# Toward the 22nd-Century World Philosophy (II)

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"What is the purpose of philosophy?" This question reflects a suspicion always directed toward philosophy while simultaneously representing a challenge that philosophy imposes upon itself. For the meticulous recognition and confirmation of facts, one could hardly conceive any procedure superior to science and technology. However, if the scientific method represents the yardstick of all knowledge, is the only task remaining for philosophy akin to gleaning what is left when the crops have been harvested?

The purpose of philosophy is to expand the range of possibilities of experience and to confer it with elasticity and expand its range of motion. When Kant defined philosophy as the elucidation of the "conditions of the possibility of experience," he established the premise that human potential had already been determined somewhere in advance, but this premise that human potential is predetermined is unique to the "classical period" of philosophy. What is needed, rather, is the elucidation of the "conditions for expanding the possibilities of human experience." I intend to demonstrate the kind of program that should be put together to this end with a few examples. This type of philosophy, in the terms of empirical science, is closest to "medicine," and, furthermore, adopts the guiding principle of "anything goes" in the sense of using anything that can be used or can be used effectively.

## 1. What to Use as Clues? What to Use as Subject Matter?

The approach of executing all intellectual quests using natural scientific methods as a model is called "naturalism," while the approach of executing scientific procedures up to and including epistemological reflection is called "scientism." It is important to clearly delineate these two mechanisms, as scientism is a mechanism that adjudicates knowledge under methodological controls, as evident in the "falsificationism" best represented in Karl Popper's logical positivism. Further, as scientism is also a methodological procedure wherein even the mechanisms of reflection are executed scientifically, it actually narrows the breadth of experience itself. As historical fact, a successful scientism does not exist.

**Scientism**

Falsificationism consists of two basic components, namely, (1) the attempt at a critical examination of individual facts and (2) the presentation of a bolder hypothesis. A major premise entailed when critically examining facts or theoretical hypotheses is the mandate to decide the truth of the matter in question. However, there is an overwhelming preponderance of things, including matters like evolution and psychoanalysis, for which truth or falsehood cannot be easily determined. Truth or falsehood are determined only in situations where the "law of excluded middle" is maintained. However, there are innumerable instances of events for which we cannot know whether the law of excluded middle applies. Hegel's dialectic was established by dispensing with the law of excluded middle at the outset.

In general, many basic scientific laws cannot be adjudged as either true or false. For example, the most basic law of

motion (Newton's First Law) already presupposes itself when conducting various examinations. Even when conducting measurements using a timepiece, it is assumed that the movement of the second hand covers the same interval every moment. Thus, the law of inertia is already presupposed. The truth or falsehood of the law itself cannot be determined by means of empirical measurement.

Accordingly, the law of inertia is more akin to an axiom than a law; the significance of the law of inertia is that it has eliminated many problems that have historically been challenging, i.e., rather than solving these many problems, this law eliminated them by identifying them to be pseudo-problems.

So what should we to do "present a bold hypothesis" as in (2) above? Seen in evolutionary terms, it seems that chances for speciation through mutation must frequently arise as the result of stochastic probability. However, even when a new species appears, it seems almost a fact that it will be overwhelmed in the face of the existing species in the stable ecosystem and thus disappear in the blink of an eye. A bold hypothesis in this context would be meaningless by itself. Instead, it is now necessary to present a "hypothesis that can be sustainably developed." In this occasional temporal context, we cannot be certain whether individual hypotheses qualify as "bold" or indeed have any prospect of developing. Thus, according to falsificationism, epistemological scrutiny using the scientific method is unlikely to be successful. In other words, when the scientific method is applied to epistemological scrutiny, an object suited to the method that is being applied must already have been selected, which means that the very act of applying it cannot remain within the framework of the scientific method.

Reflection on knowledge in general must include not only the scrutiny of truth or falsehood but also the possibility of the further development of that knowledge itself. At the same time, through this, we must heighten the elasticity and expand the range of motion of experience itself.

Scientism misunderstands the origins of science itself. Modern science is presumably a task that is conducted in a topological space stretched across three coordinate axes. Time is posited independent of motion, and space is posited independent of matter. Here, the mindset that appears in the foreground performs the operation of "limit-creation"–what the phenomenologist Edmund Husserl called "idealization." Galileo introduced the absurd mechanism of assuming that limits exist in the midst of reality, and he also designed these limits as something that could be initial "settings," like a previously existing coordinate axis. The word "setting" is freighted with considerable baggage, but perhaps the nuance closest to what I mean here is "setup."

In doing so, it became possible to link measurements to coordinate axes, thereby introducing a mechanism allowing for various changes to "degrees of measurement" (i.e., "units of measurement") in quantitative science. In fact, this state of affairs meant that time and space could both be prepared through measurement. However, time in terms of measurement is only an index. Limit-creation is the extraction of this index as an independent coordinate axis. Here, coordinate axes and measurement are intrinsically linked. These then came to be linked to algebra, which at that time was unknown outside of private circles. This was the birth of the X–Y coordinates (i.e., the Cartesian coordinates). Herein are written the various laws of physics. The setting of coordinate axes by limit-creation, which is to say the trinity comprised the setting of variables, arbitrary changes of units of measurement, and mathematical notation, determine the structural framework of modern physics. When this kind of mechanism is interrogated as a new problem, science itself is exposed to the pressure to develop separate possibilities. Asking after truth and falsehood within frameworks that already exist comes for the most part to be a discussion without merits.

