

Origins

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On the cover is a graphic of the character, Ava, from “Ex Machina,” a 2015 British science fiction film that tells the story of a programmer who administers the Turing test to an android with artificial intelligence. The film raises questions about transhumanism and the future of emergent complexity, topics explored by Elise Bohan.

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International Big History Association
Brooks College of Interdisciplinary Studies
Grand Valley State University
1 Campus Drive
Allendale MI 49401-9403
<http://ibhanet.org/>
616-331-8035

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Empiricism Is Not A Dirty Word

By Elise Bohan

Doctoral Student at Macquarie University



I stumbled on Big History through a happy accident and found myself wondering where it had been all my life. At the time I was a student of English literature with big ideas in a culture of small minds. There was a tribe. They had sayings. We were taught to learn and repeat them. But I always had this nagging feeling that two plus two didn't *really* equal five, in the same way I felt that it didn't *really* make sense that jargon plus obscurantism could equal clarity.

Before Big History, the academic culture I knew was all about things like 'critical and creative praxis,' 'scientificity' and the composition of deep declarations like 'the what is the how.' Probing questions about the real value and meaning of this way of thinking (and its idiosyncratic aesthetic) were routinely silenced. In the aftermath of such questions, the atmosphere in tutorials would grow cold and tense. The questioner would be swiftly ostracised as a discussion of panopticons, power structures, capitalism and oppression echoed in the background with the usual scripted precision and dull murmurs of collective ascent.

Nine times out of ten, the upstart questioner was me. I wanted to ask concrete questions and use *evidence* to attempt to answer them. I wanted to know if some of the assumptions about gender, race, power, class and human nature, which we were expected dutifully to imbibe, were actually true. Naively, I assumed everybody else would be just as eager as I to ponder such questions. The conventional wisdom of post-modern academic culture *may* have been accurate, but oftentimes the sources seemed too dubious. Actually, more often than not, the use of evidence to bolster critical readings was deemed unnecessary – so long as the reading was among the stockpile of 'correct' interpretations.

In one class we read Daphne du Maurier's novel *Rebecca*. In the seminar it was deemed 'glaringly obvious' that, as a woman, du Maurier had placed a great thicket of hedges around the manor house, Manderlay, to symbolise giant vaginas devouring patriarchy. My compatriots seemed to have greater powers for reading minds than I, for I discerned no such thing. The intent was not impossible, but there was no reason at all to suppose it to be true. An excerpt from du Maurier's diary to this effect would have convinced me. A 'feminist reading' through a 'deconstructive lens' did not.

At this time I was reading a lot of popular science, exploring the fascinating realms of evolutionary psychology, biology, and neuroscience. I developed a great affinity for what Richard Dawkins poetically terms 'the magic of reality' and keenly consumed

his deft and accessible explanations of biological evolution. I was interested in epigenetic (concomitant genetic and environmental) influences on human behaviour. I thought about how new technologies were changing the nature of human communication, and as a result, literature and storytelling. I wondered what literature would be like in the future – what forms it would take and what roles it would play. I imagined the different ways we would eventually teach and learn. And I hoped that literary studies could provide a background to explore many of these ideas, because in canonical literature alone we have hundreds of years of empirical testimony of the evolution of literary form, communications technologies, linguistics, and human ways of thinking.

I hoped wrong. To paraphrase J. K. Rowling: ‘*Don’t ask questions* – that was the first rule for a quiet life with the literary critics.’ I learned this the hard way. Groupthink was the law of the land, and dissent would not be tolerated. It was a sad day when I realised that no matter how compelling the question, or how strong the argument, if it was of the ‘wrong’ flavor, it would be rejected out of hand in an act of transparent tribalism. Oftentimes simply bringing up a name like Steven Pinker or Richard Dawkins would have the greater part of the room scoffing and crying ‘scientism’ with all the animosity that is typically channelled into the ritualised burning of an effigy.

Then came the fortuitous stumble. It began with the opening of a browser. With a misplaced click I accidentally opened the Macquarie University homepage instead of the library search window and read the words ‘Big History’ for the first time. I saw that an academic in Sydney was teaching an interdisciplinary course that was all about asking different kinds of questions and using empirical evidence to tell a story about where we come from and what we are. He was asking *big* questions! Life, the universe and everything questions!! The kind of questions I’d always thought the humanities were supposed to be all about. There was a TED talk, there was a course, there were even grad students out there somewhere – and it wasn’t happening halfway around the world, as exciting things often seem to be. It was bubbling away a mere two floors down, in the very Faculty of Arts building that I had been frequenting for the past three years.

The academic was David Christian. I emailed him, we corresponded, and I began to chart an entirely new academic course. Well... not *entirely*. I was still a Master’s student in literature and had a thesis to write. But I couldn’t stand the idea of wasting a year writing the umpteenth dissertation on Dickens, or Joyce, and stating without a shred of conviction that I would be ‘filling important gaps in the existing critical discourse.’ David suggested that a project on origin stories might be a good way of transitioning into the world of Big History. I agreed, although I wasn’t all that keen on dissecting ancient texts like the *Popol Vuh* or *Enunma Elish*. In hindsight that would have been a fascinating and very useful project, but at the time I had my gaze set toward the future. I wanted to think about what was happening *now*, so I devised a project on modern origin stories.

I wrote about some of the great storytellers and science communicators of the past hundred and fifty years: Charles Darwin, Carl Sagan, Lawrence Krauss and Richard Dawkins. I showed how their writings and orations fulfilled the age-old functions of literature at its best: to instruct and delight, admirably delivering on Vladimir Nabokov’s ideal literary trinity of ‘magic, story and lesson.’ I showed how these authors *persuaded* through storytelling; how they infused science with poetry and beauty; and how they unified scientific theory to serve the age-old function of all human origin stories and creation myths to date: to provide modern humans with a guiding sense of place in the universe. I also showed how the epistemological underpinnings of these origin stories represented something new in the evolving metaphysical continuum, emphasising that they are the products of an age of unprecedented scientific sophistication and are bolstered by the relatively novel framework of the scientific method.

I am now a Ph.D. candidate at Macquarie University, and David Christian is my principal supervisor. I am one of the few students in the world currently undertaking graduate research in Big History – David Baker (also at Macquarie) was the first to graduate with a doctorate in the field. We are all still in the process of figuring out how interdisciplinary research on this scale should work. And, while there’s a lot of uncertainty ahead of us, this is an incredibly exciting intellectual culture to be a part of.

I remain as curious as ever about the future, so of course my project, although historiographical, also looks ahead to what some Big Historians call Threshold 9. My project takes Big History, and the profoundly forward-looking contemporaneous movement, transhumanism, and looks at their respective histories, aims, and epistemological underpinnings. Both emerging schools of thought are effectively branches of science communication. They each rely on the same scientific body of evidence to tell a story of evolution on a cosmic scale. Sometimes different language and concepts get thrown about, and different emphases and implications often emerge, but the basic view of the past is a common story of increasing aggregate complexity in open evolutionary systems.

Both stories have climactic events or significant moments of emergence: in Big History we often refer to *thresholds*, while in transhumanism many refer to Ray Kurzweil’s *epochs*. The breakdown in both cases is almost identical. In broad terms it follows the pattern: physics, chemistry, biology, humans, technology, agriculture, industrialisation, the future. In both narratives humans get a lot of attention, and rightly so (although it is attention without privilege). In the scheme of 13.8 billion years of cosmic evolutionary history, we are reminded that humans are not the pinnacle or end of evolution, that we do not appear to be the products of purposive design and are certainly not the embodiment of cosmic perfection. But we are also shown that we *are* different from all of our biological cousins and antecedents. Humans are the first creatures in terrestrial history to have significantly remoulded the face of the Earth and altered the biosphere. In addition, we are the first creatures to have developed the capabilities to consciously and collectively engineer our own evolution through culture and technology.

