

The World of Mutual Generation

In this work, I will describe the logic of mutual generation and its world, citing examples from the universe, matter, life, and society, based on my previous writings in the fields of natural philosophy, practical philosophy, ontology, and epistemology. "Mutual Generation " refers to the self-formation through mutual interaction.

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1 Universe

Mutual relation

The universe is made up of events that are mutual related with one another. Events are linked together, forming the whole. Even the smallest event in the universe is closely connected to everything else in the universe. Through this mutual relation between events, the universe constantly undergoes generation and transformation.

The universe is a dynamic network formed by the mutual relation of interconnected events. Its countless nodes appear as galaxies, stars, planets, and more. Therefore, galaxies and stars should not be considered as independent existences, but rather as parts of the world of mutual relations.

All the phenomena of the universe are interconnected and cannot be thought of as separate realities. Even the most distant celestial bodies are linked through electromagnetic fields and gravitational fields. The interconnectedness of all things extends even to stars and nebulae far away.

This universe is a sea of waves, an inseparable whole in which various forms continuously change fluidly. Just as a wave on the sea surface is not separate from the sea surface itself, each part of the universe is interconnected within an inseparable common field. In this space, one thing permeates all others, and all other things permeate one thing.

Generation and Spacetime

The universe is itself the process of generation and change, and it is fluidity itself. Everything within the world is an event in the infinite process of this universe. Events interact with each other, carrying the process of the universe's generation and transformation.

At the beginning of the universe, there was no time or space. Time and space were brought into existence from a timeless world, alongside the event of the birth of the universe. From the silent, timeless world, motion and creation awaken time and space.

From the cosmic events of the "here and now" that we touch from within, time and space are generated. It is not that events exist within time and space, but rather that time and space emerge from the events themselves.

Resonance

The universe is a world of countless elements resonating together. Within it, the frequencies and phases of many elements are synchronized. Just as strings resonate with each other, the events of the universe echo and harmonize.

The universe is a sea of waves and energy, and just like the waves in that sea, elementary particles, stars, and galaxies emerge. All elements within the universe interact and resonate in this common field. The interactions between particles and particles, stars and stars, galaxies and galaxies must also be understood as resonating waves through this shared field.

To be "alive" means to dynamically resonate, creating new movements and naturally forming new shapes. In this sense, the universe that generates galaxies, stars, and planets must also be considered "alive."

This universe is also a network of recognition. Here, all elements recognize each other, and from this mutual recognition, the self-formation of the world occurs. In such a world, the classical mechanical understanding of movement based on causality no longer holds; instead, the world must be understood through concepts such as resonance and synchronization.

Recognition within the world

This universe has created a perceiver within itself, one that recognizes the universe itself. Our human recognition of the world is also a form of the world's self-awareness. What the self recognizes is what the world recognizes.

Originally, the universe itself is a self-observing system. This universe creates galaxies, stars, planets, life, and living beings such as animals and humans, all of which have the ability to recognize and observe the world. When we, as perceivers within the world, attempt to recognize the world, it is also the self-recognition of the world. While we live within the universe, the universe also lives within us.

The observer influences the observed, and the observed inspires the observer. The observer and the observed interact with each other, performing the drama of the generation and transformation of the world. The observer is a co-actor in the world's drama. This universe is the participating universe.

Action within the world

This universe does not exist in a place separate from the observer. Furthermore, we, observers as subjects with bodies, throw ourselves onto the stage of this universe and act, and recognize while acting.

The workings of the universe emerge through action. To act is to engage in the workings of the universe, and to perform the actions of the universe.

Interaction

In our universe, celestial bodies such as stars and galaxies interact with each other through attraction, collisions, and mergers, continuously forming new types of stars and galaxies, much like living organisms. Through the intricate interactions in all directions, the gas and dust in the universe naturally form superclusters, galaxy clusters, galaxies, star clusters, stars, and planets.

Outer space is a world of interactions. Here, various forms of matter in the universe, such as galaxies, stars, planets, cosmic dust, and gas, are interconnected and influence each other. The universe is in a constant state of activity, where its components attract, repel, collide, merge, explode, move, and continually interact. The countless events that occur in the universe create new things through their interlinked processes. Stars are born, grow, and die. The evolution of the universe arises from the boundless interactions between its constituent elements.

Ordering

The universe has continuously differentiated, complicated, and diversified, creating many structures one after another and evolving dynamically. This is because the universe is a living system that forms itself through the interactions of the forces and materials that make it up.

This universe has undergone hierarchical and ordered processes, repeating macro and micro-evolution, from galaxies, stars, and planets, to atoms, molecules, crystals, and organisms. The universe has shaped diverse forms from chaos into order. Order exists within chaos itself.

From the birth of the universe, the formation of galaxies, the establishment of planets, and the creation of matter, to the evolution of life, there have been fluctuations at key points in the natural evolutionary process, through which new orders have been generated.

The universe expresses its ability to form order through matter, matter expresses this ability as life, and life expresses it as spirit.

Form and Information

The universe has evolved through phase transitions, from galaxies and stars to planets. Matter has also formed order through phase transitions, from gas and liquid to solid. Life has become more complex through phase transitions, from prokaryotes to eukaryotes, and from unicellular organisms to multicellular organisms. Nature has formed shapes and patterns. The universe, matter, and life are mechanisms that generate forms.

In a self-organizing world, even when initial conditions are set, the outcomes that emerge afterward are not deterministically fixed by causality. This is because this world is a dynamic system that autonomously generates information. The universe continually generates new structures and forms, creating hierarchies. In this self-transcending structure of the universe, the role of information and its recognition is significant.

This universe is not only a sea of waves and energy but also a sea of information. Information is generated from every part of the universe and transmitted to every part. Without the creation of information, the formation of order is impossible. The elements of this universe choose their future through information.

To describe the self-organization of the universe, matter, energy, atoms, molecules, cells, and living organisms, one must consider not only matter and energy but also information and its reception, that is, recognition or observation.

