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Episteme and Curiosity: Two Paths of Information Processing

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Abstract: ***Processing information is both an expression of rational capacity and a manifestation of spiritual necessity. It serves as both an ability and a desire, as well as a means and an end. In comparing Aristotle's concept of "seeking knowledge" and Heidegger's concept of "curiosity", this dual tension structure can be presented in the ontological and existential sense. Aristotle's concept of "seeking knowledge" is an inherent determination of human essence, leading individuals to engage with the diverse and complex possibilities of cognitive objects in a manner that seeks to rescue phenomena. This is done through sensory perception, reasoning, and contemplation in the quest for truth, revealing a transcendent path. Heidegger's concept of "curiosity" is a perceptual inclination that invites the world to reveal itself. It prompts individuals to face the world in a state of uncertainty, exploring cognitive possibilities in an ambiguous manner, and causing beings to manifest in the semblance of illusion. This sketches a path where existence inwardly sinks into the world it engages with.***

Keywords: information processing, rescuing phenomena, curiosity, sinking.

1. INTRODUCTION

Human history research indicates that between 70,000 and 30,000 years ago, Homo sapiens underwent a "cognitive revolution" that transformed their rudimentary "language" into true language for thinking and communication. Despite being limited in the range of sounds they could produce, humans were able to utilize these sounds in nearly infinite combinations to convey various meanings, thereby collecting, storing, and exchanging vast amounts of information. Thanks to this development, humans transcended the typical cooperative group size limit of around a hundred individuals seen in other social mammals, and they embarked on increasingly larger and more sophisticated forms of social cooperation.

Since the 1940s and 1950s, the development and widespread adoption of information technology have led to the digitization of information collection, processing, exchange, storage, and handling. Machines capable of processing information have been interconnected, exchanging information with each other, giving rise to a new information system known as the computer network. The internet, which evolved from this system, emerged in the commercial sphere in the 1980s and rapidly expanded globally in the 1990s, forming the cyberspace. Cyberspace encompasses various physical infrastructure, end devices, and networks, as well as structural components like communication protocols, operating systems, and application logic. With the advancement of technologies such as the Internet of Things (IoT), big data, and artificial intelligence, networks have become more intricately connected with humans, fundamentally altering the way humans process information. This transformation has posed significant philosophical and ethical questions, including where the boundary lies between humans and machines in information processing. It also raises questions about the ethical relationship between agents and humans and how the ethical dynamics between humans are influenced by these changes. Answering these questions hinges on understanding information processing itself and what it signifies for humanity.

2. THE BINARY STRUCTURE OF INFORMATION PROCESSING

Genes and code, serving as the foundational logical structures for natural life forms and artificial networks, both process information in binary form. Additionally, human language and numerous sensory inputs can be digitized into this binary structure. Therefore, at the most basic logical level, information is composed of two elements, such as A-T (adenine-thymine) and C-G (cytosine-guanine) in genes, 0 and 1 in computer coding, as well as yin and yang, black and white, true and false, and is and is not. This binary structure in information logic encompasses infinite possibilities, and processing information entails providing certainty amid these numerous possibilities. However, information processing must align with the logical structure of information, so the certainty it offers is based on the binary foundation of information structure. Therefore, concerning the content of information itself, its underlying logical structure is binary, but the binary structure of information processing is not solely limited to

this alignment with the information logic structure; it involves substantial contradictions and oppositions.