**Naturalism**

Following the death of Hegel, naturalism saw rapid expansion after the mid-19$^{th}$ century, changing not only methods of inquiry but also intellectual attitudes. The *Annelen* published by the chemist Justus von Liebig (Giessen University) provided a method that became the model. With its method of concisely describing only the facts available to empirical

elucidation, it became the classic example of scientific description. Prior to that, intellectual inquiry had been based on the *Encyclopédie*. In this mode, rather than those that they had revealed themselves, authors had written comprehensively about facts and findings that had already been elucidated, describing them as an aggregate body of knowledge. However, after Liebig, scientific description eschewed extraneous description, drawing a clear distinction between previous findings by others and those revealed by the author and describing only the latter. Hence, science and philosophy were separated from each other in terms of both their method of inquiry and their approach to description. Later, the further expansion of science, divorced from philosophy, engendered the birth of naturalism.

Naturalism came in several types. It is an approach that takes specific concepts from within science, for example, and then assembles a view of the world around them. Wilhelm Ostwald took the word "energy" and placed it in a key position to develop the term as a theory of the world, independent of the laws of science. Around the same time, the German zoologist Ernst Haeckel also presented a consistent scientific worldview centered on the theory of evolution. Both these examples are described by a mechanism of the scientific world's consistent expansion into an intellectual theory of the world. In other words, the task of explaining the world in a consistent scientific manner was being carried out beyond the scope of contemporary scientific explanation.

**Scientific Monism**

In Haeckel's case, and in a way peculiar to the theory of evolution, the battle against traditional religious doctrine and the battle against spiritualism had to be waged on two fronts simultaneously. The "banner" carried into this fight was that of "monism," and at the end of the 19th century, the monistic movement constituted a kind of social activity. What was happening here was scientific enlightenment, an advancement of the claim that science represented a powerful worldview. Haeckel dubbed the smallest biological unit, which no one had ever seen, with the name "Monera," from which he depicted the evolutionary formation of all phenomena. In this way, the consistent expansion of a scientific worldview into a theory of the world was in due course trespassing beyond the boundaries of the already-scientific.

There were also arguments to expand specific laws into the realm of theory of the world. For example, Herbert Spencer conceptualized a mechanism that adapted evolution to all phenomena, including human beings, and considered the proper place of human beings to be within this cosmogony. Spencer consistently made use of the principle that "evolution is an increase in heterogeneity" as an explanatory principle. As increasing heterogeneity encompasses malformations, diseases, and retrogression, the meaning of evolution had to relatively change. In other words, increasing heterogeneity, despite being an assertion of diversity in the world, differs from the idea of a tendency for organisms to evolve toward a higher order.

In Spenser's conception, the emergence of individual objects from a nebulous and uniform world was a fundamental aspect of evolution. However, once an individual object has emerged under certain historical conditions, it is actually quite difficult to conceive of further evolution by the same mechanism.

**Methodical Procedure**

There is, further, a kind of naturalism that elaborates methodical procedure *tout court* as a mechanism of knowledge. For example, by applying mechanistic theory indiscriminately to all areas, it depicts a mechanistic image of the world. In this case, the world image is already mechanistic and its key principles already determined. As such, the challenge is now to derive from this a great number of formulations akin to scientific laws to refine the inner workings of mechanistic theory. This was the approach taken by Descartes himself.

Here, mechanistic theory demands that the world be constructed in a consistent fashion using as few elements as possible and that there be a "steady regularity" in the relationships among these few elements. If we can proceed in this manner, this is precisely how mechanistic theory is itself examined and justified in each instance. Mechanistic theory,

initially a worldview, was at the same time a reimagining of methodical procedure, a "science of discovery," so to speak. Descartes himself also produced scientific results, as with his contributions to the law of conservation of momentum and the law of refraction.

This conception of mechanistic theory is always open to the possibility of new developments, as machines that are invented one after another can serve as new models. In that, we can visualize phenomena, so to speak, by regarding such machines as models; these came to have overwhelming strength relative to existing knowledge. For example, let us consider the organ of the heart. While we can examine the structure of the heart by dissection, this tells us nothing about the movement of the heart. Thus, we use the pump as a model to think about the movement of the heart. The pump mechanism visually displays the movement of the heart as though by the application of a magnifying glass. Newer and improved versions of pumps give us insights into even more intricate movements of the organ. In the mechanistic world, machines replaced linguistic expressions (technical terms) of philosophy, a legacy acquired from ancient Greece and Rome, to become the principles that directly revealed the mechanisms of the world.

Descartes, when analyzing the microscopic structure of liquids, likens the minute particles that are observed to eels. Here, we find Descartes's talent of visualization. He does not use words such as "pliant and tiny particles" or "fine particles with gaps." Rather than expressing it in words, he simply uses an "object" as a metaphor. As an object, the word "eel" becomes a simile. It is an object that expresses the nature of an object. In this way, mechanistic theory changed the scope of metaphors and thus the mechanism of the world, i.e., words have changed from the hidden metaphors that permeated human consciousness to a "physical language" through which objects express facts directly. Although mechanistic theory originated in Europe, it spread across the globe with the advance of the Industrial Revolution. The human body is also a machine, and it was said by the French physician La Mettrie that even the human spirit and soul are machines.

**The Expansion of Science**

Furthermore, among scientific principles is the concept, posited at the limits of science, that laws cannot be established as science. This is also true of the law of entropy (the second law of thermodynamics), while the theory of the origin of the universe (the "Big Bang") offers another example.

Some of the methods included here are not as empirical as scientific laws. In the case of the new emergence of reality itself, for example, this is because they deal with phenomena that precede any measurable empirical science. The mechanism by which the scope of reality changes is broadly evident in discussions of "self-organization." The emergence of a new reality was the very thing that spurred a change in the way we interrogate the world.

