

Part II: NATURE AND CIVILIZATION

What is a Human Being?¹

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The author explores three questions: “What is human nature as a physical system?”, “What is the foundation of this physical system?”, and “What is the ‘habitual’ manner for it?” The following results are presented. (1) Human nature is proposed as a state of a free “molecular field,” described by the propositional formula “Psyche exists/is in the ‘habitual’ C/X manner.” (2) Molecular evolution within the Earth system is viewed as a whole-part relationship and examined as a free “molecular field” or system. (3) The free “molecular field” achieves global synchronicity with geodynamic and astronomical processes through changing (state-dependent) properties, or in other words, the “habitual” C/X manner. C/X ratios (where X = N, S, or H) highlight the properties of carbon to form various compounds with many other elements, and the C/X manner itself involves properties that interact with other “fields” via the complexity of carbon cycles.

Keywords: human nature, ethics, psyche, “habitual” manner

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¹ The article presents the initial findings of the author’s new research on human nature.
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Introduction

I understand and implement *dialegesthai*² and *dialegomai*,³ “to practice dialectics,” “to reveal results in discussion,” or “to think discursively” as an opportunity to go through the present into the past. I investigate unconcealed, more precisely, equal to *alēthēs* (true),⁴ literally “what can’t be hidden,”⁵ which determines the Fundamental (natural) Rights for human nature.

The expression “human nature” takes into account current discussions⁶ but goes beyond the relationship between Neuroscience and Psychology, on the one hand, and Anthropology and Sociology, on the other hand.⁷ The article focuses on molecular evolution⁸ and, specifically, on the ability of the fundamental and applied sciences to conceptualize in data the processes that shape the Earth’s carbon reservoirs and ensure their global synchronicity with geodynamic and astronomical events. Discussions about evolutionary processes at the molecular level, which argue for “the distinctiveness of the processes of molecular evolution from organismal evolution”⁹ and, consequently, the difference between human nature and other “natures,”¹⁰ remain basic. At the same time, the article stresses the equally obvious unity in molecular evolution that human nature is obliged to express. This unity also follows from the “human nature” concept itself and its history,¹¹ an important place in which is occupied by the meanings of the Greek concept *physis*, “origin; the natural form or constitution of a person or thing as the result of growth; the regular order of nature.”¹² That is, nature itself as a real physical world (*physis*) and human nature is a whole-part relationship within which researchers observe and study pure and mixed states of the system instead of inorganic, organic, intelligent, etc. systems. The relationship between the quantum state and the actual properties of the system is probabilistic.

This is why the proposed study is an ascent into the past of human nature rather than a “study of humans here and now.”¹³

² “This is the word appropriated by Plato’s own medium to designate itself: ‘to engage in [Socratic] dialogue’ or ‘to practice dialectic’” (Nagy, 2002: 32).

³ *Dialegesthai* (διαλέγεσθαι, verb) and *dialegomai* (διᾱλέγομαι, verb), “to practice *dialektikē*,” “to reveal results in discussion,” or “to think discursively.” Gregory Nagy states, “*dialegesthai* is key to the survival of Socrates’ language and of his message” (Nagy, 2002: 32).

⁴ *Alēthēs* (ἀληθής, adjective) unconcealed, true; opposite *lēthē*.

⁵ *Alēthēs*, “stresses *undeniable reality* when something is fully tested, i.e. it *will* ultimately be shown to be *fact* (authentic)” (Thayer, 1995).

⁶ (Nathan, 2024; Ramsey, 2023; Roughley, 2023).

⁷ (Nathan, 2024; Turner, 2020; Graziano, 2018).

⁸ (Yi, 2020: 25).

⁹ (Dietrich & Suarez-Diaz, 2016).

¹⁰ (Corti & Schülein, 2023; Riley, 2021; Weidman, 2021; Turner, 2020; Graziano, 2018).

¹¹ (Corti & Schülein, 2023; Stevenson et al., 2018).

¹² (Liddell & Scott, 1940). I follow Gregory Vlastos (2005: 4-19) and Werner Jaeger (1961), which indicate the difference between the meanings of *physis* and naturalism.

¹³ “My argument in this Element has been that human nature is not occult, that we wear our nature on our sleeve. To study human nature is to study humans here and now, our psychology and behavior and morphology. There is nothing to the nature of the river other than its form and behavior. Studying how the water flows – how it erodes the banks, how it speeds up in narrow channels, how it thunders at the base of cataracts – is studying the nature of the river. No sacred scripture is needed to tell of its nature, no prophets required to divine its hidden essence, no history to speak to what the river is at its core” (Ramsey, 2023).

The purpose of the study is to abstract the whole-part relationship in which human nature is included as the pure state of the system and to clarify the three questions, “What is human nature as the state of the system?”, “What is the foundation and the only rightful for human nature?”, and “What is the ‘habitual’ manner and right (just) for human nature?”

Niels Bohr’s experience guides us to use a unified language¹⁴ to describe the type and states of a system that does not violate Leibniz’s Principle of the Identity of Indiscernibles, and that is an important participant in surface processes on Earth and other planetary bodies. Therefore, the free “molecular field” and its three states — the cryosphere, biosphere, and psychosphere — are abstracted using linguistic concepts that link our network abstraction¹⁵ to a similar abstraction proposed in Plato’s dialogues. In our case, Network science and Linguistics are used to organize a *dia-logos* between two network abstractions, where Plato’s dialogues are considered as the earliest extant collection of writings in which a comprehensive understanding of human nature within a whole-part relationship can be recognized. Plato’s key terms (they are in parentheses) are proposed as “unmixed names” for a unified language describing the *genesis*¹⁶ of human nature as the third state of the free “molecular field.” They are the “nodes” of the proposed network abstraction by means of which, firstly, disparate networks of knowledge are linked into a multiple dynamic (temporal) network and, secondly, the evolving human nature is visualized in the time evolution of the free “molecular field.”

As a consequence, our way to follow (*methodos*)¹⁷ is to use Plato’s *logos* metaphorically and literally as an authoritative basis for abstracting human nature and conceptualizing current data in the molecular sciences into an authoritative “theory of human nature.”

The greatest unsolved problem in human nature

I want to draw attention to the greatest unresolved problem that exists in the modern understanding of human nature. If we compare modern approaches with ancient ones, it becomes especially noticeable.

The current understanding of human nature is based on the interaction between philosophical (anthropological, sociological, etc.) and scientific (biological, neurobiological, etc.) studies.¹⁸ Human nature is studied as the “evolution of the modern human brain”¹⁹ or otherwise as an

¹⁴ “Later Niels Bohr expressed the same view in an often quoted passage: “It is decisive to recognize that, however far the phenomena transcend the scope of classical physical explanation, the account of all evidence must be expressed in classical terms. The argument is simply that by the word ‘experiment’ we refer to a situation where we can tell to others what we have done and what we have learned and that, therefore, the account of the experimental arrangement and of the results of the observations must be expressed in unambiguous language with suitable application of the terminology of classical physics (*APHK*, p. 39)” (Faye, 2019).

¹⁵ “The features of a network abstraction include at least the following: individual elements; pairwise relationships between those elements; and a global or macro- patterning that can be considered as network structure. This basic description may not be sufficient for all circumstances (e.g., think of longitudinal phenomena) and can be extended in many different ways, but these are fundamental features if we are to call the abstraction a network” (Brandes et al., 2013).

¹⁶ Genesis (γένεσις, noun, from *gignomai*) coming into being, production, generation.

¹⁷ Methodos (μέθοδος, noun), path of pursuit (meta-), to pursue one’s inquiry, or literally “the way to follow.”

¹⁸ (Nathan, 2024; Ramsey, 2023; Roughley, 2023).

¹⁹ (Beaudet et al., 2019).

evolving phylogeny of hominin species²⁰ that originated in the Earth's biosphere approximately 8 million years ago²¹ and that exists or is, or equivalently, "exists/is (*eimi*)"²² as a physical system on Earth and possibly other planets.²³

In modern thought, René Descartes' truth "I think, therefore I am,"²⁴ is predominant. The Latin *cōgitō*, "I think/ponder/visualize," determines the context of the proposition "I am, I exist... necessarily is true."²⁵ As a result, the proposition "I (human) exist/am" and consequently human nature in the understanding of scholars began to express events that happen that "prove the certainty of our existence"²⁶ and "show that this I which is thinking is an immaterial substance with no bodily element."²⁷ For example, Nature Portfolio indicates that Neuroscience encompasses "the evolution, development, cellular and molecular biology, physiology, anatomy and pharmacology of the nervous system, as well as computational, behavioural and cognitive neuroscience."²⁸ That is, its multiple knowledge networks are limited to the study of the structure and function of the nervous system. In essence, Neuroscience continues to manifest Hegel's "... to apprehend what is is the task of philosophy, because what is is reason."²⁹

At the same time, the current understanding of human nature provokes anthropocentrism, the "human planet" project, when "all value and ethics is limited to humanity."³⁰ It allows the question "What is human nature?" to be displaced with another, "What kind of human nature should humans want to create for themselves?"³¹ As a result, social and human sciences rethink the recent advances in Neuroscience and legalizes human evolutionary history as an "autonomous and self-governing" system capable of implementing "a shared blueprint for peace and prosperity for people and the planet, now and into the future."³² "The acquisition

²⁰ See (Turner, 2020; Beaudet et al., 2019; McNulty, 2016).

