Forum on Big History

Craig Benjamin, Guest editor

Note: The following was published as an introduction to a collection of articles on big history that appeared in the October 2009 edition of the on-line journal, World History Connected. The collection can be found at: http://worldhistoryconnected.press.illinois.edu/6.3/index.html

Introduction

Welcome to this Forum which focuses on one of the more recent and exciting ways in which historians are trying to conceptualize and communicate the past. As a clearly defined genre, big history has been around for about twenty years now, and as the Big History Directory included in this edition demonstrates, it is being practiced as a coherent form of research and teaching by an increasing number of historians, physicists, biologists, anthropologists, and geologists. Yet many school teachers and college professors remain uncertain of what big history is, its place in the broader world historiographical tradition, and of how the ideas and approaches of big history might be usefully incorporated into their world history classes. With this in mind I have three specific aims in this introduction:

- To introduce the genre of big history by locating it within the broader historiographical tradition of universal history
- To outline some of the new perspectives or insights big history brings to world history
- And finally, to introduce to readers the outstanding collection of big history articles that the editors of World History Connected have assembled for this Forum.

The Historiographical Context of Big History

Big history did not spring from out of some historical vacuum. It is a continuation of the great historiographical tradition of universal history, which in its written form dates back to Classical Greece and Han China, and in its oral form to the earliest human communities. The first century BCE Sicilian Greek historian Diodorus Siculus clearly laid out some of the central aims of universal history when he wrote:

‘For just as providence, having brought the orderly arrangement of the visible stars and the nature of men together into one common relationship … so likewise the historians, in recording the common affairs of the inhabited world as though they were those of a single state, have made of their treatises a single reckoning of past events’.

Diodorus’ intention, of recounting the ‘common affairs of the inhabited world’ in a single, coherent, unified narrative, stemmed from the much more ancient oral creation myths that have been devised and told by every human society since our species first
appeared on the planet some 200,000 years ago. Following the ‘discovery’ of writing, attempts to create a written ‘reckoning of past events’ quickly followed. These written narratives have continuously evolved over the subsequent millennia, according to shifts in cultural perception and advances in historical methodology.

For early Christian historians like Orosius and Augustine, human and cosmic history was seen as the unfolding of God’s divine plan.ii For Enlightenment historians like Voltaire and de Condorcet, the universal narrative was progressive and culminated in the triumph of civilization and reason in their own ‘enlightened’ times.iii For Hegel, the ‘single reckoning’ could be reduced to one maxim: ‘the history of the world is none other than the progress of the consciousness of freedom’.iv For Marx however, large-scale history demonstrated nothing more than the ultimate enslavement of humans to the mindless productive forces of capitalism.v

In the first half of the twentieth century, attempts to relate the ‘big’ story of human history fell on hard times. The work of Toynbee, Spengler and others was seen as too vague and generalized to be of much use to the smaller scale, more specialized historians who now dominated the discipline. In the 1960s and 70s it was the scientific community that initially re-embraced the meta-narrative. Physicists began to recount the history of the entire universe from the big bang to the present in audacious, chronological narratives; while biologists and geologists used evolutionary theory and stratigraphical studies to offer their own ‘big histories’ of the planet and all life upon it. Even an abstract entity like ‘time’ was seen as fair game for a universal, historical account, with the 1988 publication of Stephen Hawking’s A Brief History of Time an obvious example.vi One of the implications of this historicization of science is that, when world history began to make a historiographical comeback in the 1980s and 90s, it often did so with the help of the historical sciences.

These various elements then--the oral creation myth, attempts to write a ‘single reckoning of past events’, the identification of key themes that run like threads through the confusing morass of world history, and the historicization of science--are at the intellectual heart of big history today, the latest development in this great tradition of universal history. Like its predecessors, big history uses intensive interdisciplinary research and the most advanced historical and scientific knowledge to unfold the story of the evolution of the cosmos, and of the place of humans within. Because of the extraordinary scientific breakthroughs that have occurred since the 1960s, particularly the discovery of evidence for the big bang theory, the solar nebula theory of the formation of stars and solar systems, the principles of plate tectonics, genetic evidence for evolution, and the techniques of radiometric dating, big historians are now equipped with the knowledge and tools to write the most accurate creation story ever devised.

