International Big History Association

Members' Newsletter

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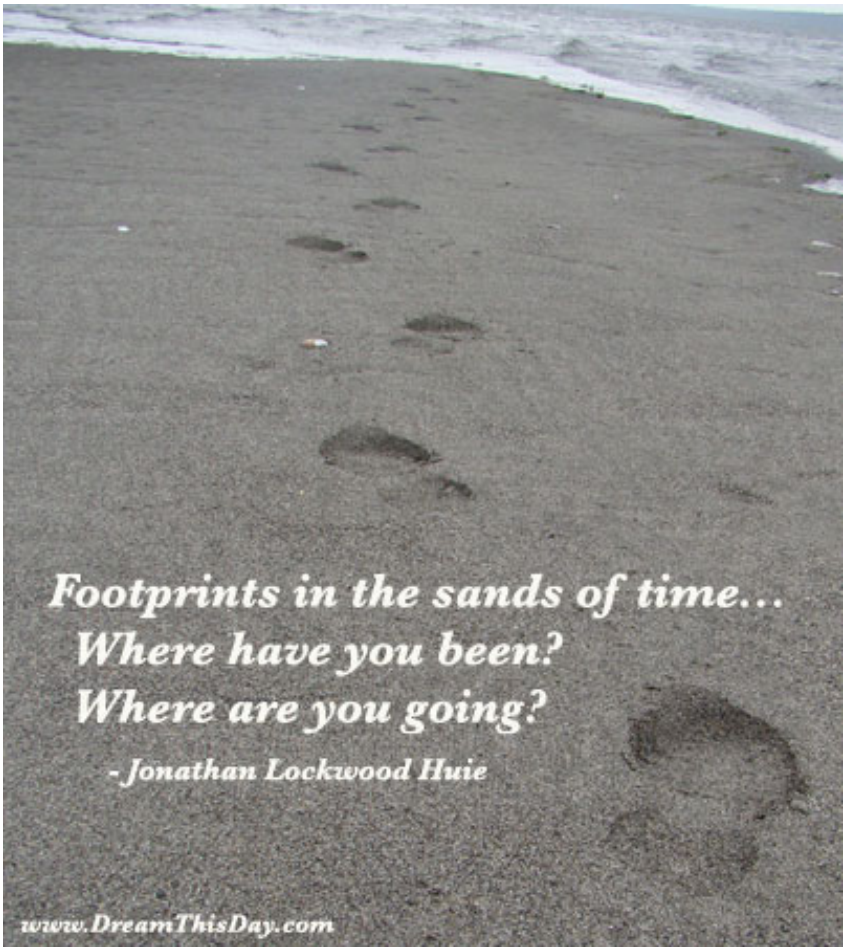
ACROSS THE SHORES OF BIG HISTORY: FOOTPRINTS IN THE SANDS OF TIME

Ken Gilbert

At the conference in Grand Rapids, Mojgan Behmand encouraged us to "Sin Boldly!" In many ways it does seem Big History now entails exactly that, or we could also say thinking and acting outside the box. This would make me a Big History



TEACHING BIG HISTORY

Tracy Sullivan

Having been fortunate enough to attend the first International Big History Association Conference at Grand Valley State University in August, I was honored to be invited to contribute a piece to the IBHA newsletter on the development of my interest in Big History. I found the inaugural IBHA conference to be one of the most exciting, enlightening and thought provoking I have attended. Now, reflecting on my experience of a developing interest in Big History the same can be said.

The interdisciplinary nature of Big History inevitably attracts an eclectic group of scholars, students and enthusiasts. When you speak to those interested in Big History, you never find the paths to its discovery the same, but they are always fascinating.

I am what you would call a Big History infant. I embarked on this amazing journey of continual discovery a mere two years ago. I had the great fortune of working with Professor David Christian at Macquarie University and consequently collaborating on the Big History Project.

