East Asian Voices on Science and the Humanities

Editorial & Introduction
with Willem B. Drees, "Zygon Goes Global: East Asian Voices"; and Thomas John Hastings, "Extending the Global Academic Table: An Introduction."

Where Are We?
with CHEN Na, "Why Is Confucianism Not a Religion? The Impact of Orientalism"; KAMATA Toji, "Shinto Research and the Humanities in Japan"; KIM Seung Chul, "Religion and Science in Dialogue: An Asian Christian View"; and LEE Yu-Ting, "East Asia and Human Knowledge – A Personal Quest."

How Did We Get There?
with HSU Kuang-Tai, "Science and Confucianism in Retrospect and Prospect"; SI Jia Jane and DONG Shaoxin, "Humanistic Approach of the Early Protestant Medical Missionaries in Nineteenth-Century China"; and ZHAO Aidong, "American Missionaries Transmitting Science in Early Twentieth-Century Eastern Tibet."

East Asian Engagements with Science
with Thomas John Hastings, "Kagawa Toyohiko (1888–1960): Witness to the Cosmic Drama"; INAGAKI Hisakazu, "Kagawa's Cosmic Purpose *and Modernization in Japan"; HYUN Woosik, "An East Asian Mathematical Conceptualization of the Transhuman"; KANG Shin Ik, "Jumping Together: A Way from Sociobiology to Bio-Socio-Humanities"; FUKUSHIMA Shintaro, "Multilayered Sociocultural Phenomena: Associations between Subjective Well-Being and Economic Status"; and SHIN Jaeshik, "Mapping One World: Religion and Science from an East Asian Perspective."*

JUMPING TOGETHER: A WAY FROM SOCIOBIOLOGY TO BIO-SOCIO-HUMANITIES

by Kang Shin Ik

Abstract. Sociobiology is a grand narrative of evolutionary biology on which to build unified knowledge. Consilience is a metaphorical representation of that narrative. I take up the same metaphor but apply it differently. I evoke the image of jumping together, not on solid ground but on the strong, flexible canvas sheet of a trampoline, on which natural sciences, social sciences, and the humanities jump together. This image overlaps with the traditional East Asian way of understanding—that is, the "Heaven-Earth-Person Triad." Using recent insights from cognitive science—metaphor, embodiment, and

Kang Shin Ik is Professor in the Department of Medical Humanities, School of Dentistry, Pusan National University, 49 Busandaehak-ro, Mulgum-eup, Yangsan-si, Gyeongsangnam-do, 50612, South Korea; e-mail: philomedi@gmail.com.

 ISSN 0591-2385

conceptual blending—I propose the alternative way of "bio-socio-humanities" to understand and experience the world.

Keywords: bio-socio-humanities; conceptual blending; consilience; embodiment; evolution; Heaven-Earth-Person Triad (HEP triad); life course; narrative; sociobiology

---

The Gaps and the Narratives

"*See things differently*" was the catchphrase of the Darwin 2009 festival celebrating the 200th anniversary of Charles Darwin's birth. When anthropologists began to see things differently, they realized that indigenous peoples might have coherent worldviews of their own which are strikingly different from those of Europeans. When renowned anthropologist Edward Evans-Pritchard asked his Nilotic Nuer informants whether they would like to ask him any question about his religion, one of them asked about the "divinity that he wore on his wrist" and consulted each time he seemed to make a major decision. Evans-Pritchard was evidently surprised by the difficulty in explaining to his interlocutors that his wristwatch was not a deity (Bruner 1990, 37).

This kind of cultural divide exists not only between European anthropologists and their indigenous informants. In 1959, scientist and novelist C. P. Snow lamented the divide between the sciences and the humanities in *The Two Cultures*, which portrays the divide as a major hindrance to solving the world's problems. The situation after more than half a century does not seem to be much better. Newly developed techno-sciences such as robotics, aeronautics, information technology, biotechnology, and nanotechnology have made our lives easier and made global markets boom, but the insights and values developed in the sciences and the humanities still do not seem to nourish each other. While sociobiology tried to bridge this divide, I argue that it does not approach the task correctly. Indeed, it sees things differently, but from a unidirectional biological and evolutionary perspective.

The divide between old and new is also a problem. East Asian countries have been developing rapidly, industrializing, commercializing, and westernizing every aspect of people's lives. Not surprisingly, a generation gap has ensued from such rapid development. Having endured years of war and poverty, older people tend to be satisfied with the current economy. Younger people, who have grown up in a secure and comfortable economic situation, are now suffering from bullying, anxiety, job insecurity, and personal isolation. Thus, the older generation's "life course" is filled with particular historical and cultural experiences that differ qualitatively from the experiences of the younger generation.