²¹ "When DNA differences among modern humans and the great apes are calibrated using the best paleontological evidence for the split between the apes and the Old World Monkeys, and if we assume that most of the DNA differences are neutral, those differences predict that the most recent common ancestor (MRCAs) of modern humans and chimpanzees/bonobos lived between about 8 and 6 million years ago (Ma)" (Beaudet et al., 2019).

²² *Eimi* (εἶμί, verb), exist, be; ἡ ὄν (ὄν, participle, noun) the things which actually exist, the present, reality.

²³ (Vernadsky, 1987; Lovelock, 2010; Lomas et al., 2024).

²⁴ Et remarquait que cette vérité, je pense, donc je suis, était si ferme et si assurée, que toutes les plus extravagantes suppositions des Sceptiques n'étaient pas capables de l'ébranler, je jugeai que je pouvais la recevoir sans scrupule pour le premier principe de la Philosophie que je cherchais ("Discourse on the Method," 1637). "And as I observed that this truth, I think, therefore I am, was so certain and of such evidence that no ground of doubt, however extravagant, could be alleged by the Sceptics capable of shaking it, I concluded that I might, without scruple, accept it as the first principle of the philosophy of which I was in search." Translated by Elizabeth S. Haldane and G.R.T. Ross (1911).

²⁵ hoc pronuntiatum: Ego sum, Ego existo, quoties a me profertur, vel mente concipitur, necessario esse verum (Meditations on first philosophy, 1641). "this proposition: I am, I exist, whenever it is uttered by me, or conceived by the mind, necessarily is true." Translated by Elizabeth S. Haldane and G.R.T. Ross (1911).

²⁶ (Descartes, 1991: 159).

²⁷ "I, on the other hand, use the argument to show that this I which is thinking is an immaterial substance with no bodily element" (Descartes, 1991: 159).

²⁸ <https://www.nature.com/subjects/neuroscience>

²⁹ (Hegel, 2001: 19).

³⁰ (Kopnina et al., 2018).

³¹ (Gregg, 2022).

³² <https://sdgs.un.org/goals>

and application of collective knowledge, operating at a planetary scale, which is integrated into the function of coupled planetary systems,” or otherwise, the idea of “planetary intelligence,” is gaining credibility in the scientific community.³³ At best, the discussions and debates are conducted “whether values in nature are anthropocentric (human-centered) or ecocentric (nonhuman-centered).”³⁴

As a consequence, the future of human nature is seen in unraveling unidentified anomalous phenomena (UAP), which are supposed to “reflect the activities of intelligent beings,”³⁵ and in cooperating with extraterrestrial intelligence, whose nature is understood to be a more advanced form of human nature: “they should be able to sustain life and support the evolution of technological civilizations.”³⁶

Modern physical science distances itself from the current understanding of human nature because it is a formula for deadlock. If we accept it as a basis, then in accordance with the physical laws and conservation principles that describe our physical world, we must declare that human nature is a mixed state of a system that will lose its own identity and individuality in an ever-changing universe. Because the pure state of the system cannot have an eight-million-year history within the 13.7 billion years of evolutionary history of our Universe. I mean the distinction between pure and mixed states of the system and their study in quantum mechanics. In particular, it is the understanding of the system as a “property-oriented ontology,” which follows from the interpretation of quantum theory proposed by Carlo Rovelli and Andrea Oldofredi.³⁷ I also take into account the alternative conception of quantum particles proposed by Dennis Dieks and Andrea Lubberdink. “One of its key consequences is that particles in quantum theory are not fundamental but emergent; another that once they have emerged, quantum particles are always physically distinguishable and thus possess a physically grounded identity.”³⁸ Laurie Ann Paul’s “mereological bundle theory” offers a perspective for harmonizing current research on human nature with new fundamental physical theories.³⁹

The distinction between pure and mixed states of a system, and as a consequence between possible and actual properties, guides us to investigate human nature as a derived (emergent) property or relation in planetary evolution, rather than as a phylogeny of hominin species. We have to define the type of system to which human nature belongs and describe its states at each moment of its history. “In sum, this proposal suggests that physical systems in Relational Quantum Mechanics should be defined as mereological bundles of properties, where (i) the intrinsic properties characterizing a certain species of particles have constant values, (ii) the extrinsic qualities take definite values relative to particular observers, and (iii) not every observable defining a system can have a definite value in virtue of the contextual nature of the quantum formalism.”⁴⁰

Thus, the question “What is human nature as the pure state of the system?” expresses the greatest unsolved problem to date. Human nature is explored as something that “comes into being to exist/be (*eimi*).” Instead, modern physical laws and conservation principles direct us to define and measure it as either a pure or a mixed state of the system.

³³ (Frank et al., 2022).

³⁴ (Kopnina et al., 2018).

³⁵ See (Lomas et al., 2024).

³⁶ (Montebugnoli et al., 2021).

³⁷ (Oldofredi, 2021).

³⁸ (Dieks & Lubberdink, 2022).

³⁹ (Paul, 2017).

⁴⁰ (Oldofredi, 2021).

The challenge for human nature “to exist/be (*eimi*) either a pure or a mixed state of the system” means much more than merely describing in terms of operational definition. In fact, the difference between pure and mixed states determines the human ability or inability to ever advance and protect one’s own identity and individuality in an ever-changing universe. Fundamentally, it is a verdict in favor of either *genesis* (coming to be) or *phthora* (passing away)⁴¹ or, equivalently, to ever be or not to be.

It is worth emphasizing that genetic engineering is developing methods to manipulate genetic material, but at the same time, the question “What is unmixed/pure (*eilikrinēs*)⁴² in human nature that provides the *genesis* (coming to be) and protects against *phthora* (passing away)?” is not understood or even raised as an issue. Where the Greek adjective *eilikrinēs* (“sincere because transparent”) “describes something *proven* because *well-examined* (totally scrutinized) – therefore, *certified as sincere* (inwardly pure).”⁴³

Thus, the question “What is human nature as a pure state of the system that is able to advance and protect its own identity and individuality in an ever-changing universe?” is a question of the highest priority for us. To follow the physical laws and conservation principles, but at the same time, to establish the ultimate ethical value, we will designate the key “node” in our network abstraction with the concept of “exist/be (*eimi*) unmixed/pure (*eilikrinēs*).” In this case, only philosophy can clarify what is unmixed/pure (*eilikrinēs*) in human nature and persuade that human nature is indeed a physical system (or its state) that comes into being to exist/be (*eimi*) unmixed/pure (*eilikrinēs*) as far as possible. We must remember that the unmixed/pure (*eilikrinēs*) is equal to *alēthēs*,⁴⁴ the unconcealed, “true, as it accords with *fact* (*reality*), i.e. *attested* because *tested*.”⁴⁵

Human nature as a physical system

The question “What is unmixed/pure (*eilikrinēs*) in human nature?” leads to the foundation of the system, which generates unchanging (or “state-independent”) and changing (or “state-dependent”) properties. Historically, the unchanging properties of human nature were linked by the parallel series *themis* ↔ *themethla* ↔ *themitos*, where “justice, right”

⁴¹ Phthora (φθορά, noun, from *phtheirō*), passing out of existence, ceasing to be. Περί Γενέσεως και Φθοράς by Aristotle, Latin: De Generatione et Corruptione, literally “On Coming to Be and Passing Away.”

⁴² Eilikrinēs (εἰλικρινής, adjective; from *heilē*, “shining of the sun” and */krystallizō*, “to judge”), *rightly* judged because seen in *full light* (Thayer, 1995); unmixed, without alloy, pure. See (*Philebus* 52d9).

⁴³ (Thayer, 1995).