David Christian has argued, in fact, that it was only after these discoveries, particularly of the principles of radiometric dating which facilitated a profound ‘chronometric revolution’, that the modern big history account became possible.vii These techniques and scientific breakthroughs have allowed big historians to dramatically expand the breadth and depth of their enquiries, and to push the start date of their ‘single reckoning’
back to that point in time before which we can say nothing with any certainty— the big bang some 13.7 billion years ago. So, as extraordinary as this sometimes sounds to traditional historians, most big history courses cover billions of years of cosmic and human history in a single semester, from the origins to the ultimate fate of the universe.

Because of this extraordinary breadth, students of big history cover a wide range of disciplinary territory in a semester-long course. Here is a list of some of the questions students in a regular big history course might reasonably be expected to provide coherent, accurate answers for by the end of a semester:

- How and when does modern science suggest the universe was created?
- How and when were our sun and solar system created?
- How and when was the earth created?
- What forces created and shaped the earth’s lands, seas and atmosphere?
- How and when did life first appear on earth, according to modern science?
- How did life assume the variety of forms we see today?
- How and when did modern humans evolve?
- Is there anything that distinguishes human beings from all other large animals on this planet?
- How did the earliest human communities live?
- When does human history begin, and why?
- How and when did agriculture first appear?
- How did humans live in the first millennia following the adoption of agriculture?
- How and when did the first cities and states evolve?
- Why did some of these evolve into agrarian civilizations, while others did not?
- What are some of the defining characteristics of agrarian civilizations?
- How did agrarian civilizations change over 4,000 years of history?
- What are the origins of modern industrial society?
- Why did the ‘modern revolution’ take a European form?
- Is the 20th century different from all previous centuries in human history?
- Does a study of history on this scale help us predict the future?

The range of these questions might suggest that they could only be addressed in a vague or generalized way in a single semester, but this is not the case. Students learn the essential elements of all the relevant scientific, social, and historical theories, along with the detailed evidence that supports them. At various stages within the course, big history students enter the disciplines of cosmology, astronomy, physics, chemistry, geology, biology, anthropology, archaeology, economics, sociology, and history. Students are also encouraged to undertake in-depth research into big history topics that might be particularly relevant to their own areas of specialization. Indeed, thinking within the big history community is already extending to the possibilities of graduate-level study through intensive investigation of specialized fields within the broader genre.

There is no denying that, when compared to narrower specialized history, or even to traditional world history, big history is audacious in scope, content, and methodology.
Yet over the past two decades it has proven to be an extraordinarily popular and useful interdisciplinary genre for students of all levels, who are continuously encouraged to seek ways to connect various fields of human knowledge, and to find a context for their own majors and interests. It is not unusual to find students using course evaluations to describe a semester of big history as literally a life-changing experience.

In the same way that the ancient oral creation myths worked for human communities living in their particular time and place, the study of big history (the ‘modern creation myth’ as David Christian initially called it\(^\text{viii}\)) encourages today’s students to see all of universal history as a connected, organic entity in which, perhaps surprisingly, they play a not insignificant role. In fact, big history treads a fine line between anthropocentrism and human insignificance. There is no doubt that, by relocating humans as just one of billions of species in the biosphere, big history reveals ‘how small, destructive, and recent a phenomenon we are’, as Marnie Hughes-Warrington has put it.\(^{ix}\) But big history also demands something of a moral commitment from students, as they are encouraged to discover their place in the connected global village of the twenty-first century, and how they might better contribute to the future of that society and the biosphere that supports it.

In the tradition of the aboriginal Dreamtime stories, and of Diodorus, Voltaire, Hegel, Marx, and Hawking to name but a few, big historians have constructed a new ‘single reckoning of the past’ that begins with the big bang, and ends with the fate of the universe billions of years in the future. This is world history drawn large across a vast cosmic canvas. As Bruce Mazlish so neatly puts it, big history is a ‘testament to the human desire to know the whole of the past, envisioned in one sweeping vision, overleaping the limited and limiting boundaries humans have sought to place on the earth.’\(^{ix}\)

**Big History and World History**

Readers of this journal understand better than most how world history has enriched the discipline of history. The examination of human affairs from a broader perspective has allowed for the identification of processes, themes, and patterns that have provided context and meaning for all the myriad and seemingly chaotic details of human interactions. In so doing, world history has not set out to supplant or replace small-scale historical research (which provides the details and substance upon which these broader patterns are constructed), but rather to complement that work.

