

# International Big History Association

Volume 1, Number 5

## Members' Newsletter

November 2011

**Eric J. Chaisson**  
New IBHA Board member

Members of the IBHA Board warmly welcome Dr. Eric J. Chaisson as a new Board member. Dr. Chaisson researches physics & astronomy at Harvard-Smithsonian Center for Astrophysics and teaches natural science at Harvard University ([www.cfa.harvard.edu/~ejchaisson](http://www.cfa.harvard.edu/~ejchaisson)).

Dr. Chaisson's major interests are currently twofold: 1) his scientific research addresses an interdisciplinary, thermodynamic study of physical, biological, and cultural phenomena, seeking to understand the origin and evolution of galaxies, stars, planets, life, and society, thus devising a unifying cosmic-evolutionary worldview of the Universe and our sense of place within it writ large, and 2) his educational work engages master teachers and computer animators to create better methods, technological aids, and novel curricula to enthuse teachers and instruct students in all aspects of natural science. He teaches an annual undergraduate course at Harvard on the subject of cosmic evolution, which combines both of these research and educational goals.

Trained initially in atomic physics, Dr. Chaisson obtained his doctorate in astrophysics from Harvard University in 1972. During his early tenure as associate professor at the Harvard-Smithsonian Center for Astrophysics, his research concentrated

**Nobuo Palette Tsujimura**  
Universal (Cosmic and Global)  
History from Japan

I was led to Big History by my mentor, Osamu Nakanishi, whom I met at Soka University (Tokyo, Japan) in 2001. He is an historian and at the time taught International Relations there. I was impressed by his lectures, joined his seminar, and went on to the Graduate School of Letters: Sociology Major at Soka University to study International Relations.

Nakanishi has written many books, all in Japanese: *Diplomacy of the Soviet Union* (1971), *Basic Knowledge of Contemporary Communism* (1974), *Structure and Dynamics of Soviet Politics* (1975), its enlarged edition (1977), *China and the Soviet Union* (1979), *Soviet Society and Soviet Diplomacy* (1986), *International Relations: An Introduction to the Study for Global and Cosmic Peace* (1990), *From the Soviet Union to the Commonwealth of Independent States* (1992), *New International Relations* (1999), *Human History of Contemporary International Relations: From Lenin to Putin, and Roosevelt, Churchill* (2003), *The Russian Revolution, the Chinese Revolution and 9/11: the 20th and 21st Centuries in Universal (Cosmic and Global) History* (2011).

He thinks that International Relations is not International Politics, nor a part of it, but a comprehensive discipline that aims for peace. He values history because history includes not only

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largely on the radio astronomical study of interstellar gas clouds. This work won him fellowships from the National Academy of Sciences and the Sloan Foundation, as well as Harvard's BJ Bok Prize for original contributions to astrophysics and Harvard's Smith-Weld Prize for literary merit. He has also held research and teaching positions at MIT, Wellesley, and Johns Hopkins, where he was a scientist on the senior staff and director of educational programs at the Space Telescope Science Institute, and at Tufts University, where he was for two decades director of the Wright Center for Science Education and Research Professor of Physics, Astronomy, and Education. He has written nearly 200 publications, most of them in professional journals.

In order to share the essence of his research and teaching with a wide audience, Chaisson has written a dozen books. These include *Cosmic Dawn*, which won several literary awards such as the Phi Beta Kappa Prize, the American Institute of Physics Award, and a National Book Award Nomination for distinguished science writing. His other books include two works on relativity, a textbook on cosmic evolution, and a volume (co-authored with George Field) outlining the scientific rationale for the United States' national space policy. Another book, *The Hubble Wars*, also won the American Institute of Physics Science Writing Award, and his popular textbook, *Astronomy Today* (co-authored with Steve McMillan), is the most widely used college astronomy textbook in the nation. His most recent books, *Cosmic Evolution: The Rise of Complexity in Nature*, and *Epic of Evolution: Seven Ages of the Cosmos*, were published by Harvard and Columbia University Presses, respectively.

Dr. Chaisson holds membership in numerous American and international scientific organizations, several honor societies, and a host of academic, public, and federal advisory committees.

