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***Editor's Note:** This article was originally published in English (with a Japanese abstract) in *Christ and the World* (annual monograph of Tokyo Christian University), vol. 12 (2002), pp. 55-76 and is an extended article originally presented at the conference "Cultures and Christianity A.D. 2000" in Hoeven, the Netherlands. The current version was edited after a presentation by Dr. Inagaki at Dordt College for publication in *Pro Rege*. When asked recently by Dordt Professor Roger Henderson of his own stand on Emergence theory, Dr. Inagaki replied that "only God is the cause of the emergence of the world and human being, and there is no room for autonomous independent evolution. The concept of emergence here is completely theistic emergence. I cannot believe [in an] autonomous emergence due to . . . naturalistic power. I reject even the so-called methodological naturalism."

Personhood and Freedom in Religio-Scientific Realism



By Hisakazu Inagaki

Abstract

This paper considers the idea of human personhood from an interdisciplinary point of view. By noting that the natural sciences have shifted from a deterministic to a non-deterministic method, it considers the idea of "emergence" as a crucial concept in its

approach. Since emergence is an essential element in complexity theory, this paper develops an ontology of meaning called Emergent Hermeneutics (EH) and compares it with Process-thought, information theory, and Buddhist philosophy based on

Lotus Sutra. It studies the so-called mind-brain problem through Emergent Hermeneutics. Finally, it expresses the new insight using Karl Popper's idea of worlds 1, 2, and 3 in terms of a world 4.

Introduction

Civilization in the twenty-first century will inevitably require a global dialogue on science and religion. Dialogue is something practiced by human beings. Thus, the way religions view human beings is critically important. Religion in this case should be considered in a pluralistic way like culture, i.e., as "religions." One of the issues in the dialogue between Buddhism and Christianity (in Japan) has been whether the transcendent (God or Buddha) is personal or impersonal. Since only human beings, among all other entities, have personality, it seems to me that the transcendent communicating with human beings that have personality is of the greatest importance. This belief may also be confirmed in our era because human beings become depersonalized day by day due to the development of advanced mechanistic technology. This depersonalization is the reason that I propose a religio-scientific realism. This depersonalization is also the reason that I do not agree with "Process-thought," A.N. Whitehead's approach. It claims a "weak God," although Process-thought has developed many interesting ideas in this

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field (some of which will be mentioned in what follows). On the other hand, the position of one of the Buddhist Sacred books, i.e., *Lotus Sutra*, “stresses Eternal Personal Life” (where Buddha is personal). T’ien-t’ai philosophy, based especially on *Lotus Sutra*, also suggests a personal God (T’ien-t’ai was a Chinese philosopher in the sixth century).

Many people today consider *personality* to be a concept that is rooted philosophically in the work of Immanuel Kant. For instance, in Japan, “education based on personality” has been argued in accordance with Kantian philosophy. Even scholars in religious circles are no exceptions to this tendency. Kantian moral philosophy, however, should be reconsidered today because it came about as a strong reaction to scientific determinism. Here we find a strong dichotomy of science vs. person or nature vs. freedom. In order to overcome this dichotomy, we should carry on a dialogue with recent scientific anthropology. The result, I hope, will be to re-establish a contemporary concept of *personality*.

Today there is a consensus about the breakdown of the notion of *substance*. All creatures are considered to be relational and not fixed. Everything, from elementary particles to galaxies, is believed to be changeable. Thus old-fashioned substantial hierarchies like Aristotelian, Thomistic, and Cartesian are invalid. In this trend of thought, what is human personality? For a new way of viewing personality, I want to propose an ontology of meaning (Section 3).

The purpose of this paper is to gain new insight into the human person through recent discussions of science and religion, and further to look for a way of ascribing freedom to individuals in Japanese society. From my position, which I call Emergent Hermeneutics (EH), I will carry on a dialogue in this paper with recent ideas developed, for example, by (a) the science of complex systems, (b) Process-thought, and (c) T’ien-t’ai philosophy. I do so by using the ideas of (1) “emergence” from non-human entities to human person, (2) the one-many relationship, (3) the relation between information and actual entity, and (4) the concept of the “experiencing subject.”

Scientific anthropology and the human person

(A) From determinism to non-determinism

It seems that true humanity is being evaded step by step through high technology today. The universe

is composed of many materials. Organisms, including human beings, are understood as metabolic systems that are just combinations of DNA and protein. The human mind, too, is reduced to the brain and the function of neurons. In order to dare to say that the human person is the most important creature today when people are seen only as a combination of genetic materials, we need a reasonable and persuasive explanation of what it means to be a person.

At the dawn of the modern age, René Descartes (pro)claimed the freedom of mind. He arrived at his *cogito* by pursuing certainty of knowledge, proposing that the mind is a substance. Over against this idea of mind as substance, he considered matter to be another substance, a view that presented a dualistic view of reality. This dualism, however, conceals one major difficulty. The mind as a substance had its own law unrelated with matter, while matter as a substance also had its own law having nothing to do with the mind. Although this dualism worked well in the external world apart from humans, it did not apply efficiently to human beings themselves. The human mind and body are in a well-balanced relationship. Why is this balance so? Descartes assumed some interrelation between mind and body, which takes place in the pineal gland. Today this idea sounds ridiculous. People are inclined to reduce the mind to mere brain activity, explained in physiological and physico-chemical terms, and are refusing to attribute a peculiar law to the mind. This approach had been the modern tendency up to at least 1980. However, in recent years, the method of science has undergone a transformation from a deterministic to a non-deterministic model, rejecting a simplified reductionism. It is crucially important to understand the implications of this tendency for philosophy and theology for the twenty-first century.

