung gegen einen gemeinsamen Feind" als auch im Fall „der unsichtbaren Kirche […] zu dem einen Gott" fest, dass hier „das dritte Element […] gegen die beiden andern eine derartige Distanz [hat], daß eigentliche soziologische Wechselwirkungen, die die drei Elemente einheitlich umfaßten, nicht vorliegen, sondern vielmehr Zweierkonfigurationen" (Simmel 1992, S. 125; Hervorh. AH).

Dass sich Schmitt selbst explizit gegen ein Verständnis des Politischen als „eines eigenen neuen Sachgebietes" oder gar im Sinne eines gesellschaftlichen Teilsystems gewendet und dagegen den Begriff des Politischen als „den äußersten Intensitätsgrad einer Verbindung oder Trennung, einer Assoziation oder Dissoziation" (Schmitt 1963, S. 27) gesetzt hat, verschärft die Sprengkraft der durch Fischers Darstellung aufgeworfenen Frage nach dem Verhältnis der Gesellschaft zum Politischen noch. Das Politische dürfte schließlich nach Schmitt im Katalog der Funktionssysteme gar nicht auftauchen, obwohl auch er gesellschaftliche Sachgebiete wie Wirtschaft, Kunst oder Wissenschaft unterscheidet und diesen sogar – Luhmanns Begriff des Codes vorwegnehmend – spezifische Gegensätze wie „Schön und Häßlich im Ästhetischen" oder „Nützlich und

Schädlich“ (Schmitt 1963: 27) im Ökonomischen zuordnet.[2] Vielmehr fordert Schmitts Begriff des Politischen, indem er diesen vom Begriff des Staates löst und damit die Hegel’sche Unterscheidung von Staat und Gesellschaft unterläuft, den soziologischen Gesellschaftsbegriff, zumal in der Fassung, die Luhmann ihm gegeben hat, heraus. Es ist jedenfalls fraglich, ob der Hinweis auf die Zugespitztheit des Schmitt’schen Begriffs des Politischen, die das alltägliche Funktionieren demokratischer Politik als Funktionssystem nicht erfassen könne (vgl. S. 259), ausreicht, um die Diskrepanz zwischen dem Politischen als vermeintlichem Funktionssystem der Gesellschaft und dem Politischen als Konkurrenzbegriff zum Begriff der Gesellschaft zu überspielen.

Abschließend sei deshalb noch einmal das Argument in Erinnerung gerufen, dass der Dritte nicht nur funktionssystemspezifische, sondern gesamtgesellschaftliche Relevanz besitzen könne, indem er die Unterscheidung zwischen denen repräsentiert, die als Person ansprechbar sind, und den anderen, die gesellschaftlich nicht erreichbar sind. Hinter diesen divergierenden Auffassungen über die Funktion des Dritten stehen wie gesagt zwei unterschiedliche Verständnisse der exzentrischen Positionalität. Aber vielleicht ist auch hier noch eine dritte Möglichkeit offen, die sich wie folgt als Frage formulieren lässt: Unter welchen Umständen führt Fremdheit dazu, dass gesellschaftliche Adressabilität durch politische Feindschaft blockiert und Kommunikation durch die politische Differenz zwischen äußerster Assoziation und äußerster Dissoziation ersetzt wird? Und darauf aufbauend: Kann die Antwort auf diese Frage ohne Auswirkungen auf den Begriff der exzentrischen Positionalität bleiben?

Fischers Position repräsentiert mit der Differenz zwischen Dyadik und Triadik einen bedeutsamen und irreduziblen Problembezug der sozialtheoretischen Diskussion, der neben andere Leitunterscheidungen wie jene zwischen Institution und Handlung, Struktur und Funktion oder Prozess und Ereignis tritt. Eine Stärke des Buches besteht in der großflächigen Ordnung des theoretischen Feldes unter diesem spezifischen Gesichtspunkt. Ein weiteres Verdienst ist darin zu sehen, die soziologische Theoriediskussion für die Klassiker des Faches offenzuhalten. Die Selbstbezeichnung des Projekts als Sozialontologie sollte als Einladung an die Philosophie verstanden werden, weiterhin den Austausch mit der Soziologie zu suchen, zum andern als Plädoyer dafür, dass das damit bezeichnete Grenzgebiet zwischen Soziologie und Philosophie auch für eine professionalisierte Soziologie eine Reflexionsressource bleibt.

Literatur

Bedorf, Thomas/Fischer, Joachim/Lindemann, Gesa (Hrsg.) (2010): *Theorien des Dritten. Innovationen in Soziologie und Sozialphilosophie*, München und Paderborn: Fink.

Fischer, Joachim (2016): *Exzentrische Positionalität: Studien zu Helmuth Plessner.* Weilerswist: Velbrück Wissenschaft.

2 Gleichwohl hat Schmitt das Verhältnis des Politischen zu Demokratie, Rechtsstaat und Grundrechten in seiner *Verfassungslehre* – wenn auch in umstrittener Weise – dargelegt.

Fischer, Joachim (2021a): „‚Philosophische Anthropologie' und ‚Neue Ontologie'. Die ‚Kölner Konstellation' zwischen Max Scheler, Nicolai Hartmann und Helmuth Plessner als philosophiegeschichtliches Ereignis im 20. Jahrhundert". In: Erik Norman Dzwiza-Ohlsen, Andreas Speer (Hrsg.): *Philosophische Anthropologie als interdisziplinäre Praxis. Max Scheler, Helmuth Plessner und Nicolai Hartmann in Köln – historische und systematische Perspektiven.* Paderborn: Brill, S. 3 – 23.

Fischer, Joachim (2021b): „‚Stufen des Organischen und der Mensch' (1928) und ‚Macht und menschliche Natur' (1931): Über ein vermeidbares Missverständnis in der Plessner-Interpretation". In: *Thaumazein* 9 – 2, S. 51 – 93.

Göbel, Andreas (2011): „Dritter Sein. Einige Überlegungen im Anschluss an Gesa Lindemanns ‚Emergenzfunktion des Dritten'". In: *Zeitschrift für Soziologie* 40, H. 2, S. 142 – 155.

Lindemann, Gesa (2006a): „Soziologie – Anthropologie und die Analyse gesellschaftlicher Grenzregimes". In: Hans-Peter Krüger und Gesa Lindemann (Hrsg.): *Philosophische Anthropologie im 21. Jahrhundert.* Berlin: Akademie Verlag, S. 42 – 62.

Lindemann, Gesa: (2006b): „Die dritte Person – das konstitutive Minimum der Sozialtheorie". In: Hans-Peter Krüger und Gesa Lindemann (Hrsg.): *Philosophische Anthropologie im 21. Jahrhundert.* Berlin: Akademie Verlag, S. 125 – 145.

Luhmann, Niklas (1984): *Soziale Systeme. Grundriß einer allgemeinen Theorie.* Frankfurt am Main: Suhrkamp.

Luhmann, Niklas (1987): *Rechtssoziologie.* 3. Aufl. Opladen: Westdeutscher Verlag.

Schmitt, Carl (1963): *Der Begriff des Politischen.* Text von 1932 mit einem Vorwort und drei Corollarien. Berlin: Duncker & Humblot.

Simmel, Georg (1992): *Gesamtausgabe. Bd. 2: Soziologie. Untersuchungen über die Formen der Vergesellschaftung.* Frankfurt am Main: Suhrkamp.

Frank W. Stahnisch

Organicism *versus* Gestaltism: Holistic understandings regarding the structure of the human body in dialogue

Review of: Hermann Ackermann (ed.): *Die Stufen des Organischen und der Aufbau des Organismus. Eine überfällige Gegenüberstellung der philosophischen Anthropologie Helmuth Plessners und der philosophischen Biologie Kurt Goldsteins.* Würzburg, Germany: Königshausen & Neumann 2023, 246 pp.

The German philosopher Helmuth Plessner (1892–1985), who needed to flee to Turkey and to the Netherlands under the Nazi regime, and the German-American neurologist Kurt Goldstein (1878–1965), who had been forced into exile in Switzerland, the Netherlands, and the United States, can be seen as pivotal 20th-century contributors to a biologically oriented theory of philosophical anthropology. The question about the structural organization of the human body – whether primarily the principles of organicism or the principles of holism influenced the integration of physiological outcomes in a functional homoeostasis, has interested philosophers of biology and philosophical anthropologists since a long time. It could be answered from at least two theoretical vantage points, namely through the perspective of physiological reductionism or the perspective of holistic morphology, thus eliciting the substrate of organic processes and bodily occurrences (Stahnisch 2022, pp. 299–302).

In his current book, *Die Stufen des Organischen und der Aufbau des Organismus. Eine überfällige Gegenüberstellung der philosophischen Anthropologie Helmuth Plessners und der philosophischen Biologie Kurt Goldsteins* (~ "*Levels of Organic Life and the Human and The Organism. A Surprising Comparison of Helmuth Plessner's Philosophical Anthropology and Kurt Goldstein's Philosophical Biology*"), the Tübingen-based neurorehabilitation scholar Hermann Ackermann has provided an interesting comparison between the philosophical similarities and contrasts among the German-speaking intellectuals Plessner and Goldstein, regarding their epistemic accounts of the bodily physiology and its implications for theoretical biology. Ackermann, who was the long-time Head of the Department of Neurological Rehabilitation at the Rehabilitation Centre of Hohenurach as well as Professor of Neurological Rehabilitation at the University of Tübingen's Medical School in Germany, relates to the clinical neurologists and nursing staff on his services, who "as part of the nursing, therapeutic, and medical care of 'their' patients, have 'put Goldstein's publication *The Treatment, Care, and Assessment of Brain-Injured Patients* from 1919 into practice every day; and they have contributed to my [Ackermann's] understanding of [Goldstein's] *The Organism* (1934)" (p. 7; author's translations provided throughout this contribution). The book offers a serviceable understanding of the parallel emergence of anthropological philoso-

https://doi.org/10.1515/jbpa-2022-016

phy and holist neurology, while raising the heuristic question whether the Plessner–Goldstein relationship (or the lack thereof), was "an entirely missed or mutually refused intellectual debate?" (p. 15). This question is particularly addressed with respect to embodied forms of cognition and language. As Ackermann further describes in the introduction of the book, he has entertained this train of thought since the end of his medical and philosophical studies at Heidelberg and Tübingen during the 1980s.