Prior to, what has been for me a

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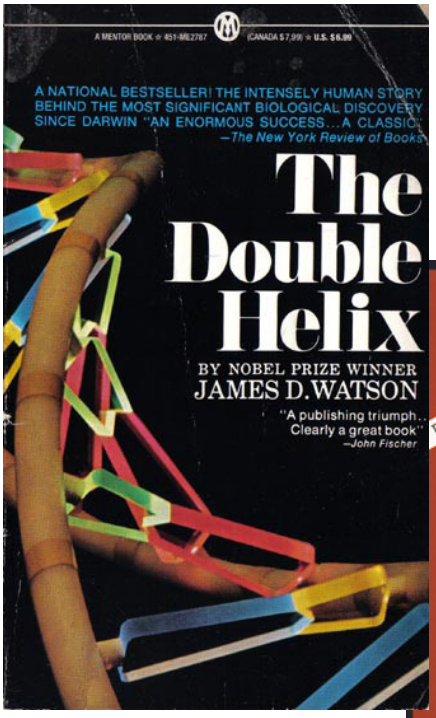
pioneer, having been exploring the territory for several decades now.

It all started back in the mid-Sixties when I was in college at MIT. Revolutions were then abounding so this turned out to be quite a good time and place to begin bold undertakings. I had been long fascinated with what now turns out to be two of the eight Big History Thresholds: the Origin of Life and the emergence of the first Stars and Galaxies. They were both very much in the air at that time. DNA,



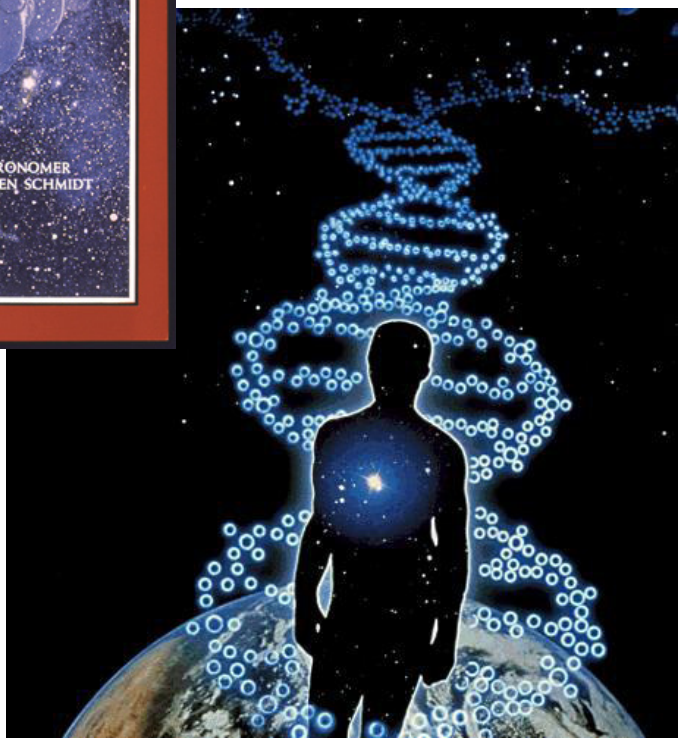
discovered in 1953, had quickly become a prime focus of research and reflection, and was already commonly being extracted in test tubes. Quasars were attracting a lot of attention too, having just been on the cover of Time Magazine, featuring the work of Maarten Schmidt at Cal Tech, "Exploring the Edge of the Universe."

Both of these favorite topics of mine also made it into two of my selected freshman courses. I was promptly exposed to a series of outstanding characters in different fields, each of whom embodied the status of their subject matter including their own original contributions to it.

The remarkable quality of Threshold 5, the Origin of Life, became vividly apparent to me during our first year biology courses with early genetic researchers and subsequent Nobel Prize winners, David Baltimore and Salvador Luria among others, introducing us to Watson and Crick's revolutionary discovery of "The Double Helix" along with its ramifications and implications. I couldn't help but marvel how in the world this molecule, which is capable in just one milligram of encoding the complete text of every book in the Library of Congress with still plenty of room left over, could arise out of the "primordial soup" as soon as it had sufficiently cooled (for an amazing graphic display of DNA in motion see "DNA: The Molecule That Defines You" at apod.nasa.gov/apod/ap120821.html).