In this context, "life course" is defined as "a sequence of socially defined events and roles that the individual *enacts* over time" (Giele and Elder 1998, 22, emphasis added). It constitutes the sum total of a person's actual experience rather than representing stages in the life cycle. Life cycle describes the "normative" experience at a certain stage of life, and is thus standardized rather than personalized. The "life course" approach does not fix rigid stages but focuses on the connection between individual lives and the historical and socioeconomic contexts in which these lives unfold. Therefore a "life course" approach provides us with a good tool for analyzing and overcoming gaps and dichotomies between civilized/uncivilized, sciences/humanities, religious/secular, old/young, East/West, and "the Way/the Word" as we will discuss.

Perhaps one weakness of the "life course" approach, however, is its primary focus on biological and socioeconomic events in relation to outcomes over the actual course of a life. Hence, a cause and effect structure still prevails. Narratives, on the other hand, present the flow of events as experienced and reported. Values and intentions are incorporated into unfolding stories. The Oxford English Dictionary defines narrative as "any *report* of connected events, actual or *imaginary*, presented in a sequence of written or spoken words, or still or moving images" (emphasis added). In this way, narrative adds subjective, dialogic, and performative dimensions of experience to the "life course" approach. From early childhood on, we all express ourselves and communicate with others using narratives, whether they are fictional or nonfictional, literal, or pictorial.

Life cycle or life span approaches capture the natural scientific dimension of human life, the "life course" approach adds to that a socioeconomic dimension, and narratives try to capture a whole picture of life, encompassing natural, social and human dimensions. Recently, narrative scholars have begun to explain storytelling and the narrative as an innate instinct evolved through our "bio-cultural" history by natural selection. "By developing our ability to think beyond the here and now, storytelling helps us not to override the given, but to be less restricted by it, to cope with it more flexibly and on something more like our own terms" (Boyd 2009, 50). In this *bio-cultural* evolutionary history, I suggest, we can find a way to cross the gaps between the oppositions mentioned above.

Telling stories does not only mean describing a certain series of events. It also means revising the original events, adding socio-cultural and existential context, and sometimes even twisting the whole story to enable the audience to imagine a world beyond texts, utterances, or audiovisual forms of expression.

We humans in large measure share the same biological heritage. Cultural heritages, however, differ according to what civilization, ethnic group, class, gender, age, historical era, and discipline we belong to. Hence, we may think of humanity as an intertwined totality of diverse cultures on top of

a shared biological heritage. People who belong to the same culture may well share experiences that, in turn, develop into a particular narrative structure. This overarching narrative is called a master- or meta-narrative, which is a "coherent *system* of interrelated and sequentially organized *stories* that share a common rhetorical desire to resolve a conflict by establishing audience expectations according to the known trajectories of its literary and rhetorical form" (Halverson, Goodall, and Corman 2011, 14).

In this essay, I will offer an alternative to the dominant Western meta-narrative. Then I will examine how an alternative metanarrative may cope with science in general and sociobiology in particular. First, I try to locate the overarching metanarrative of East Asian as opposed to that of Western civilization; that is, "the Way" (*dao*, 道) versus "the Word (*logos*)." Second, I will elaborate the metanarrative of "the Way" in more detail using the framework of the "Heaven-Earth-Person triad" (HEP Triad, 天地人). Third, using the example of sociobiology, I will consider instances where the two metanarratives have met, diverged, and converged. Fourth, I will propose a new way of "knowing-living-doing" as a single principle for the mutually constructing and constructed HEP Triad, using the metaphor of "jumping together." Finally, I will propose a field of research that has emerged from this way of "knowing-living-doing," and call it "bio-socio-humanities."

The Way and the Word

Geoffrey Lloyd and Nathan Sivin have coauthored a book on science and medicine in early China and Greece with the title *The Way and The Word* (Lloyd and Sivin 2002). At the risk of oversimplification, metaphorically "the Way" and "the Word" represent ontological, epistemological, ethical, and religious attitudes of ancient Chinese and Greek people, respectively. Or we may say that the Way and the Word are the metanarrative structures of East Asia and the West.

"The Way" (*dao* 道) literally means path, road, channel, or route. "Its most basic metaphorical meaning is best captured in the English phrase *the right way* (LaFargue 1992, 245). It may refer to a normative way of doing things, yet the range of what is considered normative varies widely. As there has been no general agreement among East Asians about what exactly *is* the right way of doing things, it still remains ambiguous, and metaphorical in the best sense of the word. It allows different interpretations according to different contexts and situations. The first paragraph of *Dao De Jing* (道德經), from which the word *dao* (the Way) originates, has countless interpretations and translations reflecting an indefinable quintessence. One of them is

> The Tao that can be followed is not the eternal Tao.
> The name that can be named is not the eternal name.