While this tendency is present at the frontiers of science, the majority of people still believe in a scientifically deterministic worldview. If it is pushed to an extreme, human free will or self is denied, negating human free personality. Such an extreme is usually avoided by a convenient procedure, i.e., dividing reality up into two parts: a scientifically deterministic world and a free personal world. Between these two worlds, there is no interrelation that grants humans a “holy personal world.” This dualistic view is what Kant proposed. The dualistic view-science vs. person (or nature vs.

freedom)-resulted in the framework of Kantian moral philosophy. Even though this moral philosophy is now very much out of style, some religious groups still insist on it to protect the “holy personal world.” Ordinary common people today live in a highly technologically determined society in which the Kantian “holy personal world” has no real basis. Where did this misleading Kantian idea come from? It came from the assumption of the “free personal world,” which was only a reaction to the “scientifically deterministic world.”

Our contemporary task, therefore, is to show that the idea of a “scientifically deterministic world” is not valid today. I know that Process-philosophy as an organic philosophy has for many years proposed a non-deterministic view of the world. However, it seems to me that it has been proposed as merely a metaphysical dogma from the top down. My strategy is first of all to observe the real world in dialogue with today’s science, and next to construct a theory of reality. This order in theorizing, from bottom up or from epistemology to metaphysics, is called *critical realism* by John Polkinghorne.¹

Today, the view that matter follows a deterministic law has been drastically changed. This change of view has nothing to do with quantum theory, as is usually mentioned by many philosophers. It is not concerned with the story of microscopic world where the probabilistic interpretation of quantum mechanics is well known, but with a story of our everyday macroscopic world. A physical theory about a microscopic world is not directly related to an epistemology of our ordinary daily world because Newtonian mechanics is valid here. Thus, a metaphysical theory about our daily world is not directly related to quantum epistemology, as is usually thought. The change of view to which I refer is concerned with our macroscopic daily world, i.e., chaos theory, non-equilibrium thermodynamic theory, or the science of complex systems in general. This view is also characterized by holism instead of reductionism.

For instance, in chaos theory, a small difference in two systems’ initial values will grow exponentially to give drastically different behaviors in those systems. The belief that “a whole is not merely the sum of its parts” is quite common in that system, usually being non-linear. In the self-organization of a biological system, for example, local interactions

among constituents in a lower level will give a certain macroscopic structure at the higher level, which again gives feedback influences to the constituents of the lower level. If that schema is seen only from below, it appears mechanistic, and if seen only from above, it appears vitalist or teleological. To describe the combination of top-down and bottom-up together as a whole, one can use the word “emergence,” because an unexpected structural behavior suddenly takes place there. In the natural world there are many unexpected phenomena, which recent science has gradually begun to articulate through a new method. Such phenomena are unpredictable, though previously predictability was considered to be essential to

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science. The methods of science are being transformed to include a non-deterministic method. The non-deterministic method is not the same as the probabilistic method, where the probability can be predicted. It is fair to say that the Newtonian deterministic idea, which essentially dealt with linear, continuous, and differentiable functions, is merely a part of the whole of nature. At first glance, this is not seen as a radical change of view in science, but in fact it is. Eventually, it will have a truly major effect on metaphysics.

We comment here on the concept of “emergence.” The philosopher who first presented “emergence” as a concept relating bottom-up and top-down is Michael Polanyi (1891-1976). After noticing the layered structure from matter and machine to organism, humanity, and society, he argued that the function of the higher level could not be explained by the laws of the lower level.² He criticized so-called reductionism. He said, “The higher level can be explained by ‘emergence’ which is not included in the process in the lower level.”³ The word “emergence” is used in order to clarify a discontinuity from one level to another. As we will see later, this discontinuity is essentially important in the emergence of human persons.

(B) Twentieth-century view of nature and Process-thought

Ian Barbour says that twentieth-century science has departed significantly from the Newtonian conception of nature. He identifies its five features as follows:

1. In place of immutable order, or change as rearrangement, nature is now understood to be evolutionary, dynamic, and emergent. Its basic forms have changed radically and new types of phenomena have appeared at successive levels in matter, life, mind, and culture. Historicity is a basic characteristic of nature, and science itself is historically conditioned.

2. In place of determinism, there is a complex combination of law and chance, in fields as diverse as quantum physics, thermodynamics, cosmology, and biological evolution. Nature is characterized by both structure and openness. The future cannot be predicted in detail from the past, either in principle or in practice.

3. Nature is understood to be relational, ecological, and interdependent. Reality is constituted by events and relationships rather than by separate substances or separate particles. In epistemology, classical realism now appears untenable; some interpreters advocate instrumentalism, but I have defended critical realism.

4. Reduction continues to be fruitful in the analysis of the separate components of systems, but attention is also given to systems and wholes themselves. Distinctive holistic concepts are used to explain the higher-level activities of systems, from organisms to ecosystems. The interaction between systems or levels can often be described as the communication of information.

5. There is a hierarchy of levels within every organism (but not an extreme hierarchy of value among beings, as in the medieval view, which could be used to justify the exploitation of one group of beings by another). Mind-body dualism finds little support in science today. The contemporary scientific outlook is less anthropocentric; human beings have capacities not found elsewhere in nature, but they are products of evolution and parts of an interdependent natural order. Other creatures are valuable in themselves. Humanity is an integral part of nature. A human being is a psychosomatic unity - a biological organism but also a responsible self.⁴

In summary, Barbour proposes “the image of nature as a community—a historical community of interdependent beings” and “will suggest that process

thought is particularly compatible with this view of nature.”⁵ I basically agree with this opinion. And I greatly appreciate Whiteheadian, Process-thought, i.e., the development of a metaphysical category that can be adapted to a continuum of diverse entities continuously from small particles to the universe. However, at the same time, I want to stress discontinuous layers of many entities instead of continuity. Each layer of being has its own laws. To notice these different laws is most important for constructing metaphysics. One good illustration of this discontinuity is “emergence” from non-human entities to the human.