I am not a scientist, and I am not a futurist. But, like most big historians, I believe that it is important to consider the future and to use our vast repositories of existing knowledge about the past to help us make informed – although provisional – projections about how things may unfold. I think that, in different ways, big historians and transhumanists are each encouraging us (academics, governments and the general public) to think carefully about the future and to take emerging threats and opportunities seriously. Some threats, such as resource scarcity, pandemics and global warming are relatively familiar, while others, such as

superintelligence, seem radical, counterintuitive, and far beyond the pale of nature.

As twenty-first century humans, navigating an era of rapid and unprecedented social evolution, we will have many thorny decisions to make. What technologies do we fund? Which do we regulate and to what extent? To whom do we extend human rights when machines start exhibiting human qualities, or when humans begin to augment themselves substantially with intelligent devices? Unlike any other unified metaphysic in human history, the scientific view of cosmic evolutionary history propounded by Big Historians and transhumanists gives us a unique and much-needed empirical context in which to grapple with these questions. In a history that spans the entire development of human evolution and beyond, we can readily recognise that humans are toolmaking creatures, and that we have consistently modulated our environment in order to aid survival. In addition, our tools have grown exponentially more sophisticated over the past 2 million years, fuelled by the uniquely human process of collective learning.

While this knowledge doesn’t tell us *what* we should do, or how exactly the future will unfold, it gives us context and some very important clues. It also provides us with a powerful sense of metaphysical orientation in which we are forced to accept, on the basis of empirical evidence, that change is inevitable, that radical change is eminently plausible, that there is no-one pulling the strings, and that if we want to survive and prosper, it is *up to us* to make intelligent and informed decisions based on revised and regularly updated knowledge and principles.

Put simply, the aims of my thesis are threefold:

- 1.) To write a history of two significant and increasingly influential modern ideas. I intend to chronicle and compare the developments of the intellectual cultures of Big History and transhumanism and to explore their intellectual antecedents in greater depth than in the accounts found in most scholarship to date.
- 2.) To exemplify how the respective contemporary movements of Big History and transhumanism embody an important (and ultimately broader) cultural shift

in modern metaphysical sensibilities – in particular, a shift in the way we perceive and value ‘humanness’ and in how we characterise the role of the human from the perspective of cosmic evolutionary history.

3.) To query, as a big historian, whether some transhumanist ideas ought to play a more significant role in our cosmological origin story and in our contemplations of the future of humanity than they currently do.

A colleague at the Big History Institute recently asked me whether I would recommend doing Big History research to interested would-be grad students. My answer was equivocal: not necessarily. While it can be tempting to proselytise, I don’t see Big History, or transhumanism, as ideas that should supplant other forms of research. In an ideal world, I think it would be great if everybody were familiar with cosmic evolutionary history, whether they learn about it through Big History or through another platform. As an origin story and metaphysic, Big History can

provide a valuable cognitive framework to contextualise all human endeavours and forms of inquiry. For scholars drawn to big picture thinking, storytelling and science communication, Big History is a great field to work in. But if everyone became big historians we would have no new knowledge to aggregate and integrate into this great modern origin story. We need jacks-of-all-trades working in concert, tackling questions at all different scales.

Big History’s undeniable value lies in its ability to synthesize meaningful knowledge into a coherent and guiding narrative and to tell it with dynamism and humanity. As a form of science communication, the field is well and truly worth its mettle. As a field of research, it is still being tested. Yet one can’t help but be optimistic about the development of a scholarly culture in which curiosity, questioning, rigor, clarity, collaboration, and intellectual humility are the defining ideals – ideals that, in my experience so far, are being both practiced and preached.



The Meaning of Big History, Philosophically Speaking

By Cynthia Stokes Brown
Professor Emerita,
Dominican University of California

Abstract:

In this paper I shall begin by distinguishing methodological materialism from metaphysical materialism and then materialism from naturalism, in an effort to state clearly the underlying philosophical assumptions of dominant big historians. Then I shall discuss what big history suggests about morality, stating my own philosophical position where appropriate.

We humans live in a galaxy a hundred thousand light years across, in a 13.8-billion-year-old universe composed of hundreds of billions of galaxies. We live on a 4.5-billion-year-old planet with optimal conditions for life circling an average-sized star. Our species emerged about 200,000 years ago and is now altering the biosphere of the planet. At the present time we live at one of the most challenging moments of human history, a bottleneck through which humans may or may not emerge onto a new plateau of sustainable living.

In a nutshell, that is what big history means. It tells us about our place in time and space on the largest scale. But hidden between these lines are many layers of philosophical thought, as big historians explore the meaning of the scientific origin story within the context of current philosophical thinking.

Methodological Materialism

The underlying assumption of most big histories is a philosophical position known as “scientific materialism,” or just “materialism,” or sometimes “naturalism.” This theory/doctrine holds that matter/energy (interchangeable forms of the same thing) is the only reality, that everything is composed of matter/energy, and that all phenomena, including consciousness, can be explained in terms of matter/energy.

To clarify the meaning of “materialism,” it is helpful to make a distinction, which philosophers do, between methodological materialism and metaphysical (sometimes called ontological) materialism. Metaphysical materialism is a belief or assumption that only matter/energy exists and that anything seemingly immaterial must be the product of the underlying matter/energy. Methodological materialism, on the other hand, is simply a restriction on method, that researchers will not make any non-material assumption as a way to eliminate confusion when studying the natural world. In David Christian’s words: “You confine your speculations about what is to those entities for which we all have direct evidence.” (e-mail message to author, September 29, 2013)

Whatever their metaphysical beliefs may be, scientists necessarily work as methodological materialists. They conduct scientific investigations as though matter and energy are all that exist, without necessarily believing that is so. A minority of scientists believe that something else exists. Most scientists, such as Richard Dawkins, do their scientific work as methodological materialists and then go further to argue the metaphysical materialist belief that matter/energy really is the only reality. (Dawkins 2006)

In the same way, big historians are necessarily methodological materialists. We summarize the findings of scientists and humanists based on the empirical evidence reported in their studies and accepted by mainstream practitioners of their disciplines. By doing this, big historians have been able to construct a narrative history of 13.8 billion years based on the materialist method for gaining empirical evidence.

It is step beyond methodological materialism to take the position called metaphysical materialism and to argue that matter/energy is the only reality. The big history narrative is necessarily based on a materialist method, but it does not require a belief in metaphysical materialism. Therefore, it is possible for people of many different metaphysical points of view to accept the big history narrative as a foundation and then to erect on it various metaphysical theories and assumptions. For example, the Roman Catholic Church accepts evolution, combines scientific methodological findings with Catholic metaphysical doctrines, and accepts

what science says as further evidence of how God works. Both Pope Francis and Richard Dawkins can agree on big history as their foundation and disagree about its implications, as can Ray Kurzweil, the technologist, and Bill McKibben, the environmentalist, or other such pairs. (Kurzweil 2005; McKibben 2010)

For big history to find acceptance around the world, this distinction between methodological and metaphysical materialism needs to become clear. People of various metaphysical positions need to realize that they can use the big history narrative as a foundation on which to add whatever cultural or religious metaphysical background they bring with them. Teachers facing philosophically naïve high school or university students need to help them understand that they can assimilate the methodologically materialist big history narrative as a foundation, even if they already have a metaphysical framework that is not materialist. At the same time, students who are metaphysical materialists need to be respected in the process.

Metaphysical Materialism

Big historians have not yet expressed themselves much about their metaphysical beliefs, those about the ultimate nature of reality. We have been deeply occupied assembling the story in various formats and for various reading levels. We are aware that scientists can't prove that matter/energy is the only ultimate reality. Indeed, scientists find that most of the universe they don't understand at all---dark matter and dark energy. Who knows what future discoveries will be made?