At the same time, MIT's distinguished astrophysicist Philip Morrison heightened my growing appreciation for the emotion and excitement surrounding the burgeoning discoveries about Big Bang cosmology and Threshold 2. Conditions in the early universe including the mind-boggling extreme brightness and distance of Quasars, along with the nature of the earliest galaxies and stars were just then becoming evident.

To my surprise, however, it was the Humanities Dept. which provided the



clues that launched my Big History career by opening me up to the Thresholds of Human History. When my freshman humanities Prof. William Irwin Thompson waxed lyrical about the significance of our religious myths in relation to the findings of archaeology and the nature of early human civilizations, I at first didn't have any idea what he was talking about. But it wasn't long before this apprentice scientist of the natural world found himself seeking to unravel the nature of the world's past from another perspective altogether.

It was the Sixties after all and radical change was all around. In the context of life in the mid-twentieth century, I had begun to wonder whether there had ever been another time in history of such rapid, widespread and momentous transformation similar to this. In my comparative World Religions and Philosophies courses with Prof. Huston Smith, I noticed that so many of the cultures and traditions we were introduced to all seemed to have originated around the same time, the mid-first millennium B.C., in various locales around the world. I asked him about this and he said, yes, this was a fascinating phenomenon well worth looking at which had been noted by many, especially Karl Jaspers who called it "The Axial Period." In his interpretation, Jaspers had also compared it to the origin of the first great imperial civilizations 2500 years prior to that. Lining up the three times (the present, the Axial Period, and the first civilizations) I recall having this profound sense that there was something essential and meaningful going on with these times of Big Change which I needed to look into.

While traveling around the world with Prof. Smith on the International Honors Program, and working on my bachelor's thesis comparing Eastern and Western cultural traditions from an evolutionary perspective, I came across the works of the great Mircea Eliade. Prof. Eliade repeatedly emphasized how earlier peoples across the world were so universally enamored of whatever their previous "Great Time" of change was, that their entire myth and ritual tradition revolved around perpetuating that creative moment intact and maintaining the vital quality of what it had brought forth. It struck me how this compelling realization I'd been having, of how there have always been definitive "Times of Origin" throughout cultural history, was an ancient and universal human experience too! Not only did it look like there was a connection here with what Prof. Thompson had been referring to freshman year, but also in this context, maybe the Axial Period wasn't such a singular sort of phenomenon, as it had more commonly been viewed, after all.

One more important voice from MIT was still yet to be heard. Upon returning from the year abroad, I found MIT's historian and philosopher of science, Prof. emeritus Giorgio de Santillana, had just published his new book on science and myth which he regarded as the culminating work of his career. Protesting how "no one is willing to imagine that civilization appeared in a thunderclap," he forcefully cautioned against the "incredible blunder" of viewing cultural evolution as a gradual process. This, he said, would deprive us "of every reasonable insight into the nature of culture."

Connecting the dots over the next several years, I realized that during my years at MIT, it seemed all my mentors of the time were pointing me towards a particular message about the nature of cultural evolution. I felt well prepared to carry the torch from there, and promptly proceeded to immerse myself in world history following this thread for the evident task of widening and deepening synthesis at hand.

But the scope soon became larger, and bolder, extending further and further back in time. It wasn't long before an emerging analysis of biological evolution and natural history came to describe that process as well, not as one of gradual and steady change but in terms of sudden, rapid and dramatic points of transition, or "punctuated equilibria." I found this absorbing enough in itself, let alone in the awesome larger context I was already working with. What I began to realize was that it is the outstanding moments of Big Change that define evolution as a whole, and that these universal breakthroughs can provide a structure for Big History on a comprehensive scale.