All elements of the universe are interconnected. Information plays the role of connecting

them. The universe is constantly being generated and developed by information. In the universe, matter, and life, no mechanistic approach can solve the questions without approving the exchange of information and the action of recognition.

Contingency

This universe, like our lives and history, always carries within it fluctuations. At various turning points, there are moments when we are uncertain about which direction to take. At these moments, contingency plays a decisive role in determining which path we follow. The encounters of nuclei within stars, the collision of meteors, the meeting of molecules in the primordial ocean, and the interaction between genes and cosmic rays—these kinds of contingent events create new things. The universe is built upon contingency.

The universe, from these random encounters, sets a direction and moves forward, becoming something that can never turn back historically. Not only human history but the formation and evolution of the universe, matter, and life itself have been shaped by contingency. The encounters between celestial bodies, between elementary particles, between molecules, and between living organisms—each is based on contingency.

Moreover, the very birth of this universe was a event of contingency. When the universe was born, a slight excess of matter over antimatter remained, causing symmetry to break and leading to the creation of a universe made solely of matter. This primordial contingency, the beginning of the universe, signifies that the universe itself tilted toward being, rather than nothingness, and can be seen as the roll of a cosmic dice in the realm of primordial contingency.

Irreversibility and Generative Change

The universe is constantly moving toward new evolution, never resting for even a moment. The universe is creative and evolves irreversibly. Since its beginning, the universe has been constantly changing and generating. Whether it is the formation of galaxies, stars, or planets, all are temporal processes that move in one direction and are irreversible. Therefore, the universe also has a history.

This universe is a field filled with waves of energy. From slight fluctuations in this field, matter was born. The universe in which we live may have suddenly emerged from this energy- and wave-filled field.

The universe is constant change and eternal creation. Everything changes and nothing stays the same. Nothing remains unchanged in each passing moment; change is the norm. Amid the endless change, all things experience rise and fall.

Everything moves without rest. Galaxies, stars, matter, and life—everything is changing continuously. It is what it is, and yet it is not. To be is to be in the process of change. The thing that exists is only change; there is nothing stable, only continuous transformation.

Life and Death

The universe creates galaxies, stars, planets, and gives birth to life. That life, along with planets, stars, and galaxies, eventually returns to the universe. The universe itself also repeats cycles of death and rebirth, always renewing itself.

We are born from the universe and return to it. We are a part of the universe, existing as a drop of the universe.

Death is nothing but a return to the cosmic life. Both body and soul return to cosmic life through death, and from there, they are reborn. All things are born from there, vanish back into it, and repeat the eternal cycle.

A human life is but a fleeting moment in the flow of the universe's time, yet we live that moment and return to the vast ocean of the universe. The return to the greater existence beyond humanity—that is death. We are born from there and die there. It is both the end of life and the source of life.

Both life and death are forms of change in the universe. Humans are born and die. All things flow and nothing remains the same.

To be alive means to be living through the union of various elements, and to die means the dispersal of those elements.

Both life and death are one, sustained in the fundamental life-field of the universe. Life emerges from the fundamental life of the universe, and death is a return to it. In this fundamental field, life and death are one. Both life and death are the workings of the true life

of the universe.

Life is like a vortex that appears briefly on the sea of death. Death arises from life, and life arises from death. Without death, there is no life. Life and death are two sides of the same coin.

We are living while simultaneously dying. Life exists because of death. Life and death are opposites, but through the process of life turning into death and death turning into life, transformation and change occur.

Universe and Life

The universe has countless points of expression within itself, and countless centers everywhere. Therefore, each living being reflects the entire universe. Within the countless individual lives, there are countless images of the universe.

The individual life is a small universe that mirrors the great universe. The body, its form, its organs, and even the cells and genes that make it up are all self-expressions of the universe. The individual exists within the universe, and the universe exists within the individual.

2 Matter

The Network of Events

The material world is also an mutual related world, and to explain one thing, everything else must be explained as well. Elementary particles are not independent existing entities, nor they are the fundamental components of matter separated from each other. Even when we talk about elementary particles, they can only determine their own nature through interactions with other particles. The world of elementary particles is an indivisible world that cannot be divided into components.

Among the phenomena occurring at the elementary particle level, there are cases where two particles behave as if they are communicating with each other, exhibiting similar properties, despite having no causal connection. This phenomenon indicates that the two particles are

non-locally connected, meaning that their parts are connected to the entire universe and cannot be separated from it.

The material world cannot be broken down into independent parts. Matter and matter, matter and space, space and time, mass and energy, all are interconnected and form an indivisible whole.

In the material world, the concept of fixed entities such as objects or particles no longer applies. Everything is in motion and undergoing change. What is observed as particles are merely points along the infinite processes of the progressing universe. They are just events. Even particles are merely transitions of energy that are constantly being redistributed. They are not isolated events, but events that are always related to other events.

The material world consists of a network of events formed by the interconnected structure of countless elements. It is a network of events formed by the encounters and decay of various particles and the continuous mutual transformation of particles. Particles are not objects, but processes.

Individuality

In the world of modern physics, the concept of a persistent substance that supports constant properties has collapsed. In the microscopic material world, even the distinction between existence and non-existence has become unclear. Particles neither exist in a fixed location nor are they non-existent. Particles can only be described in terms of probability, and we can only say that they tend to exist in certain locations.

In general, there is no guarantee that an individual will maintain its identity forever. No matter how solid a rock is, it changes and weathers over time, moment by moment. Even a single lily flower will eventually bear fruit and wither away. The idea that an individual maintains its identity is nothing more than a preconceived notion.

Field and Relationship

The essence of the field theory in modern physics is the concept of relationships. The nature of particles is understood within a series of relationships with other particles. A field represents the totality of physical relationships, and it is impossible to separate individual

particles from it. Particles are events that emerge from the field, and they are deeply interconnected with the field in which they arise.