### Current Research

As Dr. Chaisson writes, "My current scientific research concerns the interdisciplinary subject of cosmic evolution. I am striving to use aspects



Eric J. Chaisson

photo by Bridget Aquila Chaisson

of non-equilibrium thermodynamics to construct a grand scenario of evolution, broadly conceived, indeed applied to all complex structures – physical, biological, and cultural. Some representative articles published during the past decade along these lines are:

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Chaisson, E.J., "The Rise of Complexity in Nature," in *Bioastronomy '02*, Norris, R (ed.), ASP Series, p 531, 2004; Conf. Proc., Hamilton Island, Great Barrier Reef, July, 2002  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/rise\\_of\\_complexity\\_nature.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/rise_of_complexity_nature.pdf)

Chaisson, E.J., "A Unifying Concept for Astrobiology," *International Journal of Astrobiology*, v 2, pp 91-101, 2003; presented at Windsor Castle, UK, Sep, 2002  
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*Eric Chaisson continued*

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[http://www.cfa.harvard.edu/~ejchaisson/reprints/complexity\\_santafe\\_j.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/complexity_santafe_j.pdf)

Chaisson, E.J., "Follow the Energy: Relevance of Cosmic Evolution for Human History," *Historically Speaking: Journal of the Historical Society*, v 6 #5, p 26, 2005  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/big\\_history.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/big_history.pdf)

Chaisson, E., "The Great Unifier," *New Scientist*, v 189, p 36, p 7, 2006  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/the\\_great\\_unifier.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/the_great_unifier.pdf)

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[http://www.cfa.harvard.edu/~ejchaisson/reprints/energy\\_evolution\\_ethics.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/energy_evolution_ethics.pdf)

Chaisson, E.J., "Cosmic Evolution: State of the Science," in *Cosmos and Culture*, S. Dick and M. Lupisella (eds.), NASA Press SP-4802, pp 3-23, Washington, 2009  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/nasa\\_cosmos\\_and\\_culture.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/nasa_cosmos_and_culture.pdf)

Chaisson, E.J., "Exobiology and Complexity," a review article in *Encyclopedia of Complexity and Systems Science*, R. Myers (ed.), pp 3267-3284, Springer, Berlin, 2009  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/springer\\_complexity\\_review\\_corrected\\_galleys.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/springer_complexity_review_corrected_galleys.pdf)

Chaisson, E.J., "Long-term Global Heating from Energy Usage," *Eos Transactions of the American Geophysical Union*, v 89, no 28, p 253, 2008  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/Eos\\_AGU\\_Chaisson08.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/Eos_AGU_Chaisson08.pdf)

Chaisson, E.J., "Energy Rate Density as a Complexity Metric and Evolutionary Driver," *Complexity*, v 16, pp 27-40, 2010; DOI: 10.1002/cplx.20323  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/EnergyRateDensity\\_I\\_FINAL\\_2011.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/EnergyRateDensity_I_FINAL_2011.pdf)

Chaisson, E.J., "Energy Rate Density II: Probing Further a New Complexity Metric," *Complexity*, accepted, in press, 2011 (early view published online at DOI: 10.1002/cplx.20373)  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/EnergyRateDensity\\_II\\_galley\\_2011.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/EnergyRateDensity_II_galley_2011.pdf)

Chaisson, E.J., "Using Complexity Science to Search for Unity in the Natural Sciences," presented at Beyond Center Conference, Arizona St. U., December 2010; to be published in *The Self-Organizing Universe: Cosmology, Biology, and the Rise of Complexity*, C. Lineweaver, P. Davies and M. Ruse (eds.), Cambridge Univ. Press, 2012  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/ASUessay\\_revised\\_for\\_CUP.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/ASUessay_revised_for_CUP.pdf)

Chaisson, E.J., "Cosmic Evolution: More than big history by another name," *Euro/Russian journal/almanac, Evolution*, v xx, pp 30-42, 2011  
[http://www.cfa.harvard.edu/~ejchaisson/reprints/EuroRussian\\_galley\\_2011.pdf](http://www.cfa.harvard.edu/~ejchaisson/reprints/EuroRussian_galley_2011.pdf)

In addition, the interdisciplinary subject of cosmic evolution is addressed in a monograph, *COSMIC EVOLUTION: The Rise of Complexity in Nature* (<http://www.hup.harvard.edu/catalog>).