Threshold moments, first in the Realms of World History and Prehistory, and then in the Earth and Life Realm, had become a clear central concept for investigating and interpreting Big History. Next thing I knew I was tracking down footprints on the shores of all the four Realms one after another, and discovering where they led in relation to one another. When the photos started coming out from the Hubble Space Telescope, I was on the edge of my seat. At last we could actually see some of the creative explosions that we've come from in the history of the Cosmos as well, in this case happening brilliantly right before our eyes.

And we can see just that in the present also. This time we are living in now is itself one of Big Change. That is essentially where the call for boldness comes from. Our collective learning is rapidly changing, and I see Big History as riding the crest of that wave. Over the years I've been exploring Big History, I find it calls for a whole new language of interdisciplinary or transdisciplinary terms and concepts just for thinking and talking about it, let alone seeking to develop an integral field of knowledge with a body of ongoing dialogue regarding research and teaching purposes.

This necessity became clear to me right from the start. I recall when I first set out to do research in Big History, and had in mind at the time a project to examine the great transformations of collective learning i.e. at that time making the advance toward a more general approach just within the scope of Human History. At Stanford they told me with a straight face that what I was proposing to do would entail attaining facility with not only French and German, but also ancient Greek, Hebrew, Sanskrit, Pali, Chinese, Cuneiform and Hieroglyphics. They were absolutely serious. I realized that just in order to validate generalization and synthesis, let alone for Big History to gain a seat at the table as a discipline with a terminology and technique of its own, we must not be just a compiler of various contributions at face value from the 'real' disciplines on their specialized terms. Big History is a whole greater than the sum of the parts which has its own unique and valuable approach, system, and repertoire to be refined and formulated.

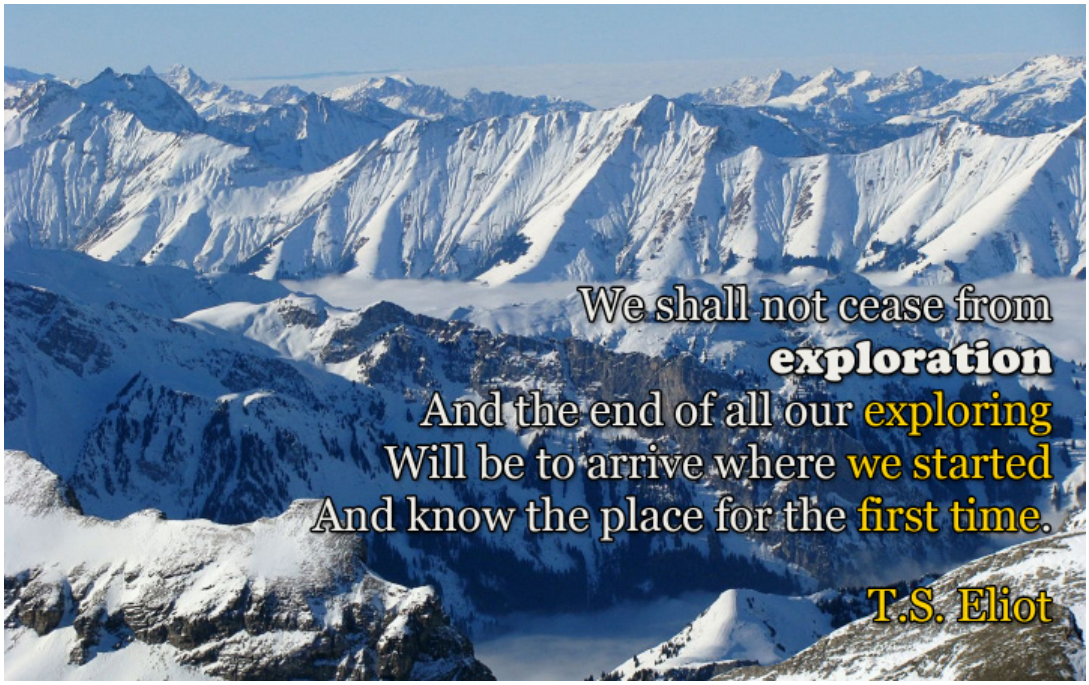
I'd like to offer a Big Cheer to the future of Big History, and say a word regarding what it has meant to me (see photo at the Philosopher's Stone in Austin). We've probably all heard about the recent breakthrough in the search for the Higgs Boson particle. The sense of excitement around this fascinating endeavor reminded me about what I've always found most intriguing about Big History: it has to do with Great Origins. In this case that would be nothing less than the Origin of Matter itself, which would of course pertain to Threshold 1, the Big Bang. Through all the various disciplines, the natural and social sciences along with the humanities, and not to forget the long-revered creation myths and legends of our ancestors