In modern physics, the motion of particles, their creation and annihilation, as well as the redistribution of energy, are described through the field and the interactions within it. Therefore, the foundation of matter is found in bundles of energy that are deeply woven into the field. Here, particles are no more than manifestations of the field, like waves forming on the surface of the vast ocean. The creation and annihilation of particles are simply movements within the field. The field itself is the medium that enables interactions between particles.

In modern physics, even when we refer to particles, they are not considered as independent entities separate from the field. Instead, they are seen as parts of a woven structure created by the field. Even if two particles are separated, phenomena are observed where they remain closely connected. Particles emerge as parts of an indivisible field. The behavior of countless particles is a vibration of the energy of the field, and the pattern of that vibration manifests as various particles.

Complementarity

The fundamental elements of matter possess a contradictory duality, being both particles and waves. The particle nature and wave nature of matter are complementary. All opposing concepts are merely two sides of the same world, and the opposing sides come together to form a single world.

The mind and matter are also different aspects of the same thing. The activity of the mind and the function of matter are complementary, and asking which one is the true reality is not an appropriate question in itself.

Mutual Opposition and Mutual Connection

In the material world, where there is sufficient energy, particles and antiparticles are created in pairs. Conversely, when a particle and an antiparticle collide, they annihilate each other and transform into pure energy. This suggests that, even in the material world, opposing forces converge, forming a world of continuous creation and annihilation.

In liquids and gases, opposing forces such as centrifugal and centripetal forces, high and low

speeds, high and low temperatures, viscosity and fluidity, expansion and contraction, lightness and heaviness, as well as shades of light, interact with each other. When these opposing forces come into contact, one layer attempts to draw in another at the contact surface, forming vortices and spirals. The spiral tendencies in plants and animals also arise from the intersection of growth-promoting and growth-inhibiting effects, as well as the entanglement of differing growth rates. The generation and transformation of nature, as well as self-formation, arise from the mutual connection of opposing forces.

When vortices and spirals are extended along the time axis, they become waves and rhythms. When two opposing tendencies compete and pulsate, they manifest as waves and rhythms. Waves and rhythms are the temporal patterns of the self-formation of the universe, matter, and life.

Interaction

The interactions between elementary particles are described by the exchange of quantum particles specific to each field. Various particles interact by exchanging their respective quanta, much like players on a tennis court hitting the ball back and forth. The phenomena occurring in the microscopic world are processes in which energy is constantly redistributed across different fields. The quantum particles of these fields mediate this redistribution.

According to the uncertainty principle, two physical quantities, such as a particle's position and momentum, cannot be precisely measured simultaneously. To observe or measure, particles like light or electrons must be used. In doing so, the particles involved in the observation will interact with the observed particle, causing uncertainty in the position and momentum of the target particle. The uncertainty in position and momentum in the uncertainty principle arises because particles are constantly interacting with each other, and matter is inherently interconnected.

In the material world, particles constantly interact with each other by colliding or exchanging other particles, undergoing continuous changes without rest. The structure of matter is formed from these particle interactions. Therefore, a single particle cannot be understood without considering its interaction with other particles. The behavior of one particle is linked to the behavior of others. Independent particles do not exist.

Resonance

Matter is constantly vibrating at various levels— elementary particles, atoms, and molecules. They are oscillators with specific frequencies and phases. These oscillators synchronize with each other. The complex structures observed in the universe arise from the dynamic resonance between such forms of matter.

Elementary particles resonate and mutually excite along with the vibrations of the field. This resonance phenomenon manifests as the localization of matter and energy, leading to the formation of new shapes. Because resonance triggers further resonance, many structures and patterns are formed, from matter to the universe.

When energy is continuously injected into electrons and photons that interact while undergoing random motion, they suddenly synchronize and form a highly organized convective state when a critical point is surpassed. Through the application of vibrations and resonance, matter transforms into form.

The fundamental elements that compose matter can be explained as the vibrations or waves of various energy-carrying fields. The essence of matter is like a symphony played by the resonating vibrations of fields. The universe is no longer made of solid matter but is composed of fields and their resonances, functioning as a fundamental force of activity.

Even the most microscopic elementary particles mutually sense and recognize each other. The motion of a single electron on Earth, through electromagnetic interaction, non-locally interacts with the motion of an electron at the farthest reaches of the universe. In other words, they resonate each other.

Observation and Action within the world

In the microscopic material world, light and electrons can be viewed as either particles or waves, according to the principle of complementarity in quantum mechanics. Whether they are seen as particles or waves depends on the observer. The world is, in a sense, in a state of superposition of particles and waves, and the phenomenon only converges into a definite state depending on how we observe it. Therefore, the observer and what is observed cannot be separated.

The uncertainty principle in quantum mechanics is also based on the assumption that the

observer is within the world being observed. Hence, the act of observation by the observer disturbs the behavior of the world being observed, causing it to become uncertain. In a quantum mechanical worldview, the objective being observed and the subjective observer are inseparable and cannot be detached. This is because the subjective observer is not outside the world but is within it, an inseparable part of the world. Subjectivity and objectivity are united in bringing forth phenomena.

Nature, in general, exists in a state of superposition of diverse aspects. Therefore, when nature is observed by us in a particular way, it assumes a definite state in accordance with that observation. Therefore, the more we explore nature, the more it presents a variety of different aspects in response."

According to the modern physical worldview, natural science itself is part of the interaction between nature and us. What we observe is not nature itself, but only the form of nature reflected through our methods of inquiry.

Natural science operates by manipulating nature through observation and experimentation. Scientific observation and experimentation are themselves part of the interaction between the observer and the observed. Here, since the act of observation and the observed object cannot be separated, the results of the observation emerge in correlation with the act of observation.

Science, too, is observation and action within the world. The observations and experiments conducted in science also disturb natural phenomena and intervene directly in the behavior of nature itself.