Hence, the most logical metaphysical position for big historians to take is that of agnosticism, the belief that so far it is impossible to prove whether or not anything exists beyond material phenomena (energy/matter). This is a basic stance of openness that all of us seem to share.

Yet some of us tire of sitting on the fence. I, for one, cannot resist taking sides tentatively and arguing for metaphysical materialism, that ordinary matter and the known types of energy are the only constituents of reality. Right away, of course, I have to acknowledge that ordinary matter and known forms of energy seem to make up only about 4% of the observable universe. We still don't know what the

remaining 96% is, the so-called dark matter and dark energy; at this time they are hypotheses under investigation. In this situation no metaphysical materialist can feel thoroughly certain of what constitutes ultimate reality. Presumably dark matter and dark energy will have an explanation within the current framework. Dark matter may help shape galaxies, and dark energy may push them apart, but otherwise ordinary matter and the known types of energy seem at this time the major players in the rise and fall of complexity in the universe. (Spier, 2015, 78)

Critics of materialism, who often attack without distinguishing methodological from metaphysical materialism, are quick to make two accusations, namely that materialists are necessarily both nihilists and reductionists. Nihilism is the denial of one or more meaningful aspects of life, especially customary belief in religion or morality. It may extend to a doctrine that life is without any objective purpose, meaning, or intrinsic value. Critics of materialism often quote the opinion of the American theoretical physicist, Stephen Weinberg, as being the necessary result of believing that only matter/energy exist: “The more the universe seems comprehensible, the more it also seems pointless.” (Weinberg, nd)

Yet these critics overlook Weinberg's further reflections:

If there is no point in the universe that we discover by the methods of science, there is a point that we can give the universe by the way we live, by loving each others, by discovering things about nature, by creating works of art. . . .if the only drama we're starring in is one we are making up as we go along, it is not entirely ignoble that faced with this unloving, impersonal universe we make a little island of warmth and love and science and art for ourselves. (*ibid.*)

In contrast to nihilists who find no objective or intrinsic meaning or purpose in life, big historians find plentiful meaning and motivation in the story that big history provides. We are devoted to telling a story that we expect to make a positive impact on the world. We are devoted to our students, our colleagues, and our institutions of learning for a start. Of course, like Weinberg, we are also devoted to love, science, and the arts. We hardly seem a band of lost beings bereft of meaningful engagement with life. Yet to a strict philosopher, our meanings may not count, since they are cultural and subjective, rather than objective and intrinsic in the nature of the universe itself.

Reductionism is a philosophical position that holds that a complex system is nothing but the sum of its parts and that an account of it can be reduced to accounts of individual constituents.

In contrast to reductionism, big history accounts are based on the assumption of emergence, the idea that new reality emerges from the interaction of constituent parts, a new reality that is different from the sum of unchanging individual parts. This is part of complexity theory, first formulated at the Santa Fe Institute in Santa Fe, New Mexico, founded in 1984. Complexity theory is now referred to as "complex adaptive systems," meaning dynamic networks of interactions, whose relationships are not aggregations of individual static entities. Several big historians incorporate some of this thinking, which is clearly different from simple reductionism. For instance, see Spier's discussion, 2015, 44-45.

Big historians are accepting some form of emergence because scientists in general are accepting it, as in this definition from the biochemist, David Deamer:

"Emergence" is now being used in science to connote the process by which a physical or chemical system becomes more complex under the influence of energy. There is a certain mysterious quality to the word's use in this regard because the emergent property is typically unexpected and cannot be predicted. Emergence is the opposite of reductionism, in which everything is believed to be explainable by understanding ever simpler components of a system. Reductionism, however, cannot account for the fact that under certain conditions, systems become increasingly and unpredictably complex."
(2)

It seems that often the terms nihilist and reductionist are used as epithets to convey distaste for metaphysical materialism itself, rather than to make coherent philosophical claims. Critics who use these terms seemingly are not content with the purposes of living provided by materialist theories and seem to be seeking some higher purpose that could be provided by some non-material supernatural intervention or by some inherent purposeful/teleological direction to nature itself.

Another philosophical term, naturalism, has recently arisen in the dialogue about reality. Its definition has not been settled yet, but philosophers Stewart Goetz

and Charles Taliaferro say that "Naturalism—very roughly—may be defined as the philosophy that everything that exists is part of nature and that there is no reality beyond or outside of nature." (2008, 6)

How does this definition differ from metaphysical materialism? In its strictest definition naturalism is identical in rejecting any supernatural, any intentionality, any purely mental substance, and in expecting that the nature of nature will be disclosed by the natural sciences. This definition acknowledges that, while scientists don't yet understand many things (dark energy and matter, gravity, origin of life, consciousness), these unknowns are part of nature and not outside of it.

Yet naturalism has a broader interpretation that recognizes consciousness and the reality of values and admits evidence from the disciplines of history and psychology. Broad naturalists are open to the possibility that certain things, such as mind, may not be reducible to matter or a manifestation of matter, which is what a materialist would say. (Goetz and Taliaferro, 2008, 7-8) Yet whatever mind may be reducible to, it will be part of nature and not supernatural, say broad naturalists.

Broad naturalism, then, is a way to exclude the supernatural without specifying just what the ultimate constituents of nature/reality may be. The American philosopher, Thomas Nagel, can say:

"I am drawn to a naturalistic, though non-materialist, alternative. Mind, I suspect, is not an inexplicable accident or a divine and anomalous gift but a basic aspect of nature that we will not understand until we transcend the built-in limits of contemporary scientific orthodoxy." (2013)

I myself am comfortable changing my metaphysical label from materialism to broad naturalism in order to acknowledge that we do not yet understand much about mind and consciousness and that current scientists are hard at work investigating this area. One theory that closely fits the big history framework is that consciousness is an emergent biological property that has emerged with the increasing complexity of brain structure. Another theory being considered is that consciousness goes all the way back to the origin of matter, that electrons have awareness, and that consciousness is a field not limited to brain. I eagerly await

new evidence about the nature of consciousness, aware that as the research findings come in scientists may need to revise some of their basic assumptions, in the usual interplay between assumptions and data. David Christian has expressed a similar position in his essay, "Big History, Meaning and Religion." (2013)

What Big History Suggests about Morality

In animal life there seems to be a continuum of social behavior, from solitary animals that are entirely self-serving, such as sharks, to those completely immersed in colony interactions (jelly fish, bees, and termites). Humans seem to be located somewhere in the middle of this continuum—both self-serving individuals and cooperative, self-sacrificing members of society, possibly moving over our time as a species, toward the social end of the continuum. As the naturalist, E. O. Wilson observes, our nature is to be continually caught in this dilemma of whether to act on our competitive or our cooperative impulses. (2012, 17)

From Darwin's account of natural selection, we got an impression of how much competition is built into animal life, including our own. It seems likely that the context of the Industrial Revolution contributed to the emphasis on competition in the reception of Darwin's account of evolution. But as Goetz and Taliaferro remind us, even Darwin recognized that cooperation plays a role in group advantage and selection. (2008, 89)

More recent studies have emphasized cooperation in animal life. Indeed, in the late 1960s, Lyn Margolis persuaded biologists that complex eukaryotic single cells, emerging somewhere about two billion years ago, were a symbiosis or cooperation of one or more simpler prokaryotic cells. Cooperation as well as competition appears early in living organisms. Some scholars see cooperation and competition as part of the same process, as competition leads to cooperation. As Fred Spier puts it, "organisms often find it advantageous to pool resources and coordinate their behavior in the struggle for existence." (2013, 7)