(C) Definition of personality by “emergence”

Freedom and responsibility belong only to humans, not to other entities. Things in the world show discontinuity, i.e., stones, plants, animals, and human beings, according to the layers of being. Why do freedom and responsibility belong to humans only? There is a strong difference in quality between humans and animals. Here I will introduce the concept “person” to distinguish humans from animals. This “person” concept is closely related to the “emergence” proposed in the last chapter of Polanyi’s book *Personal Knowledge*. After discussing the layers of being, he says, “it is as meaningless to represent life in terms of physics and chemistry as it would be to interpret a grandfather clock or a Shakespeare sonnet in terms of physics and chemistry; and it is likewise meaningless to represent mind in terms of a machine or of a neural model. Lower levels do not lack a bearing on higher levels; they define the conditions of their success and account for their failures, but they cannot account for their success, for they cannot even define it.”⁶

In this way, as an illustration from the lower levels to higher levels, he talks about the emergence from child to adult, or analogously from the animal to the human as follows: “In the course of anthropogenesis, individuality develops from beginnings of a purely vegetative character to successive stages of active, perceptive, and eventually responsible personhood. This phylogenetic emergence is continuous—just as ontogenetic emergence clearly is.”⁷

Here, “responsible personhood” is just what I want to notice. “Personhood” is always associated with responsibility. The “person” is also associated

with freedom, kindness, mercy, tolerance, prudence, self-control, and so on. Thus, we may establish “person” as a unique character to the human only.

It seems to me that Process-thought lacks a theory that can explain the uniqueness of human beings, even though “emergence” is taken to be important. Rather, the experience of organism (whose model is a conscious person) exists there first, and this experience is attributed to actual entities. In this idea, doesn’t human responsibility become ambiguous, contrary to its initial intention? I want to follow bottom-up thinking, which enables the metaphysical theory to suit scientific thinking. This is what critical realism proposes.

3. Mind-body problem and mind-brain problem

(A) Recent brain science

Chaos theory plays an important role in the relation of non-deterministic laws to the material world. At the same time, it has recently been reported that physiological function of a biological neurosystem and the brain are well explained by chaos theory. In philosophy, due to the development of brain science, the Cartesian mind-body problem has shifted into the mind-brain problem. For myself, I doubt whether the body can be reduced to a brain-neurosystem in this context. Nevertheless, it may be useful to consider the relation of the indeterministic method of science to the mind-brain problem.

Ichiro Tsuda, a brain scientist, summarizes the chaos phenomena appearing in a brain-neurosystem in the following six points: storing information, learning, pattern cognition, searching problem, memory, writing and calling of memory.⁸ In these phenomena, neural nets work through chaotic activity.

Tsuda also shows that a hermeneutic method is useful in the cognitive activity of brain. This hermeneutic method is useful because prejudice is indispensable in cognitive activity. For example, when a person sees the “duck-rabbit” diagram, one person sees it as duck and another as a rabbit according to their prejudice. This method is a way of “understanding” something in general, where the prejudice can be corrected step by step. Understanding will be deepened historically and not be completed. This incomplete understanding is one of the reasons that computers will not replace brains even in the future.⁹ Tsuda refers to the impor-

tantness of metaphor to information arrangement in the case of children’s play, saying that “Children do not react at once, but are doing tremendous information arrangement inside their brains. Without output to the outer world, they are making metaphors. Behaviorism, where only stimulations from the outside and reactions to them are observable variables, is not a useful method to know the essence of brain’s information arrangement. The methodology of science for research of matter is not valid in understanding the ‘interpreting brain’.”¹⁰

As a result, metaphorical and hermeneutic approaches are important to creative work in interdisciplinary fields across science, philosophy, and

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theory. In considering a border problem between brain and mind, we assume that mind (psyche, soul, or heart) is an independent higher mode, irreducible to brain, even though not an independent substance which, nevertheless, interacts with the brain. Mind is real “emergent” activity, different from brain.

An organism is subject to laws different from material’s laws, though the organism’s laws are based on the material’s laws. In a similar fashion, the mind’s activity is not reduced to brain physiology, though being based on it. Thus, I cannot agree with the recent materialistic reductionism advocated by some brain scientists such as Francis Crick.¹¹ The reason for my objection to the reductionism will be justified in the following scientific illustration. It depends on an analogy with phase transitions in matter. The simple phase transition from water to ice is well known. When liquid water freezes, it loses symmetry: the molecules go from a situation for which all locations are equivalent to one in which they are preferentially arranged in a crystal structure.¹² In

general, when a downward phase transition of this type occurs, the system loses a degree of freedom (such as a rotational symmetry). In the case of water, it goes from a state of higher symmetry (liquid) to a broken-symmetry state (solid). It is quite a general phenomenon. We notice here that loss of entropy or gain of information (degree of order) occurs. If this idea is applied to quantum field theory, the Nambu-Goldstone theorem is obtained. The theorem entails that a Nambu-Goldstone boson (new information) always appears with the spontaneous breaking of a (continuous) symmetry to compensate for this broken symmetry.

Thus, through an analogy with phase transitions in physical phenomena, we can understand the meaning of “emergence,” or the gain of a new degree of order (information) that is not observed in the lower level. Here is a metaphor for “emergence,” or more than a metaphor. In fact, there is a group of scientists who try to explain the relation of brain and mind in a purely physical method. They identify mind with a collective mode of the Nambu-Goldstone boson coming from the quantization of the brain field.¹³ It sounds like mere materialism, but may be taken to be a fine illustration of the meaning of “emergence.”