In its initial chapters, the publication is organized around a discussion of contemporary discourses on the embodiment of mind and a biological embeddedness of cognitive processes, before it contextualizes philosophical anthropology as "an outlived tradition" (pp. 45–52), when re-examining the early hermeneutic and natural philosophical beginnings of Plessner's intellectual thought during the interwar period. In the latter part of the book, Goldstein's holistic neurology is addressed with respect to his main publication *The Organism* and the latter's contributions to reflexology and neurological developmental processes. At the end of the book, Ackermann places Goldstein's approach within the vertical (species-directed) and horizontal (organ-based) dimension of Plessner's philosophical anthropology, while claiming that the "discussions initially rejected spiritualistic and naturalistic explanations of the origin of culture, in order to locate the origin of this second nature of ours in the 'need for expression', in the 'expressivity' of humans, a necessary consequence of the eccentric positionality of [the human species …:] human behavior within and outside the sphere of historical deeds and artistic works, which then find their way into history books and museums, hardly comes into focus, especially in the community literature. This calls for tact and diplomacy in how people interact with each other – but 'only' within the framework of a rather educational treatise. It is precisely this gap between the vertical and horizontal dimensions of the stages [of life] that Goldstein's theory of the structure of the organism could add to – at least in part" (p. 227; author's translation). With respect to the concepts of integration and functional homoeostasis among the resources of individual organisms and the challenges of the environment for the human body, Ackermann emphasizes that Plessner's *opus magnum* could be read as a form of "empirical philosophy" (p. 21) which accentuated the personality of human beings on the level of active day-to-day situations and behaviours. According to the author, the problems that emerge from the intricate relationships between animals and humans could not merely be addressed through a compilation of new empirical and scientific facts.

A major avenue of the book's theoretical argument is formed by what could be termed the biological similarity assumption, *viz.* that the genome of humans and primates does share up to ninety-nine percent of deoxyribonucleic acid sequences. Despite such high levels of genetic and biological familiarity, however, even smaller levels of physiological discrepancies can lead to enormous outcome differences in human and animal communication along with species-level variance regarding the instantiation of

physiological functions and behavioural traits.[1] Plessner, who was educated in zoology, medicine, and philosophy at the universities of Freiburg, Heidelberg, as well as in Berlin, and who taught as a professor at the universities of Cologne in Germany and Groningen in the Netherlands – before the Nazis ousted him from that position due to his "Jewish heritage", as well as at the University of Göttingen – serves as the starting point in the book's exposé. Plessner's *Levels of Organic Life* are thereby understood as placing human beings in a comprehensive natural history with all living things. On the one hand, his theory takes the physiological functioning of human biology into account, while it also seeks to determine the specificity of human behavioural and social contexts on the other hand. The argument developed in this book receives resounding weight through its embeddedness in a comprehensive natural philosophical account. Plessner's philosophy of the organism is presented with respect to the latter's theoretical views about human life and physiology, emphasizing the background tradition of philosophical anthropology as both different and still fruitful for the biomedical discourses of our times.

Plessner did form an account that transcended restricted empirical and physical worldviews, in which humans are placed in the greater scale of organic beings. Guiding phenomena for him were instances of facial expression and animal communication, which could be compared to sociopsychological behavioural traits. The human body incorporated a double perspectivity regarding the inside and outside of a positionality towards respective living *milieux* and habitats for him. And this structural regulation of a living organism could be understood in hierarchical terms, according to Plessner, implying environmental considerations that were based on a wealth of empirical and biological relations. Yet at the same time it was impossible to reduce human life forms to organic specificities and influences alone, assuming that a centralized (e. g., cerebral, or cardiovascular) organization of human life still needed to be present for incorporating the specific, personal positionality of each individual. In other words, the very natural history, in which humans find themselves embedded in, could be regarded as undermining the emergent neurological, cognitive, and physiological conditions of each person too.

When confronting the ideas of Plessner and Goldstein in chapters five and six of the book, Ackermann underlines that Plessner was not really an Aristotelian metaphysician of bodily entelechies (the realization of vital principles), but rather a zealous defender of the sovereignty of bodily functions and organic life, similar to his French contemporary phenomenologists Maurice Merleau-Ponty (1908 – 1961) (Merleau-Ponty 1943) and Georges Canguilhem (1904 – 1995) (Canguilhem 1943). Yet Plessner could not be a defender of neurological holism like Goldstein either, based on the above remark regarding the overt foundationalism in specific forms of the philosophy of life. In some

1 A similar point was made by the contemporary director of the Max-Planck-Institute for Psychiatry in Munich, Detlev Ploog (1920 – 2005), who, as an early German behavioural neuroscientist, incorporated findings related to the neurobiological aspects of social behaviours into modern psychiatric practice, such as in speech behaviours, mood symptoms, or personality disorders. See in Ploog 1970, pp. 71 – 73.

respects, such as in his 1925 essay "The Interpretation of Facial Expression: A Contribution to the Theory of the Consciousness of the Other Self", which includes a long reflection on physiognomy and human neurophysiology, Plessner seems to be much closer to the Dutch anthropologist Frederik J. J. Buytendijk's (1887–1974) stance when developing an environmental approach to human behaviour. Unlike many other contemporary thinkers, including the phenomenologists of embodiment, Plessner did not appeal to a Romantic form of subjectivity, e. g., in a circumscribed form of the phenomenology of life. The understanding of embodiment appeared for him as part of a continuation of the epistemic privilege of consciousness' self-investigation. It was his point that life realized a kind of interiority, the interiority of selfhood and sense-making. It is important to see, as Ackermann advises, that both Plessner and Goldstein did not have any particular epistemic problems with Charles Darwin's (1809–1882) theory of evolution (pp. 35–36), but rather engaged in a project of rebuilding and reinventing a new heuristic program for biomedical science (with occasional exceptions that display a more reactive attitude, such as in modern neuropsychology, cognitive science, and behavioural neuroscience).

Regarding a more direct intellectual relationship (or lack thereof) between Plessner and Goldstein, the author emphasizes that the detailed foreword to the second edition of Plessner's *Levels of Organic Life and the Human. An Introduction to Philosophical Anthropology* (from 1966), which was seventeen pages long, did not mention any references to the holist ideas of Goldstein's neurology; although the latter's concepts must have been present to Plessner as well. While the second edition references neuropsychological literature, in which Goldstein's theories were present, the latter's account of "The Holistic Theory of the Organism" (Hoffmann/Stahnisch 2014, pp. 171–298) remained surprisingly absent from Plessner's work. In a related, though different research context, shortly before the appearance of the first German edition of the *Levels of Organic Life* (1928) – Goldstein began to publish articles that went beyond narrower scholarly frameworks. More precisely, he began to contribute to the relationship between biology, physiology, and Gestalt psychology during the late 1920s (Hoffmann/Stahnisch 2014, pp. 203–218). In Goldstein's contributions during the interwar period as well as in his *Opus magnum*, nevertheless, Plessner's was not mentioned, despite referring to Canguilhem's philosophical anthropology in the introductory chapter (Ibid. p. 10). Conversely, Goldstein does not appear in the extensive preface to the second edition of the *Levels of Organic Life*, although it could be expected that the philosophical account of bodily structures interested the author in designing a theory of the development and breakdown of morphological stages in the living organism. This situation is surprising, as the author points out, especially when one considers the same time in which Goldstein was in exile at the University of Amsterdam (Belz 2006, pp. 28–33), when also Plessner lived and worked in Groningen in the Netherlands only hundred and fifty kilometers apart from each other. In a letter dated November 6th, 1934, as Ackermann relates, the publisher of the first German edition of *Der Aufbau des Organismus. Einführung in die Biologie unter besonderer Berücksichtigung der Erfahrungen am kranken Menschen* Martinus Nijhoff, in The Hague, sent a copy to the editor of *The Jour-*

nal of Nervous and Mental Disorder (~ the oldest journal in neuropsychiatry in the US) in New York City, with a request for a review of the book. Ackermann noticed a letter by Goldstein, dedicated to the New York psychiatrist and psychoanalyst Dr. Smith Ely Jelliffe (1866–1945), in the manuscript of the first edition (p. 19). Considering the network of existing physiological institutes – with the émigré Goldstein housed at the University of Amsterdam's Institute for Physiology at the recommendation of Dutch neurologist Bernardus Brouwer (1881–1949), most recent publications and international literature should have been available to him. The same, of course, holds true for the Physiological Institute at the nearby University of Groningen, where Plessner found initial academic refuge. With Goldstein's book acquired by many German university libraries during the 1930s and even partially received through neurology and psychiatry book reviews, Plessner's *Levels of Organic Life* took a bit longer before they were noticed in the field of philosophical anthropology and existential psychiatry after the Second World War.

The interested reader would have hoped to acquire here a bit of more background regarding the communication and the reception history of Plessner's and Goldstein's seminal monographic publications. Such information, however, remains relatively scarce in Ackermann's new book. He traces out the connections with German-born theologian and philosopher Paul Tillich (1886–1965), who was befriended with Goldstein and emigrated to the US as well, where their interaction and communication only ended when both died in the same year 1965 (p. 22). Ackermann returns to highlighting the continuing relevance of the neurobiological concept of wholeness in Goldstein, although it had received much short shrift in public and scholarly discussion at the time. Individual physiological functions of the living being would often be considered through the predominant paradigm of reflex mechanisms. Though Goldstein had pointed out that existing diagnostic criteria and neurological repertoires needed to change, starting from a classification of the overall behavioural facets of an organism, which would find its confirmation in the self-actualization of respective life forms and their physiological and social environments. Such an ecology of behaviour emanated from the concrete experiences and restrictions of patients that still build the foundation and starting point for neurological rehabilitational practice today (p. 174). Yet in his autobiographical article on the developments of his neurological concepts at the end of his career, Goldstein did not connect his assessments about the human condition with Plessner's anthropological philosophy at all (Goldstein 1959).

In chapter six, Ackermann provides an accessible and useful synopsis of Goldstein's outstanding work on holistic neurology and rehabilitation medicine in 20th-century Germany, presenting him as a founder of the modern field of neuropsychology and aphasiology (see also Danzer 2006, pp. 11–70). Throughout his career, Goldstein published several hundred items that spanned a vast field from anatomy of the developing and adult central nervous system, studies on the psychopathology of hallucinations, the symptomatology and rehabilitation of speech and language disorders, an array of psychological and physiological disorders following brain damage, the reflex set-up of muscle tone and postural balance, and mental consequences of surgical inter-

ventions in the frontal lobe, as well as clinical behavioural problems in schizophrenic patients. Likewise, his work from the interwar period contained reflections on the relationships between experimental biology and psychoanalysis, holistic views in medicine and their relationship to social psychology in medical practice, as well as on the psychopathology of emotions, including fear and the understanding of affective and expressive behaviours (Harrington 2002, pp. 129–132). Goldstein's two most pertinent monographs that represented his views on the nature of the organism, namely *The Treatment, Care, and Assessment of Brain-Injured Patients* (1919) and *The Organism*, were both richly based on the insights that he and his coworkers had gained from the clinical observations of patients with acquired brain damage, especially veterans who had suffered gunshot head injuries during the First World War (Kütemeyer/Schlutz 1984, pp. 134–136). Goldstein's examination of the structure of the organism enriched contemporary philosophy of biology through his own and his working groups' detailed clinical experiences in neuropsychiatric patients. From this clinical neurological work concerned with the localization of brain function and the degradation of function through cortical wounds, emerged a strong scientific focus towards wholeness in the first half of the 20th century.