2.1 The Binary Structure of Ability and Demand

Processing information is primarily an ability, and this ability is not unique to humans in the general sense. Most life forms and some machines possess the basic ability to process information. In this sense, information functions more like a stimulus that triggers subsequent responses. Within the human body, there are also numerous simple reflex structures for this initial information processing. This preliminary processing is unconscious. However, humans have a distinct, conscious ability to process information. It serves as a concentrated embodiment of rationality and advanced emotional capabilities, involving a series of steps such as collecting, filtering, reasoning, judging, understanding, remembering, expressing, and conveying. Each step exhibits individual differences, resulting in complexity and diversity. Simultaneously, this ability seeks commonalities, regularities, and certainties. This pursuit manifests as a need for regularized theories and structured knowledge and a demand for information that aligns with and reinforces this structure. Typically, abilities are used to satisfy needs external to the abilities themselves (e.g., the need for food external to the digestive ability). Once external needs are met, abilities lose their driving force and triggering mechanisms (e.g., no longer desiring food after being full). However, the paradox of the binary structure of information processing lies in the fact that the ability to process information inherently includes a need for information processing. This ability is continually employed to satisfy the needs it creates or, more simply put, its own utilization becomes the desire it seeks to fulfill. Specifically, games, exemplified by traditional card games, vividly illustrate this dual structure of "satisfying spiritual needs". The progress of these activities enhances the ability to process relevant information, and this enhanced ability, in turn, generates the demand for engaging in these activities. In the age of the internet, games have undergone further developments, but fundamentally, they continue to embody the concretization of the binary structure of information processing ability and demand. Moreover, within various subcultures such as fandoms, cinephiles, military enthusiasts, political enthusiasts, and entertainment enthusiasts, one can observe this dual structure of ability and demand. Individuals within these subcultures skillfully harness their abilities to acquire, organize, and disseminate information. This utilization of abilities then generates a spiritual need, driving them to further obtain or share related information.

2.2 The Binary Structure of Means and Ends

Processing information is first and foremost a means, and in this sense, like abilities, the instrumental aspect of information processing is not unique to humans. The majority of life forms, including humans, employ information processing as a means to achieve the purpose of sustaining their survival. However, what sets human consciousness apart is the further questioning of the purpose of survival. This gives rise to a chain of purposes for actions, which must converge on an entity or activity that serves as its own purpose to avoid falling into an infinite loop. The ability-demand binary structure of processing information can be coupled with this, and as a result, the activity of processing information, originally conceived as a means, acquires ontological significance when it also serves as a purpose. Thus, processing information occupies both ends of practical activities, serving as both the most fundamental means to accomplish practical tasks and as the ultimate purpose that provides meaning to these activities. When an activity serves both as a means and as a purpose, it becomes necessary to delineate which aspects are used as means and which aspects provide meaning. However, this delineation is often unclear. Information processing as a means has the potential to be valorized and idealized (e.g., through labeling and identity politics), while information processing as a purpose can be commodified and instrumentalized (e.g., the commercialization of faith and excessive entertainment). In essence, due to the ambiguity of boundaries, the delicate balance between purpose and means can easily be disrupted, leading to one side suppressing the other. Therefore, maintaining this subtle equilibrium between purpose and means requires vigilance, as the blurred boundaries can result in one side exerting undue influence over the other.

In the above-mentioned dual structure of A and B, the A structure delineates two aspects, with "ability-demand" inherently containing each other but directing activities in different directions. The B structure describes two distinctly different and opposing forces that emerge at the two ends of practical activities along these two directions. This gives rise to two paths: one is the "transcendent path" where function is elevated to purpose, and the other is the "sinking path" where means are sought due to necessity.

3. THE PATH OF TRANSCENDENCE: AN ANALYSIS OF ARISTOTLE'S CONCEPT OF "EPISTEME"

The pursuit of knowledge encompasses a desire that directs itself toward wisdom, the attainment of which requires

rational capacity. Therefore, the concept of seeking knowledge serves as a bridge between the desire rooted in sensory capacity and the wisdom rooted in rational capacity. Aristotle initiates his discussion on seeking knowledge at the beginning of "Metaphysics", stating, "All men by nature desire to know. An indication of this is the delight we take in our senses; for even apart from their usefulness, they are loved for themselves; and above all others the sense of sight". As analyzed in the preceding section, the capacity for information processing is a natural ability that includes both sensation and cognition, with the former being more fundamental and widely present in non-human organisms. Aristotle, in his functional analysis of life activities and examination of various forms of life, posits that sensory capacity is shared by all living creatures. This sensory capacity, in fact, constitutes the rudimentary ability for information processing, upon which human rational capacity is built.