throughout the world, there seems to have always been a common quest for Origins. It is a universal search, always probing, digging deeper one way or another in an aspiration to discover meaning in the beginnings, of the universe, of the earth and its forms of life, and ultimately where we've come from, who we are, and thus where we are going.

Big History has an innate capacity, simply because of its grand subject matter, to awaken and stimulate young people's imaginations for exploring and contemplating the relatively newfound and rapidly expanding wealth of knowledge now available to them.

Since everything in the universe is now seen to be essentially historical and developmental, it has the makings of a wonderful story to appreciate how our very existence and identity has arisen from what Big History is all about. This is a creation story for our time capable of telling us who we are in an unprecedented and awe-inspiring way. We wouldn't be here without it. For the first time it also carries the boon of being scientific and evidential, making it that much richer, not only in content but also in the timeless qualities of wonder and mystery.

In an interview with Bill Moyers, George Lucas once explained how he put "the Force" into the *Star Wars* movies to try to awaken young people's interest in searching for where we come from, and the ultimate source and meaning of life. He wanted them to begin to ask questions about the mystery. This in a nutshell is a vital part of what my work in Big History has meant to me. Across the shores of Big History, I discovered a remarkable trail of footprints in the sands. Wondering who had left these marks, and beginning to notice what they were about, I could only conclude that it was me, that in a way it was all of us at once. Those telling lines from T.S. Eliot's *Little Gidding*, which I first became acquainted with forty four years ago when my Big History boldness began, continue to resonate:



About Ken and His Work

Ken has been researching an interdisciplinary synthesis of Big History since the aforementioned synchronistic series of defining moments transformed his perspectives. These experiences had inspired his lifelong project and quest for creativity in scholarship and education. His background includes Master's degrees from the California Institute of Integral Studies and Wayne State University, and postgraduate research at the University of Edinburgh and Emory University on a Woodruff Fellowship. He recently presented at the World History Association of Texas 2012 Conference, and has participated in conferences sponsored by the Templeton Foundation. The PowerPoint and text of Ken's IBHA Conference presentation are posted on the IBHA website, and the written paper, "The Universal Breakthroughs of Big History: Developing a Unified Theory for

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Integrated Research and Global Education", is also available upon request. Ken can be reached by email at gdrken@austin.rr.com.

Ken passionately believes in the prospects for Big History contributing towards a timely transformation of our collective learning through two interconnected developments: a Grand Unifying Theory of evolution throughout history, and a meaningful Grand Unifying Story for research and education at all levels. To this end, he is currently working on expanding and deepening the initial elements proposed in his conference paper for constructing a new Integral Evolutionary Synthesis in the context of Big History. These concepts are based on taking the overall historical evidence into account in a foundational capacity, and are also quite complementary to the model Cathy McGowan Russell offered in last month's newsletter.

This work includes: 1) Enumerating and characterizing the Thresholds of Big History as Origin Events; 2) Elaborating and examining their 10 Key Features as manifest in each of the 4 Realms; 3) Formulating a system of Periodization structured by the Thresholds/Origin Events including their definitive Regimes and subsequent Eras; 4) Enlarging on the concept of 'Collective Learning' as it applies to the Regimes and Eras in the Realms of Human History; and 5) The induction of a universally evident Biphasic Principle of developmental change in time.