We don't really know when group mammals began to intensify their cooperative behavior, but it seems to have depended on the development of improved sensory organs and bigger brains for improved communication and eventually for empathy

and compassion. Caring behavior and reciprocal transactions developed gradually through a long line of animals. The Dutch/American biologist, Franz de Waal, has contributed notably to demonstrating how much chimpanzees and bonobos share with humans behavior that can be considered moral (2009). Even our immoral behavior we share with chimps---our lack of genes that act to prevent our killing large numbers of our own species, unlike most other animals. (Spier 2013, 12)

When we come to humans, we need a clear definition of morality. I will use that of Fred Spier:

"From a detached point of view we may define moral behavior as the desired standards of conduct within a group of people during a certain period of time. This means shared standards of conduct which are perceived by its members as promoting a harmonious society." (2013, 4)

In hominin development, our increasing brain size meant early births and prolonged dependency of infants on parents, which required more care and cooperation. In hunting/gathering societies, humans developed a pattern of cooperation with insiders of their group and competition toward outsiders. As cities and states emerged, moral religions appeared that re-defined "insider" as anyone who accepted the religion; competition developed for which moral standards any specific group would adopt. (Spier 2013, 12-14)

Superimposed on our innate nature of dual competitiveness and cooperation is the fact that humans are able to move beyond their biological nature through their cultural mechanisms. In human groups, codes of right and wrong are drawn up on the basis both of innate and learned cultural behavior. This is a complicated process and has led many individuals and societies to conjecture that moral codes may exist objectively "out there" somewhere, that is, that they aren't just made up by humans. This would seem to give moral codes more authority and to make them easier to enforce.

Yet big history suggests to me that no moral codes exist "out there." There seem to be no universal objective moral norms; there are only subjective moral codes, all developed by people in cultures. The extent to which they are similar seems

based on universal aspects of human nature and, of course, on the increasing intercommunication among cultures.

Humans need to assume responsibility for their ethical decisions, rather than relying on some father or mother figure or moral code in the sky to tell them what is right or wrong. Granted, given what we know about human behavior, relying on ourselves without reinforcement from the universe can seem a bit frightening. Now, however, all humans have become a single insider group as we face unprecedented ecological challenges. Will our acute situation be enough to rally a common cooperative response? Or will we revert to the competitive strands of our nature? That is the question we face. We face it, metaphorically speaking, at the end of our adolescence as a species. As we assume adulthood, we need to function as a united species without relying on assumed supernatural assistance.

Meaning in Big History

The old origin stories that we have inherited culturally are not working productively anymore. To the extent that they are still believed, they separate people and cause social tensions and even warfare. We need a new orienting story that belongs to all human groups around the world. We have it now in the big history account, assembled in the last decades of the 20th century and the first one in the 21st century, mainly by international university professors synthesizing information from the major disciplines. This is the first origin story that applies to humans as a whole group.

To assemble and structure this story, some big history authors (first Chaisson, Christian, Spier, then Christian, Brown and Benjamin in their textbook) have identified an underlying pattern to big history. They claim this pattern consists so far, on the largest scales, of increasing complexity over time, with complexity defined as increasing numbers of component parts interacting at optimal (Goldilocks) conditions with increased flows of energy. Complexity increases when something novel and more complex emerges from the earlier configuration of matter/energy. This complexity can be measured approximately by estimating the rate of free energy flow per density. (Chaisson 2006)

Once this pattern was identified, David Christian proposed the term “threshold” to describe the major periods of emergence when something completely novel appeared. (Spier uses the term “regime,” Chaisson uses “epoch” or “ages.”) In our textbook of Big History, Christian, Benjamin, and I hang the whole story on eight thresholds of increasing complexity. Here I will simply name them:

1. Big Bang (cosmology)
2. emergence of stars and galaxies (astrophysics)
3. emergence of elements in dying stars (chemistry)
4. emergence of our solar system (astronomy, chemistry, and geology)
5. emergence of life (chemistry and biology)
6. emergence of *H. sapiens* (paleo-anthropology)
7. emergence of agriculture and civilization (archaeology and history)
8. the emergence of modernity with the Industrial Revolution and fossil fuels (history)

Constructing the story in this way reveals that contemporary life seems to be near a new threshold commensurate in importance with the other eight thresholds. Burning fossil fuel provided the energy that enabled humans to cross into modernity. Yet now we see that burning fossil fuel is altering the biosphere and will change our climate in drastic ways if we persist in burning it. Hence, our current pattern of living is not sustainable; something new and different must emerge, either from us humans or from the rest of the planetary system. Whether it will consist of a leap in complexity remains to be seen.

What emerges may or may not be positive for humans. I don’t see any evidence in the big history account that the universe is on our side, that humans are the aim or pinnacle of any process. We are simply what happened, given the characteristics of this universe. We can delight and rejoice in ourselves, especially in the capacity of our consciousness to comprehend as much as we have about our universe. But are we its favorites? It doesn’t seem so from my vantage point.

Big history seems to indicate that humans are now at a major turning point in the whole story; we are not living at a time consisting of gradual, on-going change. We are living at a moment of great uncertainty in which our decisions

will matter greatly and have unusual significance. The narrative of big history dramatically reveals this conclusion. As Spier says: “Big history can help us define the situation we find ourselves in far better than any other approach by using the best understanding of our common past that academia has to offer.” (2013, 18) As Christian says, having “a map of where we are can help us decide where to go next.” (2015)

Once this overall meaning of big history becomes clear, what general social conclusions can we draw from it? I believe the big history story shows us that the arrow of time moves relentlessly forward. There are no cycles at the largest scales. We can’t go home again to the Paleolithic, no matter how attractive it may seem to us in our current situation—there aren’t enough big animals roaming around anymore and there are far too many people.

Instead, if we can agree globally that we want to maximize the chances that our descendants can flourish, we need to adapt to our new environment and to reduce our ecological destruction far faster than social change is usually possible, on an emergency basis. We need to shift to a low-carbon energy system, using both our most ingenious technologies and our most ruthless conservation. We need to develop an ethics of self-restraint, the opposite of the self-indulgence that underlies our market economy. External conditions may force us to emphasize our cooperative behaviors over our competitive ones. Or conditions may force the reverse. Our ethical choices may make the difference in the outcome.

In this situation, big history can serve at least one of the functions that religion traditionally has served—that of providing social cohesion. (Wade 2009) Big history can provide social cohesion by being a universal narrative that includes every person in the world. It is everybody’s story, as the American philosopher Loyal Rue called his account of it: *Everybody’s Story: Wising Up to the Epic of Evolution*. (2000) If we all understand the same story, the chances of our being able to work together seem greatly increased.

Given the urgency of the human situation, the big history story needs to reach seven billion people ASAP. That is not a small challenge, especially across all languages. The story needs to reach the general public and university students, as

well as the youngsters entering this world of decision time.

In conclusion, big history is a universal, trans-disciplinary story that provides the best available map of where we are in time and of how we got here. It is the overall, all-encompassing story for our time, hopeful rather than nihilistic or reductionistic. It tells us that *Homo sapiens* has survived as a single species with many universal traits despite our cultural differences. It tells us that humans are literally connected to everything in the universe. It tells us that we are at a turning point of immense magnitude in the history of our beautiful blue-green planet and that our choices in the next decades will make a significant difference in its evolution. Does this seem to be meaning sufficient to orient and sustain us? It does to me.

References:

Chaisson, Eric. 2006. *The Epic of Evolution: Seven Ages of the Cosmos*. New York: Columbia University Press.

Christian, David. 2012, 2nd ed. *Maps of Time: An Introduction to Big History*. Berkeley, CA: University of California Press. 1st ed. 2004.

Christian, David. 2015. “Mapping to Meaning.” In *Creation Stories in Dialogue: The Bible, Science, and Folk Traditions*, edited by Alan Culpepper and Jan van der Watt. Leiden Boston and Tokyo: Brill.