Forms and Symmetry Breaking

Symmetry is fundamental to the structure of nature. However, nature has formed itself by breaking this symmetry. For example, in the early moments after the Big Bang, the universe broke symmetry because matter had a slightly longer lifespan than antimatter, leading to the formation of a universe consisting only of matter.

Even in the material world, information that breaks symmetry is transmitted through fields, and the elementary particles, atoms, and molecules that receive this information begin to move in response. This movement then spreads to all elements through the common field. Unless we consider things in isolation, as classical physics does, every object is influenced by

the place it is located. To be influenced means to be sensed and recognized. Without recognition, there is no breaking of symmetry.

Creative Nature

The ever-generating and evolving nature possesses a creativity that transcends laws. In order to explain a world that evolves creatively, the laws themselves must evolve creatively as well.

In reality, nature is neither rational, decisive, nor perfect. Precisely because of this, nature continues to generate and develop. Therefore, science always encounters contradictions near its limits and, in attempting to break through them, discovers new aspects of nature. It changes its own paradigms and continuously generates new understandings.

Science does not speak of eternal and unchanging truths; it is something that develops itself. This is because science itself is part of the process of the world's generation and transformation. Thus, there are no absolute, unchanging laws, and laws themselves undergo generation and change. Moreover, as science evolves, nature also continuously presents itself in new forms.

Not only human history, but nature as well, has a history of the past, upon which current experiences are built, and which will be inherited in new experiences in the future. Modern physics has described only the momentary state of the object in the "here" and "now," while largely ignoring the history of the object.

3 Life

Mutual relation and Individuality,

The world of life is also an mutual related world. In the world of life, various elements maintain close interrelationships with each other, dynamically creating new things. Here too, each element cannot be separated from the others. Genes and genes, cells and cells, organs and organs, individuals and individuals, and species and species interact with each other, adapting to the environment and giving rise to new structures. From genes to species, each individual is not independent and separated from others but is always mutual related with

them.

Our bodies, too, are like vortices temporarily formed by elements that constantly replace one another. The more one tries to establish individuality, the more individuality breaks down, and individuality disappears into the field formed by relationships with other individuals and their connections.

One and Many

Life is a pure activity that is constantly changing with each passing moment. In terms of activity, it is one, but in terms of continuous change, it includes many. Life is one that encompasses many.

Whether it is an animal or a plant, it is both diverse and uniform at the same time. They generate variations while constantly changing their forms to adapt to the environment, and at times, they drastically change their shape to produce a new species. Yet, they continue to maintain their identity as animals or plants. Life is one that becomes many.

Each organism has a common archetype, but the diversity of life arises through the dispersion of that archetype in various directions. The infinite generative changes of life occur through the transition from one to many, with many existing within one.

Life is also supported by its self-forming ability to rise to more complex stages. It is a force that seeks to transcend the law of contradiction. The constantly changing life contains both one and many simultaneously within itself.

Whole and Part

Living organisms are entities where the whole and the parts mutually depend on each other. Indeed, the whole does depend on the parts, but the whole is not simply the sum of the parts; it always presents characteristics that are not found in the individual parts.

A living organism is a whole that is organized and structured in such a way that each part interacts with and controls the others. This whole, while containing the parts, has a unity that carries a meaning beyond the parts.

In the living world, the whole and the parts are closely interconnected. The parts are contained within the whole, while at the same time, the whole is contained within the parts. The whole and the parts cannot be separated, and it is through their mutual existence that the living world is constituted. Here, reductionism—breaking down the whole into parts to clarify its function and structure—does not hold.

Integration of Contradictions

The body overcomes the contradictions of continuity and discontinuity, openness and closure between the self and the environment, realizing a miraculous maintenance of life in diverse environments. The body integrates the contradictions of assimilation and dissimilation with the environment, serving as a medium between the living organism and its surroundings.

In order for an organism to interact with its environment, it must also remain enclosed within a certain domain. The organism establishes its own distinction between itself and the environment and decides its interactions with the environment. A living system integrates the contradiction of openness and closure at the boundary.

The self forms itself by determining its own boundaries. The boundaries the self creates between itself and the environment both distinguish them and simultaneously allow mutual penetration. Boundaries integrate the contradictions of identity and difference between the self and the environment. In this sense, the self is open to the environment through the boundary, while simultaneously being closed, and closed while being open. Boundaries separate as well as unite the self and the environment.

The individual organism, whether a plant or an animal, is covered by an outer layer, which not only distinguishes the individual from the environment but also facilitates the exchange of external and internal elements, maintaining continuity between the individual and the environment. Here, opposing concepts such as inside and outside, self and other, identity and difference intersect and permeate each other.

Interaction and Mutual Recognition

Living organisms constantly exchange matter, energy, and information with their external environment, maintaining their internal order with flexibility. Under this interaction between

the inside and outside, the process of continually changing internally while maintaining their identity is what constitutes life.

The maintenance of homeostasis in living organisms is also carried out through the interaction of various organs. It is not driven by the command of a single organ or a single substance. Rather, it arises naturally through the mutual interaction of various organs and substances. Thus, the essence of life lies in this interaction, not in any single organ or substance.

Biological phenomena are sustained by the continuous interaction with the external environment. DNA itself is a living entity, constantly interpreting the external environment and engaging in life processes through the interaction between the inside and the outside. This interaction is life itself.

The world of life is a mechanism of mutual recognition. Gene groups recognize the positional information they hold, decode it to promote development, and sense changes in the environment to trigger evolution. Immune cells also recognize each other, forming networks to confirm the self. In systems like the nervous system, circulatory system, and endocrine system within the body, various elements exchange information and recognize each other, forming networks.

Genes are information. Information is relationship. Relationship is interaction. Therefore, it is neither selfish nor altruistic. It is both selfish and altruistic.

Living organisms, both internally and externally, create harmony as each element recognizes and interacts with others. The ability of life to form order must be understood as the ability of mutual recognition between individuals that make up the organism.