Big history does precisely the same thing, but at much greater scales again. While the world history lens is certainly wider than the lens more familiar to the national or biographical historian, the big history lens examines human, planetary, and cosmic history at the widest angle thus far possible. Marnie Hughes-Warrington has argued that, for too long historians have limited the array of lenses available to them: ‘It is as if the lens through which we view the past has got stuck at a certain magnification--the viewing of individual actions lens--and over time we have forgotten that other lenses are available’.\(^{xi}\) By opening up the entire bag of lenses, from the most intense close-up to the widest of wide-angles, the big history ‘cinema-photographer’ is able to reveal a whole new set of themes and patterns hitherto invisible even to the world historian. In so doing,
big history is able to complement world history in the same way that world history complements regular history. Big history provides the framework, not just for an understanding of the evolution of different human communities upon the planet, but of the entire human species, and of the biospheric, geological, and cosmic stage upon which this species has danced and fought.

At the same time, big history also takes the natural trend of world history towards interdisciplinarity to a much higher level of intensity. No one could argue that disciplinary specialization has not been of immense benefit to our species. The fragmentation of modern knowledge into myriad sub-specializations has allowed for extraordinary discoveries in a vast array of theoretical and practical matters by thinkers who have been able to immerse themselves completely in the minutiae of their subject. But what was lost in this intense drive into the ‘sub-atomic’ world was the Toynbee-like ability to join these various parcels of tiny knowledge into a coherent whole, to show the connections between them. As Fred Spier notes in his article in this edition, even today ‘interdisciplinary studies in the form of theoretically integrated approaches are still rare’. xii Big history has been at the forefront of these efforts to offer a genuinely interdisciplinary approach to the past, present, and future since it first emerged as a genre in the late 1980’s, and key thinkers like Christian and Spier have been at the cutting edge of a genuine attempt to unify all human knowledge, something that Edward O. Wilson described as “consilience”. xiii

One might argue that some form of consilience is desperately needed in the twenty-first century, because many of the problems facing humans and planet Earth are much too big to be even considered, let alone solved, by narrow disciplinary thinking. At the most recent conference of the World History Association, held in Salem, Massachusetts in June 2009, Alfred W. Crosby, Professor Emeritus of History, Geography, and American Studies at the University of Texas at Austin, argued that big history is uniquely positioned to not only address potentially catastrophic issues like global warming, but also to offer some reassurance that humanity might just be equal to the challenges posed by them. Professor Crosby contributed to a plenary panel at the conference on the topic, “The Future of World History”, which he believed would inevitably move in the direction of big history. xiv

Crosby noted that, as well as being fascinated by patterns of human activity such as cultural diffusion and physical migration, world history’s greatest contribution to the discipline has been to emphasize the common historical experience of life on earth, particularly the processes that have effected human adaptation to environmental change. Big history not only addresses these same issues, Crosby suggested, but also offers historical evidence that humanity might be equal to the contemporary challenges posed by them. Between 100,000 and 10,000 years ago, he pointed out, in the face of wildly fluctuating global climates, human beings were able to undertake extraordinary migrations and settle every continent on the planet with the exception of Antarctica. Within the last 13,000 years, human migrants into the American world zone adapted to the ice-bound North American continent, the deserts and rainforests of Central and upper South America, and then found ways of re-adapting to the ice-bound fiords of Patagonia, all within a couple of thousand years. What, Crosby asked, was the challenge of global
warming compared to these proven adaptations? He concluded that those historians most aware of this long history of human adaptation and migration have not only acquired a deeper understanding of the human past, but perhaps also of its future, and this might ultimately prove to be big history’s most important contribution to world history.

With some of these arguments in mind, I would like to attempt to list here some of the specific ways in which big history complements world history in particular, and the historical discipline more generally. Such a list might also suggest to teachers ways in which a big history perspective might deepen and enrich the content familiar to them from world history courses and textbooks.