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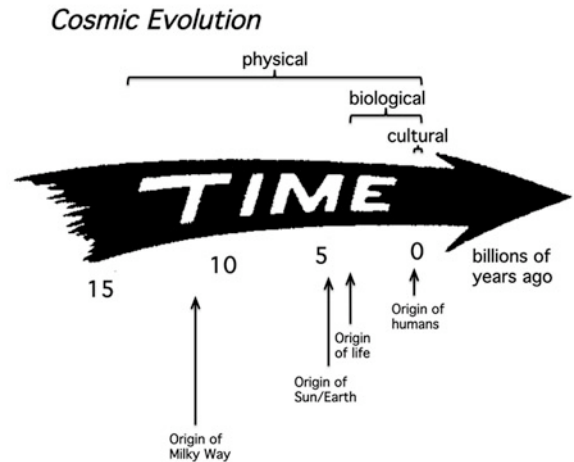
*I am striving to use aspects of non-equilibrium thermodynamics to construct a grand scenario of evolution, broadly conceived, indeed applied to all complex structures – physical, biological, and cultural.*

php?recid=27447), that I have written under contract with Harvard University Press. What follows, by way of a brief description, is the book's preface (© President and Fellows of Harvard College):

Using astronomical telescopes and biological microscopes, among a virtual arsenal of other tools of high technology, modern scientists are weaving a thread of understanding spanning the origin, existence, and destiny of all things. Now emerging is a unified scenario of the cosmos, including ourselves as sentient beings, based on the time-honored concept of change. From galaxies to snowflakes, from stars and planets to life itself, we are beginning to identify an underlying, ubiquitous pattern penetrating the fabric of all the natural sciences – a sweepingly encompassing view of the order and structure of every known class of object in our richly endowed Universe. We call this subject “cosmic evolution.”

Recent advances throughout the sciences suggest that all organized systems share generic phenomena characterizing their emergence, development and evolution. Whether they are physical, biological or cultural systems, certain similarities and homologies pervade evolving entities throughout an amazingly diverse Universe. How strong are the apparent continuities among Nature's historical epochs and how realistic is the quest for unification? To what extent might we broaden conventional evolutionary thinking, into both the pre-biological and post-biological domains? Is such an extension valid, merely metaphorical, or just plain confusing?

For many years at Harvard University, starting in the 1970s and continuing to the present, I have taught, initially with George B. Field, an introductory course on cosmic evolution that sought to identify common denominators bridging a wide variety of specialized science subjects – physics, astronomy, geology, chemistry, biology, and anthropology, among others ([http://www.cfa.harvard.edu/~ejchaisson/cosmic\\_evolution](http://www.cfa.harvard.edu/~ejchaisson/cosmic_evolution)). The principal aim of this interdisciplinary course explored a universal framework against



which to address some of the most basic issues ever contemplated: the origin of matter and the origin of life, as well as how radiation, matter, and life interact and change with time. Our intention was to help sketch a grand evolutionary synthesis that would better enable us to understand who we are, whence we came, and how we fit into the overall scheme of things. In doing so, my students and I gained a broader, integrated knowledge of stars and galaxies, plants and animals, air, land, and sea. Of paramount import, we learned how the evident order and increasing complexity of the many varied, localized structures within the Universe in no way violate the principles of modern physics, which, *prima facie*, maintain that the Universe itself, globally and necessarily, becomes irreversibly and increasingly disordered.