> The nameless is the origin of heaven and earth
> While naming is the origin of the myriad things. (Muller n.d.)

> 道可道非常道 名可名非常名
> 無名天地之始 有名萬物之母

To add my own interpretation:

> Dao is not what we can ask about.
> As soon as you answer what dao is, it ceases to be dao.
> You cannot capture the quintessence of things in the naming of them.
> In the beginning there was no name.
> As soon as names were given, the myriad of things began to exist.

In these sentences there is no mention of *by whom* the names were given. The Christian Bible, however, tells quite a different story; "In the beginning was the Word, and the Word was with God, and the Word was God" (John 1:1). Here the Word is equated with God. God reigns over the whole world by expressing a Word that can be interpreted as a peremptory command. In the world of *dao* (the Way), there is no commander, whereas in the world of *logos* (the Word), there must be someone who gives an order by words. The Hebrew and Christian God may be different from the Greek gods, but they share a supernatural power over the destiny of creatures.

I suggest that the difference between *dao* and *logos* has had a great influence on the trajectories of each civilization and its metanarratives.

> The dominant, but not the only, Greek way was through the search for foundations, the demand for demonstration, for incontrovertibility. Its great strengths lay in the ideals of clarity and deductive rigor. Its corresponding weaknesses were a zest for disagreement that inhibited even the beginnings of a consensus, and a habit of casting doubt on every preconception. The principal Chinese approach was to find and explore correspondences, resonances, interconnections. Such an approach favored the formation of syntheses unifying widely divergent fields of inquiry. Conversely, it inspired a reluctance to confront established positions with radical alternatives. (Lloyd and Sivin 2002, 250)

Before the publication of *The Way and the Word*, Geoffrey Lloyd had characterized the two sciences of the East and the West as revolving around authorities and adversaries respectively (Lloyd 1996). Of course, authorities and adversaries are the *ethos* from which stories tend to arise. It is likely that these stories have become the metanarrative core of each civilization, which we unconsciously inhabit.

Heaven-Earth-Person Triad (HEP Triad, 天地人)

When I speak about the rifts between civilized/uncivilized, sciences/humanities, religious/secular, old/young, East/West and "the Way/the Word," the wholes are divided into twos and no more. But what might happen if we divide the wholes into triads instead of dyads? That is exactly what the ancient *Book of Changes* (*I Ching* 易經) does. It classifies *dao* into three—that of the "Way of Heaven" (天道), the "Way of Earth" (地道), and the "Way of the Person" (人道). Although the basic structure of the *I Ching* consists in multiple dichotomies, it also allows us to think in threes. However, Heaven, Earth, and Person are not seen as separate entities. They are operationally interconnected. Heaven signifies the creative dynamic, the Earth refers to ontological, relational networks, and the Person is the active agent realizing the values of Heaven within the ontological, relational networks of the Earth. The world is thus the cohesive interconnectedness of Heaven as Time, Earth as space, and Persons as actors (see Table 1).

Table 1. *Dao* as found in *I Ching*

	Dimension	Mythic Character	Operational Principle		Letter (vowel)	Learning	Action
Heaven 天	Time Mind	*Hwanin*	Creative Dynamics	Value	•	Natural Sciences 天文	Knowing
Earth 地	Space Body	*Hwanung*	Ontological Interconnectedness	Law	ㅡ	Social Sciences 地理	Living
Person 人	Human *Chi* (氣)	*Dangun*	Active agent	Actor	ㅣ	Humanities 人文	Doing

The Heaven, Earth, and Person Triad is thus a system of metaphorical communication to express concepts, values, principles, norms, entities, activities, times, spaces, colors, sounds, and even the vowel components of Korean letters. The HEP Triad connects the divine with the secular, time with space, value with law, natural sciences with social sciences, mind with body, and abstract with concrete through the participatory activities of human beings. The HEP Triad is not the usual way of thinking and doing, rather it functions like a hidden tendency, unconsciously guiding us in a certain direction. The HEP Triad may be compared with Greek pagan myths that have been influential in the arts and humanities, and indeed even in Christendom, where the teaching of Greek mythology has long been considered a staple in a classical education.