The neurons in the brain are also oscillators, and millions of these neurons synchronize, leading to functional integration. Even neurons that are far apart synchronize, producing brain functions. Our thoughts, emotions, memories, and behavioral patterns arise from the synchronized phase between neurons, producing coordinated activity, allowing the brain to function as a unified entity. This synchronization is nothing other than recognition.

Activity of Perception

Perception is an event. It encompasses not only what is perceived and the perceiver but also their relationship, as well as the surrounding circumstances and context. It is a unique, momentary event that occurs right here and now. From the event of each moment itself, both what is perceived and the perceiver emerge.

Perception is the recognition of the relations between things, including the perceiver. No cognition can exist without relations. Furthermore, these relations are always dynamic. As the perceiver changes, the relations between things change, and in response to these changing relations, perception also changes.

Perception is not passive, but active. As we move within the world, we generate events and recognize them. Engaging in activity is what constitutes perception. Therefore, recognition changes depending on how one acts.

Between action and perception, there is continuous interaction and a cooperative circular process. Here, what is active is also passive, and what is passive is also active.

Perception and Action

Perception is an act. Therefore, depending on how the act is performed, the world appears in various ways. As a result, the world that each observer envisions appears differently.

Perception originates from action, not the other way around. Action does not originate from perception. Moreover, perception changes along with changes in action.

Perception arises through the encounter of the subject and the environment in the changing actions and the changing environment. The perceptual judgment of the object is established through the resonance between the object and the observer.

The perspective of perception is deeply intertwined with how we engage with the world through our bodies. By acting through the body in the world, the world image that the observer envisions naturally emerges. The observer and the world, including the observer, cannot be separated.

Practical Recognition

The subject engages with the environment through action, and the process of discovering new meanings is what we call perception. Perception is the subject's action within the environment. Through practical recognition, the subject and the environment are mediated.

Both animals and humans are acting subjects who recognize the world while engaging with it. Perception is not simply the representation of the external world; above all, it must be something that occurs through action, mediated by the body. In this sense, passivity exists only through activity.

Knowledge of the world is acquired by the subject who acts through the body within the world. The subject is not a perceptual subject observing the world from the outside, but is always an acting subject who steps onto the stage of the world, performing with their whole being. It is through this acting subject that the world is perceived.

Subject and Environment

Living systems maintain their internal order fluidly while exchanging matter, energy, and information with the external environment. They constantly reorganize their structure, interpreting the external environment while maintaining their own internal order. The ability to form order through interaction with the environment is what defines life.

The subject and the environment are distinguished by the body, and in this sense, they are discontinuous. However, no living organism can survive without continuity with its environment. The exchange of matter and energy through the body guarantees this continuity.

The subject recognizes the environment by acting within it. The perceiver exists within the world they perceive, and recognition is established through interaction with the world that is being perceived.

The subject and environment mutually define each other. Moreover, since both the subject and the environment move, and the relationship between them also moves, recognition is established through the resonance between the moving subject and the moving environment.

The subject extracts meaning from the environment through action in the environment. The meaning and value of the environment change as a result of the changes in the acting subject. Meaning and value emerge from the circular correlation between the subject and the

environment.

Living systems are influenced by the environment and also influence it, shaping themselves through interaction with the environment. As living systems change in relation to the environment, they also change the environment, and both the subject and environment evolve synergistically.

The subject influences the environment, and the environment influences the subject, with both the subject and environment undergoing spiral changes. As the environment creates the subject, the subject also creates the environment. Through this interaction, both the subject and the environment undergo self-formation.

Through the spiral and cyclical interaction of action, recognition, and form in the subject-environment relationship, evolution occurs. In this way, life forms create new forms through the interaction between the subject and the environment.

If we define the ability to choose actions within the subject-environment interaction as the mind, then all animals possess the function of the mind. In the selection of actions within the environment, the mind functions in terms of perception, judgment, recognition, thinking, memory, emotions, will, and other aspects of mental activity.

The origin of thought lies in the diversity of actions in response to the environment. By adjusting actions in response to changes in the environment, the flexibility of behavior lies in the selection of diverse ways to respond. It is through this behavioral flexibility that thought operates.

Self-awareness emerges when the subject actively influences the environment. Influencing the environment is, in turn, being influenced by the environment. Moreover, through this process, we also experience ourselves as the ones who experience the environment.

Creation of Environment

The subject of life is expressed primarily as the body, and further, as actions through this body, which interact with the environment. The behavior of organisms through their bodies mediates between the subject and the environment.

Organisms actively adapt to their environment and also alter it. It is essential not to ignore the spontaneity, agency, and capacity for choice that organisms possess. The living subject acts within the environment and is a subjective being that creates the environment.

Living beings create the environment and incorporate it as the environment necessary for their own development. In this way, living beings become more complex and evolve.

The environment creates humans, and humans create the environment. Humans are shaped by the environment, but at the same time, they shape the environment. It must be understood that humans and the environment are mutually defining.

The meaning of the world changes through the use and creation of tools. Tools are originally invented by transforming the meaning of the environment, but simultaneously, the invention of tools brings forth new meanings of the environment. Through actions, the world is opened up.

Technology, in itself, is an action that actively engages in the self-formation of the world. Moreover, if the very organisms possessing such technological capabilities are created by the world itself, then the world possesses the power to reshape itself.

Observation and Experiment

The recognition of natural sciences is also practical, action-based Recognition. The observations and experiments in natural science are acts of trying to understand nature by immersing bodily actions within it. Through this process, nature is revealed before us. We, as participants in the self-formation of the world, are observers of the world in which we exist.

The history of scientific inquiry is the history of human exploratory behavior. Just as animals recognize the external world by exploring, humans also attempt to discover new meanings of the world through observation and experimentation. Furthermore, the extraction of new meanings of the world leads to further observations and experiments, creating new understandings. Science, too, must be considered as something that emerges and develops from practical recognition.