We have confirmed that mind or consciousness can be understood as a new and different mode from the brain, even though depending on it. However, the next question we ask is how the mind relates to the brain. A higher-level structure may inversely influence the lower-level constituents. Let us hear the opinion of John Eccles, awarded a Nobel prize in medicine-physiology in 1963.

Eccles clearly distinguishes mind (self) from brain.¹⁴ He takes the supplementary motor area of the brain to be an important area. This part is inside the frontal lobe, in front of the motor area, and abundant in neurons acting before spontaneous movement. So he thinks that the self first acts upon the supplementary motor area to make muscles begin voluntary movements. The supplementary motor area is a liaison between the self and the brain in general.

How then does the self act upon the neurosystem of the supplementary motor area? He explains this in the following way. Neurons’ activities transmit through synapses that number in the hundreds of millions.¹⁵ Thus, when even a small stimulation by the self is given to the synapses, the neurosystem as a whole may change drastically. These phenomena

are very similar to chaos phenomena. A chaotic system changes very rapidly with a variation of initial conditions. In fact, as we have already seen, since chaos phenomena are certainly observed in the brain, synapses’ small fluctuations could be amplified in brain activity. Since, in the synapses, acetylcholine and other bio-polymers play important roles, this small fluctuation can be at the molecular or quantum level. The self may just act upon the brain in the molecular or quantum fluctuation. As a result, the brain can receive a large influence through chaotic phenomena. Furthermore, if this small fluctuation is supposed to be “information” instead of energy, the law of energy conservation is preserved in the whole activity.

The idea that the mind interacts with the brain only through information is very attractive. According to Greenfield, synapses’ formation depend on one’s environment or education given. When she says, “One’s synapses’ information determines one’s character,”¹⁶ a very different method of personality theory, i.e., different from genetic determinism, is possible. Thus “information” will be a most useful variable (concept) when we approach the mind from the point of view of natural science. In this case the word “information” means more than Shannon’s definition of information. If the mind and synapses interact with each other through this “information,” it is reasonable to say that God interacts with the human through the “information.” The “information” here will be interpreted as language from the side of Geisteswissenschaft (social and intellectual sciences).¹⁷

(B) How does God interact with matter?

The answer to the question “How does God interact with physical phenomena?” was simple when the deterministic method was popular. The interaction was given by deterministic natural law. God maintained the order of the universe by sustaining the law determined by Him. This is the meaning of divine providence. Natural law is understood as the means of providential government. You can see this law as a manifestation of the faithfulness of God, or, by neglecting God, you could also see it as the “unmerciful iron law.” Either way, these views are close to deism. The world is determined completely by all initial conditions. The Laplacian Demon is just an extreme expression of this.

The reason that, since the nineteenth century, theology has withdrawn from the natural world and constrained itself to the existential or historical world is due to this kind of determinism in science (Dilthey, Troeltze, Barth, Bultmann, Tillich, and so on). However, once you notice that the non-deterministic view is real, all our ways of seeing the natural world are radically changed. Unexpected phenomena in nature are quite common. Natural phenomena will not be determined from initial conditions at all. The region known exactly with the scientific method is quite restricted. It becomes more reasonable to expect God's intervention not only in miracles, but in the whole natural world. We need more detailed arguments to see how God interacts with matter, through a dialogue with science.

There is no need to include God inside the natural world, but we should notice the meaning of the indeterminacy of the natural world. Indeterminacy does not mean that there are no norms. God's norms in creation are there as a metaphysical hypothesis, but the physical aspect of the reality to be humanly known is not determined. For human beings, this indeterminacy gives more occasion for freedom and responsibility.

Process-thought has also spoken about human freedom in relation to God.¹⁸ Human experience is the starting point from which Process-thought generalizes and extrapolates to develop a set of metaphysical categories that are exemplified by all entities. Self-creativity is part of the momentary present of every entity. It is not surprising, then, that Process-thought has no difficulty in representing human freedom in relation both to God and to causes from the past. This freedom is close to our position of non-determinism. In particular, omnipotence and predestination are repudiated in favor of a God of persuasion, whose achievements in the world always depend on the response of other entities. Process-theism strongly endorses human responsibility to work creatively to further God's purposes, as well as recognizing human frailty and the constraints imposed by the biological and social structures inherited from the past. Humans are participants in an unfinished universe and in God's continuing work. God calls the human to love, freedom, and justice. Time, history, and nature are to be affirmed, for it is here that God's purposes can be carried forward. Process-thought makes these claims.

I certainly agree that human responsibility is important. I think, however, that our "response" becomes possible only when the Person calls us. Do we not need the "strong God" to respond to? I wonder whether there is a strong God in Process-thought. It seems to me that the personal Creator or the "Eternal Personal Life" in Lotus Sutra is necessary.

The concept of "emergence" will be useful also for the relation of God and matter. The top-down and bottom-up directions are not separated. Polkinghorne has recently discussed the relation of God and matter by using the notion of "causal joint." Referring to chaos theory, he argues that God relates

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to matter only through "information" that is different from energy. He calls God's top-down relation "active information."¹⁹

(C) Ontology of meaning and the experiencing subject.

The metaphysics of Process-philosophy is an ontology of entities. Instead of an ontology of entities, I want to propose an ontology of meaning, because the human mind characterizes entities and events in the world. Human beings characterize reality as meaning and understand it. I also want to show that these two types of ontology are connected by the "experiencing subject." What is the "experiencing subject"?

Although Whitehead emphasizes the interdependence of events, he does not end with a monism in which the parts are swallowed up in the whole.²⁰ An event is not just the intersection of lines of interaction; it is an entity in its own right with its own individuality. He maintains a genuine pluralism in which every entity is a unique synthesis of the influences upon it, a new unity formed from an initial diversity. Every entity takes account of other events

and reacts and responds to them. During the moment when it is on its own, it is free to appropriate and integrate its relationships in its own way. Each entity is a center of spontaneity and self-creation, contributing distinctively to the world. Whitehead wants us to look at the world from the viewpoint of the entity itself, imagining it as an experiencing subject.