Ken seeks to teach at the college level and introduce a Big History program, based on the wonderful precedent underway at Dominican, at a local university in the Austin, Texas area where he lives with his family and Angel the cat.

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serendipitous turn of events, I had taught high school History in western Sydney and worked in the fields of teacher education and museums at the university level. I always believed I was an historian and a teacher. I felt this was incompatible with what I viewed as my limited capacity for scientific thought and understanding. Although I enjoyed studying and teaching History I had since my time as a school student, felt something was missing. How did this vast array of people, places and events I enjoyed learning about and teaching students about fit together? I often felt lost and overwhelmed. Many times I saw this mirrored back to me through my students. What I was missing was the bigger picture. I had spent my entire career as a student and a teacher thinking of knowledge as needing to be carved up into bite sized, easily digestible and deliverable pieces.

Big History has shown me the immense power of the interaction of knowledge across the largest scales and the broadest array of disciplines. Paradoxically, by defining this landscape of understanding in the largest possible frame Big History has led to me no longer feel overwhelmed and lost. I am now inspired and excited to engage with a narrative and theoretical structure that is simple enough to guide my inquiry yet complex enough to allow for continued investigation, learning and discovery. The beauty of this subtle balance between 'simplicity' and 'complexity' is that Big History becomes accessible to those at all levels of the educational spectrum

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from primary school through to academic researchers.

During the IBHA conference I was struck by how often the words 'awe' and 'wonder' were used. Not about subject matter alone, but how Big History has a transformative power on the way people experience and understand the world and environments around them. Having a sense of being part of something far greater than oneself, and an understanding of what an astoundingly beautiful, fragile and volatile 'something' that is, changes the way we perceive ourselves and our environments. It has certainly done this for me. If I tend to sound like a Big History evangelist I am proud to say that I am.

Two years ago I found myself in a room at Macquarie University with Professor David Christian and three of the Big History project team. We were brainstorming a structure for a year 9 course for high school students based on Professor Christian's first year university course. I heard terms such as 'red shift' 'Cepheid variables' 'prokaryotes' and 'homeostasis.' I was literally terrified. This is the same reaction I have heard from many of my history teaching colleagues, who through their own schooling and training experiences felt marginalized and forced to make a choice between either the sciences or the humanities. I, like every other teacher who I have spoken to who has engaged with Big History, am no longer terrified but exhilarated and empowered…and I not only know the meaning of terms such as 'red shift', and 'homeostasis' but how these relate to me and the world I presently live in.

However, by far the most rewarding aspect of my Big History journey is the opportunity I have been given through working on the Big History Project to bring this experience to school students and teachers in Australia and internationally. Through the vision and collaboration of Professor David Christian and Bill Gates, the Big History curriculum developed via the Big History Project is a unique and powerful opportunity to better equip future generations to not feel forced to make artificially constructed choices between which pieces and types of knowledge are suited to them and those that are not. They will have the opportunity to think critically about information placed before them from any disciplinary arena. They will have the capacity to recognize and understand why they choose to accept certain claims of knowledge, and empowered to make those decisions.

Ultimately my interest in Big History lies with students like Jessica from Narara Valley High School, one of the Australia Big History Project small pilot schools, who says,

> "I'm not one of the brightest ones but since year 3 I always wanted to know what's out there and why and I love this course because it is helping me with that…"
> **Jessica (Narara)**

I am currently undertaking doctoral studies looking at how Big History effects students' capacity for interdisciplinary thinking. If, through this research and the work of the Big History Project ,along with organizations such as the IBHA, many more 'Jessica's' in classrooms across the world can be empowered to seek an understanding of 'what's out there and why' that is a journey I feel privileged to be able to make.

Graduate Research in Big History

The following article was written by David Baker, a PhD Candidate studying under David Christian at the Big History Institute in Sydney, Australia, and Esther Quaedackers, PhD Candidate at University of Amsterdam and also coordinator and lecturer in Big History courses at University of Amsterdam, Eindhoven University of Technology, and Amsterdam University College.