This trend began in the 1950s and, with the participation of many scientists, was sustained until around 1980. This was the age of so-called "systems science," when many scientists achieved a kind of celebrity status. Ilya Prigogine in France and Hermann Haken and Manfred Eigen in Germany were awarded Nobel Prizes. The systems science of this period did not involve many Japanese participants. Although I do not entirely understand why, these ideas were relatively unfamiliar in the Japanese context. Chaos theory was one of the systems-type ideas that emerged during this period. While there were several talented Japanese physicists at this time, their achievements were not noteworthy.

A large number of practically applicable scientific ideas came out of this period. Erwin Schrödinger, who worked on quantum mechanics, pointed out that the phenomenon of life ran counter to the mechanistic macro tendency of increasing entropy. This led him to propose the term "negative entropy." Such terms are always a kind of metaphor. Metaphors that can be used effectively should have an inspirational power that leads to discovery. The existence of negative entropy as some elementary substance seems unlikely. If so, this word should point to some kind of systemic motion. A word succeeds as a word only so far as it can be procedurally deployed.

So how does the "self-organization" argument differ from mechanistic theory? In the latter, the world is basically

created as a machine and is explained by mechanistic rules and the mechanical movement of mechanistic elements. These elements are assembled consistently, solely from linear and circular motions and interactions. In contrast, self-organization inquires into the "mode of movement." Once this theme took center stage, philosophy encountered a major test.

The main clue of philosophy is language. In language, "concepts" become generalized. The task of elucidating concepts is incorporated into the basic task of philosophy. However, language that expresses movement is essentially a verb, and verbs are extremely limited in number. There are not enough words to discuss movement with words. Moreover, although change is in any case included within movement, it is close to impossible to consciously apprehend change. It is only the results of change that we can consciously apprehend. Movement cannot be perceived directly, and consciousness can only know its outlines. Because of this, the philosophical apparatus for examining movement is overwhelmingly lacking.

**Diversity of Movement**

To that end, we must create a new toolkit. This means to categorize typical forms of movement and posit new modes of movement therein. In doing so, we find that many of the phenomena that we have grown accustomed to can be categorized therein. For example, "eddy" and "tornado" represent one typical mode of movement. These were commonly referred to as "dissipative structures." For example, in the flow of a river, small pieces of debris will sometimes get snagged because of the unevenness of the riverbed, resulting in rotational movement around the debris and forming small eddies. The appearance of such new things is referred to as "emergent."

The immediate cause of such processes is something "accidental." No specific factor signals the beginning of this type of movement, and there is no cause to which this beginning or its subsequent development can be attributed. Moreover, even if debris does get caught on the unevenness of the riverbed, there is no guarantee that an eddy will be formed. There is a forking in the development of the process, and a "fluctuation" is included at this point of divergence. The process has no unique deterministic relationship. Hence, to render the development of this process in formal terms, we would say that it is "a chain of processes in which a given process is linked in such a way that it constitutes the initial conditions of the subsequent process."

The appearance, disappearance, and reappearance of eddies repeats so that the eddy itself represents a type of a mode of movement. Human cognition is adapted to perceiving persistent "shapes" that are formed within movement. However, although movement itself can be felt as a sensation, it cannot be perceived directly. "Persistent shapes" are by-products of movement. This means that cognition, for a long time, has perceived the by-product as the essential thing. The shape of the eddy is a by-product of the movement that is only maintained for a short period of time. Moreover, the shape of the eddy actually continues to change at each instance. As a rule, no two eddies will have the same shape. The movements that form them are aperiodic and irregular. Such modes of movement are characteristic of chaotic motion.

When an eddy occurs, in some cases, several accidents overlap, resulting in the formation of a larger eddy that in turn can even reorganize the arrangement of the riverbed that constituted the initial conditions for its formation. In this case, not only is some shape of movement (in this case the eddy) formed from the initial conditions, but the mode of the movement even reorganizes these initial conditions. The movement that develops by reorganizing the conditions of its emergence is no longer determined by either its initial conditions or the destination toward which it is headed. The mode of movement that has progressed to this stage has already entered into "autopoiesis."

This perspective would seem to suggest that there exist quite a few modes of movement that have not yet been categorized for the purposes of philosophy. Moreover, there are many phenomena that remain inaccessible when conceptualizing from language. Hegel's dialectic was a typical formulation of movement constructed from language. The dialectic completes the mechanism of affirmation and contradiction seen in language by bringing it into the logic of

movement. Sketching out only the framework, in dialectic, a model has been worked out of a subject's advancement to the next stage by using contradiction to consciously perceive his or her own limits and thus transcend them further through internally including (sublating) the possibility of this transcendent self as an "opportunity." While dialectic uses linguistic affirmation and contradiction as its dynamic, movement itself becomes more diverse precisely by continuing that movement. Therefore, categories of movement draw inspiration from the natural sciences, and their categorization proceeds on that basis.