Normal usage of the word “experience” is applicable only to a personal entity, i.e., the human, but he extends this usage to the lower entities. In the following section, I hope to connect this “experiencing subject” with a concept in what I call the ontology of meaning.

4. The feature of the human mind: looking for meaning

American philosopher John Searle says that the content of mind cannot be reduced to behaviorism, functionalism, or physicalism. He identifies four features of the human mind, namely consciousness, intentionality, subjectivity, and causality. Consciousness is manifestly realized for everybody. Intentionality is the idea that beliefs, wishes, or fears (for example) are always concrete; i.e., belief is a belief in something, wish is a wish for something, or fear is a fear of something. Subjectivity means that my pain is felt only by me, not by you. Causality means that the mind influences the physical world: for example, if I decide to raise my hand, it rises.²¹

Here, intentionality is the state of mind directed toward something: it is a concrete interrelation between self and the object, with which I identify “looking for meaning.” I think intentionality is the basic feature of the human mind itself, not being a part of the animal mind or computers. Intentionality is an advanced function in the sense that language, memory, and deduction are all integrated to produce it. The mind looking for meaning inevitably wants to find the Origin of the diverse meanings in the world, and a unity of those meanings. “Looking for the unity of diversity of meaning” seems to me a manifestation of the unity of human personality. It also evokes a question, usually asked by the age of puberty: who am I, or, what's the meaning of my life? Through asking this question, the heart of the human touches the religious root, just as St. Augustine wrote, “Oh, God, our heart is restless until it rests in You,” in the beginning chapter of his *Confessions*.

(A) Meaning in Emergent Hermeneutics

What is meaning? To answer this question, we can count such representative approaches in contemporary philosophy as “meaning is verifiability” (logical positivism), “meaning is the use of the word” (Wittgenstein), “meaning is intentionality” (Fusser), and “meaning is understanding” (Gadamer). By considering these definitions, the Emergent Hermeneutics (EH) I propose gives a more comprehensive definition of meaning: “meaning is an experience that is a mode of being in a temporal event. When one sees the duck-rabbit figure, seeing it as a duck or a rabbit depends on one's pre-judgment. “Seeing-as” is an interpretation at the level of the sense of sight and will be extended in a more general form to “experiencing-as.” The human way of experience varies from person to person. Even inside one and the same person, there are many levels of experience. Let us define meaning in “experiencing-as.”²² In daily life, we find many levels of meaning as follows.

I see swans on a lake. They are five in all, swimming slowly and floating in two groups, one of them in the latter group seeming to be one week old. (Numerical, spatial, kinematic, physical, and biological meanings are observed here.) The thesis “all swans are white” is either verifiable or not. If there is a black swan, it will be sold at a high price (sensible, logical, economical). When I was a child, I read *The Ugly Duckling*, and once enjoyed the ballet *Swan Lake* (historical, linguistic, aesthetic). On the notice board near the lake is written, “Don't take swans from the lake.” We can hardly imagine a man who would steal a swan. But it could happen, if he believes in a strange religion that teaches getting eternal life by sacrificing a swan! (Here are social, legal, ethical, and pistic meanings.)

Seeing the swans, I found the diverse modes of my experience of meaning, from the numerical and spatial to the ethical and pistic, fifteen irreducible levels.²³ Usually we do not distinguish and articulate the experiences of everyday life consciously in this manner. When we begin to analyze reality, we notice lower levels of meaning, being emergent step by step to higher levels, which I call the meaning aspects. As we articulate our experience through the meaning aspects, entities in everyday life, from vague situations, will be characterized clearly and ordered, that is, will acquire “information”

(corresponding, maybe, to “concrecence” in Process-philosophy).

At the same time, the diversity of the meaning aspect is “unified” coherently in my mind. This unity explains why I “understand” myself and the real world. “Understanding” is unique to human beings and means more than “feeling,” to which Process-philosophy sometimes refers. Here, unifying coherently in my heart (or mind) includes both material and mental meaning at the same time; therefore, there is then no dual separation of mind and matter. If not “unified,” my mind is being divided. In normal conditions, however, my mind unifies the meaning of reality without any effort. “Unifying the meaning” cannot be explained scientifically and logically even if today’s knowledge of brain physiology is used but is done easily in my heart (or mind) intuitively. Cases of multiple personalities are reported sometimes in psychiatric studies, personalities that appear when a function of “unifying the meaning of diverse experiences” is lost. In a normal case, the fact that human beings are personal beings entails that the heart is “unifying the meaning of diverse experiences.” In other words, the human person “understands” himself and the real world in the fullness of meaning. Here, scientific personality by “emergence” is continuously linked with a hermeneutic view of personality. Furthermore, the concept of unifying coherently in my heart (or mind) is very similar to the concept of Ichinen-sanzen ron (three thousand worlds in each thought-instant) developed in Mo-ho-chih-kuan (A.D. 594), the practical interpretation of *Lotus Sutra*, by T’ien-t’ai Chih-i.

Visual data such as “lake,” “swan,” and “swimming” come from the retina, through the intermediate brain, into the vision area in the occipital lobe, and are recognized as distinct forms, colors, and spatial relationships in the union area. But we realize it at once²⁴ because our mind has a function of “unifying.” We can call this unifying function “intuition.” This intuition is not in the brain but is in the mind. Intuition unifies all the meaning aspects of reality.²⁵

Unifying diverse meaning is related to the notion of a worldview. Worldview provides the point from which the world is seen. That point is precisely where the unity of meaning comes from. Different points give different worldviews. I do not here consider any one point, or aspect, as providing the ultimate unification of meaning. A materialist would

take the physical aspect (the fourth aspect) to be ultimate, reducing all other meaning aspects to the physical aspect. Its result is an absolutization of the physical aspect. Vitalism is an absolutization of the biological aspect (the fifth aspect), while collectivism is an absolutization of the social aspect (the tenth aspect).