In his work "An Essay On Man: an Introduction to a Philosophy of Human Culture", Cassirer points out that Aristotle's opening statement is essentially asserting that "all human knowledge originates from a fundamental inclination inherent in human nature—an inclination that manifests itself in all of humanity's most basic actions and reactions. The entire content of sensory life is determined by this inclination and fully embodies it". According to Aristotle, nature implies a natural tendency, which is the unity of desire and capacity. "In nature, things are always arranged for the best". Therefore, nature, while endowing things with certain inclinations, also imparts the capacity to fulfill these inclinations. A capacity without desire or desire without capacity is unnatural. Taking this line of thought further, capacity is linked to purpose. Each activity points towards a certain purpose, forming a sequence. In this sequence, if only one purpose is perfect, that is what is sought. If there are several perfect purposes, the most perfect among them is what we seek. "Honor, pleasure, understanding, and each virtue we certainly choose because of themselves, but we also choose them because of happiness. No one chooses them for the sake of these things or anything else". Happiness is self-sufficient, perfect, and the most worthy pursuit, thus becoming the purpose of all activities. What is it then? Or rather, what is the most worthy pursuit of happiness for humans? If there is a specific activity exclusive to humans, then human perfection lies in the perfection of this activity. Growth and sensation are not unique to humans, leaving the rational part as the distinctive human activity. Therefore, human activities are the fulfillment or containment of logos, and a good person means one who can perform this activity well and nobly. Thus, starting with the "pursuit of knowledge", oriented towards capacity, it ultimately leads humans to contemplation. "Contemplative life is the most perfect happiness". This path can be called the transcendent path because the ultimate achievement of contemplative life is divine and transcends ordinary human happiness. "This is a better life than human life. For a person lives not with his human part but with what is divine within him, and he lives this kind of life".

Within the framework of the binary structure established in the preceding text, this divine contemplative life can be understood as an advanced information processing activity. It desires its own application, achieves the convergence of the purpose chain, and thus exists as the highest and self-sufficient purpose. Proficiently utilizing the capacity for information processing to fulfill its own desire constitutes the highest good. At the other end of the chain, those basic instrumental information processing activities serve as means. Here, the utilization of information processing capacity is aimed at accomplishing other purposes, constituting concrete goods. As information processing activities bifurcate, so does information itself. Simple information such as sound, images, and sensations generated in instrumental information processing activities give rise to complex information like experiences, concepts, opinions, and imaginations. Contemplation, as a purposeful information processing activity, attempts to employ rational capacity to derive knowledge and truth from this complex information. However, the knowledge and truth obtained may still be a form of experience, opinion, or even illusion. Therefore, the abstraction achieved by theory from empirical phenomena becomes a simplification of the theory itself. This simplification is not directed at the phenomena or the information itself but rather at a cognitive structural framework. Rather than rescuing phenomena, it can be said that theory makes phenomena more complex because theory itself, as information, becomes the object of cognition. Humans not only perceive phenomena but also perceive traditional ways of understanding phenomena. Tradition offers numerous internally consistent cognitive paradigms, resulting in diversity and differentiation. As a result, with the evolution of history, theory itself inevitably becomes more complex. This evolution from simplicity to complexity essentially signifies the deepening and refinement of research and cognition. Research and cognition invariably interact with or apply themselves to practical contexts in various ways, and their inherent diversity and differentiation further increase the complexity of information. Hence, a set of contradictions arises: theory simplifies information in various ways, yet the information itself becomes more complex. Moreover, the more theory attempts this, the more it needs to overturn the information processing paradigms of its predecessors. These paradigms are deeply rooted in tradition and history, leading to a stable and enduring tension between the two. When this tension operates in the realm of political, religious, and value concepts, it exhibits diversity, differentiation, and even conflicts and disputes.