Christian, David, Cynthia Stokes Brown, and Craig Benjamin. 2014. *Big History: Between Nothing and Everything*. New York: McGraw-Hill.

Dawkins, Richard. 2006. *The God Delusion*. Boston: Houghton-Mifflin.

Deamer, David. 2011. *First Life: Discovering the Connections between Stars, Cells, and How Life Began*. Berkeley, CA: University of California Press.

Goetz, Stewart and Taliaferro, Charles. 2008. *Naturalism*. Grand Rapids, MI and Cambridge, UK: William B. Eerdmans Publishing.

Kurzweil, Ray. 2005. *The Singularity Is Near: When Humans Transcend Biology*. New York: Viking.

McKibben, Bill. 2010. *Eaarth: Making a Life on a Tough New Planet*. New York: Henry Holt.

Nagel, Thomas. 2012. *Mind & Cosmos: Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False*. Oxford and New York: Oxford University Press.

Nagel, Thomas. 2013. “The Core of ‘Mind and Cosmos.’” *New York Times*, August 18. Accessed August 6, 2015. http://opinionator.blogs.nytimes.com/2013/08/18/the-core-of-mind-and-cosmos/?_r=0.

Rue, Loyal. 2000. *Everybody's Story: Wising up to the Epic of Evolution*. Albany, NY: State University of New York.

Rue, Loyal. 2011. *Nature Is Enough: Religious Naturalism and the Meaning of Life*. Albany, NY: State University of New York Press.

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

Spier, Fred. 2015. 2nd ed. *Big History and the Future of Humanity*. Malden, MA and Oxford: Wiley-Blackwell. 1st ed. 2010.

Spier, Fred. “How Can We Understand the Emergence of Morality in Big History? A First Exploration.” Manuscript, September 2013.

Waal, Franz de. 2009. *Primates and Philosophers: How Morality Evolved*. (Princeton Science Library). Princeton: Princeton University Press.

Wade, Nicolas. 2009. *The Faith Instinct: How Religion Evolved and Why It Endures*. New York: Penguin Press.

Weinberg, Stephen. Quotes. Accessed August 6, 2015. www.goodreads.com/author/quotes/86758.Stephen_Weinberg.

Wilson, Edward O. 1978. *On Human Nature*. Cambridge, MA and London: Harvard University Press.

Wilson, Edward O. 2012. *The Social Conquest of Earth*. New York and London: Liveright.



Editor of *Origins*,

I enjoyed reading William Katerberg's "[Myth, Meaning, and Scientific Method in Big History](#)" in last month's *Origins*. I have also noted the tension between "religious" and "scientific" on other sites, such as [Deep Time Journey Network](http://www.deeptimejourney.org) <<http://www.deeptimejourney.org>>. I think that in general, I am in agreement with Katerberg that the variety of viewpoints that fall along a continuum that includes science, philosophies, spiritualism and religion all have some relevance to history. However, I do see two distinct areas that are problematic.

Letter to the Editor

One is when non-science and/or certainty masquerades as science. Facts in science are a moving target that require a skeptical yet open mind that is willing to investigate novel ideas, a mind excited by evidence even when it contradicts cherished explanations. Religious ideas are often distinct from science because they begin with a certainty in a Truth. Science is an endless generator of questions and always corrigible. Paradoxically, those who embrace faith-based knowledge and dismiss science often claim to be scientific (e.g., Creation science).

The second area that I see as problematic is when outmoded scientific ideas continue to be promulgated as science when new convincing evidence has replaced them (e.g. nearly all of the rules and assumptions of the so-called Modern Synthesis, or neo-Darwinism, have been shown to be in error or incomplete—see [Denis Nobel](http://onlinelibrary.wiley.com/doi/10.1113/jphysiol.2014.273151/epdf) <<http://onlinelibrary.wiley.com/doi/10.1113/jphysiol.2014.273151/epdf>>). These "zombie ideas" are dead but remain animate, continuing to inform many in Big History and other disciplines. Walter Katerberg references the neo-Darwinist gene-centered explanations of evolution popularized by Richard Dawkins. These were repeated by astrophysicist, Neil Degraffe Tyson in the 2014 remake of the Cosmos series. Michael Behe, Richard Dawkins and Jerry Coyne share religious certainty: Behe in Creation science; Dawkins and Coyne in neo-Darwinism.

I agree that "religious" and "scientific" viewpoints brought to Big History will benefit from an ongoing dialogue. Reductionist science and many other disciplines suffer from academic apartheid. They will all benefit from a broad multi-disciplinary dialogue that provides a larger context so often missing. At the same time, it is necessary to distinguish things that should not be conflated or that are outdated. Yesterday's science facts may no longer be facts.

James MacAllister

James MacAllister is an evolution geographer and a Fellow of the Linnean Society of London. He is currently the volunteer archivist for the Lynn Margulis Archive at ScholarWorks at the W. E. B. Du Bois Library at University of Massachusetts Amherst and the publisher of the quarterly [Environmental Evolution newsletter](#).

New and Renewed IBHA Members

One of the key purposes of the IBHA is for those of us who are interested in Big History to have a place to associate. It is a place to learn of other members' Big History activities and thoughts. So we are delighted to welcome new members to the IBHA – and by the vote of confidence and recognition of the value of our association by those who have renewed their membership. It is a pleasure to have each of you with us.



Abel Alves

Paula Metallo

David Burzillo

Sandro Montannari

Faye Cossar

Bridgett O'Connor

Mark Gregory

Maarten Oranje

Roger Heppleston

Stephanie Poppe

William Katerberg

Stuart Silverstone

David LePoire

Nobuo Tsujimura

William McGaughey

Martin Wiener

IBHA Members are from:

Australia
Austria
Bahrain
Brazil
Canada
Chile
China
France

Germany
India
Ireland
Italy
Japan
Korea
Netherlands
Nicaragua

Peru
Russia
Serbia
South Korea
Spain
United Kingdom
United States



Third IBHA Conference

July 14 - 17, 2016

Amsterdam

Call for Papers

INTERNATIONAL BIG HISTORY ASSOCIATION CONFERENCE

July 14-17, 2016

The University of Amsterdam

The Netherlands

Building Big History: Research and Teaching

DEADLINE FOR PAPER OR PANEL [SUBMISSIONS](#) IS FEBRUARY 12th, 2016

The International Big History Association (IBHA) defines its purpose as “to promote, support and sponsor the diffusion and improvement of the academic and scholarly knowledge of the scientific field of endeavor commonly known as “Big History” by means of teaching and research and to engage in activities related thereto.”

Article 2 of the IBHA Articles of Incorporation.

The theme for the 2016 conference is “Building Big History: Research and Teaching.” The conference seeks to present the latest and the best in Big History research and teaching, while creating a forum for the articulation and discussion of questions that are central to Big History. Among the topics that are to be addressed at the conference through a series of panels, roundtables, and discussions, are: Approaches to Big History; Big History research agenda; Scholarship contributing to Big History;

Big History teaching at universities, secondary, and primary schools: achievements and challenges; Little Big Histories; Reactions to Big History. We encourage proposals along these lines on any topic related to Big History.

To allow the Program Committee to effectively group individual participants into panels, we request that you format your proposals as follows:

- Individual paper proposals must include two

separate paragraphs of no more than 150 words each.

- Paragraph one should contain the title of your proposed paper, and provide a summary of its specific content.
- Paragraph two should carry the title “Methodology, and Relevance to Big History”, in which you address the underlying methodology of your paper, your approach to Big History, and in which you explain how your

specific paper (as described in paragraph one) relates to the broader field of Big History.