⁴⁴ (*Philebus* 52d9). The Greek text is cited according to Burnet, 1901; 1903; 1978; 1907; Duke et al., 1995. The author follows the translation (unless otherwise indicated) of *Plato’s in twelve volumes*, 1967-1979. The passages quoted demonstrate Plato’s views and/or argue for a linguistic concept. I selectively use Plato’s semantics and vocabulary. In most cases, these are primary words in Transliteration B according to the *Liddell, Scott, Jones Ancient Greek Lexicon* (https://lsj.gr/wiki/Main_Page). They are shown in italics. Greek words are used as technical terms, so I do not stick to grammatical cases except for direct quotations. For me, the original meanings of words, indicated in footnotes and partially in the Glossary, are essential. I primarily use Plato’s dialogues, the Platonic corpus, the *Liddell, Scott, Jones Ancient Greek Lexicon* (LSJ), and *Thayer’s Greek-English Lexicon of the New Testament* (Thayer, 1995). Many Greek words have several significant connotations. In this case, I single out the most important ones for my research and separate them with a forward slash (“/”). The reader does not need to know Ancient Greek. Plato’s vocabulary helps me restore discussions’ primary meanings and use them as an authoritative beginning for my study.

⁴⁵ (Thayer, 1995).

(*themis*), “foundations, lowest part, roots” (*themethla*),⁴⁶ and “the only rightful” (*themitos*)⁴⁷ came from the verb *tithēmi*, which primarily means “to place” or “to set.” In the Greco-Roman world, *tithēmi* and derivative words often reflected cultural practices, emphasizing the intentionality and authority behind actions and decisions.⁴⁸ Whereas the changing properties of human nature were linked by the parallel series *dikē* ↔ *diken* ↔ *dikaios*, where the concept *dikē*, “custom, usage, normal course of nature”⁴⁹ underpins the concepts of “habitual” manner (*diken*)⁵⁰ and “right, righteous” (*dikaios*).⁵¹ In ancient Greek culture, *dikē* was viewed as a fundamental principle that maintained social harmony.⁵²

It should also be noted that in Greek mythology Themis was the goddess of divine justice, enforcing the rules of the gods and the natural laws of the world, while Dike regulated human laws and ensured the “right, righteous” (*dikaios*) way of human life.

We use the above parallel series to abstract possible properties of the system whose state human nature is. Consider their current understanding and basic meanings.

(1) I want to draw attention to the famous article “Did the Ancient Greeks Have the Concept of Human Rights?” and expand the meanings that Myles Fredric Burnyeat makes in it.⁵³ Burnyeat’s article focuses us on the difference between the emphases in Plato’s and Descartes’ philosophy and, consequently, between ancient and modern thinking about the important question, “What is the only rightful (*themitos*) for human nature?”

In the above article, Burnyeat emphasizes that ancient politics never put the individual first.⁵⁴ Plato wrote in the *Laws*, “Of all a man’s own belongings, the most divine is his *psychē*,⁵⁵ since it is most his own.”⁵⁶ At the same time, “Thus it is that in charging men to honor their own *psychē* next after the gods who rule and the secondary divinities, I am giving a right injunction.”⁵⁷ That is, other more authoritative “natures” also possessed *psychē*. It follows

⁴⁶ (Liddell & Scott, 1940).

⁴⁷ Themitos (θεμιτός, adjective from *thēmis*), “allowed by the laws of God and men, righteous” (Liddell & Scott, 1940).

⁴⁸ “In the Greco-Roman world, the concept of placing or setting something was significant in both everyday life and religious practices. Objects were placed in specific locations for worship, and people were appointed to roles within society and religious institutions. The use of ‘tithēmi’ in the New Testament often reflects these cultural practices, emphasizing the intentionality and authority behind actions and decisions” (Thayer, 1995).

⁴⁹ (Liddell & Scott, 1940).

⁵⁰ δίκην (from *dikē*), in the manner of (Liddell & Scott, 1940). “The “habitual” manner is in reality an obligation of nature or convention” (Benveniste, 1973: 559).

⁵¹ Dikaios (δίκαιος, adjective, derived from *dikē*), right, righteous.

⁵² “In ancient Greek culture, *dikē* was personified as a goddess representing justice and moral order. The Greeks viewed justice as a fundamental principle that maintained societal harmony” (Thayer, 1995).

⁵³ (Burnyeat, 2012: 282-288).

⁵⁴ “But the idea lived on, and because it lived on our politics puts the individual first in a way that ancient politics did not. The difficulty is not that the statement just quoted from the Declaration of Rights could not be translated into ancient Greek. It could. But it would sound strange and pointless in a world which never seriously challenged the institution of slavery” (Burnyeat, 2012: 288).

⁵⁵ Psychē (ψυχή, noun, from *psychō*). Plato’s research was aimed at affirming the two main meanings of *psychē*: (1) the *psychē* is immortal, (ἀθάνατος ἂν ἡ ψυχή εἴη (*Meno* 86b)) and its nature differs from the nature of the body (*Phaedo* 115c-116a; *Phaedrus* 245c-249d; *Timaeus* 34c). (2) *Epistēmē* is stored in the *psychē*, therefore to seek something (ζητεῖν ἄρα) and to know (τὸ μανθάνειν), in general, was called *anamimnēskō* (*Meno* 81d).

⁵⁶ (*Laws* 5.726a3). Translated by R.G. Bury.

⁵⁷ (*Laws* 5.726a6-5.727a1-2). Translated by R.G. Bury.

that “giving honor to their own *psychē*”⁵⁸ did not at all imply anthropocentrism, i.e., “putting the individual first.” The Greeks did not separate human nature from the preceding natures. Therefore, the properties that the parallel series *themis* ↔ *themethla* ↔ *themitos* described were “state-independent”, i.e. characterizing both divine and human natures.

On the contrary, the first principle of Descartes’ philosophy and “the proposition: I am, I exist, whenever it is uttered by me, or conceived by the mind, necessarily is true,”⁵⁹ affirmed and defined “the individual first.” In Descartes’ philosophy, reason was put first and above everything else. It came to be regarded as a self-sufficient “base, foundation” (*themethla*),⁶⁰ which was capable of independently determining “the only rightful” (*themitos*) for its nature. The titles and content of today’s authoritative scientific studies, such as “Human Rights and Human Nature,”⁶¹ “Killer Instinct: The Popular Science of Human Nature in Twentieth-Century America,”⁶² etc., develop this view.

In essence, Burnyeat demonstrated the “reversal” in the understanding of “What is equal to human nature?” that has occurred in modern thought. The Greeks developed the unity of the parallel series *themis* ↔ *themethla* ↔ *themitos*. They legitimized that everything that comes into being has a common “base, foundation” (*themethla*) and therefore it exists/is (*eimi*) according to the “only rightful” (*themitos*). To abstract human nature for the Greeks meant to harmonize controversial social practices and ideologies with the movement (work) of the “base, foundation” (*themethla*), which was the one for all natures. The Pythagorean Symbol “Don’t step over the yoke”⁶³ emphasized the necessity to “pull together” and “unite (join) to move (work) together as one.”⁶⁴ That is, the “only rightful” (*themitos*) was not only the right to represent one’s own nature, but also obliged human nature to unite (join) with equals in order to advance and protect the identity and individuality of the common “base, foundation” (*themethla*) in an ever-changing universe.

Instead, modern thought develops the idea of a self-sufficient human nature that has its own authoritative “base, foundation” (*themethla*) that is distinct from and perhaps superior to other foundations observed in the evolving Earth system. As a consequence, we can see a significant gap between the understanding of the common “base, foundation” (*themethla*) (i.e., the universe), the only rightful (*themitos*) that the universe establishes for all types of systems, and the rights and duties by which human nature controls its own guiding perspective. As a result, modern thought and the science of jurisprudence clearly understand that “Rights belong to individuals and bring benefit to them. Duties are imposed on individuals and restrict their freedom. So to take rights as basic and derive duties from them, instead of the other way round, is to take individuals as the prime beneficiaries of the civil order – all individuals

⁵⁸ τιμῶν τὴν αὐτοῦ ψυχὴν (*Laws* 5.727b6), where the verb “*timáō* – properly, *assign value* (give honor), as it reflects the *personal* esteem (value, preciousness) attached to it by the *beholder*” (Thayer, 1995).

⁵⁹ hoc pronuntiatum: Ego sum, Ego existo, quoties a me profertur, vel mente concipitur, necessario esse verum. (*Meditations on First Philosophy*, 1641). Translated by Elizabeth S. Haldane and G.R.T. Ross (1911).

⁶⁰ *Themethla* (in Homer *themelia*) is a building term meaning “base, foundation” (Benveniste, 1973: 549).

⁶¹ (Albers et al., 2014).

⁶² (Weidman, 2021).

⁶³ τὸ δὲ ζυγὸν μὴ ὑπερβαίνειν (Diogenes Laertius, 8.1.18).