Interestingly enough, the HEP Triad has not been that influential after the Sung dynasty in China, even though we still find Daoist tripartite

taichi (太極) symbols everywhere in Korean cities and towns: subway stations, restaurants, fans, temples, wall paintings, drums, and so on (Kim 2013, 56). In Korea, the HEP Triad, as represented by the tripartite *taichi* emblem, is said to arise from the state-founding myth, the structure of which corresponds exactly to the HEP Triad. *Hwanin*, or Heaven, gave birth to *Hwanung*, who came down to Earth and settled in. *Hwanung* married a bear-woman and gave birth to *Dangun*, the Person, who became the founding father of the Korean people. This myth is still taught in elementary schools, and is one of the earliest stories Korean children hear.

As the titles of Mary Midgley's *The Myth We Live By* and Dan McAdams's *The Stories We Live By* so aptly express, we live by myths and we live by stories (Midgley 2004; McAdams 1997). Stories, including myths, nourish our imagination and enrich our lives. They are "food to feed *representational hunger*" (Spolsky 2010, 38). According to the "conceptual blending theory" of Gilles Fauconnier and Mark Turner (2002), "elements and vital relations from diverse scenarios are blended in a subconscious process, which is assumed to be ubiquitous to everyday thought and language." The HEP Triad can be seen as a culture-specific cognitive tool or a mental space in which diverse but metaphorically connected scenarios are generated, processed, and integrated. I propose that the cognitive tool of the HEP Triad may be used in bridging the previously mentioned gaps, in general, and critically reviewing sociobiology, in particular.

The HEP Triad can be imagined as a bundle or package of habits of knowing, living, and doing. The differences in these habits between Asians and Westerners have been well studied and documented in psychology literature (Nisbett 2003). But it is not yet known whether the HEP Triad has had any influence on these differences. Rather than seek evidence for the hypothesis, I would like to tell a *story*.

Evolution of What We Know, How We Live, and What We Do

The Heaven, Earth, and Person are not definite categories, because their boundaries are loose and fuzzy. We discover here only loosely connected correspondences. Similarly, spiritual, biological, social, and personal lives are also inseparably interconnected. Thus you cannot analyze them as discrete categories or elements for investigation. You can only tell a story. That is what I am going to do in this section, while focusing on the relationship between biological and cultural lives.

The terms "biological" and "cultural" are by no means neutral. They embody a Western and modern perspective, just as the HEP Triad has been the metanarrative of East Asian life. So, I will try to tell stories using verbs, rather than offer an analysis using well-defined concepts. I suppose that what we know, how we live, and what we do are functions of the

interrelated evolution of the biological and the cultural. Let me start from Korea when it was annexed by Japanese imperial power.

It is well known that ancient Chinese people knew, lived, and acted according to the *Yin/Yang* (陰陽) frame and the Five Phases (五行), whereas ancient Greeks conceptualized their world and bodies as composed of four elements or fluids. The HEP Triad serves the same function as a frame. This frame constitutes what we know and constrains how we live and what we do.

When the two civilizations met in the nineteenth century, however, Western ways of knowing, living, and doing had already been transformed as a result of the scientific revolution and the Enlightenment; East Asian ways had changed very little. East Asians had to come to terms with fundamental differences in ways of knowing, living, and doing. I will focus on human bodies as the subjects and objects of knowing-living-doing at the same time; that is, bio-politics in the Korean context.

There had been three ways of coming to grips with this problem. The first was the conservative effort of constitutional medicine; that is, *Sasang* (四象) medicine, which tried to shut the door and elaborate the traditional Confucian way of cultivating bodies (修身), according to the theoretically predetermined four constitutions (great *yang*, small *yang*, great *yin*, and small *yin*). This is called *Sasang* constitutional medicine, which was invented by Lee Jema (李濟馬) in the late nineteenth century and is still practiced in the twenty-first century (Yang 2013). The biological, the moral, and the social were theoretically intertwined and integrated in this system (Sim 2003). Not only somatic disorders but also diverse personalities and psychological predilections were ascribed to one of the four constitutional types. This system of classifying and cultivating bodies is totally incompatible with the biological way of understanding. It represents a fiercely conservative political and ideological way of knowing the world and the body. Thus, it may be regarded as a desperate reaction against the irresistible flood of the Western way of knowing, living, and doing.

The second way was to accept the newly developed Western ways of knowing and managing the body; that is, physical anthropology and sanitary sciences. Physical anthropology applied seemingly unbiased scientific methods for measuring body parts and classifying bodies into racial groups. The racial characteristics thus collected were to be used as evidence that attest to the inferiority of colonial subjects.