**The Task of Philosophy**

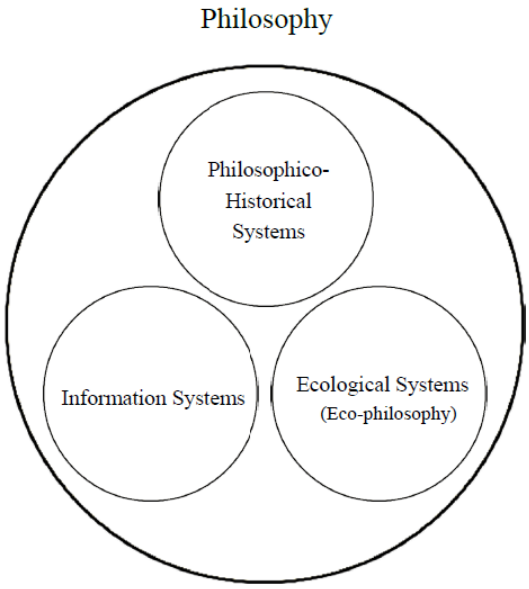
In this aspect, a naturalistic attitude can be considered an effective scientific concept for both expanding experience and directing categories of new experience while simultaneously being a mode of experience. Let us recap. (1) By introducing a mechanism for internally incorporating the appearance of a new reality, philosophy is always changing its aspect as a kind of "never-ending science." Moreover, (2) by entering the process itself, which is settled neither in terms of cause nor purpose, experience can take a step toward a new mode of experience in a way that is distinct from a change of perspective. (3) Experience, by inhabiting the midst of this process, tracks internal movements in a variety of systems and, by shining light on the characteristics of the movements contained therein, makes it possible to offer recommendations oriented to the emergence of more feasible options within those systems.

In this way, this type of naturalism can take up an enterprise that philosophy has never before attempted. Philosophy can acquire a new structure by finding clues in self-organization. Exploring modes of movement will lead to the discovery of new categories and is an indispensable procedure for expanding the possibilities of experience. In simultaneous conjunction with this, the exploration of the individual empirical sciences shall be carried out with a view of elucidating new modes of movement, thereby discovering new challenges and new alternatives. Thus, to extend the question-setting that is distinctive of philosophy, it will be possible to propose the setting of alternatives that have not yet been set, even within the fields of scientific practice. What will happen here is a cyclical process of mutual reflection between science and philosophy, an expanding spiral that broadens and extends with each revolution.

## 2. How Does One Advance Philosophy?

The clarification of categories is a task for logic, and logic is generally seen as the "articulation of the world." It is the single most powerful rule when reality is visualized. As logical categories are discovered in each instance in accordance with emergent systems and furthermore with the forking of those systems, the list of categories is an open set and, in principle, will never be complete. However, even if it is an open set, as a dimension, the network of categories will occupy a single area.

Thus, we must show this by selecting and executing that which has the potential to elucidate new categories and the systems that are most difficult to see. That is, we will consider these as our subject matter. Reality appears in each instance to diverge in various ways. Generally, this is what a system looks like. However, with each exploration, one must refine one's target. Philosophy also requires individual study at each instance. In that sense, philosophy is certainly "a child of the times." As an example of this individual study, we will select something that expresses the urgency of our age. As challenges for our times, I feel that we can posit an eco-philosophical or ecological system and information system, as well as a philosophico-historical system.




The area of exploration depicted by the inner circles covers individual programs and systems for specialized discussion. As these have been set under historical constraints, it is possible to substitute one area of exploration with another. If we can identify the current challenges of each system, clarify the matters shown there, and find the new logical categories and regular structures intrinsic to the systems, these will be transferred to the outer circle corresponding to philosophy itself, and we will be able to expand the system of philosophy itself. As a result, the appearance of this outer sphere of philosophy may itself be altered completely. Indeed, this is something we should welcome, for if it does occur, it will constitute a philosophical metamorphosis.

What should we extract as aspects of the system in eco-philosophy? We have to be able to extract those matters that have the most spillover effects, reveal a variety of aspects, and, moreover, have the potential for further development. It is usually said that this would be the increase in carbon dioxide near the Earth's surface, the global warming that is taking place because of higher temperatures near the Earth's surface. There is rapid increase in the amount of plastic waste flowing into the oceans and plastic waste that has not broken down has immediate adverse effects on the marine ecosystem. Phenomena that include such problems are immediately noticeable, and responses to such problems are immediately determined. The policies of reducing carbon dioxide emissions and reducing the proportion of synthetic fiber products, which do not break down easily, are immediately decided. In that aspect, to constitute a philosophical question, the question is that of the angle of approach necessary for viewing the ecosystem.

It is also necessary to set tasks for systems that are constantly changing at the cutting edge of history, e.g., "information systems." Information systems are included as control systems in devices, no matter how small. Automatic information control systems are also included in our thermostats, which regulate temperature. However, control systems are essentially systems that have an adjustment function rather than driving systems. In that sense, information systems are not independently operating systems. Thus, we have to envision what aspects of an information system should be cut away in order to highlight the system's characteristic features. These two requirements, while offering recommendations for actual challenges, also contribute to the possibility of identifying the uniqueness of the system and the possibility of new system logics.

We will also have to devise a way to make use of the history of philosophy. We may have a fundamental desire to learn about the history of philosophy. However, in that it contains the seed germs of a variety of ideas, we can think of the history of philosophy as a "treasure trove of possibilities." Or perhaps, this way of thought enables us to orient

ourselves more abundantly toward a history of philosophy. For philosophy to constitute a complete system of knowledge is, in principle, impossible. Hegel even claimed that he would "bring an end to philosophy" with his own systematic vision. Yet, while Hegel's system did greatly change the aspect of philosophy itself, it did not bring philosophy to an end. Contributions such as Kierkegaard's existentialism, Marx's structuralist systems theory, and the positivist evolution found in Darwin's theories have all sought out possibilities for completely different systems, leading to overwhelming diversity. Since that time, philosophy has unceremoniously abandoned the task of "explaining the entire world." We can combine these three systems into a deployable system concept.

