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## DEPLOYING KRONFELDNER'S CONCEPT OF HUMAN NATURE IN ARCHAEOLOGY

### ABSTRACT

This essay represents a reflection on the role and relevance of the concept of human nature in archaeology, inspired by the ideas about human nature presented and elaborated by Maria Kronfeldner in the book *What's Left of Human Nature?*. It is a comment from an archaeologist's perspective. Kronfeldner formulated three ways in which human nature can be conceptualized: classificatory, descriptive and explanatory human nature. In the text, I review the archaeological and anthropological topics for which the three aspects of human nature are relevant. In the first part, I address the problems related to the concepts of classificatory and descriptive human nature in the late Pleistocene, when *Homo sapiens* was not the only species of the genus *Homo* on the planet. In the second part, I discuss the role of human nature from the epistemological position when it comes to the theoretical basis of reconstructing human behavior in the past and the more general anthropological issue of establishing cross-cultural regularities and laws. This is by no means a comprehensive and detailed survey of the potentially relevant topics, but it should illustrate the usefulness and relevance of Kronfeldner's concepts for the fields of archaeology and anthropology.

### KEYWORDS

human nature,  
archaeology,  
anthropology,  
epistemology.

## Introduction

In her book *What's Left of Human Nature?*, Maria Kronfeldner formulated three concepts of human nature: classificatory, descriptive and explanatory human nature (Kronfeldner 2018). Classificatory nature is needed to determine the boundaries of humanity – what it takes to be classified as a human being. In Kronfeldner's definition, classificatory nature refers to the genealogical nexus – the necessary and sufficient condition for being a human is to be descended from other humans. Descriptive nature, according to Kronfeldner, refers to the set of traits which are typical and stable for humans. These are statistical properties pertaining not to individuals but to populations – we can imagine

a descriptive human nature as a set of univariate distributions for variables on which humans are described or relatively stable relationships between some of the variables. Explanatory nature consists of causal factors, i.e., developmental resources, which are typical of humans and are inherited biologically.

Kronfeldner conceptualized human nature in a way which provides a clear framework for discussing its various aspects and roles in different disciplines. Archaeology, as, discipline is intimately tied to anthropology, therefore it inevitably deals with the issue of human nature. This may not be explicit in empirical research, or even in theoretical debates, but it is not difficult to show that many archaeological topics, whether empirical or theoretical-methodological, touch upon the concept of human nature (Palavestra 2011: 38–41), or to be more precise, different concepts of human nature in Kronfeldner's terms. Nature vs. nurture always lurks when the fundamental questions are addressed. There are several domains of archaeology and anthropology for which the concept of human nature is relevant. In this short essay, I will try to identify some of these domains and to show how the concepts introduced by Kronfeldner correspond to the subject matter of these domains. The topics that I will cover represent or are related to some of the major questions and problems (the so-called “grand challenges” to use the term of Kintigh, Altshul, Beaudry et al. 2014) in anthropology and archaeology. This is no surprise, given the grandeur of the human nature concept itself. Needless to say, my ambition with this essay is not to provide definite answers and solutions to these big problems and topics, but simply to explore how the concept of human nature is present in archaeology and how Kronfeldner's terminology and conceptualization can help in making this clear.

## 1. The origins of humans and behavioral modernity

Archaeology is the scientific discipline which reconstructs the past based on the material remains of the past – the material culture used by people in the past, human and animal osteological remains, botanical remains, and other physical and chemical properties of the archaeological record. The beginnings of the artefact production are dated to around 3 million years ago (Harmand, Lewis, Feibel et al. 2015), so archaeology begins with reconstructing the past of the beings who were not modern humans, but ancestors of modern humans or species related to modern humans, such as Australopithecines, *Homo erectus*, Neanderthals, Denisovans etc. In other words, archaeology and paleoanthropology track the biological as well as the cultural evolution of humans and by extension – of human nature.