Through the experiments performed by scientists, the world can be changed. The act of experimentation in natural science involves cutting into nature with a hypothesis. Scientific

experiments are not conducted outside nature, but within it, forcing nature to reveal its secrets. Naturally, like any coerced confession, the image thus revealed is not the original, unaltered truth.

Science, too, is historically generated and changes over time. Science itself has changed our understanding of nature through the development of tools and discoveries, that is leaps in action. This shows that the way we perceive the world changes through observation and action.

Mutual generation and Complexification

The world of life is a realm in which life forms naturally shape themselves through interactions. Whether at the level of genes, cells, organs, individuals, or ecosystems, the living system formed at any level develops its structure and form through interactions. In this process, new forms emerge from the interaction of many elements, gaining abilities such as survival, growth, and evolution.

Living organisms are complex entities formed by the organization of various elements. This complexity cannot be reduced to the individual elements. The essence of life phenomena lies in the fact that new, holistic traits and forms emerge through the interactions of parts, which cannot be reduced to the parts.

In the evolution of life, newer forms exceed the sum of the preceding parts and generate new forms, thus increasing complexity. Life tends to move from simplicity to complexity, from disorder to order. This is also a characteristic of matter itself, which has also become more complex, evolving from elementary particles to atoms, molecules, and polymers. The entire process of the universe, from matter to life, has been a process of increasing complexity.

In the world of life, elements initially compete with each other, but eventually cooperate, symbiotically co-exist, and form a division of labor, creating more advanced and complex structures. Moreover, the formation of more complex structures occurs in a way that builds upon previous ones, like stacking blocks, so a hierarchical order inevitably emerges.

Complexification also occurs through differentiation and specialization. In fact, living organisms have diversified a single common principle into an infinite variety. In this case, the direction of this differentiation cannot be predicted, as it depends on the interactions of various elements at any given moment.

From organic polymers to genes, cellular organelles, cells, and individual multicellular organisms, life has evolved in the direction of greater complexity. Life progresses irreversibly from dispersion to accumulation, from disorder to order.

The evolution of life on Earth, from its origin to the present, from simple to complex organisms, occurred because life forms were capable of restructuring their internal mechanisms in response to environmental changes. Evolution does not occur because internal mutations are selected by external environments, but because organisms undergo active, internal self-transformation to adapt to environmental fluctuations.

The evolution of life is not the result of a mere accumulation of accidents such as mutations and natural selection; rather, it arises from the organism's ability to actively form order in response to these accidents. Life forms adapt to environmental changes by purposefully and flexibly altering their form and function to survive.

Life is a force that seeks to create order out of disorder and strives to transcend physical causality. Through its continuous evolution towards greater complexity, life has persistently resisted the law of increasing entropy.

Form

Life manifests primarily in a vast diversity of forms. Life is form, change, and creation. The myriad forms are the self-expression of the generative and transformative life.

Life is expressed as species. The essence of a species is its form. In the every organism, an individual disappears through division or reproduction. However, through the same division and reproduction, it is also regenerated. In this way, form is sustained from one individual to another, and the species is inherited.

Information

The acquisition of information is essential for all living organisms. Without information, there is no survival. Information allows organisms to judge whether the given environment is conducive to survival, and enables adaptation to that environment. Furthermore, it even allows for the modification of the environment itself.

Cognitive ability is also the ability to extract information. Living beings select the information they need from the surrounding world. Perception is the process of selecting information through actions and discovering the meaning and value that is necessary for oneself. Perception is an active act of seeking information from the environment.

In ecosystems, it is not just matter circulating and energy flowing; information also circulates. Each element in the ecosystem is an open system and a cognitive system, reading information from its surrounding environment. By receiving and recognizing information, each element creates order and form.

Living organisms are purposeful agents that strive toward goals, and creative subjects with spontaneity and autonomy. The self-transcendence of life cannot be explained by deterministic causality. It is undeniable that the information processing and cognitive abilities of life play a significant role in this self-creation and self-transcendence.

Even in the process of evolution, the phenomena of information exchange and the development of recognition cannot be overlooked. From the moment life first appeared on Earth, it has recognized environmental information and adapted to its conditions, creating new forms. Moreover, this evolution of life has led to the modification of the Earth's surface environment, resulting in the evolution of the Earth's surface itself.

Branching

All life forms on Earth are composed of proteins made of L-type amino acids and right-handed DNA, and no life forms are known to exist that are made of proteins composed of D-type amino acids and left-handed DNA. This is likely due to a spontaneous symmetry breaking at the time of the origin of life, where only one form was selected by contingency. The asymmetry of life forms is probably a function of the asymmetry of the universe itself, which arose from a spontaneous symmetry breaking.

The unexpected leaps in the development of life also stem from symmetry breaking and phase transitions occurring during the process of interactions. These unexpected leaps are unpredictable, both from internal observations within the system and from external observations of the system.

In our own lives, there are many branching points at various junctures, and the direction we take at these points determines the course of our lives. If, at any one of these branching points, something had happened slightly differently than what actually occurred, a completely different outcome would have unfolded. The tiny fluctuations at branching points expand over time, leading to results that are entirely unrecognizable. The leaps in life also arise from this process.

Irreversibility

Life phenomena are occurrences that cannot be reversed or replicated. Life is a dynamic order that changes and develops, and it changes irreversibly. Even under the same conditions, the same thing will not repeat in the same way. At any moment of the irreversible time of life, a cross-section of the world's generation and development emerges.

Living beings, in each moment, preserve within themselves their own past, the past of the species that created them, and the vast past of evolutionary life that gave rise to that species. At the same time, each moment is a change, a creation toward a new future, and a formation. Within the present, both the past is preserved, and the future is contained.