⁶⁴ The meaning of the Greek ζυγός, “properly, a yoke; a wooden bar placed over the neck of a *pair* of animals so they can pull *together*; (figuratively) what *unites* (*joins*) two people to move (work) together as *one*” (Thayer, 1995).

equally.”⁶⁵ At the same time, legalized “human rights” are not really *themis* (justice, right) in the literal sense, because they do not express the work of the whole-part relationship in which the “base, foundation” (*themethla*) (the universe) establishes the only rightful (*themitos*) for all the equals it begets. Therefore, Burnyeat quite rightly concluded that “The negative aim was as important as the positive”: rights should not be more important than duties.⁶⁶

In other words, human nature does have the right to develop an understanding of its own self-sufficient foundation. At the same time, it must realize the difference between the foundation for the pure (or mixed) state of the system and the “base, foundation” (*themethla*) of the system. In the parallel series *themis* ↔ *themethla* ↔ *themitos*, the “base, foundation” (*themethla*) are “state-independent” properties characterizing certain species of particles that permanently implement the “only rightful” (*themitos*) for all states of the system. I mean the right and the duty to move (work) together as one, in a yoke, to advance and protect one’s own identity and individuality in an ever-changing universe. It is the “base, foundation” (*themethla*) of the system that establishes the “only rightful” (*themitos*) for all its states: the right to come into being to exist/be (*eimi*) either unmixed/pure (*eilikrinēs*) or mixed. This is why exploring one’s own “base, foundation” (*themethla*) and the “only rightful” (*themitos*) for the system is actually of paramount importance to human nature. This is the only way to know one’s own guiding perspective, including the possible properties of the system and their corresponding probabilities.

Thus, we find that current discursive thinking through of human nature and its history in planetary evolution is based on the knowledge that ignores the properties that the parallel series *themis* ↔ *themethla* ↔ *themitos* described. The researchers “forget” that human nature has the right to differ from the genome of bonobos and chimpanzees by only 2%.⁶⁷ Despite the obvious common “base, foundation” (*themethla*), they establish that the only rightful (*themitos*) for human nature is the right to decide “how we must live today if we want a better tomorrow, by meeting present needs without compromising the chances of future generations to meet their needs.”⁶⁸ That is, the “justice, right” (*themis*) for equals begotten by the “base, foundation” (*themethla*) is totally ignored. The result is a violation of the Pythagorean Symbol “Don’t step over the yoke” or “Don’t step over equal/equivalent (*isos*⁶⁹) and right/righteous (*dikaios*)” as interpreted by Diogenes Laertius.⁷⁰

⁶⁵ (Burnyeat, 2012: 287).

⁶⁶ “The negative aim was as important as the positive. There had earlier been a vote on whether a declaration of rights should be accompanied by a declaration of duties. ‘If a declaration is necessary’, said the Bishop of Chartres on 3 August, ‘there is a pitfall to avoid. There is a risk of awakening egoism and pride. The flattering expression of *rights* must be accompanied by *duties as a corrective*.’ The opposition replied that duties were simply the corollary of rights and so needed no explicit declaration of their own. The opposition won. The demand for a declaration of duties was defeated by 570 votes to 433: not a huge majority, but enough to ensure that in the new social order rights would be prior to duties” (Burnyeat, 2012: 287-288).

⁶⁷ “...which showed that bonobos and chimpanzees are 99.7% alike whereas bonobos and modern humans are 98.7% alike” (Beaudet et al., 2019).

⁶⁸ <https://www.un.org/sustainabledevelopment/blog/2023/08/what-is-sustainable-development/#:~:text=Sustainable%20development%20is%20how%20we%20must%20live%20today>

⁶⁹ *Ísos* (ἴσος, adjective, probably from οἶδα), equal, “equality; having the same (similar) level or value; equivalent, equal in substance or quality”; “(*isos*) is the root of the English terms, “*isometric*” and “*isosceles*” – referring to *equivalencies*” (Thayer, 1995); “repeated to denote equal relations; equal in rights” (Liddell & Scott, 1940; *Laws* 6.774c4).

⁷⁰ τὸ δὲ ζυγὸν μὴ ὑπερβαίνειν, τούτεστι τὸ ἴσον καὶ δίκαιον μὴ ὑπερβαίνειν (Diogenes Laertius, 8.1.18).

Therefore, to clarify the question “What is unmixed/pure (*eilikrinēs*) in human nature?” we need to reconstruct the parallel series *themis* ↔ *themethla* ↔ *themitos* and use modern knowledge to answer two questions: (i) “What is the ‘base, foundation’ (*themethla*) for human nature?” and (ii) “What is the ‘only rightful’ (*themitos*) for all states of the system?” That is, we must specify the type of system that human nature represents and describe its unchanging properties. Thus, the concepts of “base, foundation” (*themethla*) and “the only rightful” (*themitos*) become the next “nodes” in our network abstraction.

(2) The question “What is human nature as an unmixed/pure physical system?” raises the problem of changing (or “state-dependent”) properties. The time evolution of at least 13.8 billion years, as well as current knowledge of human nature, planetary evolution, and the chronology of the universe, always points to one condition. Namely, something physically real and ever expresses its own individuality in an ever-changing universe is a system that “drinks a measure of water” and “does not drink more than the measure.”⁷¹ That is, the prospect of existing/being (*eimi*) either pure or mixed is determined by the “habitual” manner (*diken*) that characterizes the state of the system at each moment in its history.

Thus, the “habitual” manner (*diken*) ensures the coherence of the physical system with the “‘formula of normality’ prescribing what must be conformed to”⁷² and what is right/just (*dikaios/iustus*) for it. Whereas the Greco-Latin concept of *dikaios/iustus*⁷³ clarifies the doctrinal and situational motives of the physical system “to show the ‘measure’ which is to be imposed in such and such a dispute”⁷⁴ in order to advance and protect the identity and individuality of its own “base, foundation” (*themethla*).

As a result, we find that the Greeks used another parallel series *dikē* ↔ *diken* ↔ *dikaios* to describe the property of “showing the measure” at each moment of the evolving system. Where measure — *metron*⁷⁵ — is “not ‘measurement,’ but ‘moderation’ (Lat. *modus, modestus*) — designed to restore order in a sick body (Lat. *medeor* ‘care for,’ *medicus*), in the universe (Hom. ‘Zeus the moderator’) and in human affairs.”⁷⁶ According to current concepts, the changing

⁷¹ “They were all required to drink a measure of the water, and those who were not saved by their good sense drank more than the measure, and each one as he drank forgot all things” (*Republic* 10.621a5-b1). Translated by Paul Shorey

⁷² “Thanks to Iranian and Indic we are in a position to penetrate into the prehistory of the Latin word *ius*. The Indo-European word **yous* meant “the state of regularity, of the normality required by the rules of ritual.” This state assumes the double aspect in Latin, which we have just distinguished in Indo-Iranian. The idea of *ius* admits of these two conditions. One is the factual situation, denoted by the derived adjective *iustus* in the legal expressions *iustae nuptiae* ‘lawful marriage’, *iusta uxor* ‘legitimate wife’, that is, “conforming to the state of *ius*.” The other is implied in the expression *ius dicere*. Here *ius* denotes “the formula of normality,” prescribing what must be conformed to. Such is the foundation of the idea of “law” in Rome” (Benveniste, 1973: 564).

⁷³ «The analysis of the uses of *dikē* has brought out the frequency of the correlations between the Greek *dikē* and the Latin *ius*. These two terms, although different in origin, enter into parallel series: *diken eipein* corresponds to *ius dicere*; *dikaios* to *iustus*, and finally, *dikaspólos* corresponds more or less to *iudex*» (Benveniste, 1973: 561).

⁷⁴ (Benveniste, 1973: 587).

⁷⁵ *Metron* (μέτρον, noun), “that by which anything is measured” (Liddell & Scott, 1940); “a *measure* (the actual measure *itself*); (figuratively) the *basis* for determining what is *enough* (or *not enough*), what is *fair* (or *not fair*), etc.” (Thayer, 1995).