The basis of (certainly structured) organismic thought in Goldstein remained focused in clinical observations at the patient bedside, neuropsychological diagnostics in the laboratory – often in collaboration with the Gestalt psychologist Adhémar Gelb (1887–1936), innovative experimental-psychological procedures and the rehabilitation of patients with acquired brain damage. Through his personal experience with large groups of brain-injured patients, Goldstein came to realize that both neuropsychiatric therapy and clinical diagnostics demanded a consideration of the patients' personalities and the changes resulting from their disease patterns. Their societal rehabilitation demanded considering patients' living environments as well as their personal situation – a guiding principle that Goldstein further expanded in other publications during the Second World War and into the postwar period (Goldstein 1959, p. 6 f.). Goldstein had also been prodigiously active in continuing medical education, particularly as a speaker at conferences and congresses, and as a founding member of specialist journals in contemporary neurology, psychiatry, and psychosomatics. Following his forced migration in 1933, these wide-ranging activities almost came to a standstill and Goldstein's *Opus magnum* appearing in the Netherlands, became rather marginally received in the academic field of neuropsychiatry, including the publication of Gelb's and his own famous case study of patient Schneider, who was visually impaired after an extended lesion to his occipital cortex (Goldstein and Gelb, 1918, p. 124).

This stood in contrast to Plessner, who later received a professorial position in the Netherlands and also in West Germany after the war, where he became highly recognized in philosophical anthropology circles, including by Arnold Gehlen (1904–1976) at the Technical University of Aachen and Hans Blumenberg (1920–1999) at the University of Münster, who dealt extensively with Plessner's theoretical work. Goldstein was however only spuriously received in Germany during the 1950s and 1960s in specialist neurological and psychiatric circles. A more recent and extensive reception in Central

Europe had to await until the 1980s, when his pioneering studies and theoretical views on organismic holism steered new interest in the interdisciplinary fields of neuropsychology, neurorehabilitation, and psychosomatic medicine (Danzer 2006, pp. 59 – 65).

Ackermann's book *Die Stufen des Organischen und der Aufbau des Organismus. Eine überfällige Gegenüberstellung der philosophischen Anthropologie Helmuth Plessners und der philosophischen Biologie Kurt Goldsteins*, despite its new contributions and interesting comparative perspectives, also has several drawbacks to it. The book offers an awkwardly thesis-like arrangement and is overly structured in amplified detail through a multitude of subchapters and subsections extending at times to only a few pages each. More adequate copyediting could have offered here better structure and readability. An enormous number of (sometimes conflicting) philosophical terms are used, but only few definitions are provided. That makes it sometimes quite hard to follow the author's main arguments, especially when too many thoughts are packed in the often-run-on sentences. More contextual information on historical matters of forced migration, forms of theoretical and practical reception, as well as a better exposé of the intellectual similarities and differences between philosophical anthropology and organismic holism would have been useful for a wider interdisciplinary readership.

Ackermann's book should nevertheless be recommended to university research libraries, and institute libraries in philosophy, psychology, neurology, psychiatry, and psychosomatics. He makes the worthy case that the theoretical and practical implications of Plessnerian and Goldsteinian perspectives are still relevant for the encompassing field of rehabilitation medicine as well as philosophical anthropology today.

References

Belz, Wolfram (2006): Kurt Goldstein (1878 – 1965) – Lebens- und zeitgeschichtliche Hintergründe, in: Danzer, Gerd (Hg.): Vom Abstrakten zum Konkreten, VAS Verlag, 11 – 70.

Canguilhem, Georges (1943): Le normal et le pathologique, Clermont-Ferrand.

Danzer, Georg (Hg., 2006): Vom Konkreten zum Abstrakten. Leben und Werk Kurt Goldsteins (1878 – 1965), Frankfurt am Main.

Goldstein, Kurt (1919): Die Behandlung, Fürsorge und Begutachtung der Hirnverletzungen: Zugleich ein Beitrag zur Verwendung psychologischer Methoden in der Klinik, Leipzig.

Goldstein, Kurt (1959): Notes on the Development of my Concepts, in: Journal of Individual Psychology 15/1, 5 – 14.

Goldstein, Kurt / Gelb, Adhémar (1918): Psychologische Analysen hirnpathologischer Fälle auf Grund von Untersuchungen Hirnverletzter. I. Abhandlung. Zur Psychologie des optischen Wahrnehmungs-und Erkennungsvorgangs, in: Zeitschrift für die gesamte Neurologie und Psychiatrie 41/1, 1 – 142.

Harrington, Anne (2002): Die Suche nach Ganzheit. Die Geschichte biologisch-psychologischer Ganzheitslehren: Vom Kaiserreich bis zur New-Age-Bewegung, Reinbek bei Hamburg.

Hoffmann, Thomas / Stahnisch, Frank W. (2014): Kurt Goldstein. Der Aufbau des Organismus. Einführung in die Biologie unter besonderer Berücksichtigung der Erfahrungen am kranken Menschen, Munich.

Kütemeyer, Michael / Schultz, Ulrich (1984): Kurt Goldstein (1878 – 1965): Begründer einer psychosomatischen Neurologie?, in: Pross, Christian/Winau, Rolf (Hg.): Nicht misshandeln. Das

Krankenhaus Moabit, 1920 – 1933. Ein Zentrum jüdischer Ärzte in Berlin, 1933 – 1945. Verfolgung – Widerstand – Zerstörung, Berlin, 133 – 139.

Merleau-Ponty, Maurice (1943): La structure du comportement, Paris.

Plessner, Helmuth (1925): Die Deutung des mimischen Ausdrucks. Ein Beitrag zur Lehre vom Bewußtsein des anderen Ichs, in: Richard W. Schmidt et al. (Hg.): Helmuth Plessner – Gesammelte Schriften, Bd.VII, Frankfurt am Main, 67 – 130.

Ploog, Detlev (1970): Neurological Aspects of Social Behavior, in: Social Science Information 9/3, 71 – 97.

Stahnisch, Frank W. (2022): "'Morphologie' und 'Gestaltlehre' in Kurt Goldsteins theoretischer und praktischer Neurologie", in: Becker, Ralf, Freyberg, Sascha, Müller, Ralf, Reinhardt, Thomas, van Vliet, Muriel, and Matthias Wunsch (Eds.): Morphologie als Paradigma in den Wissenschaften. Stuttgart: Frommann-Holzboog Verlag, 2022, pp. 283 – 308.

Hans-Peter Krüger

Personales Leben als soziokulturelle Kommunikationsweise: was zwischen der Psycho-Zentrierung und biologischen Dezentrierung der westlichen Kultur fehlt

Besprechung von Isaac E. Catt: *The Human Image in Helmuth Plessner, Pierre Bourdieu, and Psychocentric Culture.* New York-London: Lexington Books 2023.

Dieses Buch lohnt eine transdisziplinär genaue Lektüre in Philosophie und allen Humanwissenschaften, die mehr implizit als explizit ein bestimmtes Menschenbild vertreten, sind sie doch auch selbst nur ein Teil der westlichen Soziokultur. Es stellt eine transatlantische Brücke für das kritische Verstehen der soziokulturellen Problemlage im globalen Westen dar, da Europa immer schneller amerikanisiert wird. Die psychozentrische Kultur im Westen schlage in ihre biologische Naturalisierung um, die als die ökologisch legitime Dezentrierung des Anthropozentrismus erscheine. Demgegenüber vertritt Isaac Catt seit Jahrzehnten einen *communicologischen* Zugang zur Problemlage, der auf die Semiotik und Phänomenologie von Charles Sanders Peirce zurückgeht und an Gregory Batesons und Jürgen Rueschs Kommunikationsverständnis anschließt. Kommunikation wird nicht auf Information reduziert, sondern als die phänomenologisch qualitative Erfahrung von psychisch, sozial und kulturell Anderen in symbolisch triadischen und verkörperten Relationen verstanden. Von diesem weiten Kommunikationsverständnis ausgehend werden Helmuth Plessners Philosophische Anthropologie personaler Lebensformen und Pierre Bourdieus reflexive Sozialanthropologie des Habitus und der Hexis rezipiert. Dieser amerikanische Blick auf europäische Konzeptionen führt zu interessanten Parallelisierungen und Transformationen, die durch die bereits längere amerikanische Rezeption von Merleau-Pontys Phänomenologie vorbereitet wurden. So könnte insgesamt ein alternativer Kanon für die transatlantische Diskussion (17, 171) entstehen.

1 Die psycho-zentrierte Kultur kippt in ihre reduktive Naturalisierung um, die als die ökologisch legitime Dezentrierung des Anthropozentrismus erscheint

Die westliche Kultur hat nach amerikanischem Vorbild während der letzten Jahrzehnte eine subjektive Empfindsamkeit ausgebildet, die kaum noch übertroffen werden kann.

https://doi.org/10.1515/jbpa-2022-017

Ununterbrochen sind die Individuen in ihr auf analoge und digitale Weise mit ihren Befindlichkeiten beschäftigt, suchen sie Bestätigung, Trost und Anerkennung durch ihre Mitmenschen dafür, werden sie von diesen nach ersten Kontakten oft gemieden, enttäuscht, fühlen sie sich als Mobbing-Opfer, werden sie gar als Abnorme, Gestörte und Kranke behandelt. Dies müsse man sich aber in seiner subjektiven Freiheit nicht gefallen lassen. Es gibt illegale und legale Märkte, auf denen die verschiedensten Substanzen und Aktivitäten zur Verbesserung der Stimmungslage den Individuen massenhaft angeboten werden, so in der Werbung von *Big Pharma* und *Big Data* (92 – 94). Man fühle sich schnell besser, die Abhängigkeiten und Süchte würden schon im je eigenen Falle nicht eintreten. Zudem glaube man heute zu wissen, wie stark das *human animal* durch die eigenen Gene und durch das eigene Gehirn lebenslang determiniert werde. Da können die ExpertInnen der biomedizinischen Lebenswissenschaften für Abhilfe sorgen. Gen- und Hormon-Therapien, Neuro-Transmitter-Behandlungen, Anti-Depressiva und Opioide stehen bereit. Man nutze die eigene Freiheit zur Verbesserung der eigenen Befindlichkeit.