**Big history provides a cosmic and environmental context for human history** (from 13.7 billion years ago to c.7 million years ago). In attempting to articulate the environmental context for human history, big history offers coherent, detailed, up to date information on the most significant and relevant ‘scientific’ theories, which are rarely discussed in world history textbooks or classes:

- The formation of the universe and stars; the appearance of chemical complexity in the cosmos
- The origins and shaping of the solar system and earth; earth’s history as revealed in the rocks
- The origins and evolution of life on earth, and the increasing biological complexity of our planet

**Big history reminds us of the importance of the earliest stages of human history** (from c. 7 million years ago to c. 2000 BCE). Big history offers a far more detailed and up to date consideration of significant ‘prehistory’ topics that are given scant coverage in most world history books or courses:

- Hominid evolution
- What makes humans different from other hominids and large animals (the ‘human revolution’?)
- The Paleolithic Era of human history
- The agricultural revolution from c. 10,000 BP (Before Present)
- The identification of four separated and isolated world zones in which human history began to play out in different ways following the adoption of agriculture in some regions: Afroeurasia, the Americas, Australasia, the Pacific.
- The Early Agrarian Era (c. 10,000-5,000 BP)
- The impact on the environment/biosphere of Paleolithic and Early Agrarian human communities
- The origins of power in human society
- The emergence of the first cities and states (noting increasing population densities, evolving economic and social complexity, the transition from consensual to coercive power, and the creation of the first cities and states in Mesopotamia, Egypt, China by c. 2000 BCE as regional examples of these processes)
Big history provides an objective, connected, thematic evaluation of the Era of Agrarian Civilizations (from c. 2000 BCE to 1000 CE). Big history offers a global, comparative, thematic, and up to date consideration of the traditional eras of ancient and pre-modern history that is very different to the compartmentalized, episodic treatment these often receive in world history:

- A theoretical introduction to the Era of Agrarian Civilizations (c. 2000 BCE – 1000 CE); what, when, why it matters (or, does it ultimately matter?)
- Why agrarian civilizations appear in some zones and not others; why this is important to subsequent global history
- A thematic and ‘hierarchical’ exploration of the defining themes of the era. Large global trends are outlined first; interregional (within the four world zones) processes are considered next; and substantial regional examples are explored in sufficient depth to inform and illustrate the larger patterns and processes.
- The most important themes of the era explored by big history are:
  - the growth and expansion of agrarian civilizations
  - contacts and exchanges between them
  - increasing social complexity
  - evolving gender relations
  - the emergence of rich streams of religious and philosophical thinking
  - and the critical question of the pace and scale of innovation during the era, including the role of Malthusian Cycles and the S-curve (explored by David Christian in his article in this edition).

Big history offers a global, non-centric explanation for the ‘Modern Revolution’ (from c. 1000 BCE to 2009 CE). The creation of the modern industrial world is certainly a topic covered in depth in all world history books, but often this is done through a series of disconnected chapters considering the individualized experiences of different regions and nations; the industrial revolution in England, the French Revolution, the industrial revolution in the USA etc. Big historians see this modern revolution as global and inevitable, and trace its routes back to the earliest phases of human history. The types of questions big historians ask are:

- What is the modern revolution? Can we define it?
- What changes can we point to globally to show that, since roughly 200 years ago, we have been living in profoundly different times?
- What global social, agricultural, economic, and political processes emerged between c. 1000 and c. 1800 CE that paved the way for the modern revolution? (In most world history textbooks these centuries are covered in a series of episodic, discrete chapters on the Renaissance, Reformation, Enlightenment, successive dynasties in China, the Islamic Caliphates, the Age of Exploration, European Colonization etc)
- What impact did the industrial and political revolutions of the eighteenth and nineteenth centuries have on human society, and on human relations with the environment (returning to the social, gender, and environmental themes that run like connecting threads throughout an entire big history course)
- Was the twentieth century arguably the most pivotal moment in human and planetary history? The twentieth century is often handled ambivalently and even
Finally, big history offers a consideration of the future of humans, the planet, and the universe (from 2009 CE to hundreds of billions of years into the future). A big history course concludes by considering the future at various scales. Having created a ‘single reckoning’ of the past by focusing on the major themes of cosmic, planetary, and human history, big history attempts to offer a reasoned consideration of how these same trends and patterns might play out over the next century, the next millennium, and even to the ultimate end of the universe. In line with this aim, one of the pioneers of big history, Fred Spier, will publish a book next year titled *Big History and the Future of Humanity* (Wiley-Blackwell, forthcoming 2010).