Life is also a grand system of memory. All currently living organisms carry within them the memory of the long history of 4 billion years since the origin of life. From this long memory, they find ways to respond to the uncertain future and engage in new creation. For life, time is an irreversible time in which the past and future come into contact within the present.

Life's time is irreversible, singular, and unpredictable. This time, characterized by irreversibility, uniqueness, and indeterminacy, can be seen as, in some ways, a harsh time for life. However, life endures this harsh time by preserving the past in every moment, holding the future within each moment, and continually creating toward the future. Constant generation — this is the eternity of life.

If life's time is irreversible and singular, then the path of evolution cannot be predicted. The path that life evolution will take and the new forms it will produce are unknowable. The paths of life evolution are countless and branch out in all directions, like a tree. In this process, there are elements of contingency, uncertainty, and indeterminacy.

Freedom

Both from a mechanistic and a teleological perspective, life is a free existence beyond determinism. Life responds to the contingency of each moment, freely creating new forms, functions, and structures. Life unfolds itself in any direction toward an indeterminate future that is unknowable. In this, there is not only freedom but also creativity. The astonishing diversity of life has been brought about by this freedom of life.

Whether in animals or plants, the forms and colors of living beings exhibit expressions beyond the purpose of self-preservation. The diversity in the forms of plants and animals cannot be fully explained by the concept of purposive adaptation to their environments. Even within the same environment, infinitely diverse forms of plants and animals are created. In this diversity, there is a free activity of life that transcends mere teleology.

Changes in the environment are unpredictable accidents for living beings, but the self-forming power inherent in life responds to these changes creatively. When life encounters obstacles such as environmental changes, it finds various paths of adaptation, branching the flow in many directions. It is in this diverse branching and adaptation that the freedom and initiative of life are manifested.

The kinds of environmental changes that living beings will face are unknown to them, and it is undecided how they will adapt and what forms they will take in response to these changes. In this sense of indeterminacy or future determination, life is free. In the sense that various ways of life are possible in response to contingency, life possesses freedom. Life is a free existence beyond determinism.

The forms and directions that living beings can take are filled with contingency. For a living being, any possibility exists. However, because life contains this contingency, it is also free. Plants grow against gravity, and birds fly in the sky. The world of life is one of freedom and spontaneity.

4 Society

Mutual connectivity

The society we engage in is also constituted by interconnectedness, and it generates and changes through the interaction between elements and their interaction with the environment. When one element fluctuates, other elements will fluctuate accordingly, and when other elements fluctuate, the original element will also change. When the individual changes, the field also changes, and when the field changes, the individual changes as well. Through the interaction between the individual and the field, society forms itself.

Each individual and element of society is interconnected and reflects one another, forming itself. The self and others, individuals and individuals, events and events, are all interconnected and linked, constantly fluctuating.

In a society based on the mutual relation, individuals are both distinct from one another and yet connected. Individuals are interconnected, forming parts of a continuous whole, and making up inseparable parts of society. There is no individual that is detached from the mutual relation. Individuals are both discrete and continuous.

The countless individuals that make up society also relate to each other, influence each other, and are bound together, forming a network of interactions. From this network, new social structures emerge. Society is thus emergent from the behavioral interrelations between people.

Relational Entities

If we define an individual who determines their own way of being within relationships as a "relational entity," then the society that humans engage in is formed by the interconnections of relational entities. Society is built upon the relationships of countless individuals acting as relational entities. It is a self-forming entity that arises from the interactions between relational entities, and its fluctuations are also caused by the interactions of these countless relational entities.

The relationships of individuals are constantly changing, and in response to these fluctuations, individuals as relational entities also fluctuate. Furthermore, with the changes in individuals, the relationships and society itself change. The fluctuations in society arise from the spiral interconnection between individuals and relationships.

Each individual is a relational entity. An individual cannot exist apart from their relationship with others and always exists in a way that is connected with others. Therefore, within each

individual, the interconnectedness with others is already incorporated, and it is within this interconnectedness that the individual acts. The self and the other are within the relationship, and cannot exist without it.

Since everything includes a relation to others, the self can only be itself insofar as there are others. The self exists rather as the other of the other. Even the opposing concepts of self and other coexist within the self.

The self maintains its identity by distinguishing itself from others, but this identity cannot exist without a shared identity with others. The self is constituted by the identity of both sameness and difference.

Mutual Reflection and Self-Observation

In a society structured like a network of elements, each individual is interconnected and reflects upon one another, collectively creating the whole world. Society is a world of mutual reflection between individuals. At the same time, by reflecting upon one another, each individual also mirrors the entirety of society.

Society, in turn, is a self-observing system where the observer is within the world being observed. Here, those who observe society are simultaneously actors within it. This action, within the mutual relations of society, directly influences the self-formation of society itself.

Society depicts itself, and through this self-depiction, it forms itself. The formed self then re-depicts itself, thus forming a new self. Through this self-referential cycle, society transforms itself. A society that self-forms, through this infinite reflective capacity, constantly generates new meanings and structures.

Action and Relation

In the generation and transformation of society, individual actions within mutual relations are essential. One action, within these mutual relations, influences others one after another while also being influenced in turn. From the connections of such actions, something beyond those actions themselves emerges, and this is society.

In a society of mutual relations, we act within our relationships with others, but our actions

also change these mutual relations. In this sense, even the smallest of our actions contribute to the generation and transformation of society.

Humans act within the relationships between people, while being limited by them. However, we must also pay attention to the individual actions that restrict these relationships. Human relationships and society are always in flux, and this is due to the actions of individuals within mutual relations. The actions of individuals change the social mutual relations. The relationship not only changes depending on the actions, but the actions also change the relationship. The fluctuations of society occur through the differences between action and relationships.

Actions are limited by relationships, and relationships are limited by actions. The change and creation of society arise from the mutual limitations of action and relationships. If we focus on this point, we must consider not only the actions that are performed in accordance with relationships but also, conversely, the actions that move the relationships. Through this, the fluctuation of relationships takes place. The action not only changes depending on the relationship, but the relationship itself is also changed by the action.