Was auf den ersten Blick wie ein unglaublicher Reichtum in der Kultur von Subjektivität erschien, schlägt in seiner geschichtlichen Verwirklichung um. Hier setzt Isaak Catts Buch ein. Die unerfüllte Sehnsucht der Subjektivität wird in einer Psyche vergegenständlicht, die auf Märkten ihre Bedürfnisse befriedigen und durch Psyche-Methoden praktisch behandelt werden kann, als wäre sie ein herstellbares und austauschbares Produkt, das sich modisch designt in *good shape* zu präsentieren hat. Die kulturelle Zentrierung auf die je individuelle Psyche, die *psychocentric culture* (1 – 74, 82 – 87), kippt um in ihre *reduktiv naturalistische Dezentrierung*. Dabei hilft die Moral des ökologisch schlechten Gewissens, die Menschheit habe anthropozentrisch auf Kosten ihrer irdischen Umwelt gelebt. Aus der Kritik am Anthropozentrismus folge der Anthropomorphismus, in alle möglichen Dinge die eigene Erlebnishaftigkeit hineinzuprojizieren. So stünden die Menschen endlich unter allen Gleichen, weil Lebenden. Realisiert wird dieser Egalitarismus mit allem Lebendigen dann biologisch: Menschen haben als eine Spezies unter vielen keinen Vorrang (10, 44 – 45, 50, 54 – 59). Der intuitive Sinn von Moral liegt in der Dezentrierung des eigenen Selbst. Die von ihr geforderte Dezentrierung übernimmt real eine Biologie der Anpassung und Selektion, die die Gehirne in Computernetzen verlinkt. Raymund Tallis nannte dies die *Veraffung der Menschheit* (*Aping Mankind*) durch *Darwinitis* und *Neuromania*, was Catt gerne öfters zitiert (18, 103, 187).

Wir stecken in einer Falle. Irgendetwas stimmt hier in dem die Wirklichkeit durchlaufenden Angesicht von Menschen nicht, in dem *human face*, wie Isaak Catt herausarbeitet, ohne darunter nur bestimmte Bilder (*images*, *pictures*) zu verstehen. Ihm geht es letztlich um eine Kommunikation von Angesicht zu Angesicht (*face to face*). Nach den Ausdrucksgestalten von Gesichtern und in ihrem Benehmen (*conduct*) erkennen und behandeln sich Menschen im Common Sense der Lebenswelt, aber die ist durch Schranken geteilt. Man schaut und hört besser nicht mehr hin, nimmt Umwege und Absperrungen in Kauf. In der psychozentrischen Kultur werden Menschen als durch ihre zentrische Subjektivität störanfällige Lebewesen aufgefasst, deren egalitärer

Anspruch in ihren Anthropomorphismus umgelenkt werden müsse. So könne ihnen durch ihre biologische Normalisierung geholfen werden, sich an die Umwelt anzupassen. Der reduktive Naturalismus scheint nicht nur erkenntnistheoretisch und ontologisch, sondern auch normativ betrachtet alternativlos zu sein.

Aber für wen und auf wessen Kosten in welchen Strukturen und Institutionen? Woher kommen die Normen dafür und dagegen in der Kultur? Wer beansprucht hinterrücks für sich selber ein anderes Menschengesicht als für die Anderen, die nur noch den paternalistischen Objekt-Status haben? Wer glaubt, das bessere Wissen, das höhere Recht, die legitimere Macht zu besitzen, den Menschen ihre Rechte einschränken, für all die unterdrückten und ausgebeuteten non-humanen Kreaturen auf Erden sprechen und handeln zu dürfen (65 – 66, 166)? Kommt hinter all dem vermeintlich so moralischen Anti-Anthropozentrismus, der den psychozentrischen Anthropomorphismus in alles Mögliche ablenkt, nur ein neuer Anthropozentrismus zum Vorschein, indem biopolitische Fakten geschaffen werden? Kann es eine *post-psychological culture* (18, 129 – 130) geben, deren einladende Ansprüche sich in der Realisierung nicht in eine Biologisierung der Kultur selbst verkehren?

2 Personales Leben kann seine Problemlage als soziokulturelle Kommunikationsweise lösen

Catt bejaht in Fortführung des amerikanischen Pragmatismus der öffentlich regulativen Demokratie (John Dewey) gegen ihre autoritär-diktatorischen Abschaffungen diese Frage ausdrücklich (76). Die immer erneut prekäre Problemlage in dem personalen Leben von Menschen lasse sich auf dem Wege einer soziokulturellen Kommunikationsweise lösen, deren Potentiale aber in der Gegenwart nicht verwirklicht würden. Erst in dieser Kommunikationsweise könne der praktische Zusammenhang je individueller Subjektivität mit dem *Generalized Other* der Moral ausgebildet werden, um in lebenspraktischer Verantwortung dezentrieren zu können (190). Da diese Kommunikationsweise fehle, übernehme die Biologie auch gleich noch die Rolle der Moral, sieht man von ihren ins Leere laufenden Appellen ab.

Communicology wird als die Wissenschaft von der Kommunikation im weiten, nicht nur sprachlichen, auch nicht-sprachlichen Sinne konzipiert. Sie richte sich phänomenologisch auf qualitative Erfahrungen aus, deren lebendige Unmittelbarkeit (Firstness) im tätigen Gegensatz zu anderen Erfahrungen (Secondness) verstanden und in semiotisch triadischen Zeichenrelationen (Thirdness) interpretiert werde. Diese Integration von Phänomenologie und Semiotik folge Peirces normativem Verfahren, von der Ästhetik in der Erfahrung auszugehen, ihre ethischen Implikationen freizulegen und die angemessene Logik ihrer Darstellung im Fragen und Antworten zu generieren (147, 171 – 175). Dieses Vorgehen sei selbstkritisch gegenüber den Vorannahmen der Untersuchung, um erfahrene Bedeutungen klären und verbessern zu können. Gelungene Kommunikation bestehe in der Erfahrung der Teilhabe an soziokulturell gemeinsamen Bedeu-

tungen (mit John Dewey und George Herbert Mead 168 – 171). Diese Erfahrung der Teilhabe antworte als Lösung auf zuvor erfahrene Probleme, die zu Defiziten und Störungen der Kommunikation geführt haben. Dafür reichen bei geschichtlichen Herausforderungen nicht die bisherigen Induktionen und Deduktionen aus, brauche man Abduktionen, die die faktische und normative Lage neu und besser erschließen können. Catt fasst das stets erneute Durchlaufen dieses phänomenologisch-semiotischen Untersuchungsprozesses reflexiv in einer „axiology" (129, 161) zusammen.

Gegen die Reduktion der Kommunikation auf Information und deren kybernetische Regelkreise macht Catt mit Richard Lanigan und Nikolas Rose eine lebendig und ambivalent verkörperte Kommunikation stark, deren interdisziplinäre Untersuchung durch die Konzeption von Jürgen Ruesch und Gregory Bateson in ihrem Buch *Communication, the Social Matrix of Psychiatry:Human Psychology, Behavior, and Culture in Modern Society* (1951) eröffnet worden sei. Dieses breite und tiefe Kommunikationsverständnis sei durch die Macy-Konferenzen über Kybernetik (39 – 44, 57– 61) aufgelöst worden. Abgesehen von wenigen angeborenen Erkrankungen und Hirnverletzungen gingen die meisten psychischen Störungen, exemplarisch die weit verbreitete Depression, auf das Fehlen von oder den Mangel an gemeinsamen kommunikativen Problemlösungen zurück. Dies sei bei oft alltäglich gewordenen Gewalterfahrungen oder deren Androhung offensichtlich, äußere sich aber auch in den soziokulturell um sich greifenden Narzissmus-Formen, die wir seit den Untersuchungen von Christopher Lasch in *The Culture of Narcissism. American Life in an Age of Diminishing Expectations* (1979) kennen (185). Statt den Zusammenhang zwischen psychischen Störungen und soziokulturellen Kommunikationsdefiziten zu untersuchen und zu therapieren, habe sich die gen- und neurobiologische Reduktion psychischer Erkrankungen durchgesetzt, obgleich es dafür eindeutige Bio-Marker nur äußerst selten gebe. Diese Reduktion zeigt Catt anhand der immer enger werdenden Diagnostik und Therapieempfehlungen für psychiatrische Erkrankungen in den Revisionen des *Diagnostic and Statistical Manual of Mental Disorders* während der letzten Jahrzehnte, in dem die soziokulturelle Umwelt nur als einer von vielen Faktoren erwähnt werde, der sich in der Regel nicht ändern lasse (74 – 80). Die Normalisierung von Narzissmus-Formen, die unter dem Slogan der subjektiven Freiheit je individueller Selbstbefindlichkeit, die nicht durch verkörperte Relationen zu Anderen beeinträchtigt werden soll, erfolge, führe zur Pathologisierung einer alltäglich miteinander auch noch im Streit geteilten Lebenswelt (84 – 97).

3 Die vertikalen und horizontalen Relationen der personalen Lebensform von Menschen: Catts Plessner-Rezeption

Nachdem uns die gegenwärtige Problemlage und der Zugang des Autors zu ihr vor Augen stehen, werden die Schwerpunkte seiner vergleichenden Interpretation von Plessner und Bourdieu verständlich, wobei er selbst mit Plessner beginnt. Was in dem

„reductionist turn" der westlichen Kultur „first to psychologism and then to biologism" als erstes auffalle, sei das Fehlen des Personenstatus von Menschen, ihrer Personalität (*personhood:* 130). Die Person sei nämlich, wie Plessner herausgearbeitet habe, nicht ein subjektivistisch abgespaltenes Selbstbewusstsein, sondern dasjenige Dritte, das deutet, versteht, interpretiert, selbst Symbol ist und symbolisiert, da es in einem doppelten Verhältnis zum Organismus stehe. Es könne ihn wie andere Körper auch haben und bewohne ihn doch zugleich in seinem lebendigen Sein. Diese *vertikale* Integrationsaufgabe der Person in ihrer Differenz zwischen Körper-Haben und Leibsein könne nur *horizontal* lösbar werden durch ihre Teilnahme an den interpersonalen Relationen der *Mitwelt* (*shared world:* Plessner 2019), die geschichtlich eine konkrete soziokulturelle Form annimmt. Dadurch werde die Übernahme der *inter*personalen in *intra*personale Relationen möglich, die erneut in umgekehrter Richtung zurückwirkt.