I have attempted here to distinguish big history from world history, and offer some suggestions as to how world history educators might usefully incorporate some big history perspectives into their courses. At the end of this introduction you will find a short bibliography, which lists a number of useful and approachable big history books. I strongly encourage teachers to read some of these books, and consider enhancing their existing courses by building in some of the perspectives, themes, and topics they will find there. I can assure you this will be an immensely rewarding experience for students and teachers alike. Of course, the first place teachers should look to gain a deeper sense of what big history has to offer is the outstanding collection of articles the editors of World History Connected have brought together for this special focus edition, and I would like to conclude this essay by introducing these articles to you.

**The Articles in this Forum on Big History**
The editors of World History Connected are delighted to be able to present the following seven articles by leading big history practitioners in this special focus edition. The articles cover a range of theoretical and pedagogical approaches, but each is intended to be accessible to teachers, who will hopefully find them useful both as introductions to the genre of big history, and as aids to incorporating some of the ideas and perspectives of big history into their own pedagogical approaches. They are introduced here in alphabetical order, by author’s last name.

**Walter Alvarez: A Geological Perspective on Big History**
Walter Alvarez is a professor in the Earth and Planetary Science department at the University of California, Berkeley. He is perhaps best known for the theory that dinosaurs were killed by an asteroid impact, developed in collaboration with his father, Nobel Prize winning physicist Luis Alvarez. (See W. Alvarez, *T-Rex and the Crater of Doom*, Princeton University Press, 1997). As well as an interest in big history, Professor Alvarez has contributed to our understanding of Mediterranean tectonics, Roman geology and archaeology, and the establishment of magnetostratigraphic correlations. Professor Alvarez has won numerous awards and honors, including the prestigious 2006 Nevada Medal, the Vetlesen Prize, and the Penrose Medal, the Geological Society of America’s highest award.
In this fascinating paper, Professor Alvarez models the way in which teachers of big history are able to take their own specialized disciplines as a starting point, and then slowly expand outwards until the entire world and universe have been incorporated. Through teaching his own big history course at Berkeley, Alvarez believes that the genre has given him ‘the opportunity to see how the history of the Earth fits into the history of everything else’. In this article Alvarez takes us on an extraordinary journey back through time, beginning with contemporary California and tracing historical processes in reverse through the spheres of human, earth, biological, and cosmic history. In a powerful conclusion Alvarez considers just how deeply improbable our existence really is, how many extraordinary circumstances have conspired to allow for the existence of humanity and the individuals of which it is comprised, and what this might mean for the way his students decide to live their own lives.

Craig Benjamin: The Convergence of Logic, Faith and Values in the Modern Creation Myth
Australian-born Craig Benjamin, Ph.D., is an associate professor in the History Department and Meijer Honors College at Grand Valley State University in Michigan. He is the author of numerous published articles, chapters and books on ancient Central Asian history and world history historiography. He is currently working on three textbooks for major US publishers, including a big history textbook for McGraw-Hill with co-authors David Christian and Cynthia Brown.

In this reflective article based on fourteen years experience teaching big history in Australia and the United States, Professor Benjamin describes the reaction of young undergraduate college students to their first encounter with the genre. After attempting to counter the post-modernist critique that all meta-narratives exist only to reinforce the power of the myth-spinners (the academic), Benjamin argues that the ‘modern creation myth’ is actually a tool for empowering students through its potential to engage their critical thinking skills at the highest level. By offering a clear, science-based account of cosmic, earth, and human history, young college students begin to dismantle the simplistic, dualistic view of existence that has sustained their lives thus far, and ponder ways in which they can reconcile both faith and rationality in a new and more nuanced world view. Because of this potential, Benjamin concludes, big history ‘deserves to be at the heart of every general education program at every university in the country that is genuinely dedicated to providing their students with a liberal education’.

(Editor's Note: A shorter version of this paper was originally published in Cheryl Genet et al. eds., *The Evolutionary Epic: Science's story and humanity's response*. Santa Margarita, California: Collins Foundation Press, 2009. The editors of World History Connected are grateful to the Collins Foundation for permission to reprint the article here)

Cynthia Stokes Brown: What Is a Civilization, Anyway?
Cynthia Stokes Brown is professor of education and history emerita at Dominican University of California. She is author of Ready from Within: Septima Clark and the

In her discussion of the term ‘civilization’, Professor Stokes Brown begins by considering how the word is used in the California State Standards, and then offers teachers concrete suggestions on ways in which they might help their students gain a deeper more ‘universal’ understanding of this slippery concept. She notes that standard definitions of ‘civilization’ are problematic, because they contain ‘an overt value judgment that civilization is better, more advanced, and superior to other forms of social organization’. Brown argues that a civilization is simply one of several specific types of human community (along with bands, tribes, chiefdoms, early agrarian societies, and modern industrialized society), and that like these others, all civilizations share certain defining characteristics. Brown also ponders the origins of agrarian civilizations, and as a big historian sees this as part of a global process that began with the adoption of agriculture. She concludes by thinking about the future evolution of human societies, asking whether we have any choice in this, or whether it is out of our control. Finally, she asks, ‘Where else but in large-scale history do these questions even arise’?