For example, a Japanese anatomy professor named Kubo (久保) published more than 20 papers on the ethnological characteristics of Korean bodies. He found that skeletons of Koreans are bigger than Japanese and added that bigger skeletons are thus better adapted for carrying back racks; that is, manual rather than intellectual labor (Park 2004, 197). Further, Satō Dakeo's (佐藤武雄) work on the statistical distribution of blood types was highly tainted with racism. Using the so-called *racial index*

devised from blood type distribution among racial groups, he listed races *hierarchically* from European (more than 2.5) down to Asia African (lower than 1.2). He said that Japanese (1.52) and Koreans living in the southern part of the peninsula "fortunately" were in the middle, whereas the rest of Koreans (1.07) belonged to the Asia African type (Satō 1935, 698).

While physical anthropologists were thus producing the kinds of knowledge that colonial subjects *should* know, sanitary scientists and hygienists acted directly on colonial bodies, forcing upon them the imperialist's norms of how to live and act. Sanitary police visited households, inspecting them for cleanliness and any indication of disease (Jung 2011, 221). This represented a huge transition from *cultivating* to *sanitizing* paradigms of knowing, living, and doing. Bodies began to be seen as objects to be inspected, measured, cleaned, and sanitized rather than to be fostered and cultivated.

The third way was the movement to improve the genetic quality of the human population, that is, the eugenics movement. Medical doctors and intellectuals who had studied abroad were the major advocates of eugenics. They wanted to transform their colonial fatherland by genetically improving the people rather than by political means. A program promoting higher rates of sexual reproduction for people with desirable traits, and reducing the rates of sexual reproduction and even sterilizing people with less desirable traits was under consideration. Although the program was not actually implemented, the circulation of the eugenic idea itself might have had a big impact on people's bodies and minds. The journal *Woosaeng* (優生), published by the Korean Eugenic Association in 1934, was the organ for circulating and propagating the idea (Shin 2006, 155). By ascribing inferiority to the people, it might have restricted the way they lived and what they did; that is, kept them from fighting against the colonial oppressive power. Irrespective of its actual implementation, the idea of eugenics itself had immense "bio-power." Here again, what we knew, or rather what intellectual leaders wanted us to know, restricted how we lived and what we did.

Social Darwinism was the expanded version of eugenics. When Darwinian evolution was introduced in East Asian countries, the original *biological* ideas were virtually omitted and only the theory's *social* implications were considered. As I mentioned above in regard to constitutional medicine, the way of knowing the body was mainly moral and social and not factual or biological. The discipline called biology itself was non existent.

In East Asia, where time had been generally experienced as circulating like a spiral rather than progressing forward like an arrow, the concept of evolution was quite new and hard to understand. Evolution did not fit well with the Confucian ideology that considered the legendary past as its ideal. This was even truer in late nineteenth-century Korea, where the world powers were competing furiously for their own capitalistic interests

and the theory of evolution was imported via China and Japan, not from Europe. In this context, the concept of evolution was mainly understood as a principle of struggle among political powers, rather than in terms of natural selection among living beings. Thus, the original meaning of natural selection was lost and interpreted as "the stronger eats the weak" (弱肉强食), "natural weeding out" (自然淘汰), and "the superior wins the inferior lose" (優勝劣敗).

Yan Fu (嚴復), a Chinese scholar, first introduced the theory of evolution to China. He translated "evolution" as the "flow of the heaven or nature" (*tianyan* 天演) and "natural selection" as "things compete, and heaven selects" (*wùjìng-tiānzé* 物競-天擇), thus conveying the original meaning of evolution by natural selection. However, he was also a product of the time and interpreted evolution as constant progress. "By accepting the evolutionary theory, he tried to read the idea of linear progress of the West and criticized the retrospective and circular perspectives of China" (Yang 2007). Later Yan's word *tianyan* (天演) was replaced by the word *jinhwa* (進化, meaning "progressing forward"). Thus, evolution was imported and understood from the outset as "artificial-social" and not "natural-organismic" selection.

It was nearly a hundred years later that the idea of social Darwinism was reintroduced in a more tamed and scientifically refined form. Whereas nineteenth-century social Darwinism saw the world from a macroscopic, social, and imperialistic point of view, twentieth-century sociobiology was armed with a microscopic, biological, and monopolistic gene's eye view. Social Darwinism was driven by the *political* ambitions of imperialists. Sociobiology emphasized the *biological* rules of natural selection and tried to expand the rules to encompass psychological, social, and even ethical norms of human life. New fields of study ensued such as evolutionary psychology, evolutionary ethics, and evolutionary medicine.