None of the meaning aspects of temporal or empirical reality should be absolutized because such an absolutization breaks the harmonious meanings of entities in reality. When the ultimate meaning as the origin of meaning stands outside the empirical world, entities in empirical reality as such are full of meaning. The origin of meaning should be the

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transcendent, viz., Creator God or Eternal Buddha, but the meaning is read out by the human heart itself. Religious realism is thus presupposed in Emergent Hermeneutics.

The fact that the diverse meaning aspects are irreducible to each other is called sphere sovereignty. By contrast, one aspect by itself reflects all the other aspects (and so *ad infinitum*, like a fractal); this reflection is called sphere universality (corresponding to T’ien-t’ai Chih-i’s Jikkai-gogu, i.e., each of the ten realms of beings contains the other nine in itself). For instance, let us take the sensible aspect. We notice that our feelings are coherently related to all other aspects of meaning of reality. Feelings become strong at, for instance, the age of puberty (biological aspect), which necessarily is associated with such harmonic matters as blood pressure or the amount of human growth hormone within the body (physical), and emotional change or movement (kinematic) often will affect friendships within certain circles (spatial, numerical). At the same time, the feelings are observed in higher levels such as logical feeling, historical feeling, social feeling,

ethical feeling, and pistic feeling.

The fact that one meaning aspect includes the lower aspects is called retrocipation. Inversely, the fact that one meaning aspect anticipates higher aspects is called anticipation. Including both retrocipation and anticipation results in analogy. Corresponding to each aspect, there are particular sciences. Theology is, for instance, a science of the pistic aspect, and natural theology has analogies with the physical and the biological aspects. Of course, theology can include analogies with the historical aspect and the social aspect.

I call the meaning aspects, from the viewpoint of religious realism, "God's law spheres," just as Herman Dooyeweerd called them, because reality is created by God. This application of cosmological laws is called Emergent Hermeneutics (EH), just as the study of the application of legal laws is called law hermeneutics. The relation of "the one and the many" or unity and diversity in EH is similar to the thesis that "the whole includes parts and parts include the whole," which is familiar in contemporary fractal structure presented in complexity theory.

The ontology of EH is also close to that of the metaphysics of "Ichinen-sanzen ron (three thousand worlds in each thought-instant)" proposed by T'ien-t'ai Chih-i. It explains each thought-instant (mind or micro-cosmos), and three thousand worlds (macro-cosmos) penetrate each other in unity. The micro-cosmos includes the macro-cosmos and vice versa. The T'ien-t'ai cosmological principle of "ichinen-sanzen ron" is the culmination of Buddhist thought whereby each dharma (truth) arising through the causal process of *prantitya samutpada* (dependent coorigination) is comprehended as a micro-cosmos of the macro-cosmos. "Each thought-instant" means not only psyche but also thing, because the subjectivity of thing is important here. This concept of subjectivity is now investigated with relation to Process-philosophy.

(B) Experiencing subject

The definition of subject in EH is as follows: an entity that is subjected to God's law is called a subject. To what level each entity is a subject is open to investigation. For example, a stone is a subject up to the fourth law sphere (physical sphere), because it is subject to physical, kinematic, spatial, and numerical laws, but not to biological laws. A lotus flower is a

subject up to the fifth law sphere (biological), and a dog is a subject up to the sixth law sphere (sensible). A human being is subject to all fifteen law spheres, though the brain is a subject up to the biological sphere. When I observe a butterfly alighting on the lotus flower, the observed butterfly is an object, but if we characterize the butterfly on the lotus flower in the sensible aspect, the butterfly is a subject and the lotus flower is the object. The subject and the object transform each other dynamically from place to place. Each entity in the world differs in the degree of its subjectivity. This subjectivity is what I mean in the word "experiencing subject," that is, the subject being defined in the meaning aspect or "experiencing-as" aspect.

Another meaning is implicit in this "experiencing subject." When a subject is subjected to God's law, it is experiencing God's will. Thus, it is an "experiencing subject." Even in that case, the personal subject should be distinguished from the impersonal subject in the degree of its experiencing. This distinction is the problem of responsibility (*homo respondens*).²⁶ A human is called an "understanding subject" instead of an "experiencing subject," because there is a large jump in the emergence from the impersonal being to the personal being. This approach may be noted in hermeneutic philosophy since Heidegger and Gadamer.

(C) The origin of meaning and the primordial nature of God

My mind gives meaning to the world. My mind intuitively unifies the meaning aspect of reality. Intuition gives unity to the whole of meaning by alternately going to and coming back from the different meaning aspects. During this process, the direction my mind takes is important. Does my mind direct itself toward the transcendent (the Creator/the Eternal Buddha) as the origin of meaning, or not? If my mind directs itself upward, the world is seen as full of meaning. However, if it does not, the empirical world will be absolutized; then we have the absolutization of meaning, which leads my mind to see the world polarized into two parts. The world will be dichotomized, e.g., into nature vs. freedom, modernity vs. tradition etc. Intuition can be called spirit (*pneuma*) when considered from the side of religious anthropology. In my opinion, the relation between intuition and spirit is important in order to connect

scientific anthropology and religion. The spirit meant here is the human spirit induced by God's Spirit.