David Christian: Contingency, Pattern and the S-curve in Human History
David Christian is by training a historian of Russia and the Soviet Union, but since the 1980s, he has become interested in world history on very large scales. He taught at Macquarie University in Sydney from 1975 to 2000 before joining San Diego State University in 2001. In January 2009, he returned to Sydney to take up a position at Macquarie University. He has written a textbook history of modern Russia, and a synoptic history of Inner Eurasia. In 1989, he began teaching courses on big history, and in 2004, he published the first text on big history. In 2008, he accepted appointments as a Research Fellow at Ewha Women’s University in Seoul and as a Professor of history at Macquarie University in Sydney. Christian’s recent publications include This Fleeting World (Berkshire Publishing: Great Barrington, MA: 2007), a history of humanity in under 100 pages; Big History, a set of 48 lectures for the Teaching Company, 2008; and Maps of Time: An Introduction to Big History, foreword by W. H. McNeill, (Berkeley: University of California Press, 2004).

Professor Christian begins his paper by comparing the role of contingency in human history with that of large-scale patterns that might be equated to ‘scientific laws’. Christian understands why smaller-scale historians are generally opposed to the application of any rigidly deterministic laws to human behavior, but also believes that big history, with its unique ability to allow the observer to step back from the immediate, helps us see details and patterns otherwise obscured. In so doing it transforms ‘our ideas of what history is about’. One of the most revealing patterns discernible to the big historian is that of the S-curve, which focuses on the relationship between population growth and available resources. The essential equation here, as noted by Thomas Malthus and Adam Smith, is that population increase is a direct product of natural resource availability. But uniquely, humans have been able to artificially increase
resource availability through innovation, resulting in a distinctive, relentlessly upwards-slanting curve. Christian explores this propensity to innovate through the great eras of human history, explaining innovation as a direct product of symbolic language and collective learning. In conclusion, Christian returns to the contingency/inevitability debate by arguing ‘the large patterns of human history suggest that something like the Industrial Revolution was going to happen eventually’, and concludes that ‘to focus almost entirely on the contingencies is to miss half the story’.

Lauren McArthur Harris and Sarah Hamilton: Challenges and Opportunities: Reflections on Teaching Big History Discussion Sections
Lauren McArthur Harris is a Postdoctoral Research Fellow at the University of Michigan who specializes in History and Social Science Education. A former high school world history teacher, she completed her PhD in Teacher Education at the University of Michigan in 2008. Her dissertation focused on how world historians, content standards, and teachers build coherence in world history and how this applies to the teaching of secondary world history courses. Sarah Hamilton is a PhD student in the Department of History at the University of Michigan. Her current research interests involve the environmental history of 20th century Spain.

In this jointly written paper, the authors reflect on their first semester as teaching assistants for an inaugural big history course taught at the University of Michigan in 2008. The course, titled ‘ZOOM: A History of Everything’, was convened by Professor Douglas Northrup and attracted students from a wide range of disciplines. The authors offer a detailed description of the intent, content, structure, and assessment components of the course, and then reflect on the challenges inherent in teaching it. Despite these very real challenges—including building in coherence, relating the big story to specific disciplines, and having to become familiar with the science content—this was an enormously rewarding experience for all involved. Through lecture and discussion, students were forced to confront questions of science and religion, contingency and inevitability, and their role as stewards of the environment. In their summarizing conclusion, McArthur Harris and Hamilton note that ‘ZOOM was truly a journey for the students and the instructors, from its early challenges to the standard narratives and inherited mythologies, through its humanity-minimizing perspective on the longue durée, to its final conclusions about the current path of humanity and our possible role and actions in the immediate future’. This is an assessment sure to resonate with all of us who have taught big history in the past, and all those who will in the future.