Diese Grenz-Übergänge erfolgten durch Kommunikation, weshalb auch das Verständnis von und Arbeiten mit Plessners Philosophischer Anthropologie gewinnen könnten, lese man ihn kommunikologisch. Catt beansprucht dafür zurecht Originalität (104). Was Plessner *Anschauung* und *Expressivität* nenne, sei *Kommunikation* mit Anderen als dem Medium der Rückbeziehung auf sich (112). In der eigenen Anschauung deute man die Ausdrücke anderer und von anderem auf sich rückbezogen. Im Ausdrücken des Eigenen gebe man anderen etwas von sich zur Anschauung. Personen schauen sich in Ausdrücken anderer an und bringen sich in ihren Ausdrücken anderen zur Anschauung. Diese Kommunikation durch Ausdruck und qualitative Wahrnehmung (pragmatisch *Erfahrung* und phänomenologisch *Anschauung* genannt) auf Gegenseitigkeit sei eine *embodied communication* (103). Sie erfolge bereits durch Markierungen, die in die Richtungen des Körperhabens (von außen nach innen) und des Leibseins (von innen nach außen) weisen. Dies nenne Plessner den *Doppelaspekt*, den er für die lebensweltliche Erfahrungsweise durch seine Grenzenlehre ontologisch vertiefe, bis die exzentrische Positionalität als ihr Ermöglichungsrund hervortrete. Daher handele es sich in der Wahrnehmung (*perception*) nicht nur um *apperception*, sondern um *apposition* im Sinne seiner Theorie der Positionalitäten (106, 111–117).

Diese körper-leibliche Kommunikation setze aber eine Vermittlung in der Mitwelt voraus, die ein soziokulturelles Format an Gemeinsamkeit aufweise, die hier und jetzt unmittelbar freigesetzt werden kann. Ohne dieses Format könnten Eigene/s und Andere/s nicht *als solche* unterschieden, nicht *als solche* in rückbezügliche Relationen auf sich selbst integriert oder aus diesen Beziehungen ausgeschlossen werden, sondern würden sie schlicht auseinander oder übereinander her fallen. In der Erfahrung der Kommunikation erlerne man den Unterschied und Zusammenhang zwischen dem intrapersonalen und interpersonalen Selbst als Relation im Hinblick auf Drittes. Dies werde in der Sprache reflexiv und explizit übertragbar, müsse aber auch habitualisiert werden. Die Paradigmen (synchron) und Syntagmen (diachron) formierten rückwirkend schon die Apperzeptivität und Expressivität der Personen als Lebewesen (118).

Deren *Mitwelt* stehe historisch in Auseinandersetzungen über die Grenzen der *community*- und *society*-Formen, in denen die Sprachpotentiale entsprechend selektiv als *parole* (mit Merleau-Ponty: sozial als *parole parlée* und persönlich als *parole parlante,*

114) aktualisiert werden. In einer Kultur herrschten semiotisch betrachtet durch Kodifikationen Grenzen vor, die als Schranken (*border*) nicht überschritten werden und so die Einheitlichkeit der Verhaltensweisen sicherstellen sollen, was Catt kurz als *having a body at the borders* (117) bezeichnet. Dafür werde aber im Diskurs eine semiotische Immaterialität in Anspruch genommen, um die jeweilige Intentionalität zwischen verschiedenen Situationen übertragen zu können, wodurch sie *de*kontextualisiert werde (114). In der personalen Lebensführung hingegen müssten alle dekontextualisierten Codes *re*kontextualisiert werden, damit sich die Personen den verschiedenen Situationen angemessen verhalten können. Dafür verwenden sie ihren Leib als Medium in einem *boundary play* (Spielen in und mit Grenzen in deren Überschreitung:120 f). So könnten auch Abduktionen für neue Zusammenhänge erschlossen werden (124). In der Redeweise vom *play* verweist Catt wohl auf Plessners Rollentheorie, ohne diese näher auszuführen (zu ihr Krüger 1999/2001 u. 2019), bis auf seine Hinweise auf die Grenzen des Schauspiels in und mit Personenrollen in Plessners *Lachen und Weinen.*

Erst nach dieser horizontal-vertikalen Entfaltung des personalen Lebens wird einem klar, warum Catt die psychozentrische Kultur für eine Kultur der „Entkörperung" (*disembodiment:* 87–97) hält. Ihr Subjektivismus schlage in einen Biologismus (molekularbiologische Methoden in Genetik und Neuroforschung) und einen kybernetischen Informations-Mechanismus der Steuerung und Regelung in digitalen Netzen um, wohinter der alte Fehldualismus von Seele (für Innenwelt) und Körper (für Außenwelt) wieder zum Vorschein komme. Die für lebende Personen spezifischen Verköperungsweisen im Körper-Haben, Leibsein und in semiotisch-praktischer Teilnahme an einer soziokulturellen Mitwelt kämen in diesem *human face* qualitativ überhaupt nicht vor. Es gibt dafür in dem Modell der Interaktion von Lebewesen oder Maschine mit der *Umwelt* keinen kategorialen Rahmen von *Welt.* Die Verhaltenszentrik werde, exemplarisch in der Werbung, so festgestellt, dass sie in die Umwelt passe. Dies entspreche der Biologie von Jakob von Uexküll (45 f., 50 f., 104 f), deren Funktionalismus auch dann noch in der Biosemiotik erhalten bleibe, wenn man mit Arnold Gehlen die Spezifik der menschlichen Umwelt in der sozialen Stabilisierung kultureller Codes (148) sehe.

Plessner sei dagegen kein „biological philosopher", sondern ein semiotisch geschulter, in triadischen Relationen denkender Phänomenologe der lebendigen Erfahrung (104 f). Die Relationen der Körper-Leib-Differenz von Personen (119 f); deren interpersonale Mitwelt in Bezug auf Drittes in der Außen- und Innenwelt; die Person zwischen dem Vollzug ihrer Existenz und ihrer Selbstvergegenständlichung (in der Innenwelt); das Grenzspiel der Selbstbeherrschung von Personen zwischen ihrem Lachen und Weinen; Wissenschaft, Kunst und Sprache (in der *Einheit der Sinne*) liegen als Zeichen-Triaden auf der Hand (so auch schon Krüger 1999/2001). Plessners Grenzübergänge (*boundary play* im Unterschied zu geschlossenen Schranken in *borders*) seien solche der Kommunikation mit und von Anderen, intrapersonal, interpersonal, sozial, kulturell und in der Natur (107, 112). Der hermeneutische Zirkel in einer Sprachgemeinschaft werde durch Expressivität und ihre Darstellung vor Anderen und durch die Erfahrung von Anderen und Anderem zur *Welt* geöffnet, weshalb es sich um keine biofunktionale *Umwelt* handeln könne. Die Relationen der Gegenseitigkeit und des

Rückbezugs der Relata aufeinander bestehen aus Gliedern, die in lebendigen Ambivalenzen leben, also nicht wie in Laborversuchen positivistisch in bedingten Ding-Relationen nach Eigenschaften festgesetzt werden können. Entfremdung ohne Rückkehr (*alienation without a return:* 110) sei in solche Relationen hinein nötig, ihre Verdinglichung (*reification*) aber gerade nicht, sondern eine dualistische Verkehrung (114).

Catt liest Plessner parallel mit Merleau-Ponty, der in der amerikanischen Diskussion bereits gut etabliert ist. Bedenkenswert sind Catts Übersetzungen, weil sie der englisch häufigen Fehlidentifikation von Körperlichkeit mit Physikalität oder auch nur Physiologischem vorbeugen. Bei dieser Identifikation handelt es sich lebensweltlich betrachtet nur um Spezialfälle für bestimmte wissenschaftlich-technische Kontexte, die dekontextualisiert zu einer fraglichen Vorherrschaft geführt haben, als ob es keine anderen soziokulturellen Auffassungen von Körperleibern gäbe. Man könne Merleau-Pontys „conception of *corps vécu* and *corps propre*" parallel zu „the lived-body and the body-lived, that in German are, respectively, *Leib* und *Körper*" (104) verstehen. Was bei Plessner *ambivalences* seien, sie werden von Merleau-Ponty als *ambiguities* aufgefasst (105). In beiden Konzeptionen stünden die Person respektive das Ich in *lived contradictions* (109), die eine fortlaufend neue Ausbalancierung erfordern, um erneut ihre *appositional unity* (114) erlangen zu können. Heideggers Unterscheidung zwischen Vorhandenheit (*present-at-hand*) und Zuhandenheit (*ready-to-hand*) sei nur eine Variante von Plessners Körperhaben und Leibsein (119). Ratcliffe's *feelings of being* seien lebensgeschichtlich länger andauernde Gestimmtheiten im Leibsein im Unterschied zu *emotions*, die man von Situation zu Situation im Wechsel haben kann (122).

Merleau-Ponty schließe an Plessners *Deutung des mimischen Ausdrucks* (112) an, während Bourdieu wiederum Merleau-Pontys semiotische Phänomenologie in eine reflexive Sozialanthropologie transformiere (142, 161). De Saussures Semiologie, die für die französische Entwicklung ein wichtiger Bezugspunkt der Kritik war, lasse sich im Peirceschen Sinne als eine Semiotik verstehen. Durch die semiotische Rahmung der Intentionalität brauche man keine Phänomenologie mehr, die in der Beschwörung ihrer Unmittelbarkeit stehen bleibe, statt deren semiotischen Vermittlungscharakter zu durchschauen (124).

Damit offeriert Catts Buch paradigmatische Entsprechungen, Transformations- und Ergänzungsmöglichkeiten zwischen der amerikanischen, französischen und deutschen Diskussion. Dabei danke ich diesem Autor, den ich leider erst durch das vorliegende Buch kennengelernt habe, für seine konstruktiven Antworten auf meine Vorschläge zum transatlantischen Dialog zwischen amerikanischem Pragmatismus und Plessners Philosophischer Anthropologie durch das Medium der semiotisch verstandenen Phänomenologie (Krüger 1999/2001 u. 2009). Wir forschten über Jahrzehnte in einander unbekannten Zirkeln und gelangen nun doch zu vergleichbaren Ergebnissen. Er war Präsident der *Semiotic Society of America* und arbeitet inzwischen als *visiting scholar in philosophy of communiation* am entsprechenden Department und dem *Simon E. Silverman Phenomenology Center* der *Duquesne University* in Pittsburgh, Pennsylvania.

4 Die *conditio humana* ist eine prekäre Lage, deren Fraglichkeit nach geschichtlichen Lösungen verlangt: die Komplementarität von Plessner und Bourdieu

Die psychozentrische Kultur kenne nicht nur die dem personalen Leben spezifischen Verkörperungsweisen nicht, sondern auch keine personalen Zuordnungen mehr und damit auch keine persönliche Verantwortung. Der gepriesene Subjektivismus gehe in diffusen Erlebnis- und Projektionswolken Einzelner unter, die darauf bestehen, ihre Psychozentrik ausleben zu dürfen. Daher müsse man sie in der psychozentrischen Kultur als *human animals* durch gen- und neuro-biologische Normalisierung und als Informationsträger in Informationsnetzen in eine stabile Seitenlage zur Umwelt bringen. Dabei stören alle Verdoppelungen der Person (in öffentliche und private) und die spezifisch personalen Verhaltensambivalenzen. Sie bräuchten Entlastung davon, damit sie doch noch ökologisch angepasst werden können. Der Subjektivismus geht so in seiner realen Reproduktion in biologischer Anonymität unter.