⁷⁶ “In historical times the root **med-* designated a great variety of different things: “govern,” “think,” “care for,” “measure.” The primary meaning cannot be determined simply by reducing all these to a vague common denominator nor by a confused agglomeration of the historically attested senses. It can

properties provide global synchronicity of the physical system within an ever-changing universe. This is probably why the Greeks developed the meanings of “right (as self-evident), justice” (*dikē*) and its derived meanings of “habitual” manner (*diken*) and right/righteous (*dikaïos*) inextricably with the theme of “happiness, well-being, outward prosperity,” i.e. with *eudaimonia*.⁷⁷

In our network abstraction, the parallel series *dikē* ↔ *diken* ↔ *dikaïos* will represent the current knowledge of the changing properties by which human nature advances and protects the identity and individuality of its own “base, foundation” (*themethla*) in an ever-changing universe. Changing properties make “their possessor happy to the farthest possible limit of human happiness”⁷⁸ because they provide “value” and “life cycle” to a physical system, or in other words, they are responsible for its moderation within the whole-part relationship at every moment of its history. Modern Biology and Neurosciences study state-dependent properties as “changeability,” “adaptability,” “flexibility,” “agility,” etc.⁷⁹ Whereas Sociology and Anthropology develop the understanding of “habitual” manner (*diken*) and right/just (*dikaïos/iustus*) for human nature mainly in two directions. The first is research into “the fundamental differences between humans and our nearest relatives, the great apes,”⁸⁰ which allows us to “address the role that human nature plays in the foundation of human rights.”⁸¹ The second is the study of “organic life as a crossroads between philosophy and the natural sciences,”⁸² which guides to solve “significant socio-ecological challenges such as global biodiversity loss and climate change.”⁸³ or otherwise “the triple planetary crisis.”⁸⁴

The accumulated experience and knowledge allow us to extend this understanding. On the one hand, we will clarify the relationship between the “state-dependent” properties that the parallel series *dikē* ↔ *diken* ↔ *dikaïos* describes and the external qualities that take definite values relative to particular observers.⁸⁵ On the other hand, we will show that changing properties do determine a right and happy life.

By their nature, “state-dependent” properties are a showing of the measure of unmixed/pure (*eilikrinēs*) for any state of the system. They actually visualize the movement (work) of a controlling “base, foundation” (*themethla*) that “takes appropriate measures” (**med-*)⁸⁶ to

be defined as “measure” – not “measurement,” but “moderation” (Lat. *modus, modestus*) – designed to restore order in a sick body (Lat. *medeor* ‘care for’, *medicus*), in the universe (Hom. *Zeūs (Idēthen) medēōn* ‘Zeus the moderator’), in human affairs, including the most serious like war, or everyday things like a meal” (Benveniste, 1973: 576).

⁷⁷ *Eudaimonia* (εὐδαιμονία, noun), happiness, well-being, outward prosperity, to be happy, in the sense of living a good life, etc. In understanding ancient thinkers, *eudaimonia* meant the quality of life deserving respect, approval, and imitation in society.

⁷⁸ (*Phaedrus* 277a1-3). Translated by Harold N. Fowler.

⁷⁹ (Sullivan et al., 2023).

⁸⁰ (Frey et al., 2011: 1).

⁸¹ (Albers et al., 2014).

⁸² (Corti & Schüle, 2023).

⁸³ (Misiune et al., 2022).

⁸⁴ “The triple planetary crisis refers to the three main interlinked issues that humanity currently faces: climate change, pollution and biodiversity loss.” <https://unfccc.int/news/what-is-the-triple-planetary-crisis#:~:text=The%20triple%20planetary%20crisis%20refers%20to%20the%20three>

⁸⁵ (Oldofredi, 2021; Paul, 2017).

⁸⁶ **med-* Proto-Indo-European root meaning “take appropriate measures.” It forms all or part of: accommodate; accommodation; commode; commodious; commodity; empty; immoderate; immodest; Medea; medical; medicament; medicaster; medicate; medication; medicine; medico; medico-; meditate;

ensure the “value” and “life cycle” of the system. “The ultimate reason why we should respect each other’s rights is because justice is an essential part of our own happiness.”⁸⁷ It follows that knowledge one’s own “habitual” manner (*diken*) opens up the perspective of knowing the controlling “base, foundation” (*themethla*) and the unmixed/pure (*eilikrinēs*) within one’s own system. We will call this perspective the right/just (*dikaios/iustus*) or the right (just) guiding perspective. Thus, the concepts of “habitual” manner (*diken*) and right/just (*dikaios/iustus*) become the next “nodes” in our network abstraction. They underpin two important questions for us, “What is the ‘habitual’ manner (*diken*) for human nature?” and “What is right/just (*dikaios/iustus*)?”

As becomes clear from the above, we will abstract human nature as a physical system by discursively thinking through three questions. The first question directs us to think through the key “node” of our abstraction, namely, what is the unmixed/pure (*eilikrinēs*) in human nature that ensures its continuous coming into being (*genesis*) rather than passing away (*phthora*). The first question has the highest priority for us:

(1) “What is human nature as a pure state of the system?”

The second question is about the unchanging properties of the physical system. It directs us to think through the “base, foundation” (*themethla*) of a physical system in order to determine a way of describing its states and properties that are the only rightful (*themitos*) within the whole-part relationship.

(2) “What is the foundation for human nature and the only rightful?”

The third question is about the changing properties of this physical system, which we will think through by developing the meanings of the parallel series *dikē* ↔ *diken* ↔ *dikaios*:

(3) “What is the “habitual” manner for human nature and the right (just) guiding perspective?”

The questions posed do not imply answers. They are beacons between truth and oblivion (*alētheia* and *lēthē*)⁸⁸ that make it possible to realize one’s own wandering⁸⁹ in the borderland between human nature and the preceding natures that the “base, foundation” (*themethla*) begets as the states of the system. Therefore, the proposed network abstraction is just the next step in the “eternal” step-by-step renewal of the human paradigm. The paradigm helps to find a way out of the impasse and to go through the view on the Self and “my own *psychē*”

meditation; Medusa; meet (adj.) “proper, fitting;” mete (v.) “to allot;” modal; mode; model; moderate; modern; modest; modicum; modify; modular; modulate; module; modulation; mold (n.1) “hollow shape;” mood (n.2) “grammatical form indicating the function of a verb;” must (v.); premeditate; premeditation; remedial; remediation; remedy. <https://www.etymonline.com/word/mete>

⁸⁷ (Burnyeat, 2012: 287) with modification.

⁸⁸ (*Republic* 10.621a5-b1). “The myths of the *Republic* and the *Phaedrus* recount two sides of the human destiny that necessarily go together: we are equally under the power of ἀλήθεια and λήθη, we emerge into this life from both the plain of ἀλήθεια and the plain of λήθη” (Gonzalez, 2009: 240-241).

⁸⁹ The verb *πλανᾶω* (*πλανωμένων* (*Sophist* 230b7), to cause to wander, to wander. A passage from the *Sophist* (230b4-d4), “in which the Eleatic Visitor stresses the necessity of the wandering soul’s being made aware of its wandering” was thought out by James M. Ambury (Ambury, 2018: 93-95).

to begin to know “What is equal to human nature?” i.e. Other equals. At the same time, the cognition of “What is equal to human nature?” is done only to discover one’s own right (just) guiding perspective and make the Self happy but not the Others. Myles Fredric Burnyeat rightly noted that “All the ancient thinkers insist that evil-doing brings misery: only the good are truly happy. So the ultimate reason for respecting animal life is not that it will make the animals happy, but that it will make me happy.”⁹⁰

That is, each nature as a state of the system embodies specific properties of the “base, foundation” (*themethla*), which continuously and non-linearly provides global synchronicity of the system in an ever-changing universe. Therefore, the right/just (*dikaios/iustus*) for any nature that determines its happy life is to exist/be (*eimi*) in a “habitual” manner (*diken*), or in other words, to ever practice its own *ethos*, and never the *ethos* of Others. Where the concept of *ethos* — “usage prescribed by law, institute, prescription, rite”⁹¹ — produces the meanings of *ēthos*, “‘familiar morals,’ referring to daily *life-style* (moral *habits*, behavioral *patterns*).”⁹²

Consider the “habitual” manner (*diken*) in which human nature exists/is (*eimi*) unmixed/pure (*eilikrinēs*) as far as possible in the time evolution.

What is the “habitual” manner for human nature?

In the threefold scheme of philosophy inherited from Plato,⁹³ it was ethics that was developed as the way to follow (*metodos*) the “habitual” manner (*diken*) and the right/just (*dikaios/iustus*). We go through the current understanding of ethics as “moral principles that control or influence a person’s behavior”⁹⁴ and begin to think through *ethos*, “a customary abode, dwelling-place, haunt, customary state” as Homer, Hesiod, Herodotus, and others understood it.⁹⁵ It is in this understanding that *ethos* expresses the pure properties of human nature and is equivalent to the “habitual” manner (*diken*).

The Greeks explored *ēthos* (an accustomed place) through *ethos* (custom, habit),⁹⁶ where the concept *ēthos* and its derivatives, the adjective *ēthikos* (of or for morals, ethical, moral) and the noun ethics, have a rich history of meaning development.⁹⁷ In Plato’s *Laws*, *ēthos* defined an habitual place and a custom in the sense of frequent repetition of the same behavior or a mode of conduct common to many. *Ēthos* is “a personal characteristic (custom), which

⁹⁰ (Burnyeat, 2012: 286).