Of particular interest, in the light of the classificatory and the descriptive roles of the term, are the Middle Paleolithic and the Early Upper Paleolithic periods (roughly the time between around 300,000 and around 40,000 years before present), when there was more than one *Homo* species present on the planet. Establishing the reference class independently of the description (to use Kronfeldner's terms) is easy in the present by means of the genealogical nexus (everybody is human). But how do we do that in the case of the deep past,

i.e., in times when *Homo sapiens* was not the only *Homo* around, when Neanderthals and Denisovans, and possibly some other variants of *Homo*, were also there? We would have to set up an arbitrary threshold for the genealogical nexus or to reach for the descriptive criteria (e.g., phenotypic and genotypic), which we know is problematic. To make things worse, we cannot use the mating barrier, as we know that these populations could engage in sexual relations and produce fertile offspring. For example, genetic evidence suggests that modern humans and Neanderthals diverged from a common ancestor more than 500 thousand years ago (Stringer and Cr  t   2022). But it also suggests that there were multiple episodes of cross-breeding – that humans and Neanderthals mated and had fertile offspring (Reich 2018; Stringer and Cr  t   2022). It would be very difficult to apply the classificatory concept of human nature in this case, especially for the period close to the divergence and for the period when the mating between Neanderthals and modern humans was most frequent, which is between 60 and 41 thousand years ago (Stringer and Cr  t   2022). When the classificatory role is compromised, this also affects the descriptive role, as we are unable to establish the reference class.

Closely related to this problem is the origin of behavioral modernity and the relation between anatomical modernity and behavioral modernity. The anatomical modernity refers to the physical characteristics of the skeleton – skeletons which are similar to the skeletons of modern people are referred to as anatomically modern. The behavioral modernity refers to the set behaviors which are considered to be characteristic of modern *Homo sapiens* (the descriptive human nature) – e.g., symbolic behavior, complex technology, complex social structure etc. The oldest anatomically modern skeletons are dated to around 300,000 years before present (Hublin, Ben-Ncer, Bailey et al. 2017). Likewise, the molecular clock analysis indicated that the most recent common ancestors of all humans living today can be dated to around 160,000 years before present in the case of the most recent maternal ancestor (the so-called mitochondrial Eve) (Fu, Mittnik, Johnson et al. 2013), or to more than 300,000 years before present in the case of the most recent ancestor along the paternal line (the so-called Y chromosomal Adam) (Mendez, Krahn, Schrack et al. 2013). However, the first archaeological evidence of behavioral modernity (primarily symbolic behavior and advances in the lithic technology) postdates the evidence of anatomical modernity for tens or even hundreds of thousands of years. During the third quarter of the 20th century, it seemed that behavioral modernity appeared only in the Upper Paleolithic, 45 thousand years ago. Blade technology, portable art and cave art were thought to be exclusively Upper Paleolithic phenomena, heralding the domination of modern humans over the Neanderthals. The explanation was that the anatomically modern humans acquired their true human nature through a series of mutations which immediately preceded the start of the Upper Paleolithic and heralded the era of *Homo sapiens* who managed to dominate the world and the *Homo* lineage due to an evolutionary advancement, primarily related to superior cognition and intelligence (but see Shennan 2001).

In the meantime, archaeology revealed at least two facts that cast doubt on this rather speciesist and essentialist narrative (d'Errico 2003; d'Errico, Henshilwood, Lawson et al. 2003). We now know that the Neanderthals also used superior Upper Paleolithic technology, and there are many lines of evidence (some of it contested, though, see White, Bosinski, Bourrillon et al. 2020) pointing to the conclusion that they also practiced symbolic behavior (d'Errico et al. 2003; Pitarch Martí, Zilhão, d'Errico et al. 2021). Therefore, it seems that the indicators of behavioral modernity were present in the Neanderthal contexts as well. The traces of modern behavior predated the beginning of the Upper Paleolithic among anatomically modern humans as well. In South Africa, there are sites dated to around 100-70k years before present where traces of symbolic behavior are found (e.g. Henshilwood, d'Errico, Yates et al. 2002; Henshilwood, d'Errico, Van Niekerk et al. 2011; Henshilwood, d'Errico, Van Niekerk et al. 2018). So, we have a temporal discontinuity in the evidence of modern behavior for modern humans as well.