Jonathan Markley: ‘A Child said, “What is the Grass”? Reflections on the Big History of the Poaceae:
Jonathan Markley is an Assistant Professor in the History Department at California State University, Fullerton. His early education was in New Zealand (BA & MA Auckland University), and his doctoral studies were in Australia (PhD Macquarie University). He has also taught history for four years in Hong Kong. Dr. Markley’s focus is on ancient history, specializing in Roman and Chinese studies. His work deals with both civilizations’ relations with “barbarians” and on the historiography in both parts of the world. He teaches courses on both ancient Rome and China, in addition to world history.
His book, *Peace and Peril, Sima Qian’s Portrayal of Han-Xiongnu Relations*, will appear in the Silk Road Studies series, published by Brepols next year. Professor Markley’s first encounter with big history was as a teaching assistant in the Big History course at Macquarie University, where he taught with Marnie Hughes-Warrington. He is currently working on a “Big History of Grass,” a project that covers the period from the first evolution of grass to the present day. Initially he had been planning to write about the great clash between agriculturalists and pastoralists throughout history, but one day in the middle of a class realized that the major difference between them is simply how they make use of grass.

In this extraordinary paper, Professor Markley shares some of his recent thinking on the role of grass in planetary and human history. In a deliberate attempt to write a non-anthropocentric narrative, Markley has constructed a history of the world from the point of view of the major grass species that have colonized much of the planet. Indeed, Markley argues that ‘the chief difference between Big History and previous attempts to write universal histories … is the acknowledgement that humans are not the center of the story’. He draws an interesting parallel between the global spread of various grass species and the migration of bipedal hominins, noting that in both cases it was only those species best equipped to adapt to a variety of environmental conditions that survived and flourished. The article is clearly ‘big’ history in that it is interdisciplinary in methodology, enormous in scope (covering some 90 million years of planetary evolution), and places the biosphere at the center of the story (grasses are seen as the ‘fundamental player’, and the role of humanity as ‘merely incidental’). Yet ultimately, as Markley puts it, this is a ‘true story and one that is arguably more representative of the development of the world than traditional anthropocentric world histories.’

**Fred Spier: Big History. The Emergence of an Interdisciplinary Science?**

Trained as a biochemist specializing in genetic engineering and as a cultural anthropologist and social historian studying religion and politics in Peru, Fred Spier is Senior Lecturer in Big History at the University of Amsterdam, from where he coordinates the big history courses both in Amsterdam and at the Eindhoven University of Technology. Based on complexity studies, he is currently developing a general theoretical approach to big history, outlined in his paper ‘How big history works: energy flows and the rise and demise of complexity’, *Social Evolution & History*, 2005, 4, (1), 87–135. An extended version of the argument will be presented in his upcoming book *Big History and the Future of Humanity*, to be published in 2010 by Wiley-Blackwell.

In his paper on the interdisciplinary strengths of big history, Professor Spier begins by offering an excellent overview of the origins and intentions of the genre, and also provides a neat description of the content and structure of his own big history courses, which he teaches at the University of Amsterdam, and the Eindhoven University of Technology. Spier’s main focus is on the interdisciplinary potential of big history. He believes that the varied disciplinary backgrounds of big history’s proponents is allowing for the development of unique perspectives on critical topics such as complexity, and the Goldilocks principle. Indeed, Spier argues that the Goldilocks principle (which in essence suggests that circumstances must be just right for complexity to exist) might be
pursued as a central theoretical approach by big historians, allowing scholars ‘ranging from astronomers to historians and anthropologists to collaborate in unprecedented ways while speaking a mutually intelligible language’. Spier offers an eloquent investigation of one of the great strengths of big history, its ability to bring leading scholars from a great diversity of specialized fields together to address the fundamental issues facing the human species in a genuinely interdisciplinary way.

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Brief Big History Bibliography
(Note: See also the Big History Directory included in this edition of World History Connected)


Spier, Fred (1996). *The Structure of Big History: From the Big Bang until Today*. Amsterdam: Amsterdam University Press.


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**Notes**


2 See for example, Paulus Orosius, *Seven Books of History Against the Pagans*, Washington DC: Catholic University of America Press, 1964


viii See the Introduction to David Christian’s *Maps of Time*, Berkeley and Los Angeles: University of California Press, 2004


xi Hughes-Warrington, ‘Big History’, 20