**Ecological Systems**

The most important feature for considering the global ecosystem is *water*. The Earth itself, known as "the water planet," is thus the ecosystem's largest conceptual element. So the question "Where is the water?" is a strange one. This is because the answer "In the oceans" comes readily to hand. However, water changes state, becoming either solid (ice) or gas (water vapor) depending on its temperature. This means that it is on land in the form of ice and in the atmosphere in the form of water vapor. Further, although this fact is often overlooked, water is also stored in the soil. Water flows in and under the ground. In the case of Japan, when you dig into the soil, you will hit a volcanic hot spring. Most tap water is either rainwater collected and treated for use or has been sourced by digging deep under the Earth to hit aquifers. Water flowing on the surface, such as rivers, is in part left over from fallen rain and in part left over water that either could not be fully absorbed into the soil or has not yet been absorbed. Groundwater supports the terrestrial ecosystem.

Analytically isolating the ecological aspects of water yields the following. (1) Marine water is comprised of giant bodies of water that regulate the temperature of the entire globe and evaporate to continue to provide the atmosphere with water vapor. This water constitutes the global matrix. (2) Groundwater provides the Earth with moisture, functions as a temperature regulator for the entire Earth, and supports plant growth. When we dig into soil, we are usually able to access filtered drinking water. This is the water under the ground. (3) Water vapor in the atmosphere: functions as a buffer to bring diversity to the ecological environment. Without humidity in the atmosphere, for example, in the case of human beings, the senses of taste and smell would never have developed. Humidity is essential for the formation of the five senses. This is the water of our living environment. (4) River water forms a living area and creates a focal point for productive activities in the surrounding region. Many industrial belts are located near rivers. This is the water we use for productive endeavors. (5) Water in living bodies constitutes the site of biological activity and makes up about 70% of living cells. This is the water found in the internal environment of the living body. Human beings, when young, are abundantly endowed with this water. The ratio of this water decreases with age, and, individual differences aside, it has been said that the water retention ratio at age 60 drops to approximately 50%. When this happens, such people become more susceptible to suffering from heat strokes in the summer if they are not careful.

From this point of view, we can see that ecosystems move with water, the lives of individual organisms are conducted along with the circulation of water, and the preservation of water maintains the sustainability of life in general. A variety of problems are now arising with regard to water control and management.

There can be no doubt that global weather patterns are experiencing major shifts as temperatures near the surface of the Earth rise. However, the problem, more than that, is that the amount of water than can be stored underground after heavy rainfalls, for example, seems to be decreasing. This is the apparent "desertification" that is spreading all over the world. Because of industrial water consumption, a number of lakes around the world have dried up, but more than this, it can be safely assumed that subterranean lakes thought to have existed underground have dried up. What is now the Taklamakan Desert was once one of the key points of transportation along the Silk Road. The Silk Road is a journey of many days on foot. The only way to proceed is along the Tarim River. Around the time the last glacial epoch transitioned to our current interglacial epoch, it is estimated that almost the entire river basin became an extremely large lake, like

the Caspian Sea, with some indications that there may have been a groundwater source ten times as large as the amount of water in the Great Lakes of North America.

The pastoralists managed their herds while moving from place to place. Digging underground as they moved, they would have found veins of water running several meters below the surface, which they would have pumped to use as a water source in their daily lives. However, once the water close to the source at the foot of the mountains at the edge of the Tarim basin was tapped and pumped for use in irrigation or other industrial projects, the underground lake dried up soon after, triggering desertification. As it became a desert, the porous soil became clogged, solidifying so that it was no longer easily able to retain water. Even if it rained, the water would simply flow away along the ground surface. A similar situation arose in urban areas, where the ground surface was paved with concrete. Re-greening desertified land is no longer a simple proposition. One of the major problems in water-based ecosystems is the drastic decrease in the levels of the underground water table.

In subtropical regions, it does not rain for almost half the year. Thus, another option is needed for the preservation of water and the formation of waterways. Simply building a dam to create a reservoir will result in its drying up in the blink of an eye. For example, the irrigation canals of the dam built by the Japanese engineer Nobuhei Torii before World War II south of the Taiwanese city of Kaohsiung (then known as Takao) is an underground dam with underground canals. Like rivers, canals do not always have to flow on the surface of the Earth. If waterways are built underground using a tunnel-like mechanism, evaporation of water could be prevented, contributing to the preservation of water in the soil as subsoil water.

One of the largest additional problems with water is that, in addition to serving as an apparatus for maintaining living environments, it is a *resource*. It is not only our supply of drinking water but also a resource that has both agricultural and industrial uses.

As an apparatus for maintaining living environments, water has no natural borders. What is the source of water in Asia? In Tibet, what is the source of Asia's major rivers, including the Indus, Ganges, Yangtze, Yellow, and Mekong rivers? Wen Jiabao, the former Premier of China, said that water shortages threaten "the very survival of the Chinese nation" and built almost 7,000 dams upstream of the Indus and other rivers. This is also an illustration of the Chinese principle of establishing control over the headwaters, an idea implying that those who manage the headwaters hold supremacy over the river. Thus, there are shortages of water in the river's lower reaches, particularly in India.

The Mekong River originates from the Tibetan Plateau, traverses China's Yunnan Province, and then flows for about 4,200 kilometers across the borders between Myanmar and Laos, Thailand and Laos, and Cambodia and Vietnam before entering the South China Sea. This is where China began building its dams. The Mekong River is an international river with many tributaries that requires discussions with downstream regions over the utilization of water resources. Small-scale trade is carried out in countries along the main stream and tributaries, including transactions involving the necessities of daily life. As rivers are naturally delimited logistics zones, with these dams, China is changing the status quo of control for each of the rivers of interest to it by imposing control over the headwaters.