"Sociobiology is a field of scientific study which is based on the hypothesis that social behavior has resulted from evolution and attempts to explain and examine social behavior within that context" (Wikipedia). It claims to have succeeded in bridging the gap between the sciences and the humanities. However, the book titled *Sociobiology* by E. O. Wilson has not been read widely and has not yet been translated into Korean. Rather, the same author's *Consilience* was a big hit (Wilson 1998). The word "consilience" was translated as *tongsup* (統攝, Wilson 2005), which literally means "governing all together." But because *tongsup* has the same pronunciation as another word that means "coming and going with each other (通涉)," there has been some confusion. I suspect this may have been the translators' clever strategy. Thus, the image that pops up in the public's mind when they hear the word *tongsup* is radically different from the content of Wilson's book, which is *biological imperialism* as one critic

said (Do and Choi 2005). Paradoxically, though, the success of the book was partly due to the confusion or rather the conceptual blending.

The idea of evolution introduced in nineteenth-century social Darwinism and twentieth-century sociobiology was basically the same, but each has had a different trajectory according to their socio-political and intellectual contexts. Although I enthusiastically accept the evolutionary idea's primary importance for our understanding of human and social conditions, I also think the ideas of social Darwinism and sociobiology have critical limitations in themselves and in their applications. Recent developments in the cognitive sciences, which are increasingly making us rethink human conditions from a perspective other than the purely evolutionary view, are not being seriously considered. Keeping the evolutionary idea in mind and incorporating insights from the cognitive sciences, I will now attempt to make East Asian culture, in general, and the HEP Triad, in particular, jump together with the sciences.

Conceptual Blending: the HEP Triad and Sociobiology

It is interesting that Edward Slingerland, a scholar of ancient Chinese literature and religion, has written a book titled *What Science Offers the Humanities: Integrating Body and Culture* (Slingerland 2008). Here he argues that the humanities should learn from recent advances in science. He also tries to overcome both objectivism and postmodern relativism by *embodying* the cultural variations in human bodies. The human body is the space-time of life when and where the biological and cultural are integrated. It is not only a space but also a time capsule in which real life experiences unfold and evolve. Our cognition and thus the culture are closely related to the sensorimotor capacities of our bodies. What we see, touch, smell, catch, eat, feel, and understand constitute both our bodies and the world we inhabit. Bodies are "embedded in a more encompassing biological, psychological, and cultural context" (Rosch, Thompson, and Varela 1993, 173). The world is embodied in us and we, as bodies, actively engage in it. "[T]he world is not something that is given to us but something we engage in by moving, touching, breathing, and eating" (Varela 1999, 8).

The HEP Triad had functioned as an embodied cognitive schema or Way (*dao*, 道) through which East Asians saw, knew, lived, and engaged in the world. When Western imperialistic power and social Darwinism flooded into this Way, people were faced with the choice of either clinging to the traditional Way of the HEP Triad or fully accepting the logically coherent and power-centered new Word ("survival of the fittest"). The clash of the two systems did not allow for any "cognitive fluidity" (Slingerland 2008, 152). Conflicts and debates between advocates and opponents of social Darwinism and sociobiology, discussed in the previous section, were natural consequences. Intellectuals and the general public alike, who themselves

embodied the HEP Triad, did not have any opportunity to deal frankly with a logically coherent explanation such as evolution by natural selection. On the other hand, intellectuals who accepted the logic had to abandon the whole package of the HEP Triad. From a scientific point of view, Heaven, Earth, and Person are not categorically distinct. The HEP Triad was not a valid and coherent system for *explaining* the world and human beings. Thus, the two camps had neither cognitive fluidity nor any common ground from which to start.

However, the possibility that the two may have a productive dialogue began to arise from the cognitive sciences that found "(1) The mind is inherently embodied. (2) Thought is mostly unconscious. (3) Abstract concepts are largely metaphorical" (Lakoff and Johnson 1999, 3). Accordingly, Heaven, Earth, Person, and the Way of the HEP Triad are metaphorical bundles of embodied experience that unconsciously lead our bodies and minds in a certain direction. Sociobiology is also a system of coherent metaphors across the biological, psychological, social, and cultural domains, among which the biological has the top priority. This being so, conflict between pro- and anti-sociobiology may be thought of in terms of metaphorical incoherence rather than a right or wrong position. Cognitive linguist George Lakoff and philosopher Mark Johnson proposed that concepts and meanings arise from metaphorical systems embedded in us through our evolutionary and cultural life experiences (Lakoff and Johnson 1980, 1999).

If we take this position (called "experientialism") seriously, then we will be able to find a way out of the incommensurability problem between strikingly different cultures, whether they are East and West or science and the humanities. There are two ways of resolving conflicts between cultures. One is to analyze the metaphorical networks and structures of each culture and compare them, as does Slingerland. Through this kind of work we will be able to find some experiential and metaphorical common ground and make them harmonize with each other, acknowledging evolutionary and cultural histories. The other is to devise an alternative metaphor or a metanarrative from which many metaphorical connections or micronarratives may arise and conceptual blending may take place. I will take the second path.