Demgegenüber erlaube die kommunikologische Lektüre Plessners keine feste Ortung der Psyche im Gehirn und in den Genen, um sie schließlich in einer Umwelt aus Informationsnetzen einfangen zu können. Die personale Psyche identifiziere sich in fließenden Grenzen je nach ihren existenziellen Erfahrungen in einer „ontology of ambivalences“ (130). Sie ist fortlaufendes „product of communication“ mit interpersonal, kulturell und sozial Anderen, was sie auf sich zurückbeziehen und leiblich in ihrem Selbstverhältnis zu individualisieren vermag. Darin bestehe nicht nur eine anspruchsvolle Dynamik, die die Teilnahme an der Eröffnung von Welt ermöglicht, sondern auch eine Lage, die durch „uncertainty, insecurity, and anxiety“ (132), kurz zusammengefasst durch *psychological precarity* (129), charakterisiert werden kann. Die *human condition* bezeichne für die Psyche von Personen eine instabile Lage, die ohne festen Boden bleibe, auf der Kippe stehen, ständig ins Ungleichgewicht rutschen könne, wenn man nicht selber für ein neues Gleichgewicht sorge.

Umso dringlicher werde es daher, die Frage der personalen Zuordnungen, Rechte und Pflichten von Personen und deren Grenzen in anonym werdenden Macht- und Herrschaftsverhältnissen zu präzisieren, worauf Plessner in den *Grenzen der Gemeinschaft* und in *Macht und menschliche Natur* einging. Aber die heutige Lage, nach einer neoliberalen Deregulierung von Kapitalmärkten, dem Abbau des Sozialstaates, der Globalisierung von Ungleichheiten (130), erfordere eine reflexive Sozialanthropologie, die eine Brücke vom philosophisch-kategorialen Rahmen in die empirische Wirklichkeit zu schlagen gestatte, ohne die Psyche in ihrer eigenen Zentrik zu isolieren und durch ihre reduktive Naturalisierung in eine künstlich biologische Anpassung zu bringen. Dafür empfehle sich Bourdieus Werk (137), da es um das Double *habitus/hexis* kreise, von dem ausgehend phänomenologische Konstruktionen und semiotische Strukturen

ineinander greifen können, die für den Zusammenhang zwischen verschiedenen Kapitalformen auf unterschiedlichen Spielfeldern empirisch präzisiert werden.

Plessners und Bourdieus Konzeptionen widersetzten sich der Auflösung in disziplinäre Trennungen, weil sie die Epistemologie der Disziplinen nicht als die Ontologie ihrer Gegenstände ausgäben, sondern umgekehrt durch reflexive Selbstkontrolle in ihrem Untersuchungsverfahren für transdisziplinäre Lösungen wirklicher Sachfragen eintreten. Sie wussten um die professionellen Deformationen, die Zugehörigkeit der Spezialisten zur Lebenswelt und die institutionelle Abhängigkeit der Wissenschaftsdisziplinen von Machtgefügen (134–136). Daher könne man die Psyche nicht abtrennen in Psy-Disziplinen (Psychologie, Psychiatrie, Psychotherapien), sondern begegne auch dort der allgemeinen Problemlage als Frage nach den Kriterien für normal/abnorm, gesund/krank, gar *the pathologization of modern life* (137).

Für Catt referiert der *habitus* eher auf die semiotischen Strukturen und die *hexis* primär auf die leibesphänomenologische Anschauung in der Ausübung von soziokulturellen Positionen. Die Positionalität sozialer Akteure sei doppelt bestimmt durch die „accumulated experience of codified social structures (*habitus*) and bodily incorporations of the experience of the structure (*hexis*), that is, their sense of the game in habitats. A *habitat* is a field of play" (138). Als Kapitalformen würden alle Mittel verstanden und ausdifferenziert, die Akteure in Relationen zueinander und gegeneinander verwenden können, um ihre Position empirisch und schon vor- oder unbewusst auszuüben. Diese ökonomisch anmutende Terminologie sei nur heuristisch im Hinblick auf endliche Bedingungen und deren Veränderung in Relationen zu verstehen. Dadurch können *antinomies of domination* hervortreten und deren *rules* thematisiert werden (140). Für Catt ist das intersubjektive Verständnis von Bourdieu, das dieser im Dialog mit Loic Wacquant entwickelt hat, maßgebend: „Recognizing the body as a mediator of objective (semiotic) structures and subjective (phenomenological) structuring, Bourdieu realizes Merleau-Ponty's relational conception of culture and person. This is the habitus/hexis nexus that is central to Bourdieu's conceptual apparatus" (143). Daher gelte, wie schon bei Plessner, nicht nur *entweder* Objekt (Gesellschaft) *oder* Subjekt (Individuum), sondern ihr *intersubjektiver* Zusammenhang, woraus ein lebendiger Widerspruch entstehen könne, der von den Akteuren geschichtlich verschieden beantwortet werde. *Habitus/hexis* müssen nicht zu den geschichtlich erworbenen Regeln auf den Spielfeldern passen (155), ebenso wie bei Plessner Konflikte in der Ausübung der Rollenspiele zwischen Lachen und Weinen konzeptionell vorgesehen sind (150).

So stark Plessners Philosophische Anthropologie durch Bourdieus reflexive Sozialanthropologie an soziologischer Gegenwartsdiagnose gewänne, also in der horizontalen Ausarbeitung der Mitwelt, so ergänzungsbedürftig bleibe vertikal betrachtet Bourdieus Konzeption, der die exzentrische Positionalität als Ermöglichungsgrund personalen Lebens in der Natur fehlt. Bourdieu müsse einfach eine komplex-organische Plastizität bei Menschen voraussetzen, ohne die es nicht zu *habitus/hexis* kommen könnte, während Plessner die Körper-Leib-Differenz von lebendiger Personalität im Vergleich mit anderen, sowohl pflanzlichen als auch tierlichen Lebensformen wirklich verstehen könne. Er habe auch im Hinblick auf die heutige vergleichende Verhaltensforschung

recht damit behalten, dass „animals can mimic, but can not imitate; they enjoin the excitable sounds of fellow creatures but can not produce the sounds as generalities in the foregoing Peircean sense. Semiotically speaking, we might say that they can mimic (index) the message (icon), as signifiers, but can not carry the code (symbol) in another space and time, as signifieds." (149). Zur exzentrischen im Unterschied zur zentrischen Positionalität passen ebenso die neueren Forschungsresultate über den Spracherwerb von Primaten, der im Vergleich auf dem Niveau von Menschenkindern im Alter von zweieinhalb Jahren stehen bleibe (167). Es ist daher unverantwortlich, diese Primaten im Namen ihrer anthropomorphen Gleichstellung mit menschlichen Personen sich selbst zu überlassen, weil sie sich in der Zerstörung der ihnen nötigen Umwelten durch Menschen nicht selbst helfen können.

5 Die soziokulturelle Kommunikationsweise als in die Zukunft weisender utopischer Standort

In gewisser Weise wiederholt sich nun auch in der angloamerikanischen Diskussion der alte Streit zwischen Arnold Gehlen und Helmuth Plessner. Ist nicht das tierliche Leben in einer *zentrischen* Positionalität mit relativ sicheren Instinkten und Bedürfnissen einfacher als in einer *exzentrischen* Positionalität, die im personalen Leben alle möglichen Verdoppelungen (in Körper und Leib, in selbstbezügliche Relationen zu Anderen und von Anderen, in *community*- und *society*-Formen, in Kapitalformen und Spielfeldern der Praxis für *habitus/hexis*) freisetzt? Da wir uns der zentrischen *Organisationsform* nach biologisch kaum von anderen Primaten unterscheiden, nur durch eine deutlich höhere Plastizität (so mit Thomas Fuchs: 30 f, 110 f), scheint unser Organismus in der Tat durch die Anstrengungen der personalen Lebensform in ihr kompensationsbedürftig zu sein (152 f). Gönnen wir ihm also genügend Schlaf und ausreichende Bewegung an frischer Luft! Die künstliche Rückverwandlung personalen Lebens in eine *zentrische Positionalität* der Konkurrenz (der sog. Kampf ums Dasein) und Werbeindustrie (die Herstellung künstlicher Instinkte) hat indessen Grenzen. Es gibt nicht genügend Geld für alle, damit dies ohne Kampf funktionieren könnte. Zudem wird in der ökologischen Krise immer zweifelhafter, ob es überhaupt noch ungestörte zentrische Positionalitäten gibt, die wir als realistischen Maßstab verwenden könnten, ja, ob es sie je gegeben hat, etwa nach mehreren Massensterben in der Erdgeschichte. Wahrscheinlich handelt es sich dabei um einen Mythos ähnlich dem, zurück in den Mutterleib kommen zu können.

Für Catt gibt es mit Plessner kein Zurück aus der Entfremdung, nur eine der *exzentrischen Positionalität immanente Kritik.* Personales Leben habe an sich selbst (nicht am tierlichen Leben) gemessen *deficiencies* in seinen Spaltungen, Verdoppelungen, Verkehrungen, die immer erst wieder durch Drittes in einer geteilten Mitwelt ausgeglichen, ausbalanciert, integriert werden können (153). Daher bedeute *human being being human in communication* (165 f). Das integrative Dritte kann nur durch eine interpersonal angemessene Kommunikationsweise zwischen verschiedenen Kulturen und

Sozietäten entstehen. Daher seine pragmatische Parteinahme für Demokratien gegen Autokratien (76), für Kooperation statt Kriegen. Er weiß, dass Plessner seine Untersuchungen auf skeptische Weise offen angelegt hat, um nicht ideologisch geschlossenen Weltbildern von irgendeinem geschichtlichen Ende förderlich sein zu können. Es entspreche aber dieser pluralen Weltoffenheit, die soziokulturelle *Kommunikationsweise selbst* als einen *utopischen Standpunkt für die Zukunft* wahrzunehmen, weil anders das jeweils integrative Dritte zu leicht ausfallen oder einfach zu spät kommen könnte.