Water does not adapt itself to national borders, and water is not something that should be used solely in the light of national interests. Should this happen, an international organization for water management will be needed. In fact, there are reportedly 600 million people worldwide who do not have access to safe drinking water. Even in China, if you go to the rural areas, you will find that the high price of water results in many rural residents using local agricultural water as drinking water. Drinking water serves a life-maintaining function to the same extent as oxygen in the atmosphere. Thus, it is essentially impossible to put an economic value to water like other resources.

**Information Systems**

Information is not a discrete system. When carrying out a mathematical operation on each PC, the operation proceeds

and the result of the operation is easily calculated in a relatively short period of time. At this time, it is not only the operation that is running, but there are also several programs running the operation in question. Most of these are programs that are built into the PC. The program that initiates the running of the operation is running automatically while the operation seems to continue automatically. This is quite a common operational program, one that includes *order of operations*, *conditional branching*, and *repetition*. In information, there are always programs that establish information and programs that are linked to information.

In information, we should distinguish between visual information, physical information, and linguistic or symbolic information, because even the same piece of information has different properties. Linguistic or symbolic information poses a problem for information networks. In an online context, the key variables will be the amount of information, the speed of information, and the value of information. Of these, although amount and speed will make remarkable progress as they move in order through 5G, 6G, and 7G, these are technologies that we will grow accustomed to in our daily lives not long after their introduction. Things that we can immediately grow accustomed to in our daily lives, even if they seem like spectacular innovations in the short term, are not major changes in themselves. Something that has a more significant influence over online information is the scale of networks and the competition over who controls the platforms. These are problems for information sociology and information economics.

In many cases, different things will be said about what might be called the same "information." In the case of colors, the naked eye can distinguish about 35,000 shades of colors because of mutual differences between colors, owing to the discrimination of the human eye. With AI (Artificial Intelligence) sensors, we can make even more detailed distinctions. In this case, not only is there no natural language corresponding to these distinctions, but even if symbols were also used, cognition corresponding to those distinctions would still be out of reach. Sensors can continue analyzing raw video, but this analysis does not fall into the category of linguistic information. AI sensors, with a view of rendering their own programs more detailed, articulate their programs themselves, carrying out judgments according to the data when requested. However, this means that there is a growing area wherein things are happening beyond the scope of human understanding. This is the AI "tipping point" from the standpoint of human capabilities.

Another problem arises with regard to tactile information. The relief and roughness of the desk that can be differentiated between will be completely different depending on whether one runs their hand quickly or slowly over the desk or does so at an irregular or constant speed. This is due to the fact that one only perceives as much as is necessary to maintain physical movement, while information "extraneous" for physical acts is "ignored." While walking fast, we would hardly be able to walk at all if we constantly perceived the particulars of the ground with the soles of our feet. Cognitive information that is unnecessary in maintaining one's gait is naturally ignored. We can think of this as the code that determines the possibility of perception changing, not so as to fail to perceive information but rather working so as to "ignore" information that has been "rendered latent."

Ignorance is always a *creative ignorance*. The sense of touch is based on a different mechanism than the sense of sight. It is a mechanism that links cognition to physical movement, whereas visual cognitive information is not connected to physical movement by information-based directives. Thus, on the contrary, information extracted independently is linked to movement in a curious way. Information is imbued with a structural unnaturalness that appears in a manner that is distinct from ignorance.

Sensors in the midst of movement pose a separate problem. When perceiving an object in front of our eyes as we move, human cognition perceives the amount of time before a collision will occur between ourselves and the object in question. The angle of approach when an object is flying is perceived by the time remaining until the collision occurs, just as the remaining time is also perceived when preparing the body for a long jump over a railroad crossing, for example. With artificial sensors, however, a mechanism must be adopted that apprehends the approach or movement of an object solely by its positional information on a map or changes in its position.

This is because for sensors, time is a coordinate axis that is set externally and in advance. An object's approach and the time remaining until collision can only be calculated secondarily by the reduction of spatial distance. In a sense, information sensors have never been proactive as subjects. They are driven or reactive entities to which subjectivity is secondarily ascribed. This means that AI sensors have been lacking a control variable since the very beginning. Let us try to rethink this situation from another angle. A clock keeps the accurate time, and AI also keeps the accurate time. Yet, while they can both keep time, this in itself does not mean that they experience time. AI is undoubtedly a "temporal zombie." It is entirely lacking in one subset of experience. Technically, AI has no mechanism for selectively controlling memory and thus no mechanism for selectively forgetting or reorganizing memory.

Furthermore, in the case of AI systems, there are some situations wherein the acquisition of control information variables is not in itself sufficient. It becomes necessary to acquire movement control skills for coping with the intricacies of driving a moving vehicle. When a pedestrian walking along the shoulder of the road suddenly runs into the middle of the road to avoid a bicycle coming from the opposite direction, we can hardly talk about automobile operation if the car senses this and stops every time it occurs. The moving body will always have multiple possible responses to the sensor's readings. In the case of AI, there is no one-to-one relationship between improving discrimination skills using the sensor and possible responses by the motor. It would seem that the sensor and motor are set differently as programs. In that case, the important question becomes how to design the "coupling" mechanism that serves as the link between these two programs. Even if there is no one-to-one correspondence, it will be necessary to have a mechanism that can maintain the operation.

AI programs, when advancing to a given procedure, have multiple possible procedures within which are included mechanisms in which the choice of one procedure will influence the choice of the next procedure and by which choices that prove to be effective and those that are not are determined in the course of this reiteration. The classification of effective and ineffective in the advancement of this procedure is called a "judgment" carried out by AI. If an automaton is confronted with multiple branches, one can expect that it will feel out each branch for a circuit along which it can automatically proceed. When deciding the efficacy of the sensor at such a time, in addition to the problems of the granularity of the data and the speed of data organization, there will also be a need for a "coupling circuit" indicating the degree to which the motor program needs to be improved as well as an index (variables) for that purpose.