Jumping Together: A Way to Bio-Socio-Humanities

Let me start with the metaphor of consilience, originally used by the nineteenth-century scientist William Whewell, who meant it to be the convergence or concordance of evidence. If you test the same hypothesis using different methods and get converging answers, the hypothesis is likely to be true. Consilience is a test of the truth of the theory in which it occurs. It is a measure of the strength of evidence.

E. O. Wilson, the founder of sociobiology, uses this metaphor to build the solid ground on which to make disciplines in the social sciences and humanities jump together. He calls it "the linking of facts and fact-based theory across disciplines to create a common groundwork of explanation" (Wilson 1998, 8). But many critics, including myself, suspect that the groundwork is presupposed to be already established by evolutionary biology, rather than being created or emerging in the act of jumping together. Here, evolutionary biology is the constant and the other disciplines variables. This kind of consilience corresponds to the image of jumping together with pogo sticks on solid ground. Each discipline jumps together independently of other disciplines. They interact only via the evolutionary groundwork. Sociobiology takes evolution by natural selection seriously but not the bio-cultural transition during which new qualities of life such as morality have emerged. Sociobiology is the system of the vertical and hierarchical integration of knowledge, and is relatively reluctant to absorb insights from neighboring disciplines both in the sciences and humanities.

I propose an alternative image of jumping together, not on solid ground, but on the strong, flexible canvas sheet of a trampoline. Imagine biology, the social sciences, and humanities jumping together on a trampoline with different costumes, body weights, styles, and intentions, giving and receiving influences to and from the other jumpers. Further, imagine what would have happened if the nineteenth-century Korean Confucians had jumped with biologists and imperialists armed with social Darwinism on a trampoline, instead of either wholehearted acceptance or rejection. Of course, there is no point in applying a purely imaginative and metaphorical hypothesis to the past. Political power has always been stronger than scholarly imagination. Having a different metaphorical perspective than that of the past, however, may provide us with new opportunities to see things differently going forward.

Though sociobiology was introduced a century later, the basic idea was similar to that of social Darwinism. But the scientific, cultural, and political contexts were quite different. Evolutionary biology has attained wider credence by incorporating molecular and population genetics. The violent implementation of eugenics that had given social Darwinism a bad name has faded away. Disciplines derived from sociobiology, such as evolutionary psychology, evolutionary medicine, and evolutionary ethics, emerged with specific fields of application. Evidence for evolution is converging across disciplines, creating a common groundwork of explanation.

On the other hand, cognitive sciences dealing with problems cutting across the bio-cultural transition are prospering with newly developing brain-imaging techniques. As much as biology gives culture evolutionary directives, cultures are also found to have limiting or enhancing effects on biological evolution. The idea of bio-cultural co-evolution seems to have become common sense. *A priori* categories such as nature versus nurture

do not seem tenable any more, as Matt Ridley's book *Nature via Nurture* (2004) attests.

If we take the implications of the cognitive sciences seriously, the boundaries between nature and nurture, natural and social sciences, body and mind, sciences and the humanities become fuzzier. The biological, the social, and the human are not categorically different but transitionally distinct.

Causal relationships among them are not unidirectional and linear but multidirectional and complex. I propose we call this loosely knit network of what we know, how we live, and what we do in biological, social, and human life *bio-socio-humanities*, a system for jumping together.

Sociobiology is claimed as a common groundwork of *explanation*. Bio-socio-humanities is not a system of explanation but an effort to *understand* human conditions and experiences with metaphorical representations or systemic correspondences. It is thus a narrative rather than a theoretical system.

Similarly, the HEP Triad framework or metanarrative may be thought of as a system or a Way (道) of jumping together. Traditional East Asian learning was composed of three closely interrelated fields: Heavenly Pattern (天文), Earthly Principle (地理), and the Humanities (人文). These three are mutually dependent. As ripples and sound waves make new patterns when they encounter others, the Heavenly Pattern, Earthly Principle, and the Humanities constantly interact with each other and generate new patterns and principles. They are likened roughly to the natural sciences, social sciences, and the humanities. But they are not specific fields of research. They are embodied Ways of knowing, living, and doing. This is different from the hierarchically arranged "vertical integration" (Slingerland 2008, 251) of disciplines to which Wilson's sociobiology aspires. The HEP Triad is a system of horizontal organization of nature via culture rather than a vertical integration of culture into nature. This is the emerging proposition arising from the interface of traditional East Asian learning and modern cognitive sciences.