Anyone who attended the first inaugural International Big History Association Conference in August 2012 could not help but feel a little encouraged. We have established a brotherhood of comrades-in-arms from every corner of the globe. There is, however, a long road ahead of us as a discipline and as a genre of history. One of the most important tasks of big historians in the coming years is to prove that Big

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History can sustain a wide number of empirically rigorous and truly interdisciplinary research projects. As two people who have pursued this question for a while, we know that such research is eminently possible. The unique approach of Big History has suddenly opened up a vast horizon of research agendas, or, to put it another way, triggered a speciation event where hundreds of new niches have opened up, waiting to be filled. The ecological terrain is vast and the numbers that currently populate it are few. We urge anyone interested in researching in Big History to do so. There is a network set up to accommodate you. And you will be in good company.

Research comes in a variety of forms. One form involves scouring the whole of history for unifying patterns. Eric Chaisson has written extensively on the relationship between free energy rate density and the rise of complexity in the universe. Fred Spier has done work on energy flows, a common strand running through every stage of the cosmic story right up to the 'bottom line' that underscores human history, and added the concept of Goldilocks circumstances that allow the next level of complexity to emerge. These works are tremendous achievements, for, as the reader can imagine, finding a common theme that unites cosmology, geology, biology, and human history, is no small thing. To these unifying themes we might possibly add the Darwinian algorithm as a field of future inquiry, in which IBHA members Christian Jennings and David Baker have taken an interest, and the latter has recently finished an article on the subject for the first Big History Anthology.

Another type of research is Little Big History. It focuses on specific topics and is not limited by temporal or spatial constraints, extending the shining light of the Big History perspective to any subject. Little Big Histories try to connect a topic to all important phases of the grand narrative. The format has already been used to great effect by Jonathan Markley and Esther Quaedackers, and numerous Big History courses all over the world. They are extremely valuable both for undergraduate education and for graduate research projects.

Another avenue is the examination of ways to use Big History as a tool in organizations like governments, NGOs, and companies. For instance, it has been used as an instrument to help create scenarios for the future, to model network organization, and to force people in the corporate world to think bigger than they are accustomed to, in the hope that this will help them discover all kinds of new corporate niches. This approach is being harnessed in a new corporate training venture, Quasars.

Another line of inquiry pursues debates and questions about a certain chunk of the grand narrative that nevertheless hearken back to broad trends. Many of these make excellent fodder for Masters and PhD research projects that can by realistically achieved within a set timeframe. Current projects along these lines include:

- the impact of population ecology on collective learning
- random variation and non-random selection in culture
- network theory in broker communities
- computer models for visualizing our place in the universe
- the impact of disease on human and non-human evolution
- the cultural evolution of technology from the Paleolithic onward
- the nature of emergence in the Universe
- human development in the twenty-first century in a broader context
- the impact of geology on biological evolution
- the evolutionary origins of collective learning, the relationship between the organic and inorganic worlds
- the historiography of Big History, the role of extinction events
- world systems in the agrarian period
- the nature of life in the Paleolithic (noble savages vs. nasty, brutish, and short)
- the philosophical implications of Big History, the maladaptation of evolutionary instincts in complex society
- the two explosions of agriculture and industry
- optimistic and pessimistic interpretations of the grand narrative as it pertains to meaning, life, and the future of humanity.

This list only includes a few of the projects that people are working on right now. Both of us could rattle off dozens of potential research subjects like the ones above. We simply do not have the manpower, at the present moment, to explore them. The carrying capacity of the field is indeed set by the number of research positions available to us, which are few, and not by the number of areas of research, which are plentiful.

We need enthusiastic and intelligent people in our field. But in order to keep them, we need to be able to give them a home. If you are a faculty member at a university reading this, regardless of whether you are in the sciences or humanities, you might seriously consider doing your part to expand Big History at your university and find a place for Big History researchers and lecturers there. Naturally this takes money. The Big History Institute in Sydney under David Christian, for instance, is currently looking for financial support so it can expand. If you have any millionaire philanthropists in your back pocket, now would be the time to pull them out and hurl them in our direction. University faculties tend to suffer from perpetual inertia when it comes to restructuring and new ideas. That is the nature of the beast. External funding is an excellent way to light a fire underneath them.