If the sensor data were only to become finer without any improvement to the motor program, only rough-and-ready driving would be possible as an effective driving body. At the present juncture, this is expected to be a daunting task. The task of driving for long stretches in a straight line at night-time on roads with no other vehicles can be treated similarly to large ships or airplanes on international routes. For self-driving cars, though, the situation is much different.

AI cannot be said to have learning capability so long as it lacks a built-in mechanism for reducing trial and error in such situations. In the case of self-driving cars, trial and error represents a state in which it would not be unusual for an accident to occur. AI cannot be permitted to cause accidents as it learns. However, without the inclusion, to some extent, of a range of trial-and-error situations, there can be no prospect of maintaining the range of learning. Unlike autopoiesis in game programs, program trial and error involves damage. This poses a dilemma for AI. To reduce the possibility of accidents is to narrow the scope of learning, thus reducing the chances of improving the motor. On the contrary, if we set a wider potential for improving the motor, the risk of accident increases. This is something that should be called the "trial-and-error dilemma" for coupling in an AI context.

AI will grow increasingly sophisticated solely in terms of information processing. However, movement control will be uniquely programmed in its own way. At that time, there will not be easy correspondence between the speed of data processing for the sensors and the speed of processing for the motors. AI-powered self-driving cars have a just overly narrow capacity to learn.

Undoubtedly, AI will likely find a state wherein it fulfills a secondarily effective function in a state that lacks many

variables. While this is unquestionably a new form of learning, it has diverged too far for humans to learn anything from it. The excessive use of certain abilities constrains the development of other abilities. AI has been burdened with this destiny from its inception.

**Philosophico-Historical and Philosophical Education Systems**

We cannot think of the history of philosophy as a museum littered with monuments of philosophy. Hegel ridiculed the history of philosophy by calling it a "gallery of fools." Else, he saw no point in the knowledge of philosophy in its own right. In that sense, philosophy must not be knowledge, but rather "the experience of practicing philosophy." Kant's basic guideline was that one cannot learn philosophy, but one can learn to practice it.

The task of philosophy is not to acquire philosophical knowledge or become a philosophical know-it-all. Rather, it is to expand the way in which we experience things or the operational scope of experience itself. We could say that this is a broadening of the range of motion for experience. If philosophical knowledge could offer some kind of opportunity to expand the possibilities of such experiences, a philosophical education could be established as such, which would also be effective as philosophical learning. If the range of motion for experience could be expanded even further at the same time that experience entered a new phase and advanced to a point at which the entirety of experience to that point were to be reorganized, this would constitute a "metamorphosis of experience." This would herald the creation of a new "creative subject."

The history of philosophy provides us with materials for that purpose, based on the way it is used. There are many aspects to this. As we extract the mysteries embedded in these individual concepts as such, new matters sometimes come to light. Otherwise, it can become apparent that logic can possibly develop in a different way, as it sometimes entails other situations in the background. Alternatively, by developing a method of inquiry at the level of experience, we can also clarify phenomena that could not have been revealed as experience until that point.

For example, let us consider Gottfried Leibniz's "monadology," a concept he developed in his later years. The monad is the smallest unit of the world and may be thought of as the setting for the smallest possible subject in the world. Monads are imbued with two abilities: an "ability to represent" that reflects the world and the "desire" that supports the movement of monads. For multiple monads to be able to cooperate and act in concerns, there must be a linking mechanism between monads. This is what Leibniz referred to as a "pre-established harmony." The fate of each monad is preordained. No matter how big a change will be visited upon it later, a monad is the manifestation and development of a destiny-like essence that has been preordained. The positing of monadology in this way can be examined in more detail with reference to Liebniz's discussions. This type of discussion is not easy to construct in a consistent fashion as a holistic concept and is also difficult to complete without exaggeration or omission. Thus, philosophers, to the extent that they are able to through philosophical analysis, usually aim to provide consistency to present the concept as richly fertile. This sort of task is a study of the bare minimum of the literature and a prerequisite for any sort of philosophical consideration.

While monadology appears to be the ultimate form of pluralism, its concepts entail a great many riddles and challenges. As each individual monad represents the world, each will have a world that can be seen from its respective position. For example, if one looks at the Milan Cathedral from each monad, it should look different each time. If each monad perceives the world from a different standpoint, it will see different worlds. The position that a monad occupies has a deterministic sense. Monads are set as the smallest units of activity, but if they exist in the world, they should already occupy specific positions. The fact that monads are "alive" and "occupy specific positions" are contiguous features. When a monad represents the world, it cannot help but do so from a specific position. The monad's abilities to represent the world and to desire have been set, but in order to establish them, we must add to these the basic situation of "occupying a position in the world." This is not only the monad's ability to recognize the world but also a characteristic

feature of their being in the world.

Of the monad's two abilities, the ability to desire can be thought of as including the ability to feel instinctive hunger and thirst as well as affect and emotion. It becomes difficult to conceive of affect or the representation of the world as having unrelated independence. The representation of the world is, in many cases, colored by affect. The world comes to be represented as being colored by "affect values," as in the case of a thrilling world of surprises or a world of tedium. Representation and desire are independent operating systems, but they are also intricately interconnected. By taking this interconnection into account, the monad becomes the world's first real "individual." In this way, we are able to extract many inherent challenges even from an ambitious and adventurous concept like monadology. This is also a way to make use of the history of philosophy.

Let us extract another aspect of the history of philosophy. When Hegel announced the "end of philosophy" in his systematic vision, philosophy itself was at a major turning point. Philosophy had to interrogate itself anew. Now, the question of what exactly it was supposed to do became one of philosophy's constant obsessions.