Acknowledgments

This work was supported by a two-year research grant from Pusan National University. This article is based on a presentation at the conference "The Presence and Future of Humanity in the Cosmos: Why Society Needs Both the Sciences and the Humanities" held at the International Christian University in Tokyo, March 18–23, 2015.

References

Boyd, Brian. 2009. *On the Origin of Stories: Evolution, Cognition, and Fiction*. Cambridge, MA: Harvard University Press.

Bruner, Jerome. 1990. *Acts of Meaning*. Cambridge, MA: Harvard University Press.
Do Jeong-Il and Choi Jae-Cheon. 2005. *Dialogue: The Humanities Meets Sciences*. Seoul: Humanist.
Fauconnier, Gilles, and Mark Turner. 2002. *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books.
Giele, Janet Z., and H. Elder, Jr., ed. 1998. *Methods of Life Course Research: Qualitative and Quantitative Approaches*. Thousand Oaks, CA: Sage Publications.
Halverson, Jeffry R., H. L. Goodall, Jr., and Steven R. Corman. 2011. *Master Narratives of Islamist Extremism*. New York: Palgrave Macmillan.
Jung Keunsik. 2011. "Formation, Change, and Legacy of the Colonial Sanitary Police in Modern Korea." *Society and History* 90: 221–270.
Kim Ju-hoon. 2013. "An Analysis on the Samtaeguk Patterns of Korea, China and Japan." *Journal of Korean Society of Communication Design* 21: 55–63.
LaFargue, Michael. 1992. *The Tao of the Tao Te Ching*. Albany: State University of New York Press.
Lakoff, George, and Mark Johnson. 1980. *Metaphors We Live By*. Chicago, IL: University of Chicago Press.
———. 1999. *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought*. New York: Basic Books.
Lloyd, Geoffrey. 1996. *Adversaries and Authorities: Investigations into Ancient Greek and Chinese Science*. New York: Cambridge University Press.
Lloyd, Geoffrey, and Nathan Sivin. 2002. *The Way and the Word: Science and Medicine in Early China and Greece*. New Haven, CT: Yale University Press.
McAdams, Dan P. 1997. *The Stories We Live By: Personal Myths and the Making of the Self*. New York: Guilford Press.
Midgley, Mary. 2004. *The Myth We Live By*. London: Routledge.
Muller, Charles. N.d. *Tao Te Ching*. http://www.ligo.caltech.edu/~mevans/docs/DDJ-CharlesMuller.html
Nisbett, Richard. 2003. *The Geography of Thought: How Asians and Westerners Think Differently and Why*. New York: Free Press.
Park Soonyoung. 2004. "Academic Tasks Left by Physical Anthropology under Japanese Colonialism and Lessons from Experiences of Western Physical Anthropology." *Comparative Culture Studies* 10: 191–220.
Ridley, Matt. 2004. *Nature via Nurture: Genes, Experience, and What Makes Us Human*. New York: Harper Perennial.
Rosch, Eleanor, Evan Thompson, and Francisco J. Varela. 1993. *The Embodied Mind: Cognitive Science and Human Experience*. Cambridge, MA: MIT Press.
Satō Dakeo. 1935. "Blood Types of Koreans." *Journal of Criminology* 9: 691–98.
Shin Young-Jeon. 2006. "The Characteristics of Korea's Eugenic Movement in the Colonial Period Represented in the Bulletin *Woosaeng*." *Eusahak* 29: 133–155.
Sim Chang-ae. 2003. "The Study of Moral Cultivation According to *Sasang* Constitutional Medicine in the Light of *Sadan* Theory in Dongyi Suse Bowon." *Dongyangchulhakyungu*, 35: 153–181.
Slingerland, Edward. 2008. *What Science Offers the Humanities: Integrating Body and Culture*. New York: Cambridge University Press.
Spolsky, Ellen. 2010. "Narrative as Nourishment." In *Toward a Cognitive Theory of Narrative Acts*, ed. Frederick Luis Aldama, 37–60. Austin: University of Texas Press.
Varela, Franscisco. 1999. *Ethical Know-How: Action, Wisdom, and Cognition*. Stanford, CA: Stanford University Press.
Wilson, E. O. 2005. *Tongsup [Consilience]*. Seoul: Sciencebooks.
———. 1998. *Consilience: The Unity of Knowledge*. New York: Random House.
Yang Il-Mo. 2007. "Rethinking Social Darwinism that Prevailed in East Asia." *Korean Studies* 17: 89–119.
Yang Sung-kyu. 2013. "A Study of Preservation of Health in Sasang Constitutional Medicine and Buddhist Medicine." *Jeongtohakyungu* 19: 367–400.