In human societies, the actions and words expressed by individuals, as components of society, influence others, and this influence circulates back to affect the individual. As a result, it also becomes a factor that changes individual behavior, leading to the emergence of new behaviors. In this way, individual actions and words are reproduced. Society, by continuously self-referencing and creating itself, adapts to the environment.

Life and social phenomena are established through cycles, and the distinction between cause and effect is often unclear. Rather, living systems are formed through cyclical interactions where each element is both the cause and the effect for the others.

Emergence

The society humans create is also an open system that is open to the environment, constantly interacting with it while exchanging materials, people, and information. Through these interactions with the environment, society continuously generates new structures and adapts to environmental changes. Society is thus a living system.

The reason society has a flexible ability to adapt to the constantly changing environment is

that it can generate new structures in response to changes in the environment. Society is in constant interaction with its environment, and this interaction leads to the emergence of new structures within the system.

Like the material and biological worlds, society also generates new structures and forms through interactions between elements, creating new order. The order within society is not a static order, but a dynamic one that never ceases to move. Society is constantly striving to surpass its existing state, changing its structure and form.

Chaos and Order

Our society fluctuates between states of chaos and order. Two movements, from chaos to order and from order to chaos, intersect, causing society to evolve. The point where chaos and order intersect is the place of creation, the place of emergence.

In the process of social change, disorder and chaos often appear during the transition from one order to another. However, this also becomes the force that creates new order. In the process from order to chaos, and from chaos to order, the meaning of society is re-examined, and new meanings are assigned.

Differentiation and Information

As a society's ability to adapt to the environment increases, its functions become more complex and differentiated, and correspondingly, its structure also becomes more differentiated. In this way, society has generated more complex, hierarchical structures such as families, kin groups, tribes, interest-based societies, nations, and the international community, along with an increasingly complex division of labor.

Human society is also a system of meaning in which various elements are organically organized, and the force that organizes and integrates these elements toward that system of meaning. Moreover, society constantly reorganizes and updates this system of meaning. Here, the role of information becomes significant.

Contingency

In human society, small contingent events are often amplified, leading to significant changes.

These contingent events cause symmetry to break in one direction. Once symmetry is broken, self-amplifying formation occurs in that direction.

When society chooses a particular direction, the role of contingency is crucial. While surrendering to contingency, society shapes and transforms its own form and structure. The form and structure it can take are determined by the interaction of various factors at any given time, and it is neither predictable nor definable.

Indeterminacy and Irreversibility

The way in which a society creates new orders is not deterministic, nor can it be predicted. In general, in systems where countless elements are interconnected and interacting, the results cannot be determined solely by the initial conditions.

A society does not operate according to predetermined laws or plans. The society in which people live determines its form and structure based on the interaction between unpredictable environmental changes and unpredictable responses to those changes, depending on the situation at any given moment.

Because society is a system that continuously generates new forms and structures, the time manifested within it, is also irreversible. When one societal state is rearranged and a new societal state emerges, there is, to varying degrees, a leap and accumulation of experience. Thus, in this process, nothing is repeated, and there is no regression.

The time of social phenomena is one-way; it cannot be reversed, nor can the past and future be exchanged. Society is an irreversible developmental process, always formative and creative. The reason we cannot foresee the direction of societal development, the specific path it will take, or the new forms it will create, is due to the irreversibility and uniqueness of social phenomena.

Society is not something that exists in a static state; it is an inseparable part of a world that constantly undergoes generation and change. Society is a process, a process of generation and change, and a drive to continuously create something new. Society cannot be perceived as something fixed or stationary. It must be understood as something that is always in motion.

5 Conclusion

The history of the universe, the history of life, and the history of society are all formed by events that continuously emerge. Only events occur. History is constituted by what has happened and what is going to happen, and moreover, what is going to happen emerges by including everything that has happened up until that point. In order for a particular event to occur, all prior events are related in various ways.

From the universe to matter, life, and society, the world is a system of mutual relationships where each element mutually reflects and shapes itself. The logical structure of this system is based on the interplay of unity and multiplicity at every phase.

The universe, the material world, and the world of life all create new structures and organizations through mutual recognition. Just like our society, the universe itself is a creative society that constantly generates new forms through the exchange of information. In the evolution of the universe, the formation of matter, the birth and evolution of life, recognition is at work in all of these processes.

In the universe, matter, life, and society, individuals interact with each other in various ways, forming a field through this interaction. The field and the individuals then influence each other, and the world undergoes spiral-like generative change.

In a world where countless elements are mutual related , permeate each other, and influence one another, new structures emerge from their interactions that did not exist within the individual elements. As the world progresses to higher levels of hierarchy—from the universe, to matter, to life, to society—it increasingly generates more complex and novel characteristics. The reductionism of modern science has failed to capture this emergent world.

Everything that has history, including the universe, matter, life, and society, spontaneously generates new characteristics, forms, and more complex structures and functions through the interaction of many elements. This often occurs not through continuous change, but through discontinuous leaps.

Whether it is the universe, the material world, the world of life, or human society, all are systems composed of the interaction of infinite elements, and thus, they are indeterministic

and irreversible. Since everything is interconnected and interdependent, no event can be determined by itself, nor can it revert to a previous state.

Living systems actively interact with each other within themselves while also interacting with their environment. Through this, they adapt to the internal and external conditions, generating new structures. This takes place in a special domain between chaos and order. It is precisely the gap between chaos and order that enables the self-formation of matter, the manifestation of life, the evolution of organisms, and the activities of society.

The phenomena of uncertainty, indeterminacy, the breakdown of causality, and irreversibility increase as we move from elementary particles, atoms, molecules, and polymers to geology, meteorology, organisms, to the human society and history, with the hierarchy becoming more complex. From the microcosm, through the world of life, to the macrocosm, we must recognize that this world is a non-deterministic one.