Included in Hegel's dialectic is a mechanism for the further shaping of one's own experience in a higher order through the perception of the limits of one's own knowledge. The major premise here is a mechanism whereby a past experience that has been contradicted and overcome is internalized and incorporated into one's new experiences. Generally, this is referred to as "sublation." If we acknowledge this, then experience will include the past and be enhanced and broadened, and when it eventually reaches the "absolute spirit," the whole world will be perceived as being identical to oneself. However, does this really happen?

When contradiction arises through cognition, in most cases, other ways of doing things are submitted to trial and error. For example, in the case of the COVID-19 pandemic, it was initially reported that no human-to-human infection would occur. Yet, the widespread occurrence of human-to-human infections was soon acknowledged, and it became clear that, rather than all infected people spreading the virus, it was only a certain subset of people who went on to subsequently infect many others. It also became clear that there is, as yet, no scientific indicator able to distinguish between asymptomatic individuals who pose a risk of infection to others and asymptomatic individuals who do not. Facts like these have made it difficult to respond to the virus, inviting a situation wherein many people feel complacent on the one hand, while it is impossible to limit the range of infected people on the other. When existing knowledge is contradicted, that which has already been said is abandoned or reorganized in another way. However, it is these new appearances that come into view that are organized in each instance rather than the internal incorporation of past knowledge. For each piece of knowledge, we seek in each instance the "optimal possible response"; whether to incorporate past knowledge into one's own foundation is a secondary matter.

Hegel placed his emphasis on a completely futile point. Thus, we find that the internal incorporation of past experience, which is an indispensable condition of the dialectic, is in fact a completely misleading argument. The view of experience in which the contradicted experience is incorporated internally so that experience itself is expanded and enlarged is a simple misunderstanding.

Here, each instance of organized knowledge forms a unique morphology and phase domain so that knowledge seems pluralistic from the point of view of the observer who considers it in reflection. Each concept, rather than being completely independent, intersects with the others, spreading out like a cloud. Undertaking the formation of knowledge so that it moves to an even newer phase of pluralistic knowledge is a philosophical quest as well as philosophy's task.

However, what is the process of experience when it proceeds under scrutiny? In the case of dialectics, knowledge is always one-sided, so in that respect, constantly moving forward is the only option. However, for experience to become even more detailed and subtle, there is no choice but to keep moving forward even in situations that articulate as they advance. These would also seem to proceed through a process akin to dialectics. For example, information systems become more detailed by revisiting the same affect repeatedly. The advancement of the process of experience is not

accomplished solely while changing situations to shift perspectives. It can also move forward to press for the refinement of the same affective experience. Within the process of repetition as well, the intricate folds of activity appear, and subtly different experiences are realized while passing through the same location over and over again.

Here, we come to the negative dialectic, the domain in which Kierkegaard followed after Hegel. Dialectics, as well as the direction of further expansion, can proceed in the direction of internally detailing the articulations of experience. In this way, even a methodical logic like dialectics can be utilized in completely different ways so as to open up new situations.

Furthermore, the phenomenology pioneered by Edmund Husserl is deployed in a completely different manner. Phenomenology is the analysis of knowledge related to the immediacy of experience, an elucidation of knowledge that has already been established at the level of sensory perception. As the task of elucidation also takes place at the level of experiential immediacy, we must elucidate experiential immediacy in the very midst of the experience that is tinged with the same. Here, a gap is necessary for description, and the methodological procedure for opening and widening that gap is called the "phenomenological reduction." While this method can be applied to a wide variety of domains, such as the body, affect, and experiential belief, the method itself has been undergoing subtle modification. Japan's leading phenomenologist, Yoshihiro Nitta (1929–2020), spoke of phenomenology as "a movement."

For example, the perception of objects is completely different from the perception of a dynamism in which shapes are created through movements, such as "eddies" or "tornadoes," the latter involving a distinct ability called "kinesthesia" or motor sensation. To discuss the body, we must discover the body's unique capabilities. Maurice Merleau-Ponty thought of the body in parallel with perception. In his formulation, the body had "ambivalence," in that it was perceiving (active) at the same time as it was being perceived (passive). However, the body, more than as a "cognitive ability" observed with perception, is rather "something that moves thereby." If that is true, then we must devise a way of thinking that might approach this characteristic of motility. With phenomenology, it is necessary not only for us to change our mode of thinking depending on the domain in question but also to change the way in which we approach the same object and devise new emphases for consideration.

With affect too, there is a sense of movement that is not cognition, but "movement as such." In that case, the consideration of affect must include two types, namely, that which moves as such and the sensation that feels the movement. The sense of touch is just such a mechanism. Phenomenology has long considered the sense of vision as its model. There is no doubt, of course, that in the context of human sensory perception, the sense of vision is given the highest priority as the most advanced sensory ability. However, the consideration of moving things should rather have been modeled on the sense of touch.

In this way, phenomenology constitutes a new history by devising methods for elucidating phenomena and discovering circuits for new advances. Philosophy continues to imbue experience with a degree of freedom and to expand the possibilities of experience through the development of such means of elucidation. This, in other words, is a mechanism for experience as a mode of cultivating the self. The site of this self-cultivation is itself the "site of philosophical education."

The history of philosophy is not only configured as knowledge or as knowing the past. Rather, it is a creative task that continues exploring, always in the midst of new challenges. It brackets the hasty integration of knowledge, always wagering that both knowledge and experience are themselves being opened to the possibilities of their own expansion, and that, more than anything, is the face of modern philosophy.

**Works Cited**

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