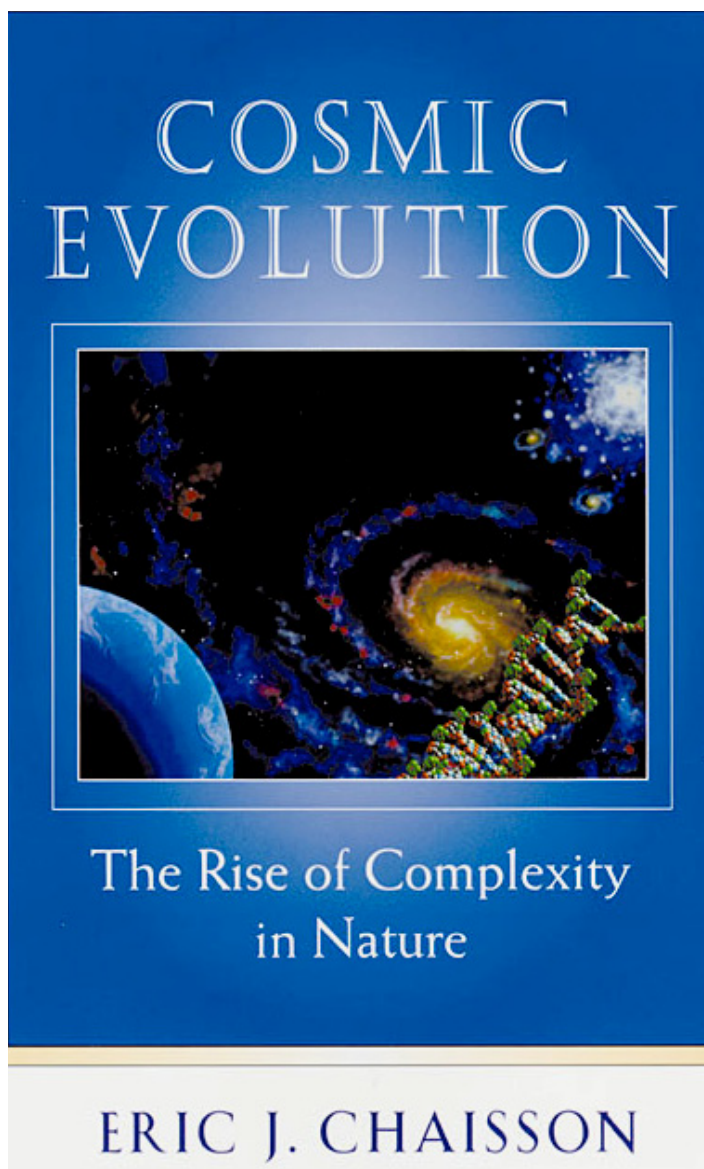
Beginning in the late 1980s while on sabbatical leave at MIT, and continuing for several years thereafter while on the faculty of the Space Telescope Science Institute at Johns Hopkins University, I occasionally offered an advanced version of the introductory course. This senior seminar attempted to raise substantially the quantitative aspects of the earlier course, to develop even deeper insights into the nature and role of change in Nature, and thus to elevate the subject of cosmic evolution to a level that colleague scientists and intelligent lay persons alike might better appreciate. This brief and broadly brushed monograph – written mostly in the late 1990s during a stint as Phi Beta Kappa

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National Lecturer, and polished while resuming the teaching at Harvard of my original course on cosmic evolution – is an intentionally lean synopsis of the salient features of that more advanced effort.

Some will see this work as reductionistic, with its analytical approach to the understanding of all material things. Others will regard it as holistic, with its overarching theme of the whole exceeding the sum of Nature's many fragmented parts. In the spirit of complementarity, I offer this work as an evolutionary synthesis of both these methodologies, integrating the deconstructionism of the former and the constructivist tendencies of the latter. Openly admitted, my inspiration for writing this book has been Erwin Schroedinger's seminal little tract of a half-century ago, "What is Life?," yet herein to straighten and extend the analysis to include all known manifestations of order and complexity in the Universe. No attempt is made to be comprehensive in so far as details are concerned; much meat has been left off the bones. Nor is this work meant to be technically rigorous; that will be addressed in a forthcoming opus. Rather, the intent here is to articulate a skeletal precis – a lengthy essay, really – of a truly voluminous subject in a distilled and readable manner. To bend a hackneyed cliché, although the individual trees are most assuredly an integral part of the forest, in this particular work the forest is of greater import. My aim is to avoid diverting the reader from the main lines of argument, to stay focused on target regarding the grand sweep of change from big bang to humankind.

Of special note, this is not a New Age book with mystical overtones however embraced or vulgarized by past scholars, nor one about the history and philosophy of antiquated views of Nature. It grants no speculation on the pseudo-science fringe about morphic fields or quantum vitalism or interfering diets all mysteriously affecting the ways and means of evolution; nor do we entertain epistemological discussions about the limits of human knowledge or post-modernist opinions about the sociological implications of science writ large. This is a



book about mainstream science, pure and simple, outlining the essence of an ongoing research program admittedly multidisciplinary in character and colored by the modern scientific method's unavoidable mix of short-term subjectivity and long-term objectivity.