- Your proposal must include your name, institutional affiliation (if you have any), e-mail address, phone and/or fax numbers, and a brief curriculum vitae.
- All of this must be provided as one single file, preferably in MS-Word.
- Proposals for entire sessions or panels must contain all this information for each participant, as well as contact information and a brief C.V. for the moderator, if you suggest one. (The program committee can help find moderators, if necessary.)

Please submit your paper or panel [proposal](#) by clicking on one of this link, which allows for submission of information. The deadline for paper and panel submissions is February 12th, 2016. The time limit at the conference for presenting papers

will be 20 minutes, and the deadline for submitting papers to the session moderator is three weeks in advance of the conference.

All presenters at the conference must be members of IBHA. Presenters may become members at www.ibhanet.org and will need to do so prior to registration for the conference.

The IBHA Conference will convene on premises of the University of Amsterdam, The Netherlands, located in the center of this beautiful European city. Attendees will have the option of selecting from one of several hotels in Amsterdam and the surrounding area with whom special conference arrangements have been made.

The Conference Planning Committee is already hard at work investigating walking and other pre-conference tours of the city, and a post-conference

tour that will visit many of the leading scientific, geological, and cultural sites in Europe. We will keep all members fully informed as plans for the third IBHA conference evolve. (See the IBHA website www.ibhanet.org) For all things Amsterdam, you can go to <http://www.iamsterdam.com/en/>. For a complete guide to the Netherlands and its many attractions, you can visit <http://www.holland.com/us/tourism.htm>. If you have more time to explore the larger area, similar websites exist for nearby Belgium, France, Germany, and Great Britain.

Please find more details on the conference at www.ibhanet.org. We very much hope that you can join us at the 3rd IBHA conference.

Program Committee: Jonathan Markley (chair), Cynthia Brown, David Christian, Lowell Gustafson, Andrey Korotayev, Esther Quaedackers, Fred Spier, Sun Yue.

The conference will take place at the Oudemanhuispoort (Old Man's Home Gate). Part of it was built, as the name implies, as a home for poor old people in the early 17th century. In the late

19th century the University of Amsterdam started to use the building. Around that the same time book traders also moved into the little shops that line the main hallway of the building. The book traders are

still there. Fred Spier started teaching a Big History course in Oudemanhuispoort 20 years ago. It ran there for 10 years.

We have retained two hotels – [IBIS Amsterdam Centre Stopera](#) within a 15 minute walk to the University of Amsterdam, and the [Volkshotel](#) (<https://www.volkshotel.nl/>, use code “IBHA” for discounted rate) within a 15 minute metro ride to the University. The two hotels are totally different types of hotels; Check the great reviews of these hotels on [tripadvisor](http://www.tripadvisor.com/) (<http://www.tripadvisor.com/>). Please mark the dates of July 14 - 17 on your calendars, and start planning to join us in Amsterdam in July of 2016!

If you have any questions – just email [Donna Tew](mailto:tewd@gvsu.edu), IBHA Office Coordinator @ tewd@gvsu.edu



Oudemanhuispoort (Old Man's Home Gate)

Big History (and the IBHA Conference) at the University of Amsterdam

The next and third IBHA conference will be held from July 14th to July 17th 2016 at the University of Amsterdam.

The University of Amsterdam has a long history. It was founded as the Atheneum Illustre in 1632, during the Dutch Golden Age. The prosperous city of Amsterdam wanted and needed a university to educate its citizens about the riches of the world. Yet the central government did not allow it to have one, since a university had already been established in nearby Leiden in 1575, possibly as a reward for that city's successful resistance against the Spanish. Amsterdam, however, was not discouraged and simply established an educational institution under a different name. It subsequently hired a number of internationally renowned scientists and scholars and started teaching from the Agnietenkapel, a former nunnery. This chapel, which currently houses the university museum, is right around the corner from the IBHA conference location.

The university's slightly anarchistic nature never quite disappeared. After almost 400 years and numerous upheavals, some of which led to major university reforms, the institution still identifies with its somewhat rebellious roots. Even today, one of its three core values is a form of determination, described on the university's website as "inherent to any Amsterdam citizen who looks at the world from an independent, critical and self conscious perspective. University of Amsterdam researchers, teachers and students are competent rebels who, boldly yet responsibly, choose their own paths and set trends."

Partly because of its history and identity, the University of Amsterdam was one of the first in the world to adopt the groundbreaking and unconventional approach to history that was being pioneered by David Christian at Macquarie University in Sydney in the early 1990s. After visiting David in 1992, University of Amsterdam professor Johan Goudsblom brought the syllabus of the big history course that was being taught in Sydney home and decided to set up a similar course at his own university. He did so together with his former Ph.D. student Fred Spier, who after Goudsblom's retirement in 1997 became the course's main organizer.

The new course proved to be a big success. About 200 students attended its first run and hundreds of students have registered for the course each year ever since. Within the university, the course's success occasionally led to some resistance, mainly from faculty members who deemed the big history approach to be too broad. But thanks to student engagement and the strong support of a number of the university's most prominent scientists a semi-permanent position in big

history was created for Fred Spier in 1997 and was turned into a permanent position in 2006.

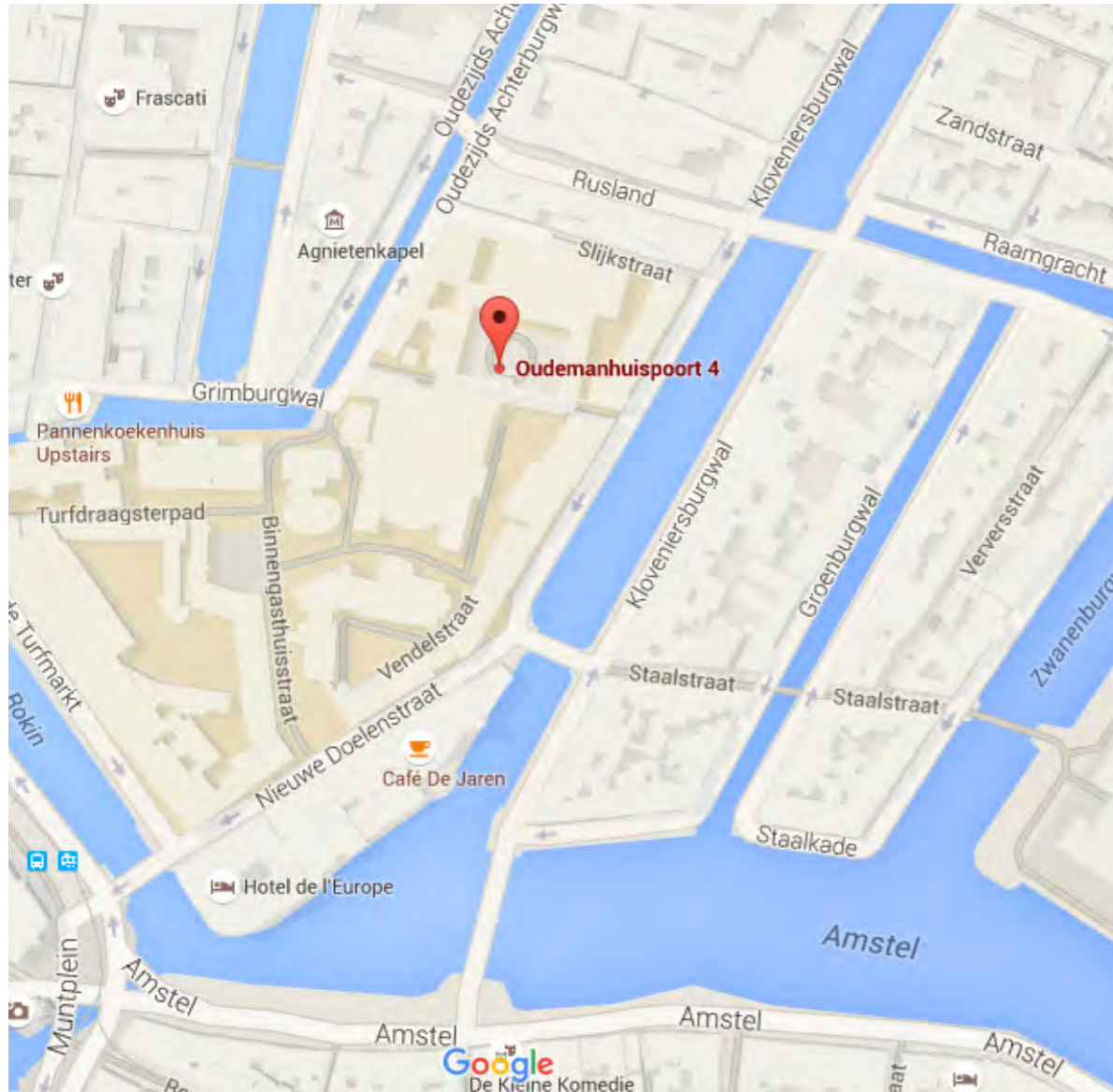
Meanwhile, new big history courses, aimed at slightly different student populations, were established both within the University of Amsterdam and outside the university. The university started to function as a kind of big history course contractor, which in turn made it possible for the university to develop into a regional big history hub. The university's latest efforts to create a big history MOOC that will be published on Coursera in early 2016 (alongside Macquarie's big history MOOC that will be published on the same platform in the upcoming months) neatly fits into this pattern.