As I already mentioned, this situation poses great challenges to both the classificatory and descriptive aspects of human nature. Should we include or exclude the Neanderthals and Denisovans from the reference class, or should we say that human nature in the Paleolithic was different from today (e.g., perhaps traits having larger variances)? Should we exclude anatomically modern humans before 100,000 years ago from our species, as they lacked behavioral modernity? In practical terms, the answer is easy, at least for the Neanderthals and Denisovans. We should include neither Neanderthals nor Denisovans into the descriptive nature of humans for the simple reason that their distributions of traits no longer influence the overall human distribution, as their biological, psychological and behavioral characteristics are gone. This underscores the temporality of the descriptive nature which stems from the Darwinian process and the fact that there are no species essences, as only variation and change are real.

## **2. Human nature and the reconstruction of the behavior of the people of the past**

Human nature as an epistemic principle is relevant for the construction of archaeological and anthropological theory – analogous to the principle of uniformitarianism in archaeology (Cameron 1993). If we want to reconstruct some aspect of the past based on the material traces of human behavior in the archaeological record, we would be helpless without making assumptions about descriptive human nature as homeostatic property clusters. The large portion of archaeological theory, which tells us how to reconstruct the dynamics of the past based on the static characteristics of the archaeological record in the present, the so-called middle-range theory (Binford 1977, 1981; Raab and Goodyear 1984) or behavioral correlates (Schiffer 1976, 1995), relies upon ethnographic knowledge and analogy (Wylie 1982; Kuzmanović 2009; Porčić 2006). Therefore, if the contents of the descriptive human nature were significantly different

in the past than they are today, this epistemic bridge would crash down. But the question is how far back in time can we project the contents of descriptive human nature? The problem is that if we assume stability in advance, it is impossible to show that the contents of human nature were different in the past. On the other hand, if we do not make any assumptions about stability, how can we hope to reconstruct human behavior from material remains in the first place? The answer to this question depends on the time scale. At short time scales, it is not a problem to talk about human nature as the current snapshot of the existing variability, but it does become problematic to do so at larger time scales.

### 3. The issue of cross-cultural laws

This leads to a deeper issue, related to the essentialist versus materialist ontology, discussed by Kronfeldner in her book. In this framework, the essentialist is viewed as being appropriate for physics and chemistry, but not for the evolutionary accounts and historical sciences in general, for which the materialist historical ontology is more appropriate. The implication would be that there can be no laws in the historical sciences, as laws require entities which have essences, whereas the biological and social entities are always in the state of becoming and changing (see also O'Brien and Lyman 2000).

One of the big aspirations of anthropology, and by implication, archaeology as its part, is the discovery of cultural laws, or, more generally, laws which may include the interaction between biology and culture, as well. Cross-cultural studies (Ember and Ember 2009; Hrnčír and Květina 2023), as well as long-term diachronic studies, based on archaeological and historical data (e.g. Bocquet-Appel 2011; Kohler et al. 2018; Turchin, Currie, Whitehouse et al. 2018), suggest that statistical tendencies do exist, which may count as some kind of statistical laws of culture which may have a basis, at least partly, in human nature. For example, the theory of the Agricultural demographic transition predicts that the fertility rate of a population will increase when a previously mobile hunter-gatherer population switches to sedentary farming (Bocquet-Appel and Bar-Yosef 2008; Bocquet-Appel 2011). This prediction has been confirmed by many cases from prehistoric, historic and ethnographic records (Bocquet-Appel 2002; Bocquet-Appel and Bar-Yosef 2008; Bocquet-Appel and Naji 2006). Likewise, we can also see large-scale statistical tendencies related to the increase in inequality for the societies and cultures which made the transition to farming – the social complexity and inequality develop in the Holocene in many cases independently, but such developments are always preceded by the transition to agriculture (Kohler, Smith, Bogaard et al. 2018; Kohler and Smith 2018).