Catt nimmt Plessners Einsicht darin, dass sich personales Leben aus seiner Zukunft muss überschreiten können, ernst, denn anders könne es nicht besser werden. Bourdieu habe in seiner Inauguralvorlesung am Collège de France 1982 die Frage *fight or flight* gestellt (155). Er habe sich fürs Kämpfen entschieden, aber wie der Exilant Plessner in *Lachen und Weinen* nicht für die Eskalation der Freund-Feind-Relation, sondern in der Utopie, sich in die prekäre Lage der anderen hineinzuversetzen, um sie durch öffentliche Kommunikation zu verbessern (158 f). Auch Plessner beanspruche für seine Beiträge keine übergeschichtlich absoluten Werte, wohl aber die Einsicht, was im Angesicht der Lage besser oder schlechter wäre (159). Beide Autoren setzten in ihrem Auditorium und Publikum den *Konjunktiv* frei: „Precarity is originary in the existential sense that being human is not accomplished once and for all, never finished, always in process, always not-yet, forever as-if." (161).

6. Kommunikalogischer Ausblick auf den Zusammenhang zwischen verbaler und non-verbaler Kommunikation im personalen Leben von Menschen

Abschließend verdeutlicht Catt den Zusammenhang zwischen verbaler und non-verbaler Kommunikation, statt beide erneut zu trennen oder sie in digitalen Codes gleichzusetzen (175), wodurch die Interpretation triadischer Zeichenrelationen aus der *Mitwelt* für die Bestimmung der jeweiligen *Umwelt* verunmöglicht oder aus Machtgründen nicht reflektiert werde. „Interpretation is not passive. By definition, interpretation is not adaptation within a system. To interpret is to assign *meaning* to the environment – a distinctly human act. Meaning is a performative act, produced from a syntactical structure, within a semantic social system that inheres synthetically in culture." (168 f). Diese semiotische Explikation der Vermittlungsstruktur von Geist (*mind)* werde phänomenologisch gesehen als unmittelbare erfahren, da dieser Geist in der Lebensführung durch *habitus/hexis* beziehungsweise den Körperleib einverleibt (*incorporated*) und den Leibkörper verkörpert (*embodied*) werde, von Kontext zu Kontext jeweils eingebettet (*embedded*). Dadurch sei die personale Wahrnehmung nicht die Wahrnehmung von Tieren (perception), sondern phänomenologisch gesprochen *Anschauung* (*ap-perception*, bei Plessner: Erfahrung im Doppelaspekt) von *ap-positions*

(Positionen in Positionalitäten). Man könne auch mit Edmund Husserl und Ernst Cassirer sagen, so deren amerikanische Rezeption von Urban bis Lanigan: „The objects of human perception are expressions. This is why Lanigan contends in many places that perception and expression, realized together in speaking, are foundational for the human sciences. As communicative beings, we declare ourselves as persons, not mere organisms." (169). Mit Plessner gesprochen: Die Mitwelt ist nicht ein Zusatz, der dem Tierleben einfach aufgesetzt werden könne, sondern der *Integrator* der Vertikale in die Horizontale (152f).

Das alternative *human face* bestehe darin, dass es sich bei der *human person* um ein *communicative being* handele, das *a being in communication* sei (173). Dafür brauche man *a new logic of embodied mind,* die nicht erst in den Ausdrücken oder gar nur Aussagen während des *speaking/listening* einsetzt, sondern in der Expressivität und Perzeptibilität des Doppelspekts von Körper und Leib (184), kurz: eine *appositional logic* (175). „The *logos* is the complex symbolic realm of the *Mitwelt.*" (176). Das Reale werde als *relational* in einer *ambivalent ontology of embodiment* erfahren, dem relationalen Charakter der Intentionalität entsprechend aktualisiert (177). Man verstehe die Individualität humaner Personen nicht, ohne die in ihnen vorausgesetzte Teilnahme an einem *shared consciousness (*Bateson), einer *collective cognition* (Guldberg: 176), zu thematisieren. Daher verweist Catt für die Einordnung und Ausarbeitung der Psy-Disziplinen auf Thomas Fuchs' *Ecology of the Brain* und *Foundational Questions of an Embodied Anthropology.* Die individuelle Wahrnehmung nehme an einer *we-intentionality* teil, die aus der *eccentric positionality* resultiere und die individuellen Perspektiven dezentriere (186). Das damit entstandene Problem der interpersonalen Trennung (*disconnection*) und intrapersonalen Spaltung (*depression*) könne auf kommunikativen Wegen durch Teilnahme und Integration ausgeglichen werden. Sie führten, mit Bourdieu gesprochen, *to the generalized other in a generalized symbolic order*, zu einer praktischen Verbesserung, die für ihre Mobilisierung der Utopie bedürfe, auch wenn sie unvollkommen bleiben dürfte (190).

Literatur

- Catt, Isaac E. (2017): *Embodiment in the Semiotic Matrix: Communicology in Peirce, Dewey, Bateson, and Bourdieu.* Lanham, MD: Rowman & Littlefield.
- Eicher-Catt, Deborah, and Isaac E. Catt (2010): *Communicology: The New Science of Embodied Discourse.* Lanham, MD: Rowman & Littlefield.

Krüger, Hans-Peter (1999/2001): *Zwischen Lachen und Weinen.* Bd. I: *Das Spektrum menschlicher Phänomene.* Bd. II: *Der dritte Weg der Philosophischen Anthropologie und die Geschlechterfrage.* Berlin: Akademie Verlag.

Krüger, Hans-Peter (2009): *Philosophische Anthropologie als Lebenspolitik. Deutsch-jüdische und pragmatistische Moderne-Kritik.* Berlin: Akademie Verlag.

Krüger, Hans-Peter (2019): *Homo absconditus. Helmuth Plessners Philosophische Anthropologie im Vergleich.* Berlin: De Gruyter Verlag (Open Access).

● Lanigan, Richard L. (1992): *The Human Science of Communicology: A Phenomenology of Discourse in Foucault and Merleau-Ponty.* Pittsburgh, PA: Duquesne University Press.

Plessner, Helmuth (2019): *Levels of Organic Life and the Human. An Introduction to Philosophical Anthropology.* Translation by Millay Hyatt. Introduction by J. M. Bernstein. New York: Fordham University Press.

● Ratcliffe, Matthew (2008): *Feelings of Being: Phenomenology, Psychiatry, and the Sense of Reality.* Oxford: Oxford University Press.

● Rose, Nikolas (2019): *Our Psychiatric Future: The Politics of Mental Health.* Medford, MA: Polity Press.

● Tallis, Raymond (2016): *Aping Mankind: Neuromania, Darwinitis, and the Misrepresentation of Humanity.* London: Routledge.

Author bios / Autorenbeschreibung

A former student at the École Normale Supérieure, **Étienne Bimbenet** is currently professor of phenomenology at the University of Paris 1 Panthéon-Sorbonne. He is also a member of the Archives Husserl in Paris and, with Bruce Bégout, co-editor of the collection „Matière étrangère" (by Vrin). He works on Merleau-Ponty and phenomenology, as well as on the question of our animal origins and the possibility of an anthropology from a phenomenological point of view. Latest publications: *L'Animal que je ne suis plus* (Gallimard, 2011); *L'Invention du réalisme* (Le Cerf, 2015); *Le Complexe des trois singes. Essai sur l'animalité humaine* (Le Seuil, 2017).

Anne Collinot is an historian of science at the National Center for Scientific Research in Paris. Her research is devoted to existential aspects of scientists' intellectual work. She studies the relations between scientific creation and everyday life of scholars. For several years, she has led a seminar at École des hautes études en sciences sociales, entitled *Biographical investigation for the study of science. Scientific life and work.* On these topics she notably published „Marcelle Gauvreau et frère Marie-Victorin: d'une enquête biologique à la vie éternelle", in *Bulletin d'histoire politique*, 2024; „Les intitulés 'père & fils' ou la question de l'hérédité des chaires", dans *La Politique des chaires au Collège de France*, Éditions Les Belles Lettres, 2017; „Entre vie et œuvre scientifiques: le chaînon manquant", *Critique*, 2012.

Joachim Fischer, Prof. Dr. habil., ist Honorarprofessor für Soziologie am Institut für Soziologie der TU Dresden. Seine Forschungsschwerpunkte sind Philosophische Anthropologie, Soziologische Theorie, Sozialontologie, Kultursoziologie, Stadt- und Architektursoziologie. Er ist Mitbegründer der Helmuth-Plessner-Gesellschaft und war von 2011 – 2017 ihr Präsident. Wichtige Publikationen sind *Philosophische Anthropologie. Eine Denkrichtung des 20. Jahrhunderts* (2008, 2. Aufl. 2022), *Exzentrische Positionalität. Studien zu Helmuth Plessner* (2016), *Tertiarität. Studien zur Sozialontologie* (2022).

Andreas Höntsch, Dr. phil., Research Associate, Institute of Sociology, Technische Universität Dresden. Research interests: Sociological theory, history of ideas, cultural sociology. Publications: The problem of non-physical spatiality. Kant's theory of predicabilia and Plessner's concept of positionality. *Kant-Studien* 114 (2023): 98 – 132; *Provisorische Ewigkeit. Staatstheoretische Reflexionen der frühen Bundesrepublik.* Reihe Staatsverständnisse, Bd. 162 (Baden-Baden 2022) (ed. with P. Wöhrle); *Die institutionelle Bestimmtheit sozialer Systeme. Niklas Luhmanns Systemtheorie und die Soziologie der „Leipziger Schule"* (Berlin 2018).

Shumon T. Hussain studied prehistoric archaeology and philosophy in Tübingen, Cologne and Leiden. He completed his Doctorate in 2019 with a dissertation on the epistemology of contemporary stone artefact analysis in human origins research. Shumon was Assistant Professor of Palaeolithic archaeology in the Department of Archaeology and Heritage Studies at Aarhus University, Denmark, from 2019 to 2023 and has joined the interdisciplinary research hub MESH (Multidisciplinary Environmental Studies in the Humanities) of the University of Cologne, Germany, in late 2023. Shumon's research is emphatically transdisciplinary and seeks to re-negotiate the relationship between the sciences and the humanities in the context of understanding the deep past. His work is mainly concerned with the archaeology of hunter-gatherers, the early evolution of the human technological niche, human-animal relationships in the Pleistocene and earlier Holocene, as well as the production, treatment and reception of deep-time knowledge and heritage. Shumon's research attempts to build bridges between deep-time archaeology, the Environmental Humanities, multispecies studies and human-animal studies, critical heritage studies, techno-anthropology and science and technology studies, and is inspired by the German tradition of philosophical anthropology.