In writing this book, I have assumed an undergraduate knowledge of natural science, especially statistical and deterministic physics, since as we shall see, much as for classical biological evolution, both chance and necessity have roles to play in all evolving systems. The mathematical level includes that of integral calculus and differential equations, with a smattering of symbolism throughout; the units are those of the centimetergram-second (cgs) system, those most

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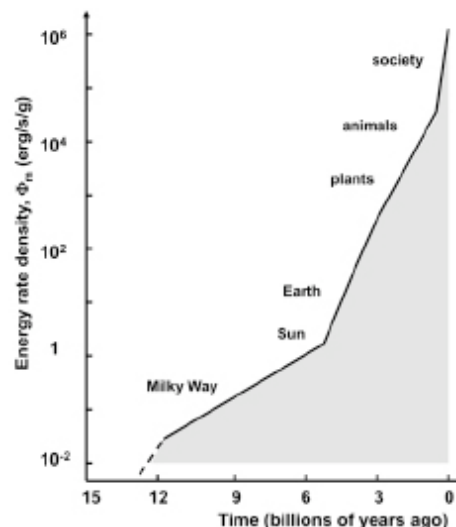


widely used by practitioners in the field, editorial conventions notwithstanding. And although a degree of pedagogy has been included when these prerequisites are exceeded, some scientific language has been assumed. “The book of Nature is written in the language of mathematics,” said one of my two intellectual heroes, Galileo Galilei, and so are parts of this one. Readers with unalterable math phobia will benefit from the unorthodox design of this work, wherein the “bookends” of Prologue-Introduction and Discussion-Epilogue, comprising more than half of the book, can be mastered without encountering much mathematics at all.

What is presented here, then, is merely a sketch of a developing research agenda, itself evolving, ordering and complexifying – an abstract of scholarship-in-progress incorporating much data and many ideas from the entire spectrum of natural science, yet which attempts to surpass scientific popularizations (including some of my own) that avoid technical lingo, most numbers, and all mathematics. As such, this book should be of interest to most thinking people – active researchers receptive to an uncommonly broad view of science, sagacious students of many disciplines within and beyond science, the erudite public in search of themselves and a credible worldview – in short, anyone having a panoramic, persistent curiosity about the nature of the Universe and of our existence in it.

### Summary Abstract of This Work

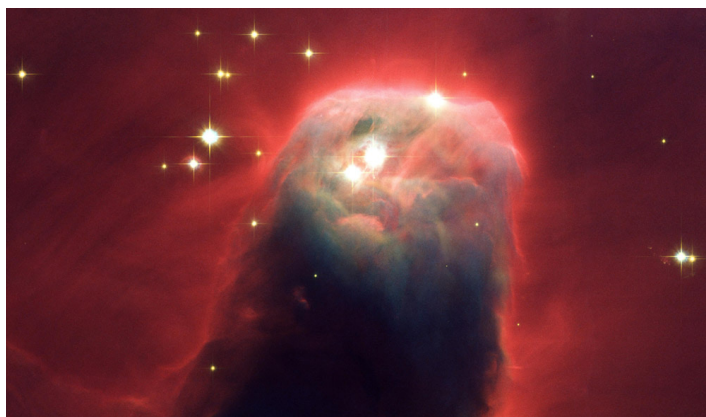
The essence of this book outlines the grand scenario of cosmic evolution by qualitatively and



quantitatively examining the natural changes among radiation, matter, and life within the context of big-bang cosmology. The early Universe is shown to have been flooded with pure energy whose radiation energy density was initially so high as to preclude the existence of any appreciable structure. As the Universe cooled and thinned, a preeminent phase change occurred a few hundred centuries after the origin of all things, at which time matter’s energy density overthrew the earlier primacy of radiation. Only with the onset of technologically manipulative beings (on Earth and perhaps elsewhere) has the energy density contained within matter become, in turn, locally dominated by the rate of free energy density flowing through open organic structures.