And let us not forget the contribution Big History research can make to education at a variety of levels. At Amsterdam, Sydney, and Volgograd, scholars engage in research to expand our understanding of the narrative, to make our current interpretations more empirically rigorous, and also to provide education to students at the undergraduate, Masters, and PhD levels – running the full gamut of an academic career in Big History, just like any other historical genre. There are currently 40-50 entry level Big History courses being taught all over the world, second and third level undergraduate courses and also Masters coursework will soon become a reality, and from the students of these courses will be taken the second wave of big historians, engaging in the most interdisciplinary field of work that the world has ever seen, and in the service of a grand narrative that has profound ideological implications for humanity in the 21st century.

In addition to research institutions, which will need time and money to expand, we are also supporting the endeavors of these students by the establishment of a research journal that will release its first issue early next year. Votes are still being cast for the name of the journal. We already have a long list of about thirty research contributors. If someone you know is interested in this field of research, but has looked in vain for a scholarly platform to publish their work from a Big History perspective, please send them in our direction. We will work with them, we will publish them. We will give them a home.

There is, of course, much peril in the coming years that in bridging the gap between the sciences and humanities we may strain too far and topple down into the abyss of pseudo-science. An emphasis must simply be placed on objectivity and scholarly rigor at all times to assure that Big History is taken seriously. And this sentiment goes with a vast amount of respect for some of the magnificent explorations of the humanistic, artistic, and literary facets of Big History – which are crucial to the vitality of the field. The mixture of science and the humanities is at the heart and core of our entire movement.

But there is a difference between the utterly impressive displays of calculation and artistic skill in representing the grand tale (eg: Infinitaas or BH children's books) and some of the rare appearances at the conference of more questionable intellectual material that was cause for some embarrassment. There is no need to go into detail of it. Most readers will know to what sort of thing we refer. A number of our colleagues expressed concern. Others were furious. Others were driven to stay away. One hopes that the leaders of the conference at Dominican in 2014 will fix this problem.

We beg the reader to consider the question from the perspective of graduate students who are trying to found their entire careers in Big History as a serious scholarly field. In order to do so we need to win respect for our common cause. There is a difference between something that is scientific and something

that just adopts the guise of science. Big History is not a false beard for the absurd. Serious empirical research is the one thing required to enhance the credibility of this burgeoning new field. A vat of nonsense endangers this enterprise and along with it the careers of those brave few intellectuals who are devoting their energies and their prowess to Big History research. In the coming years, we must proceed with caution.

But let us all look with confidence to the vast sunlit horizon that has room for many research agendas in Big History. These projects may in fact be some of the first truly interdisciplinary pursuits. They employ different modes of thinking on the same question from start to finish, and the chemistry of such collaboration often comes out with the most profound and unpredictable results than you could possibly achieve sitting in your own silo with a group of those identical to you. Some so-called 'interdisciplinary' work can be ephemeral and fleeting. Big History is what makes the difference between the interdisciplinary equivalents of an awkward bit of small talk at a bus stop out of politeness and a long conversation into the small hours with a friend.

And let us not forget the contribution research can make to education and the narrative. All research adds a certain intricacy to our understanding of the grand scheme, lavishing details upon the canvas with a fine brush, adding to the broad strokes that have already been made. Like in any historical genre, research is essential to expanding the field. It refines ideas and generates new ones. We will better understand how things have developed in our universe and better contextualise who we are and where we are going. Finally, we may better articulate a sense of meaning and identity by exploring this magnificent, often terrifying, but staggeringly beautiful narrative of all things.

For inquiries about the contents of this article or to apply to publish in the new journal please email david.baker@mq.edu.au and e.quaedackers@uva.nl

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