Filip Jaroš is an assistant professor at the Department of Philosophy and Social Sciences, University of Hradec Králové. His scientific background is in both philosophy and theoretical biology. In 2012, he finished his PhD studies in Theoretical and evolutionary biology at the Faculty of Science, Charles University. In 2017/8 he completed a postdoctoral research project at the University of Tartu, where he focused on the problem of human-cat cohabitation in urban environments from the perspective of biosemiotics. In 2023 he received habilitation in Philosophy from the Faculty of Humanities, Charles University. Since 2020 he is a member of the editorial team of the journal *Biosemiotics.* Current scholarly interests of Filip Jaroš include philosophical anthropology, philosophy of biology, biosemiotics and human-animal relations. Together with J. Klouda, he edited the monograph *Adolf Portmann: A Thinker of Self-Expressive Life* (Springer, 2021), which for the first time presented Portmann's thought in the light of anthropology, biology and philosophy. He published *Portmann's Philosophical Biology and Anthropology* (Togga, 2022, in Czech) as his habilitation thesis. He is a principal investigator of the project *Reframing Philosophical Anthropology: Searching for an Anthropological Difference Beyond the Nature/Culture Dichotomy* (https://uni.uhk.cz/jaros/?lang=en) funded by the Czech Science Foundation.

Stine Jensen is an endowed professor of Public Philosophy at the Erasmus University of Rotterrdam. Her research centers on the role of philosophy in public debates in Europe. She works at the Dutch Broadcasting Company HUMAN where she hosts a daily podcast on philosophy and is a regular contributor to the Dutch national newspaper *NRC Handelsblad.* She has published a large number of popular nonfiction books, including books on gurus, identity, lying, atheism and spirituality. Her children's book *Dear Stine, do you know?* (*Lieve Stine, weet jij het?)* won a Zilveren Griffel, the most prestiguous Dutch award for children's books. Her work is translated into French, German and Chinese.

Julien Kloeg is assistant professor of social philosophy at the Erasmus School of Philosophy. His research interests are the intersections between philosophical anthropology, political theory, and the philosophy of education. In view of this, Julien serves as the managing editor of the *International Yearbook of Philosophical Anthropology*, published by De Gruyter, and was elected *Generalsekretär* for the *Helmuth Plessner Gesellschaft.* At ESPhil Julien is part of the Human Conditions research theme.

Hans-Peter Krüger, Professor für Politische Philosophie und Philosophische Anthropologie, im Ruhestand, Institut für Philosophie der Universität Potsdam, Forschungsschwerpunkte: Philosophische Anthropologie, Sozialphilosophie, Geschichtsphilosophie. Monographie: *Homo absconditus. Helmuth Plessners Philosophische Anthropologie im Vergleich* (Open Access 2019).

Karel J. Kuipers is currently a double PhD-candidate in the 'Neanderthals and us' project at the Faculty of Archaeology at the University of Leiden and the Erasmus School of Philosophy. Trained as a Palaeolithic archaeologist, he mostly focuses on the epistemology and research history of human evolution. In his research, he focuses on concepts such as 'modern/symbolic' behaviour and 'humanness' in the archaeological theoretical framework that he perceives as problematic due to their exceptional essentialist nature. Convinced that studying Human Evolution is per definition an interdisciplinary endeavour he actively seeks to collaborate with other disciplines.

Corijn van Mazijk is a philosopher and faculty member at the University of Groningen, the Netherlands. He completed his PhD at the University of Groningen and KU Leuven, focusing on Husserl's phenomenology and Kant's theoretical philosophy. His recent research interests include the philosophy of prehistory, particularly the evolution of art, language, and symbols in the hominin lineage. Van Mazijk's interdisciplinary approach integrates insights from cognitive archaeology, evolutionary psychology, primatology, cognitive science, and phenomenology, aiming to bridge empirical studies and philosophical theory. His recent work on the evolution of symbolic behavior has been published in journals such as

Phenomenology and the Cognitive Sciences, *Biology and Philosophy*, *Human Studies*, and *The Oxford Handbook of Cognitive Archaeology.*

Susan Peeters is a PhD researcher within the Erasmus School of Philosophy (Erasmus University, Rotterdam). She holds a master's degree in Biological Psychology and in Behavioural Biology, with primatology and the role of non-human primates as a model for human nature, as a common focus. In her PhD project she shifted her focus to palaeoanthropology, notably Neanderthal research, aspiring to illuminate implicit assumptions underlying our idea and ideal of humanness, and challenge the anthropocentric and androcentric framework. A first paper, „Neanderthals as familiar strangers and the human spark: How the 'golden years' of Neanderthal research reopen the question of human uniqueness", setting the stage for this project, appeared in *History and Philosophy of the Life Sciences* (2020).

Von 2012 bis 2016 studierte **Anna Riethus** Urgeschichte und historischen Archäologie in Wien (AT) sowie Archäologie und Museologie in Leiden (NL). Als Forschungskoordinatorin ist Riethus für das Projektmanagement der Wissenschaftsprojekte und den Aufbau neuer Projekte und Kooperationen zuständig. In ihrer Funktion als Projektleiterin von NMsee (2019 – 2022) untersucht Riethus, wie Museen mithilfe von digitalen Angeboten für Menschen mit Sehbehinderung inklusiver gestaltet werden können.

Pouwel Slurink is an independent philosopher and freelance lecturer in philosophy. In the 1990s he conducted research on the evolution of culture at the Department of Philosophy of Science at the Radboud University in Nijmegen. He has published articles on evolutionary epistemology, evolutionary ethics, consciousness, the evolution of culture, and the evolutionary naturalism of Roy Wood Sellars. His doctoral thesis, *Why some apes became humans* (2002), includes a theory of consciousness and an exploration of the complex interactions between environment, genes, mind and culture in humans. He has taught philosophy of science at the universities of Nijmegen, Wageningen and Leiden. As a freelancer, he has also taught evolutionary philosophy, evolutionary psychology, human evolution, philosophy of mind and ethics in various Dutch cities for various institutions. He has written many popular articles, reviews and a popular book on evolutionary naturalism in Dutch (e. g. in the *Dutch Review of Books*). His work can be found on Academia and Research Gate. He has also been an enthusiastic field biologist and nature photographer since childhood. Residence: Nijmegen, the Netherlands.

Marie Soressi is Professor of Hominin Diversity Archaeology and head of the Human Origins research unit at Leiden University's Faculty of Archaeology (NL). She designs and leads high-resolution excavation research projects that integrate Paleolithic archaeology, geoarchaeology, and paleogenetics. Her research focuses on the period between 50,000 and 35,000 years ago, when Neanderthal populations were assimilated and replaced by Homo sapiens. She has published in Nature, Science, and numerous other journals; serves as associate editor for the *Journal of Paleolithic Archeology* and was elected vice-president of the European Society for the Study of Human Evolution in 2020.

Frank W. Stahnisch holds the Alberta Medical Foundation/Hannah Professorship in the History of Medicine and Health Care at the University of Calgary in Alberta, Canada. He is cross-appointed in the Cumming School of Medicine and the Faculty of Arts. His research comprises the history and philosophy of the neurosciences, history and theory of psychiatry, and the history of public mental health. He is an Editor-in-Chief of the international Journal of the History of the Neurosciences and an Associate Editor for the history and philosophy of the behavioural neurosciences with Frontiers in Psychology. His most recent monographs are entitled *A New Field in Mind: A History of Interdisciplinarity in the Early Brain Sciences* and *Great Minds in Despair: The Forced-Migration of German-Speaking Neuroscientists to North America, 1933 to 1989*, which appeared with McGill-Queen's University Press (2020 and 2025).

Wiktor Stoczkowski is a professor of anthropology at the École des hautes études en sciences sociales in Paris. His research focuses on cosmological foundations of knowledge in contemporary Western societies, observed through the relationships between scholarly and ordinary ideas. Taking palaeoanthropology and prehistory as an example, he explored this theme in his first book entitled *Explaining Human Origins. Myth, Imagination and Conjecture* (Cambridge University Press, 2002). His most recent book is devoted to the cosmological foundations of French sociology: *La Science sociale comme vision du monde. Émile Durkheim et le mirage du salut* (Paris, Gallimard, NRF Essais, 2019).

Davide Vecchi studied at the Philosophy Department of the University of Bologna (Italy) and then obtained his Ph.D. at the Department of Philosophy, Logic and Scientific Method of the London School of Economics and Political Science (United Kingdom). Before joining the Centro de Filosofia das Ciências (CFCUL) of the Faculty of Sciences of the University of Lisbon (Portugal), he had been Postdoctoral Research Fellow at the Konrad Lorenz Institute for Evolution and Cognition Research (Austria) and Associate Professor at the Department of Philosophy of the Universidad de Santiago (Chile). Davide is interested in historical, philosophical, theoretical and ethical issues in the life sciences. He has published on many bio-philosophical topics ranging from biochemistry, developmental biology, evolutionary biology and biomedicine. Most recently, Davide's research focus has been on two issues. The first centres on the theoretical foundations of sentience research, particularly the status of hypotheses concerning the phylogenetic distribution of sentience. The second is related to the theoretical implications of research in molecular evolution for the conceptualisation of evolutionary dynamics, including human evolution. This second issue is relevant for philosophical anthropology and is the focus of Davide's contribution in this volume.

Dustin Welper studierte Paläoanthropologie und Naturwissenschaftliche Archäologie in Tübingen. Seit 2023 ist er Community Manager im Neanderthal Museum im NWO Forschungsprojekt Neanderthals and us.

Melanie Wunsch studierte Vor- und Frühgeschichte und Keltologie an der Philipps-Universität Marburg. Nach der Leitung verschiedener archäologischer Ausgrabungen wechselte sie 2011 in die Museumsarbeit und wirkte an der Entstehung der Dauerausstellung im Staatlichen Museum für Archäologie Chemnitz mit. Seit 2014 war sie im Ausstellungsmanagement des Neanderthal Museums tätig. Sie entwickelte Wechselausstellungen zu verschiedenen kulturhistorischen Themen und war als Projektleiterin zuständig für die DFG-geförderte Ausstellung „2 Mio Jahre Migration". Seit 2019 ist sie Leiterin des Ausstellungsmanagements im Neandertal Museum.

Hub Zwart studied philosophy and psychology at Radboud University Nijmegen and defended his thesis in 1993 (cum laude). In 2000 he became full Professor of Philosophy at the *Faculty of Science* Radboud University Nijmegen. In 2018 he was appointed as Dean of *Erasmus School of Philosophy* (Erasmus University Rotterdam). His research develops a philosophical (dialectical) assessment of contemporary technoscience. Special attention is devoted to the dialectical relationship between science and genres of the imagination (drama, poetry, cinema, novels, music). He is editor-in-chief of the *Library for Ethics and Applied Philosophy* (Springer). Recently, he published *Continental Philosophy of Technoscience* (Springer/ Nature 2022).