Using non-equilibrium thermodynamics at the crux, especially energy flow considerations, we argue that it is the contrasting temporal behavior of various energy densities that have given rise to the environments needed for the emergence of galaxies, stars, planets, and life forms. We furthermore maintain that a necessary (though perhaps not sufficient) condition – a veritable prime mover – for the emergence of such ordered structures of rising complexity is the expansion of the Universe itself. Neither demonstrably new science nor appeals to non-science are needed to explain the impressive hierarchy of the cosmic-evolutionary scenario, from quark to quasar, from microbe to mind.

Eric J. Chaisson  
Concord, Massachusetts



politics but also economies, cultures, and natural environments. Thus, history includes everything. He started from the study of international relations centered on Soviet (Russian)-US relations on the basis of history and has now reached his own Big History, Universal (Cosmic and Global) History. He taught his own Big History course during the last years of a university teacher until 2008.

He is also the President of the Institute for Global and Cosmic Peace (IGCP) of which I have been a supporting member for several years. IGCP was founded in Japan on December 15, 2001 and obtained non-profit status on May 2, 2002. The purposes of IGCP are as follows:

- research and education in the field on the peace of global community
- promotion of international cultural and academic exchanges
- contribution for global and cosmic peace

The peace that we aim for is not only that among states, but a global (comprehensive) and cosmic (harmonious) peace encompassing the whole global community and the Cosmos. Nakanishi opposed to expand human wars into space when Ronald Reagan advocated “Star Wars” in the 1980s. That’s our starting point.

In 2005, the second year of my master’s course, the Soka University Sociological Society planned the Special Issue “Globalization” of its journal *Sociologica*. As the executive editor of that issue, Nakanishi advised me to study global history and to contribute. I began to look over literature on global history and then happened to find David Christian’s *Maps of Time* on Amazon.com. With some help from the global electric marketplace, and my mentor’s advisement, I began to study Big History independently.

The results were an article I wrote for that issue, “A Methodological Note for Global and Cosmic History” (2005) and its enlarged version and master thesis, “A Methodological Draft for Global and Cosmic History:

For Unifying Grasp of the Earth, the Cosmos and Humanity” (2006) (both in Japanese). These share the same core ideas as I will summarize below.

First, I arranged confusing uses of the buzzword “globalization” into 3 forms:

- (1) globality: global interconnectedness, global spread/expansion
- (2) globalizations: the processes of strengthening global interconnectedness, spreading/expanding at a global scale, and adapting to the former two
- (3) globalism: all phenomena of global human activities that include the processes of both strengthening and weakening global interconnectedness

Global and Cosmic History is a comprehensive discipline that places human life (from a daily human life to the life of humanity as a whole) into the context of the interaction between the Earth and the Cosmos.

Globalization is just a process. We should focus on the whole phenomena: globalism. Its locale is an archipelago in Global Blue. Global Blue is my original term that regards all the seas on the Earth as one. Now all the continents can be regarded as great islands.

An archipelago that consists of great and small islands comes out on Global Blue.

The realities of globalism have transformed historical studies. Second, I overviewed 7 trends related to global history at that time:

- (1) history of civilizations: Durkheim, Spengler, Sorokin, Toynbee and McNeill;
- (2) history of world-systems, economic history, and history of the British Empire: Wallerstein, Abu-Lughod, Kawakita, Yamashita, Pomeranz, Wong, Chaudhuri, Frank, Kawakatsu, Hamashita, Sugihara, O’Brien, Akita, etc;
- (3) global education: Becker, Kniep, Stavrianos, Miyazaki;
- (4) history of globalization: Osterhammel & Petersson;
- (5) Middle Age history: Takayama;
- (6) comprehensive cosmic history: Christian, Spier, Matsui;

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(7) global history: Braudel, Geyer & Bright, Mazlish, Schäfer, Held et al., Institute for Global and Cosmic Peace, Research Institute for World History, etc.

With the exception of trend 6, these are all about human history. But, Global History as historical studies should not be limited to global history as historical events in the global phase or events on the global historical stage. Global History means not just Global Human History and a subfield of History, but a History of the entire Globe (the Earth) and its relations with the Cosmos.

If we focus only on the global historical stage, like Mazlish's New Global History (studying contemporary history on "new globalization" after WWII), we will miss the issues and questions that go beyond the global historical stage and relate to the whole history. If Global History is only a subfield of History as Mazlish says, its mission will be shared with only a part of historians. What are important are not objectives but methods. For this reason, I titled my two articles as "methodological."