Aristotle emphasized a methodological approach that places significance on examining the opinions of predecessors and popular views. These opinions may appear simple, lacking in-depth contemplation and high-level abstract generalization. However, when contextualized within their respective backgrounds and conditions, they often contain truth. Aristotle introduced a highly important method, stating that if a premise is true, all the evidence aligns with it; if it is false, all the facts conflict with it. He brought forth traditional views and widely accepted opinions to assess their compatibility with the concepts discussed earlier. Although these views and opinions may be fragmented, they align with the concepts presented in the study. As a result, they are integrated under a single concept, forming the method of rescuing phenomena and gradually seeking patterns and truths. Is there a method of information processing that can accommodate all views and opinions? On the transcendent path of seeking knowledge, such a method does not exist because the pursuit of knowledge seeks truth. It aims to identify patterns within the complexity of phenomena and determine the validity of these patterns. Consequently, there will inevitably be some patterns that do not align, or some information that is false. However, on the sinking path, information is processed in an ambiguous manner in everyday life, allowing it to encompass all views and opinions and exhaust all possibilities.

4. THE PATH OF IMMERSION: AN ANALYSIS OF HEIDEGGER'S CONCEPT OF "CURIOSITY"

On the transcendent path, the pursuit of knowledge and truth by humans represents an adherence to order and certainty. From the perspective of desire, information processing reflects an aversion to randomness and uncertainty. Therefore, on this path, there is no need for purposeful guidance, and any means that can provide certainty and a sense of security are considered. Consequently, when the everyday world of ordinary people can largely satisfy this need, they are easily drawn into it. However, in reality, human existence is not predetermined but filled with various possibilities. Based on these possibilities, expectations arise, as do corresponding concerns. These expectations and the subsequent disappointments when expectations are not met, along with the concerns and relief after surviving a crisis, all revolve around planning and caring about possibilities. Martin Heidegger uses the term "Sorge" (often translated as "care" or "concern") to describe the essence of human existence in the world: "Existence in the world is essentially caring... The existence present-at-hand in terms of what is objectively at hand can be grasped as something that is being taken care of, and coexisting with others in their being-in-the-world can be grasped as something that is being attended to". In this sense, human existence revolves around the choices, planning, and responsibilities associated with possibilities. Conversely, death signifies the end of possibilities. When one can confront this possibility, existence can be understood through the lens of the world, others, and oneself. Plans can be made in response to possibilities, leading to a state of "being-able-to-be": "Existence as something that can be understood in terms of its own most can-be is a manner of being of existence, which can understand itself in terms of its own most can-be. This unfolding state of its own most can-be points out the most primordial truth phenomenon in the style of primordial being". This form of existence allows individuals to have agency over their own existence, deciding how it is presented, as they are cast into a world filled with possibilities. However, it can also lead to a non-authentic mode of existence in which one diverts attention away from their own most can-be and turns toward the "world". Heidegger refers to this state as "falling". In this state, individuals detach from their genuine understanding and unfolding of themselves and dissolve into the shared world. They lose themselves in everyday life and drift away from their true essence. The concept of "curiosity" comes into play within this structure, as it, along with "idle talk" and "ambiguity", represents three ways in which individuals coexist with and become immersed in their world of labor.

"Curiosity" is a daily-life phenomenon that is similar to "seeing" and represents a specific inclination to let the world present itself. When one steps away from the immediate tasks at hand and gains some leisure, they don't completely detach from the visual orientation that guides their work. They continue to gather information about the "world", not for the purpose of bettering their work or achieving a specific goal but simply because they want to look: "It leaves what is at hand nearby and turns toward the distant and unfamiliar world. Care becomes a kind of engagement with such possibilities: resting, staying around, and just looking at the 'world'". This act of looking constitutes how they grasp the 'world' and derive certainty from it. Unlike the pursuit of knowledge, this form of curious looking does not lead to contemplation: "Free and idle curiosity is concerned with seeing but not in order to understand what is seen, that is, not to enter into a mode of being toward what is seen, but merely for the sake of looking. It is eager for novelty and only stops at what is new, in order to jump to another novelty". Curiosity does not seek truth: "Curiosity is engaged with a kind of knowing, but only for the sake of knowing". This state is sufficient to satisfy its need for certainty in everyday life. In other words, it can provide an adequate amount of information to meet the needs of ordinary information processing. Of course, the appearance of these novelties often requires some form of explanation; otherwise, they would still point to the uncertainty that it seeks to avoid.