⁹¹ (Thayer, 1995).

⁹² (Thayer, 1995).

⁹³ “...a threefold scheme of philosophy inherited from Plato: one division dealt with conduct and morals, the second with the secrets of nature, the third with dialectic and with judgement of truth and falsehood, correctness and incorrectness, consistency and inconsistency, in rhetorical discourse” Fuit ergo iam accepta a Platone philosophandi ratio triplex, una de vita et moribus, altera de natura et rebus occultis, tertia de disserendo et quid verum quid falsum quid rectum in oratione pravumve quid consentiens quid repugnet iudicando. [p. 9] (Cicero, 1933: 1.19). Translated by H. Rackham (1933). See (Horky, 2020: 171-181).

⁹⁴ <https://www.oxfordlearnersdictionaries.com/definition/english/ethic?q=ethics>

⁹⁵ Strong’s Greek Lexicon G2239: ἠθος.

⁹⁶ (*Laws* 7.792e2).

⁹⁷ *Ēthos* (ἠθος, noun, from *ethos*), an accustomed place: hence, in the plural, haunts or abodes of animals; of the abodes of men (Liddell & Scott, 1940). Aristot. Nic. Eth. 1103a17: ἡ δὲ ἠθικὴ ἀρετὴ ἐξ ἔθους περιγίνεται, ὅθεν καὶ τοῦνομα ἔσχηκε μικρὸν παρεγκλίνον ἀπὸ τοῦ ἔθους, “ethical virtue is the result of habit, and its name ‘ethical’ is also derived from ‘ethos’ (habit).” Translated by R.G. Bury.

is determined by the habitual action (the power of habit).⁹⁸ Consequently, accurate data on the “habitual” manner (*diken*) for human nature can be found by examining the established practices or traditions that characterize human nature in the time evolution.

It should also be emphasized that Plato’s dialectical method, which we use,⁹⁹ was developed also to “come to know (*gignōskō*) through itself all unmixed/pure (*eilikrinēs*),”¹⁰⁰ where the meanings denoted by the Greek verb *gignōskō*, “to know” or “to come to know,” continued to be developed by the Romans under the name *scientia*, and by modern scholars as knowledge, science. As a result, our study of the established practices (traditions) that characterize human nature in the temporal evolution of the system is based on knowledge, factual accuracy,¹⁰¹ and “in accordance with our own reality.”¹⁰²

The dialectical way to follow (*metodos*) guides us through values, attitudes, and behaviors that are closely related to the concepts “man,” “people,” etc., toward the Latin *homō*. The concept *homō* and its derivatives Hominidae, hominids,¹⁰³ and Homo Sapiens¹⁰⁴ continue to be used in modern science to denote the key evolutionary processes that separate human nature from other states of the system.

We rise higher and discover that the Latin *homō* was preceded by the Greek concept *anthrōpos* with a unique history. This history is represented in numerous written sources that have survived to our times.¹⁰⁵ Through the *anthrōpos* concept, we go through the texts of the Bible¹⁰⁶ to Plato’s dialogues¹⁰⁷ and further into the past. We clarify the indigenous name for

⁹⁸ τὸ πᾶν ἥθος διὰ ἔθος (*Laws* 7.792e2), “personal characteristic” (custom), which is determined by the habitual action (the power of habit)” (Liddell & Scott, 1940).

⁹⁹ “The word ‘philosophy’ here means what Socrates usually means by it: discussion and argument devoted to the search for definitions. No other interpretation is possible, given that the journey is a journey to view the Forms. For the notion of a Form is first and foremost the notion of that which a definition defines. So the myth really does tell Socrates about himself. He uses the idea of recollection, as he does in the *Meno* and *Phaedo*, to illuminate his own method of philosophising. That is what is common to the three dialogues in which recollection is discussed. They are all reflecting on the pre-suppositions of or conditions for successful philosophical inquiry by the dialectical method of discussion” (Burnyeat, 2012: 248).

¹⁰⁰ γνωσόμεθα δι’ ἡμῶν ἑαυτῶν πᾶν τὸ εἰλικρινές (*Phaedo* 67a7-b1).

¹⁰¹ My duty as “director” of the research centre established at Guangdong University of Petrochemical Technology (Maoming, Guangdong, China) required me to review the various research projects the centre funded. They were entirely unrelated to philosophy but always focused on various aspects of human existence and human nature. All studies were Q1 and Q2 scientific journal level, and I am grateful to the author teams for expanding my understanding of the guiding measure for human nature.

¹⁰² “it is clear that things have some fixed reality (αὐτὰ αὐτῶν οὐσίαν) of their own, not in relation to us nor caused by us; they do not vary, swaying one way and another by our fancy, but exist/are (*eimi*) of themselves in relation to their own reality (αὐτῶν οὐσίαν) imposed by *physis* (πέφυκεν)” (*Cratylus* 386d12-e3). Translated by Harold N. Fowler with modification.

¹⁰³ “Traditionally, only human ancestors were placed in the family Hominidae (and thereby referred to as hominids)” (McNulty, 2016).

¹⁰⁴ The name *Homo sapiens* was applied in 1758 by the father of modern biological classification, Carolus Linnaeus. <https://www.britannica.com/topic/Homo-sapiens>

¹⁰⁵ <https://gregoriusworld.blog/2018/02/28/> Note that the Greeks used other words in order to clarify the intended meaning for “people”. For example, *dēmos* (δῆμος) η *laós* (λαός) (Benveniste, 1973: 537-538).

¹⁰⁶ “Universally, with reference to the genus or nature, without distinction of sex, a human being, whether male or female: ὅτι ἐγεννήθη ἄνθρωπος εἰς τὸν κόσμον (John 16:21)” (Thayer, 1995).

¹⁰⁷ “The name “*anthrōpos*” indicates that the other animals do not examine, or consider, or look up at (ἀναθεῖ) any of the things that they see, but *anthrōpos* has no sooner seen — that is, ὅποτε — than he

man as a physical system. Henceforth, we lawfully call this derived (emergent) property or relation by the name *anthrōpos* and not “man” or any other. The *anthrōpos* concept for us is a “node” that connects anthropological, sociological, and other networks of knowledge about “man,” “people,” etc., and forms a dynamic (temporal) network abstraction.

The network abstraction of *anthrōpos* includes meanings from Plato’s dialogues to modern research. It helps us to discover the first important result in written history. Namely, modern studies of human nature do not refute the early Greek sources in which *anthrōpos* was investigated and which we can evaluate. They merely make their contents, meaning, and scope more precise and accurate. When a professor of anthropology Kieran McNulty wrote in *Nature Education*, “Many researchers now place all species of great ape and human within a single family, Hominidae – making them all proper ‘hominids,’”¹⁰⁸ she implied the same “base, foundation” (*themethla*) upon which Protagoras may have asserted “*anthrōpos* exists/is (*eimi*) the *metron*”¹⁰⁹ and Plato “thought discursively” (*dialegesthai*) “Therefore whatever is *anthrōpos*?”¹¹⁰

My point is that the arguments of modern scholars correlate with the ancient postulates that the “base, foundation” (*themethla*) of *anthrōpos* and, consequently, of human nature is *psychē*. “...and he that surmises otherwise concerning *psychē* knows not that in it he possesses, and neglects, a thing most admirable.”¹¹¹ In the *Alcibiades*, Socrates asks, “Therefore whatever is *anthrōpos*?”¹¹² and answers, “either *anthrōpos* exists/is (*eimi*) nothing at all, or if something, he turns out to be nothing else than *psychē*.”¹¹³

Thus, discursive thinking through of human nature helps us go through various “nodes” (concepts) and networks of knowledge and connect oral and written discourse about *anthrōpos* and its nature. We have discovered a phenomenon that has been abstracted into a network for over two thousand years. The dynamic network abstraction of *anthrōpos* is nested in this network. Both modern scholars and earlier thinkers distinguish and recognize this phenomenon and, consequently, the nature of *anthrōpos* (human nature) as the proposition “*Psychē* exists/is (*eimi*).”¹¹⁴

At this stage, the investigation “What is man as a physical system?” gives us two important intermediate results. The first result, we have discovered and connected the disparate networks of knowledge that conceptualize in the data a phenomenon that we have called the proposition “*Psychē* exists/is (*eimi*).” Thanks to extant written sources, we can observe the properties of this phenomenon for more than two thousand years. We distinguish it as specific structure-

looks up at and considers that which he has seen. Therefore of all the animals *anthrōpos* alone is rightly called “*anthrōpos*,” because he looks up at (*ἀναθρεῖ*) what he has seen (*ὄπωπε*)” (*Cratylus* 399c2-6). Translated by Harold N. Fowler.

¹⁰⁸ (McNulty, 2016).