Third, I added the cosmic perspectives of Christian and Matsui and presented the new and whole framework of History, Global and Cosmic History. Though I had not written so in my articles, there may be hints that suggest a connection between global and cosmic phenomena. One day my friend said to me, "Women live together with the Moon" (implying menstruation). This shook me. It broke down cosmology of International Relations that mainly consisted of four layered levels: local, national, regional and global. She recognized that her life zone included the Moon.

Global and Cosmic History is a comprehensive discipline that places human life (from a daily human life to the life of humanity as a whole) into the context of the interaction between the Earth and the Cosmos. It is a total history in the new age that narrates how a human and humanity as a whole have lived and communicated socially and ecologically with the Earth and the Cosmos both in mind and



body. It places human history into a universal context, beginning with the Big Bang. Global and Cosmic History is also a general framework to synthesize disciplines. All the disciplines are essentially cosmic history because their objectives were all created by the Cosmos. All scholars read historical records of/in the Cosmos.

Next, I released a new article, "Big History: Cosmonization of Historiography" (2007) (in Japanese) to introduce Big History to Japanese people.

It includes the following:

- an introduction to the core ideas and characteristics of Big History;
- an outline of Christian's Big History; and
- the genealogy of Big History surveyed by Fred Spier and my overview of developing processes of Big History in Australia, USA, Netherlands and Russia

In the conclusion, I posed 2 problematiques.

- (1) How do we think about periodization and the laws of Big History?
- (2) How do we define Big History and think of its genealogy?

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*Nobuo Palette Tsujimura continued*

First, Christian doesn't adopt the usual periodization; ancient, middle, modern (and contemporary). Instead he pays attention to rhythms of historical changes. New divisions and increases in complexity involve reintegration and reorganization, whose entanglement generates new rhythms of historical change. Once a higher complexity emerges from the clusters of lower complexities, new relationships and order between them also emerge.

He asks what is the new rhythm of historical changes that humans brought about. Its outset was collective learning by use of symbolic language. Humans have accumulated knowledge between groups and generations. They have corresponded to their environments and changed their ways of living by cultural changes rather than biological changes. Their lives were supported by foraging in the first period, agriculture in the second period, industry in the third period. Each organization was done in each period. At one time it was done by Earth environments like dividing a vast continent into big blocks owing to rise in sea level. At another time it was done by humans, for example, Afro-Eurasia and the Americas have been closely connected by them.

Nonetheless, as long as the lives of humans are grounded on an earth environment, it is natural that they are constrained by it. This is apparent in Malthusian cycles. Not grabbing of power or the rising and falling of civilizations but how to get along with and interact with other organisms

and natural environments has decided great trends of human history. That's one of the historical insights that can be read within Christian's books. We can say it's an "ecological" viewpoint.

Moreover we can find his "polyrhythmic" perspective that rhythms of historical changes become more complex when a new rhythm is added to existing rhythms. That's another viewpoint to grasp both human and natural history together.

Second, Big History has not yet been established as an academic discipline. It remains as a name of the genre and the project [in 2007]. Nevertheless, Big History has gone through a long embryonic period as Spier referred. Christian can be regarded not as the originator of Big History but the godfather of it, thinking of such an embryonic process. Of course the origins of Big History, based on the modern scientific knowledge as Christian posed, could be found in the 20th century. However if we look at "mythical Big History" as the ancient cosmology, its originators might be nameless people in many parts of the world. A flexibility that is not limited to proper History will help fertilize the growth of big historiography.

Of course the right or wrong of theories in each proper discipline should be first argued within their respective domains. However, how to combine such theories into an overall picture should be argued in its own place as well. That is Big History. In one case, an astrophysicist will do it, while in another, an archaeologist. Different scholars will weave together diverse stories from different specialties. Such various "big historians" will fertilize Big History. Both collaborative and general studies of history will go far beyond the domain of literally recorded history, and into the cosmonization (cosmic expansion) of

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historiography. Cosmonization was first used as an analogous term to globalization by Nakanishi (2005) although it had no clear definition then.