However, in the daily immersion of falling, the need for explanations does not lead to a desire for truth but rather to "idle talk" and "ambiguity". Idle talk in daily life can contradict and even be completely opposite to one another, but because it is a form of casual expression, it does not rigorously seek correctness. Therefore, it does not concern itself with errors. Furthermore, because it exhausts all possibilities, it includes correct explanations. So, upon reflection, people often feel that it contains insights into truth. In reality, for any given judgment, one opinion may say it is true, while another may say it is false. Within this structure of ambiguity, all possibilities are exhausted. When one carefully and thoroughly applies rationality to make a judgment or propose a theory, the daily response to it is: someone has already said that. Therefore, on the path of falling, information interprets every possibility through exhaustive means, but it also negates every possibility. Truth becomes obscured among numerous illusions, and the authentic state of being is concealed. It is no longer an active engagement with possibilities, but rather satisfies daily explanations, admires casual talk insights, finds stability in the "world", and entrusts the choices regarding possibilities to others without the need to bear responsibility. This processing of information inevitably leads to a confusion and mixing of knowledge and opinions.

5. BOUNDARIES OF OPINION, KNOWLEDGE, AND INFORMATION

It is indeed challenging for the human mind to distinguish between information, opinions, and knowledge. This difficulty may arise because the mind tends to process these three categories in roughly the same way, or it could be because information, opinions, and knowledge share similar characteristics. For researchers, opinions and information both fall under the umbrella of knowledge. For artificial intelligence, opinions and knowledge are both types of information. And for the general public, information and knowledge are often treated as opinions. The categorization is typically made in hindsight, meaning it is determined after these contents have been processed. In ancient Greece, the concept of information as we understand it today did not exist. However, they were meticulous in distinguishing between opinions and knowledge, considering the latter to hold higher status as eternal and true, while the former was seen as constantly changing and susceptible to emotional and preferential influences. With the introduction of the concept of information, the relationship between these three categories becomes more intricate. Each of them can serve as a basis for distinguishing the remaining two. As mentioned earlier, the quantity of information can be used to differentiate between knowledge and opinions. Knowledge can be further divided into information and opinions. Within the framework of knowledge, valuable pieces are those bits of information that can be confirmed or refuted, while emotions, attitudes, and stances are considered opinions. Both knowledge and information tend to marginalize opinions, classifying them as a lower-value category. Opinions, on the other hand, distinguish knowledge and information by sincerely expressing themselves. They often believe they are conveying something real, and to establish this reality, they often rely on knowledge and information. The criteria are that knowledge is based on the general validity of a statement, while information pertains to specific instances.