Now let us compare my religious realism with the God of Process-philosophy. Whitehead wrote as follows: "Viewed as primordial, he is the unlimited conceptual realization of the absolute wealth of potentiality. In this aspect, he is not before all creation, but with all creation."²⁷ This view corresponds to T'ien-t'ai's Absolute Saddharma, absolute absolutism or Buddha-man non-duality. "God with all creation" is the origin of meaning itself, which belongs to "the primordial nature of God." Further, "the human spirit induced by God's Spirit" belongs to "the consequent nature of God." Since the diverse divine laws characterize entities in the world, it can be expressed as the many-ness of God (T'ien-t'ai's three thousand world). The following quotation from Whitehead suggestively affirms this line of thought:

In every respect God and the World move conversely to each other in respect to their process. God is primordially one, namely, He is the primordial unity of relevance of the many potential forms: in the process He acquires a consequent multiplicity, which the primordial character absorbs into its own unity. The World is primordially many, namely, the many actual occasions with their physical finitude; in the process it acquires a consequent unity, which is a novel occasion and is absorbed into the multiplicity of the primordial character. Thus God is to be conceived as one and as many in the converse sense in which the World is to be conceived as many and as one.²⁸

Another interesting analysis may perhaps give the interpretation that "the primordial nature of God" corresponds to the first God-human contact as explained by Katsumi Takizawa, and "the consequent nature of God" to the second God-human contact.²⁹

(D) Information

In my opinion, the above approach, which suggests a close relationship between mind and material science, has merit. It makes it clear that mind is not a substance but depends on the brain and body, and thus it recognizes the whole person as a psychosomatic entity. This person is laid open to the spiritual world. We have already mentioned "information," which plays an important role in the communication between God and human persons, or God

and matter. Between the mind (the self, or the heart) and brain, the concept of information has been considered as an independent variable. But might it not be possible to say that material objects communicate with each other through information? What then is information? To clarify this point, let me point out an analogous view in EH and Process-philosophy. The concept of information discussed below is not the syntactic information measured by bits but semantic information.

In an article discussing "System philosophy and Process-thought," James Huchingson talks about information in the following way: "We normally understand information in terms of the intuitive

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appropriation of communicated content which conveys existential or rational meaning."³⁰ In a word, information is communication of meaning. In terms of EH, we will express it as "differences of the meaning aspect." In EH reality is identified with the irreducible fifteen meaning aspects, and each meaning is defined to be "experiencing-as." So each irreducible meaning aspect is viewed as a basic unit of experiencing. We remember here that Whitehead defined the actual occasion as "drops of experience."³¹ Thus, it is not so strange to see the irreducible meaning aspect in EH as the "actual occasion" in Process-philosophy. In other words, the actual occasion can be expressed more dynamically as a "crossing through irreducible meaning aspects." In other words, communication of meaning is just information.

The above line of thought makes it easier to understand the following sentence by Huchingson: "An actual occasion is a discrete information processing system. Indeed, if we may understand prehensions as signals, and the ingression of prehensions as the initial phase in a selective

process of self-actualization, then an actual occasion consists purely of information.”³²

Entities of everyday life are characterized and articulated in the fifteen meaning aspects in the temporal world, ordered and understood step by step. Is this not a kind of “conrescence”? Listen to Huchingson’s explanation: “Whitehead stresses that the process of conrescence generates the order of the world as the entropy-laden and disjunctive many attain unity in the determinate form of the completed occasion.”³³

Analogous thinking about “information” in EH and Process-philosophy allows me to give an affirmative answer to my question. Namely, material items do communicate with each other through information. Water becomes ice, or a butterfly alights on a lotus flower; these natural phenomena are surely the communication of meaning or the flow of information. In fact, entropy decreases when water becomes ice or information circulates in the bio-sphere.

Entities in the world communicate with each other through information. The origin of meaning also communicates with the world through information. Information will become the most important concept in religion, philosophy, and the sciences in the twenty-first century.

5. Liberalism, communitarianism, and pluralism

How can we form a society that will assure each person’s dignity and freedom? Related to this point, what suggestion does Process-philosophy give? Does Process-philosophy offer an adequate basis for assurance of a free society? I wonder whether the concept of a weak God makes it possible. In the traditional Japanese thought, the concept of a strong God was given mainly by Nichiren’s sects who believed the Lotus Sutra.

(A) The concept of Person in Buddhism

Buddhism does not presuppose a personal God, nor does it have a concept of Creator. The Eternal Buddha in Lotus Sutra is not a Creator, but a salvation Lord. Why did Lotus Sutra insist on the Eternal Buddha? Yoshiro Tamura answers this question in three points [32]: (1) Clarifying Buddha’s views: Unifying dharma (truth) is given in part II (houben-hin) and unifying Buddha (person) is given in part XV (or XVI) (nyoraijuro-hin). (2) Eternal personal

life is always in the place of unifying truth. (3) Eternal life is perceived in actual practical activity.³⁴ The Eternal Buddha himself lived in the way of the Bodhisattva.

Nichiren especially emphasized living in the way of the Bodhisattva, claiming to be a practitioner of Lotus Sutra. He was a rare religious person who could criticize the state power and actually act in such a way. In modern Japan, under the influence of Nichiren, Ikki Kita proposed “statism” and Tyogyu Takayama “transcending statism.” While both persons are extreme in the opposite directions, Nichiren’s thought was more balanced. Today, from the viewpoint of eternal personal life, we should seek a public space in Japan where Buddhists, Christians, and Humanists can live on the basis of a constitutional freedom according to their beliefs. The role of the government is to assure this public space by circumscribing its own power; at least it should not force different groups of people to act in a uniform or unanimous way.

(B) Public social philosophy

Over against old liberals such as Locke, Kant, and Mill, communitarians claiming recovery of a public space, such as MacIntyre, Taylor, and Sandel, came into the debates on social philosophy after the seventies. Their coming parallels the rise of post-modernism. Since the old liberalism, demanding the maximal freedom for the individual (i.e., Sandel’s unencumbered self), went to extreme individualism, discarding social morals, people have welcomed the traditional common senses of community. That welcome is quite natural.