In this spring, he published his 11th book, *The Russian Revolution, the Chinese Revolution and 9/11: the 20th and 21st Centuries in Universal (Cosmic and Global) History* (2011) (in Japanese). He presented his original dual academic framework in it. They consist of two disciplines: Universal (Cosmic and Global) History plus Global and Cosmic Peace (Studies).

Universal (Cosmic and Global) History places the Earth as a floating object in the Cosmos and argues the history of human life as not only on the Earth but also in the Cosmos. Universal (Cosmic and Global) History is called “Uchū Chikyūshi” in Japanese. He decided on the translation “Cosmic and Global History” for the English title of his old article (2006) yet we recently argued about the English paraphrase of it. We decided to adopt the new and tentative name “Universal (Cosmic and Global) History” because we think that universal history essentially means cosmic history. Global and Cosmic Peace (Studies) shows the problems arisen from the process of universal (cosmic and global) history, and then presents the solutions to them.

The different order of “cosmic” and “global” has a point. In the former, Cosmic precedes Global because global history (it includes the whole Earth history) is a part of cosmic history. (The Cosmos had existed before the Earth appeared.) In the latter, Global precedes Cosmic because its first task is to keep global peace and the second one is not to expand wars on the Earth to the Cosmos.

He defined Cosmonization as “emergence and expansion of the Cosmos and the Earth, expansion and unification of the human life zone in the Cosmos” and Globalization as “emergence

of humans, expansion and unification of the human life zone on the Earth.” These definitions include our recent discussions through e-mails based on his new book. The first period of Cosmonization began when the Cosmos emerged and began to expand. The first period of Globalization began when humans emerged and began to spread over all parts on the Earth. The second period of Globalization began when Columbus reached the Americas, beginning the unification of humans who had spread all over the Earth. The second period of Cosmonization and the third period of Globalization began together when the Soviet Union launched Sputnik in 1957.

This April, I began to serialize an on-line column mainly on Big History, “Sora Yomu Tsukihi” (Months & Days of Reading the Cosmos) mainly in Japanese on the IGCP website (<http://www.igcpeace.org/>).

In closing, Barry Rodrigue asked me, “Is there an academic tradition that is similar to Big History in Japan?” This is an interesting question. My answer depends on my definition of Big History. Though my research about this issue is not enough to answer, some examples of Big History-like works have existed in Japan. I’ll show them in my future writings.

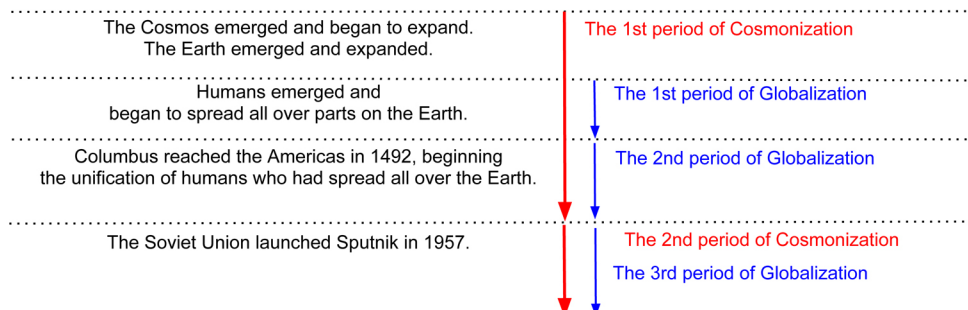
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**Cosmonization:** emergence and expansion of the Cosmos and the Earth,  
expansion and unification of the human life zone in the Cosmos

**Globalization:** emergence of humans,  
expansion and unification of the human life zone on the Earth





*Nobuo Palette Tsujimura continued*

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*sabrina ioana*

*“Teaching and Researching Big History:  
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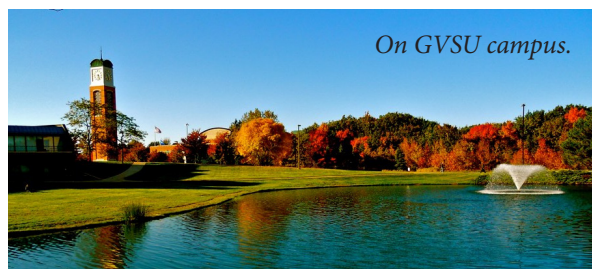
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