There are indeed many commonalities among these three categories: information, opinions, and knowledge. They all serve as bases for making decisions and have standards for their reliability. Generally, people often perceive themselves as making judgments based on knowledge and information, while opinions can sometimes be seen as knowledge or information. The former situation is more prevalent in the humanities, where the viewpoints of authorities are often regarded as having a sense of truth. The latter situation is more common in the fields of science and social sciences, where information is selectively collected based on experimental purposes and ideological preferences. In cases like these, the criteria for such judgments may appear reliable in form but are not always reliable in practice. This does not necessarily mean that opinions themselves are unreliable, but rather that criteria applicable in one domain may become unreliable when applied in another. Knowledge is suitable for long-term, universal domains (e.g., science and technology), information is suited for dynamic universal domains (e.g., business and warfare), and opinions are suitable for empirical, specific domains (e.g., the everyday world). Due to the potential negative effects of mixing these categories, opinions are often resisted, excluded, or cautiously avoided. Information and knowledge are both considered virtues of objectivity, with the common assertion being that opinions always attempt to disguise themselves as knowledge and information, compromising their objectivity. Therefore, researchers should strive to avoid the influence of opinions because opinions are often associated with bias. However, opinions are fully susceptible to the influence of knowledge and information within their own domain. The result is that objectivity and universality encroach upon the specificity of the everyday world, causing it to lose vitality and become increasingly stagnant. Excessive knowledge and information disrupt life; they overexplain it, deconstruct it, and fragment it. Opinions and beliefs are closely related, with opinions often relying on beliefs for support. In places where opinions should play a role but are suppressed and gradually stifled, beliefs also face a similar fate. The suppression of opinions by knowledge and information is a means by which technology and capital suppress beliefs. Religion and ideology, as common forms of beliefs, once suppressed capital and

technology. Still, in societies that have undergone demystification and depoliticization, the roles have reversed, with capital and technology retaliating, encroaching upon the everyday world. In the everyday world, forming opinions, expressing them, and exchanging them is the most normal and genuine way to engage with opinions and the essence of the everyday world. However, people, especially those who have received higher education, often feel ashamed of forming opinions. They seem to believe that opinions laden with emotions and "bias" are uncivilized and tarnish their image. They use a different term — "viewpoints" and often preface it with "my viewpoints". They prefer to express viewpoints rather than opinions, using knowledge and information to package opinions and make them sound rigorous, impartial, elegant, and tactful.

From a spatial perspective, knowledge dissemination is the most challenging, but from a temporal perspective, knowledge can be preserved for a relatively long time. This explains why the Greeks regarded knowledge as truth and eternity. On the other hand, opinions are the opposite of knowledge. Opinions are easy to spread widely but are also highly variable and not easily preserved. Gustave Le Bon's book "The Crowd: A Study of the Popular Mind" describes how the dissemination of opinions can lead to collective irrationality. It's worth noting that this book itself expresses opinions and received considerable attention for a work that did not have particularly strong knowledge content. This illustrates a fact that contradicts the book's viewpoints: the expression and dissemination of opinions are not always destructive and irrational. Opinions can also contain insightful content, and good opinions have their rationality. Le Bon's perspective, which ties irrationality and opinions together, is influenced by the rationalization process of modernity. Opinions are closely linked to demystified beliefs and primarily consist of teleological rationality rather than instrumental rationality. While opinion holders often believe that they provide effective means to solve problems, these means often lack true and rigorous instrumental rationality. This is precisely why opinions are criticized—they tend to be presumptive and do not rely on data and knowledge systems. As a result, opinions are rejected by modernity due to their lack of instrumental rationality, but their teleological and inspiring aspects are also rejected, similar to Hegel's statement about throwing out the baby with the bathwater. While Le Bon's view that opinions are entirely irrational is somewhat extreme, it hits the nail on the head in some respects. Just like the two decision-making systems in humans, society may also have two systems: the opinion system and the knowledge system. Widely circulated opinions, like intuitive thinking, are simple, quick, but prone to errors due to their hastiness. In contrast, the knowledge system is rigorous, cautious, but slower and more labor-intensive. Information flows through both systems, much like blood, and the content of the information determines which system is predominantly used. The spiritual turmoil and hysteria of the Information Age are rooted in the confusion between the opinion system and the knowledge system. These systems should operate in their respective areas of expertise, but due to the excessive flow of information, one system's operation is influenced by the other. Opinions and knowledge are negatively pitted against each other, hostile, mutually critical, and each attempts to overpower the other. This results in both systems being unable to function properly. Knowledge is disseminated in the form of opinions but loses the motivation and ability for more in-depth research. Opinions, masquerading as knowledge, infiltrate the knowledge system but increasingly detach from the everyday world.

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