¹⁰⁹ ‘πάντων χρημάτων’ μέτρον’ εἶναι ἄνθρωπον (*Cratylus* 385e5-386a1); φησὶ γάρ που ‘πάντων χρημάτων μέτρον’ ἄνθρωπον εἶναι (*Theaetetus* 152a2-3).

¹¹⁰ τί ποτ’ οὖν ὁ ἄνθρωπος; (*Alcibiades* 1 129e17).

¹¹¹ ἀλλ’ ὁ περὶ ψυχῆς ἄλλως δοξάζων ἀγνοεῖ ὡς θαυμαστοῦ τούτου κτήματος ἀμελεῖ (*Laws* 5.727e2-3). Translated by R.G. Bury.

¹¹² (*Alcibiades* 1 129e17).

¹¹³ ἢ εἴπερ τί ἐστι, μηδὲν ἄλλο τὸν ἄνθρωπον συμβαίνειν ἢ ψυχὴν (*Alcibiades* 1 130c3-4). Translated by W.R.M. Lamb.

¹¹⁴ “(§106) We next laid down the fundamental principle that we must never try to define the meaning of a word in isolation, but only as it is used in the context of a proposition; only by adhering to this can we, as I believe, avoid a physical view of number without slipping into a psychological view of it” (Gottlob Frege, 1950).

property relationships in non-equilibrium dynamic systems. According to modern views, we speak of the evolution of the human nervous system¹¹⁵ and its expression in the noosphere¹¹⁶ and the anthropocene.¹¹⁷

In other words, we have cleared up the time evolution of the state called *anthrōpos*. Let us describe it with a propositional formula (Formula 1):

(1) *Psychē* exists/is (*eimi*) in the “habitual” manner (*diken*)

In essence, we have become a “witness” of past events. We contemplate the nature of *anthrōpos* as a derived (emergent) property that comes to be (*gignomai*) and exists/is (*eimi*) in the “habitual” manner (*diken*). We really hold its “base, foundation” (*themethla*) and observe the properties that it expresses.

The second result is no less important. We announce it as the *anthrōpos* paradigm. The Platonic corpus and Greek-English lexicons of Henry George Liddell and Robert Scott, Joseph Thayer, James Strong, etc., helped us to clean up an authoritative *logos*. “...as Socrates says in the *Phaedo* (89b9–c1), the only death that he would mourn as a genuine extinction is the death of the *logos* — if it should happen that the *logos* cannot be resurrected (*anabiōnai*: 89b10). Socratic *dialogesthai* is vital to the words of Socrates, revitalizing them every time that the reader rereads them.”¹¹⁸

The *logos* of Socrates and Plato were the boundary between the authority of oral and written discourse on *anthrōpos*.¹¹⁹ Despite the obvious differences,¹²⁰ the oral and written *logos* continue to be “not fruitless, but yield seed from which there spring up in other minds

¹¹⁵ (Sousa et al., 2017).

¹¹⁶ “His (*Teilhard de Chardin*) core concept (his philosopheme) is the “noosphere” (derived from νοῦς: i.e. “mind” or “intellect”), co-developed with biogeochemist Vladimir Vernadsky and referring to the evolving layer of language and communication, science and technology, information and communication, transforming and absorbing both the geosphere and the biosphere, emerging and proliferating *via us*” (Zwart, 2022).

¹¹⁷ “The Anthropocene, currently an informal term, being investigated as a potential series/epoch within the Quaternary System/Period. It represents a time when intensified anthropogenic impacts have caused the Earth System to depart from the comparatively stable conditions that characterized the Holocene Epoch. A Holocene/Anthropocene boundary may be best placed to coincide with a marked inflection in a wide array of environmental proxies at about the mid-20th century” (Zalasiewicz et al., 2020: 1257).

¹¹⁸ (Nagy, 2002: 32).

¹¹⁹ (Smith & Woodruff, 2000; Kalligas et al., 2020).

¹²⁰ “As is well known, Plato was the first collector of books, even though, like his mentor Socrates, he had cast doubt on the importance of written discourse. Diogenes Laertius (54 D.L. 3.9.) speaks of Plato’s systematic quest for and manner of acquisition of various treatises, mainly containing Pythagoras’ theories when he was in Magna Graecia. It seems that Plato’s extensive collection of books played a major role in the teaching process in the Academy. Without the library, study of the pre-Socratic philosophers, of the Pythagorean mathematicians, of astronomy, geography and other disciplines would not have been possible. The Library of the Academy, that is the Exedra or Mouseion of Plato, must have been the model for the founding of such buildings in later times, such as the Library of Hadrian at Athens (Fig. 4.11). Aristotle, who was Plato’s student in the Academy for seventeen years, likewise created his own library in the school he founded in 335 BC, in the gymnasium of the Lyceum. His mentor and Plato’s school were the model for his teaching activity, but mainly for conducting his wide-ranging research and writing his extensive oeuvre. (56 Strabo, 13.100.608–9, refers to the library of the Lyceum as the most important private library of antiquity.)” (Lygouri-Tolia, 2020: 62-64).

other *logos* capable of continuing the process for ever, and which make “their possessor happy (*eudaimōn*), to the farthest possible limit of human happiness.”¹²¹ Used to construct a network abstraction, Socrates’ and Plato’s *logos* represents Formula 1 as Heraclitus’ Πάντα ῥεῖ, “everything flows” and Plato’s *dialegesthai/dialegomai*, “discursive thinking through” rather than “what is said: word, sentence, speech.” As a result, the nature of *anthrōpos* is shown as a movement (work) that originates from prophetic visions and knowledge of the past and passes through Neuroscience and Psychology on the one hand, and Anthropology and Sociology on the other. Moreover, Socrates’ and Plato’s *logos* “continue to yield seed” in logic and algorithms in computational linguistics, data science, machine learning, etc.¹²² It produces post-writing sources.

Thus, I postulate a time evolution of *anthrōpos*.

The combined *logos* of authoritative pre-written, written, and post-written sources, i.e. the “nodes” of our multilayer network, expresses the movement (work) of the nature of *anthrōpos* (human nature). We can now create a *dia-logos* about the “base, foundation” (*themethla*) of the physical system that *anthrōpos* represents. Where the preposition *dia-* emphasizes that we can “go all the way” from the current state of the system to its ultimate beginning. Hence, we can “get beyond an impasse” that the proposition “*Psychē* exists/is (*eimi*)” creates and “goes on”¹²³ into the past to the “‘habitual’ manner (*diken*)” in which the system and, consequently, all its states (equals) exist/are (*eimi*).

In other words, the second result of our ascent into the past is the mastery of an abstract tool (Network Science) and linguistic concepts (“nodes”) that allow us to think discursively about the nature of *anthrōpos* as a state of the system. We “exhibit side by side, make comparisons”¹²⁴ of human nature’s measurable (observable) properties with previous states. We compare the evolution of the human nervous system and the noosphere with the evolution of biological systems and the biosphere,¹²⁵ and other states. We “hold” the time evolution of the *anthrōpos* and pass through the boundary of the eight million-year history of *anthrōpos* into its past. We clarify “What is the ‘habitual’ manner (*diken*) for the *anthrōpos*?” and, consequently, the time evolution of the physical system that *anthrōpos* represents.

Conclusions

The formula “*Psychē* exists/is (*eimi*) in the “habitual” manner (*diken*)” describes the particular state of the physical system. We have rightfully called it *anthrōpos* instead of “man” (human). The network abstraction we have created shows that the first part of the formula, “*Psychē* exists/is (*eimi*),” corresponds to Descartes’ “I am, I exist... necessarily is true.” We see that if we investigate only this part of the formula, we come to an impasse in which the ideas of “planetary intelligence,” “anthropocentrism,” “human planet,” etc. are cultivated. The *anthrōpos* paradigm binds the two parts of the formula. Fundamentally, the *anthrōpos* paradigm leads us from understanding the measurable (observable) properties of a particular state of the system to the measurable (observable) properties of the system.

¹²¹ (*Phaedrus* 277a1-3). Translated by Harold N. Fowler.

¹²² (Hammond, 2020).

¹²³ “A *paradigm* indicates how to go on, how to begin an enquiry or how to get beyond an impasse” (Gill, 2010: 176).

¹²⁴ These are the senses of the verb παραδείκνυμι (Liddell & Scott, 1940). The noun “paradigm” is its derivative.

¹²⁵ (Vernadsky, 1987; Lovelock, 2010).