However, this American communitarianism cannot be imported easily into today’s Japan because historically the concept of a public “individual” has been very weak here. The weakness of that concept is, in my opinion, due to the lack of the personal transcendent concept that is always supra-state or more than the political power. The shadow of State Shintoism returned to national politics after the 1960s. It seems to function as a civil religion in Japanese community, supporting a neo-nationalism.

The problem of the public “individual” in Japan is now at the center of social debate. An individual is born and bred in a certain community, but always transcends that community. His or her mind is always open to an unseen world: the primordial

nature of God. I will call it the “spiritual world.” The spiritual world is real, just as the social world and physical world are real.

I want to propose this “spiritual world” as “World 4,” analogous to Karl Popper’s concept of the open society. It is well known that Popper presented Worlds 1, 2, and 3.³⁵ Thus I will propose that, in the real world of Popper’s terminology, World 4 (the spiritual world) should be added further to World 1 (brain, matter), World 2 (psyche, mind, heart), and World 3 (scientific theory, art, social institutions, etc.). World 4 will interact with worlds 1, 2, and 3 through information. World 4 interacts with World 2 in keeping directional pluralism, and interacts with Worlds 1 and 3 in the cosmic laws.

The ways of pursuing science and democracy within the public world (World 3) depend on the concept of the true reality of World 4. Considering the relationship between religions and cultures in today’s global age will require this kind of religio-scientific realism. Religio-scientific realism, or Emergent Hermeneutics, is just a natural development of the transcendental ontology developed by Herman Dooyeweerd. The concept of “emergence” is especially very close to the contemporary refined version of his idea of “enkapsis,” which extends from biological entities to social institutions.³⁶

Finally, the Creator God is the origin of all natural phenomena, and the Spirit leads the whole process of human behavior. Thus, as the Trinitarian God is the cause of the emergence of the world and human beings, there is no room for autonomous independent evolution. The concept of emergence presented here is completely theistic emergence. I do not believe in autonomous emergence caused by naturalistic power. I reject even so-called methodological naturalism. While emergences are observed objectively as scientific laws in the natural world, we interpret them as God’s laws. Our interpretive action is called hermeneutics, in which the subjective, or personal, element is very important, even though natural scientists prefer objectivity. However, when we use the term “Emergent Hermeneutics,” the term is half objective, because of emergence, and half subjective, because of hermeneutics. Even in scientific knowledge, the subjective element is essential, for our scientific knowledge is personal knowledge, as explained by Michael Polanyi. It is interesting to observe that the

theory of complex systems explicitly shows the nature of scientific knowledge in a deeper way than does the theory of old simple systems. The concept of Emergent Hermeneutics, therefore, is considered one of today’s debates for the fields of science and religion.

ENDNOTES

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3. Ibid.
4. Ian G. Barbour, *Religion and Science: Historical and Contemporary Issues* (SCM Press, 1998), pp. 283-284
5. Ibid., 284.
6. M. Polanyi, *Personal Knowledge*, (Routledge & Kegan Paul Ltd., 1958), p. 382; Karl R. Popper and John C. Eccles, *The Self and its Brain*, (Springer-Verlag, 1977), 40.
7. M. Polanyi, *Personal Knowledge*, p. 395.
8. Ichiro Tsuda, *Chaos Theory of Brain* (in Japanese), (Kyouritu shuppan, 1998), 119.
9. Ichiro Tsuda, *Chaotic View of Brain* (in Japanese), (Saiensu sha, 1997), 175.
10. Ibid., p. 182. See also M. L. Langeveld and H. Danner, *Hermeneutic Pedagogy* (Methodologie und Sinn-Orientierung in der Padagogik), (Ernst Reinhardt Verlag, 1981).
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12. I thank Dr. Arnold E. Sikkema for pointing out a more exact expression of this point.
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15. S. Greenfield, *Brain and Mind*, (Cambridge Univ. Press, 1998), 126.
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17. J. M. Soskice, *Metaphor and Religious Language*, (Oxford University Press, 1985).
18. I. Barbour, 323.
19. J. Polkinghorne, *Belief in God in an Age of Science*, 63.

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22. J. Hick, *An Interpretation of Religion*, (Macmillan, 1989), 138.
23. H. Dooyeweerd, *A New Critique of Theoretical Thought*, (Amsterdam-Philadelphia: P&R Press, 1953), vol. 1.
24. S. Greenfield, *Brain and Mind*, 77.
25. H. Inagaki, *Knowing and Believing* (in Japanese), (Yorudansha, 1993), 146; H. Inagaki and N. Jennings, *Philosophical Theology and East-West Dialogue* (Amsterdam-Atlanta: Rodopi, 2000), Ch. 2. In this book, we used the terminology "Transcendental hermeneutics" instead of "Emergent hermeneutics."
26. Dr. Henk Geertsema uses this word frequently.
27. A.N. Whitehead, *Process and Reality*, Corrected Edition, Edited by David Ray Griffin and Donald W. Sherburne (The Free Press, 1978), 343.
28. A.N. Whitehead, *Process and Reality*, 349.
29. Tokiyuki Nobuhara, *Between Whitehead and Nishida-philosophy* (Hózókan, 2001), p. 73.
30. James Huchingson, "Organization and Process: System Philosophy and Whiteheadian Metaphysics," *Process Studies*, 11, no. 4 (winter 1981), 235.
31. A.N. Whitehead, *Process and Reality*, 18.
32. *Ibid*, 236.
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34. Yoshiaki Tamura, *Lotus Sutra, in Japanese* (Chuou-kouronsha, 1969), 117.
35. Karl R. Popper and John C. Eccles, *The Self and its Brain* (Springer-Verlag, 1977), Ch. 1.
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