All of these developments have led to the creation of another permanent position in big history in August 2015, which will be filled by Esther Quaedackers. These developments have also enabled the University of Amsterdam offer to host the 2016 IBHA conference. This offer has been accepted by the IBHA, which, given the university's dedication to big history, deemed it to be a suitable place to hold its first conference outside of the US.

For more information on the history of big history at the UvA, you can also read Fred Spier's [The Small History of the Big History Course at the University of Amsterdam](#) that appeared in World History Connected in May 2005.

The Agnietenkapel
(source: Wikimedia Commons)



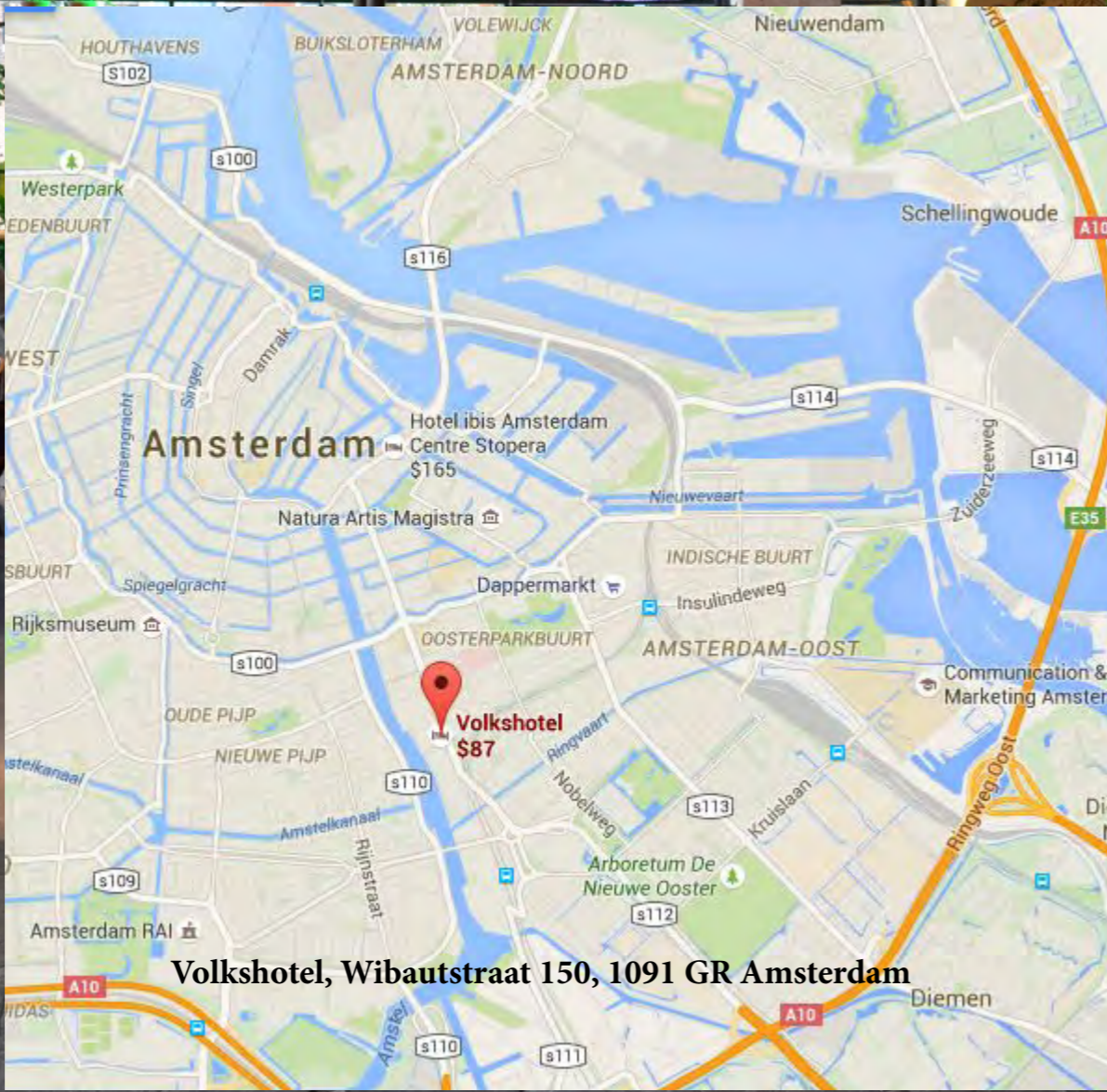


Location of Conference: Oudemanhuispoort 4-6, 1012 EZ Amsterdam



Hotel ibis Amsterdam Centre Stopera, Valkenburgerstraat





Volkshotel, Wibautstraat 150, 1091 GR Amsterdam

Nominations for IBHA Board of Directors

The members of the IBHA Board of Directors hold staggered three year terms. Each year, a few seats become open. This year, four seats become open. Since the IBHA was founded, there have been a number of Board members who have cycled off the Board, a number of new people who have joined it, and a number who have stayed on. In the interest of serving the purpose of the IBHA while fostering both continuity and change, the IBHA selects Board candidates in two ways:

- (1) the existing Board proposes a list of names; and
- (2) IBHA members may identify additional names (please see the next page)

We encourage you to participate by logging on to the IBHA website at <http://ibhanet.org/>. Click on “Forum,” “IBHA Discussions,” and “IBHA Board of Directors Nominations.” You may by April 15, 2016 post the names of any members you recommend for Board membership.

Up to that time, please check the forum periodically for new postings and endorse all candidates of your choice. (Just follow the simple instructions at the website.) Moreover, if you become a candidate, please add a statement describing your interest in serving as a Director. Should you be recommended but unable to serve, [please let us know](#). Candidates endorsed by at least 10% of IBHA membership before May 15, 2016 will become nominees.

An electronic election for new Board members will begin on June 1, 2016, and end on June 30, 2016.

The new Board will be announced in July.

We welcome your active engagement in this important process.

.....

..., then go to [Forums, IBHA Discussions](#) to nominate an IBHA member as a candidate to become a Board member or to endorse a nomination.



Please first log into <http://www.ibhanet.org/> . . .