The *anthrōpos* paradigm “turns” us to *ethos* through which the physical system expresses its “habitual” manner (*diken*) “to come into being to exist/be (*eimi*).” Where the neuter noun *ethos* is cognate with the verb *éthō*, “to be accustomed,” or more precisely, “to do what one is accustomed to do, i.e. on the basis of *habit* or *tradition*.”¹²⁶ We take it as a basis that the expression “‘habitual’ manner (*diken*)” denotes the unmixed/pure (*eilikrinēs*) properties of the physical system, while the concept *ethos* denotes their manifestations as “custom, manner.” Knowing *ethos* leads us to an understanding of the unmixed/pure (*eilikrinēs*) properties of a particular state of the system and reveals a view of the properties of the physical system.

The terms “‘habitual’ manner (*diken*)” and *ethos* are fundamental linguistic concepts and can be used to describe any physical phenomenon.¹²⁷

Formula 1 focuses our attention on the *psychē* concept. On the one hand, the meanings of *psychē* ground the context of the proposition “*Psychē* exists/is (*eimi*).” We remember that reality “should be learned and sought for, not from names but much better through themselves,”¹²⁸ and, in addition, we are guided by Frege’s three principles.¹²⁹ On the other hand, Plato wrote that the *psychē* (and *noūs*¹³⁰) put into order and have the being.¹³¹

The dialectical way to follow (*methodos*) leads us through the current understanding of *psychē* to its original meanings. We again distinguish *psychē* as “breath, life,” and not “the human soul, mind, or spirit” in the broad sense and “the emergence of the cerebral subject,”¹³² “psychic,” “mentality” as certain highly specialized knowledge in the field of psychology and education. We “discover through ourselves” the *psychē* as a derived (emergent) property or relation that, on the one hand, forms the *ethos* that characterizes the everyday movement (work) of *anthrōpos*. On the other hand, we distinguish the “habitual” manner (*diken*), which determines “Me” and “my own *psychē*” as the evolution of the human nervous system. Neuroscience and Anthropology show that the time evolution of *anthrōpos* is a continuation of the time evolution of biological organisms.

We go through the meanings of Formula 1 to the state called the “Earth’s biosphere.”¹³³ We contemplate the multilayer network of knowledge about the various aspects of life processes created by the biological sciences¹³⁴ and find the familiar meanings of “breath, life” in the carbon cycles generated by biological organisms. We move through the evolution of individual neurons and neural systems to the evolution of cell types, their structures, and

¹²⁶ (Thayer, 1995).

¹²⁷ For example, “*éthnos* (ἔθνος) is not solely used of men but also of animals, such as bees” (Benveniste, 1973: 537).

¹²⁸ “How realities (ὄντα) are to be learned or discovered is perhaps too great a question for you or me to determine; but it is worth while to have reached even this conclusion, that they are to be learned (*gignōskō*) and sought for, not from names but much better through themselves than through names” (*Cratylus* 439b6-9). Translated by Harold N. Fowler.

¹²⁹ “P1: Always to separate sharply the psychological from the logical, the subjective from the objective; P2: Never to ask for the meaning of a word in isolation, but only in the context of a proposition; P3: Never to lose sight of the distinction between concept and object” (Gottlob Frege, 1950).

¹³⁰ *Noūs* (νοῦς, noun; contracted form from *Nóos* (νόος)), mind, as employed in perceiving and thinking; an act of mind (thought) (Liddell & Scott, 1940).

¹³¹ νοῦν καὶ ψυχὴν εἶναι τὴν διακοσμοῦσαν καὶ ἔχουσιν (*Cratylus* 400a11-12).

¹³² (Vidal, 2011).

¹³³ (Vernadsky, 1987).

¹³⁴ “The concept includes anatomy, physiology, cell biology, biochemistry and biophysics, and covers all organisms from microorganisms, animals to plants.” <https://www.nature.com/subjects/biological-sciences>

functions in order to clarify the “base, foundation” (*themethla*) of this “breathing, life” and hence the “habitual” manner (*diken*) common to the biosphere and the noosphere. We expect to discover and explore the ultimate beginning in proteins, carbohydrates, nucleic acids, and lipids. However, the multiple knowledge networks created by the biological sciences clearly identify the biosphere and its “base, foundation” (*themethla*) as the state of the system, not the system itself. Biological carbon cycles are a consequence of molecular evolution and, therefore, geochemical cycles.

Stuart A. Kauffman wrote, “Physicists seek to simplify to find laws, biologists to study how life became complex.”¹³⁵ Plato’s dialectical way to follow (*methodos*) is also to advance the “architecture” of mathematics in general and geometry in particular.¹³⁶ Therefore, we go through the evolution of polymers and biological molecules and discover a multilayer network of knowledge about the properties, structures, and reactivities of molecules and intermediate species. Our focus is on molecular quantum properties such as energies, forces, atomic charges, polarizabilities, etc., and the types of chemical environments. It is here that we discover molecular geometry, also known as the three-dimensional spatial structure of a molecule,¹³⁷ and the architecture of the “base, foundation” (*themethla*) that produces the properties of the system. We use recent geochemical data to observe the nonchondritic formation of “life-essential volatile elements”¹³⁸ on Earth during planetesimal accretion, core formation, giant impact(s), impact-induced atmospheric loss, or a combination of all these processes.¹³⁹ We finally realize that the “base, foundation” (*themethla*) of the system that *anthrōpos* represents is the evolution of the terrestrial carbon reservoirs, which is caused by internal and external planetary events. The evolution of carbon reservoirs modifies the distribution of elements within planet Earth¹⁴⁰ and forms the “habitual” manner (*diken*) for a particular system and its states.

I postulate that the “habitual” manner (*diken*) for the system and its states, including the biosphere and noosphere, is the C/X ratios, where $X = N, S, \text{ or } H$.¹⁴¹ In what follows, I will use the concept “‘habitual’ C/X manner (*diken*).”

The concept of “‘habitual’ C/X manner (*diken*)” is based on the properties of carbon to form various compounds with many other elements. Along with hydrogen, the noble gases,

¹³⁵ (Kauffman, 2019).

¹³⁶ “Plato knew very well the mathematics of his time. His dialogues are peppered with mathematics. He is fully aware of the problem of incommensurability (Meno 82b–85b, Theaetetus 147d–148b, Laws 819d–820c, Parmenides 140b–c), the theory of proportions (Timaeus 31b–32c, Gorgias 465b–c, Republic 509d–510a), plane and solid geometry (Meno 82b–85b, 86e–87c, Timaeus 53c–56c, 56d–e), arithmetic (Republic 337b, 546b–d, Parmenides 143d–144a, Politicus 262d–e, Timaeus 35b–36b, Laws 757e–758a), astronomy (Timaeus 38b–39e), and even optics (Timaeus 45b–46c). Nevertheless, Plato was not an active mathematician. There is no evidence from his dialogues that he solved problems or proved theorems. Philodemus refers to him as an ‘architect’ of mathematics and not as a mathematician. Eudemus (in his Summary, 66.8–14) says that ‘Plato ... greatly advanced mathematics in general and geometry in particular because of his zeal for these studies. It is well known that his writings are thickly sprinkled with mathematical terms and that he constantly tries to arouse admiration for mathematics among students of philosophy.’ Plato is not presented here as an active mathematician but as a philosopher who has a great esteem for mathematics and urges younger philosophers to work on it” (Karasmanis, 2020: 117).

¹³⁷ (Fang et al., 2022; Huang et al., 2024).

¹³⁸ (Dasgupta & Grewal, 2019).

¹³⁹ (Mikhail & Furi, 2019).

¹⁴⁰ (Mikhail & Furi, 2019; Dasgupta & Grewal, 2019).

¹⁴¹ (Dasgupta & Grewal, 2019).

the halogens, and nitrogen, carbon is usually grouped as a highly volatile element. At the same time, “carbon is rarely found solely in its natural state (i.e. as graphite, diamond or amorphous). Instead, carbon exists in a variety of materials with different oxidation states (i.e. compounds) that have very different physical and chemical properties. This means that carbon can, under the right conditions, follow the pathway of atmophile (CO₂ gas), lithophile (MgCO₃), siderophile (Cohenite ([Fe,Ni,Co]₃C)) and (very rarely) chalcophile (Carbon monosulfide (CS)) elements.”¹⁴² The main connotation that we convey in the concept “‘habitual’ C/X manner (*diken*)” is the processes involved in the formation of Earth’s carbon reservoirs.

Thus, we refine the propositional formula (Formula 1). Henceforth, the time evolution of *anthrōpos* is described by Formula 1a:

(1a) *Psychē* exists/is (*eimi*) in the “habitual” C/X manner (*diken*)

Now, we have to consider the system that forms the “habitual” C/X manner (*diken*). Only then can we go back to Formula 1a and prove that the nature of *anthrōpos* (human nature) is the process involved in the formation of planetary carbon reservoirs and the flows between them.

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¹⁴² (Mikhail & Füre, 2019).

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