These examples show us that there is some structural regularity in the development of cultures and societies which do not share any recent cultural genealogical links. Perhaps we can also interpret this as having something to do with human nature, as the stable distribution of traits, which when combined with similar environmental and structural situations, yields similar results. Perhaps

the most illustrative example is Brian Hayden's hypothesis for the emergence of transegalitarian communities (Hayden 1995), which resonates with Kronfeldner's concept of descriptive human nature. Namely, Hayden suggested that in each population there is a proportion of people with certain psychological personality traits – the ambitious aggrandizers (Hayden 1995). When the subsistence economy allows the accumulation, storage and manipulation of resources, these people will gain power and generate a specific social structure, or the *Big Man* cultural institution. Therefore, the emergence of Big Man is something which is potentially possible in any community if the circumstances are right, as the distribution of personality traits in all human cultures is similar in the sense that in all communities we find a certain kind of people.

This interpretation of cross-cultural regularities in the light of human nature is not without problems, though. An objection can be made that cultural regularities or statistical tendencies, which correspond to cultural laws, have nothing to do with human nature, but with culture as a phenomenon in its own right. Again, let us look at individual examples. In the case of the Agricultural demographic transition, the cultural factors, concretely, the subsistence technology of farming and the sedentary way of life, directly influence human biology – the fertility rate. We can interpret the resulting increase in fertility and population growth as a natural response to increased energy available to reproduction, as the relative metabolic load model would suggest (Bocquet-Appel 2008).

But what are we to make of the contemporary demographic transition? Is it also a consequence of human nature? The contemporary demographic transition is a phenomenon of the last two centuries when both mortality and fertility levels have been declining due to cultural developments – scientific advances in medicine and the use of contraception (Bocquet-Appel 2014). This would indeed be difficult to explain in terms of some simple mechanism of human nature, even though the process is also cross-cultural and universal. Of course, we can always postulate that this is also a consequence of how humans respond to some set of conditions – i.e., it is a part of their nature – but the problem with this kind of thinking is that we can always say this.

## Conclusion

This short, and by no means comprehensive, exploration into the realms of archaeology and anthropology where the issue of human nature seems to be relevant, demonstrates the usefulness of concepts introduced by Kronfeldner. Archaeology is in a very difficult, yet interesting, position as a discipline when it comes to discussing human nature, provided that we do not wish to discard the concept altogether. It is the only discipline which can provide insights into the time depths over which humans and human nature evolved, yet in order to do so, it must make some assumptions about certain aspects of human nature. As we approach the present, these assumptions become less problematic, but in the deep past we find ourselves in a rather awkward epistemological

position. The topic of cross-cultural tendencies and principles is also related to the concept of descriptive human nature, which intuitively makes sense, yet it is not easy in practice to determine the role of human nature in complex patterns. Making an analytical distinction between different aspects and roles of the human nature concept (descriptive, classificatory and explanatory) is not automatically going to solve the old epistemological, theoretical and empirical problems, but it certainly makes thinking about them clearer and more disciplined.

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## Primena koncepta ljudske prirode Marije Kronfeldner u arheologiji

### Apstrakt

U ovom eseju razmatraju se uloga i relevantnost koncepta ljudske prirode u arheologiji, na osnovu ideja o ljudskoj prirodi koje je formulisala Marija Kronfeldner u knjizi *What's Left of Human Nature*. Ovo je, pre svega, komentar na ove ideje iz perspektive arheologa. Kronfeldner je predstavila tri načina kako se ljudska priroda može konceptualizovati: kao klasifikaciona, deskriptivna i eksplanatorna ljudska priroda. Ovaj esej predstavlja pregled arheoloških i antropoloških tema za koje su ova tri aspekta ljudske prirode relevantna. U prvom delu, bavim se problemima vezanim za koncepte klasifikacione i deskriptivne ljudske prirode u kasnom pleistocenu, kada *Homo sapiens* nije bio jedina vrsta roda *Homo* na planeti. U drugom delu, razmatram ulogu koncepta ljudske prirode u arheologiji i antropologiji iz epistemološke perspektive, fokusirajući se na teorijsku osnovu rekonstrukcije ljudskog ponašanja u prošlosti i na opšti antropološki problem uspostavljanja kroskulturnih pravilnosti i zakona. Ovo svakako nije sveobuhvatan i detaljan pregled potencijalno relevantnih tema, ali ilustruje korisnost i relevantnost konceptata koje je definisala Kronfeldner kada su u pitanju arheologija i antropologija.

Ključne reči: ljudska priroda, arheologija, antropologija, epistemologija.