Macquarie University expands Big History to tackle world's biggest problems

Big History, the course loved by Bill Gates, will be used to solve real world problems in business and public policy.

by Tim Dodd

Macquarie University has launched an ambitious project to expand its Big History program into a multidisciplinary approach to solve real-world problems in business and public policy.

Next year the university's Big History Institute will offer a series of online units on Coursera, the leading US massive open online course (MOOC) provider, to apply more widely the techniques developed in Big History to connect knowledge across disciplines.

Big History was invented by Macquarie University history professor David Christian and takes the largest possible perspective on the past and present by starting with the origins of the universe in the Big Bang and following the development of stars, planets, the evolution of life, up to the appearance the human race and the growth of human society.

It unites sciences with humanities to tell this story and investigate how to solve current-day problems. Bill Gates famously called it his favourite course.

"This is hugely relevant to the challenges faced by CEOs, scientific researchers, politicians, students, and entrepreneurs," said Big History Institute executive director Andrew McKenna. "Real-world problems are complex, and require solutions based on multidomain knowledge, cross-disciplinary critical thinking, and innovative problem-solving and synthesis skills."

Solving complex problems

The series of courses, called a "specialisation" will be called *Our Big History: Solving Complex Problems* and have three study units and a capstone project, which will apply multidisciplinary skills to write a strategic briefing paper on solving a complex problem for a global organisation.

The series will build on a MOOC called *Big History: Connecting Knowledge* from



Macquarie University history professor David Christian invented the multidisciplinary Big History approach to studying past and present. Photo by Peter Braig.

Macquarie University, which was soft-launched on Coursera in September and has attracted over 4000 enrolments so far. As well as covering all of history from the Big Bang until the present, this MOOC also investigates the "complicated, complex, and connected" challenges facing humanity today.

The new series of courses will be formally launched this week at a major Big History conference at the university's Sydney campus. The Big History Anthropocene Conference, from December 9 till 11, will look at the impact of humans on the biosphere and the challenges of the 21st century.

Up to 10 scholarships will also be announced at the conference for doctoral students to do a joint PhD at Macquarie University and an overseas university to research a theme developed at the conference. The students are required to take a "transdisciplinary" approach, covering at least three disciplines in their PhD.

The scholarships will cover tuition and a stipend, as well airfares between Macquarie and the other university.

@FinancialReview on Twitter | financialreview on Facebook
Originally printed in the Financial Review on December 6, 2015.

Origins, Big History, and the IBHA

Origins is produced monthly in order to communicate among members of the International Big History Association. In *Origins*, we report regularly on Big History-related activities of our members; notify IBHA members of IBHA projects, such as the 2016 conference and Board elections; offer a space for IBHA members to share their own experiences and thoughts about Big History; and advance Big History scholarship by publishing peer reviewed articles.

The IBHA has adopted this statement about its core idea: Big History seeks to understand the integrated history of the Cosmos, Earth, Life, and Humanity, using the best available empirical evidence and scholarly methods. The IBHA's official positions are available to members in our by-laws, articles of incorporation, and Board of Directors' motions on our website at <http://www.ibhanet.org/page-1362850>.

The IBHA has adopted no single list of propositions that present an orthodox statement of what Big History is. It is generally recognized that David Christian first used the phrase "Big History." Books and articles written by him, Craig Benjamin, Cynthia Brown, Eric Chaisson, Fred Spier, and others are recognized by many as excellent examples of scholarship of Big History.

Big History has been made possible by the many advances made in the natural sciences. The term 'Big History' comes from the observation that history, or the study of periods of time, should begin with when time in our universe began, currently understood as the Big Bang 13.82 billion years ago. Subsequent periods of time in a coherent narrative include the appearance of stars and galaxies about 400 million years after the Big Bang, the fusion of elements heavier than hydrogen and helium, the formation of elements heavier than iron in supernovae, the combination of various elements into chemicals such as water and many others in space, the accretion of Earth 4.5672 billion years ago, the evolution of chemicals into various minerals and bio-chemicals, the first appearance of life on Earth about 3.8 billion years ago, and the evolution of more complex life, including *Homo sapiens* about 200,000 years ago, followed by such key developments in human organization as agriculture, industry, and the digital age. Big Historians are equally interested in reasonable, evidence based projections about the future of humanity, the earth, and

the universe. Especially for the periods of time before the invention of writing, only a few thousand years ago, our knowledge depends on analysis of physical evidence. We came to understand the vast majority of time, not at first by reading primary texts in libraries, but by observations of natural phenomenon, scientific experimentation, and mathematical analysis of evidence.

Big History presents an exciting field of study in large part because many unanswered questions about all of these periods and their relationships remain. Big historians are keenly interested in the continual advances that are being made in the natural sciences.

Big History does not seek to replace traditional histories or the study of humans within the past few millennia. Rather, it seeks to place the written record of the human past within a context of the natural record of the entire past. There remains much to learn from the cultural experiences of humanity. Understanding the enormous diversity of human culture within the whole of the past presents a rich field of study.

The IBHA looks for *Origins* to develop gradually into an academic, peer-reviewed journal. We do this to further our key objective, as stated in Article II of our by-laws: "The Corporation is organized exclusively for educational and scientific purposes within the meaning of Section 501(c)(3) of the Internal Revenue Code of 1986, as amended (the "Code"), or comparable subsequent legislation. In furtherance of these purposes, the purpose of the Corporation is to promote, support and sponsor the diffusion and improvement of the academic and scholarly knowledge of the scientific field of endeavor commonly known as "Big History" by means of teaching and research and to engage in activities related thereto."

We need the help of IBHA's members to realize this objective. So far the editors of *Origins* have received articles about the meaning of Big History. We have published a few of these after having them peer reviewed, since meaning is a topic of great interest when science and the humanities are combined. We have also received and published peer-reviewed articles about research topics in big history, based on empirical evidence. We invite our readers to write, and to solicit from

colleagues and connections, articles based on empirical evidence, which is admittedly a complex category especially in the period of human culture. The review and editing process usually takes several months.

We welcome your submission of original research to *Origins*. You may format your article according to the [Chicago Manual of Style](http://www.chicagomanualofstyle.org/tools_citationguide.html), http://www.chicagomanualofstyle.org/tools_citationguide.html. You may also use the format commonly used in your discipline. We use a double blind review process for research articles.

Please submit articles to:

Editor, *Origins*

ibhanet@gmail.com

The **Chicago** Manual of Style

16

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Writers, Editors, and Publishers

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World History Conference

July 2 - 5, 2016 in Ghent, Belgium

Craig Benjamin, current Treasurer of the IBHA and outgoing President of the World History Association, wants to remind members of the IBHA that the World History Association will hold its 25th annual conference in Ghent, Belgium from July 2-5, 2016, ten days before the IBHA Amsterdam Conference. The WHA conference will be held in Het Pand (right), the historic cultural center of Ghent University. Het Pand is an old Dominican monastery located in the heart of the city on the banks of the river Leie, near the medieval port. If any IBHA members planning on attending and presenting at Amsterdam are also interested in attending and perhaps presenting at the WHA Conference in Ghent, please contact Craig Benjamin who can assist in organizing designated Big History panels. Craig's email is: benjamic@gvsu.edu



Ghent canal, Graslei and Korenlei streets, Ghent, Belgium

Notice of new book by IBHA member, Roger Heppleston.

Mememes, Societies and Human Evolution – How humans came to dominate the planet and then threaten its ecology tells the complete evolutionary history of mankind from our ape-forebears to the modern day.

Human evolution is markedly different from that of other animals due to the enhanced human ability to communicate ideas. Richard Dawkins proposed that these ideas, or as he called them memes, have the same evolutionary properties of replication as genes. He then suggested that the development and sharing of memes could account, not only for the fantastic technical advances that have marked the development of human civilisation, but also for the way humans interact with each other, how they compete, co-operate and communicate.

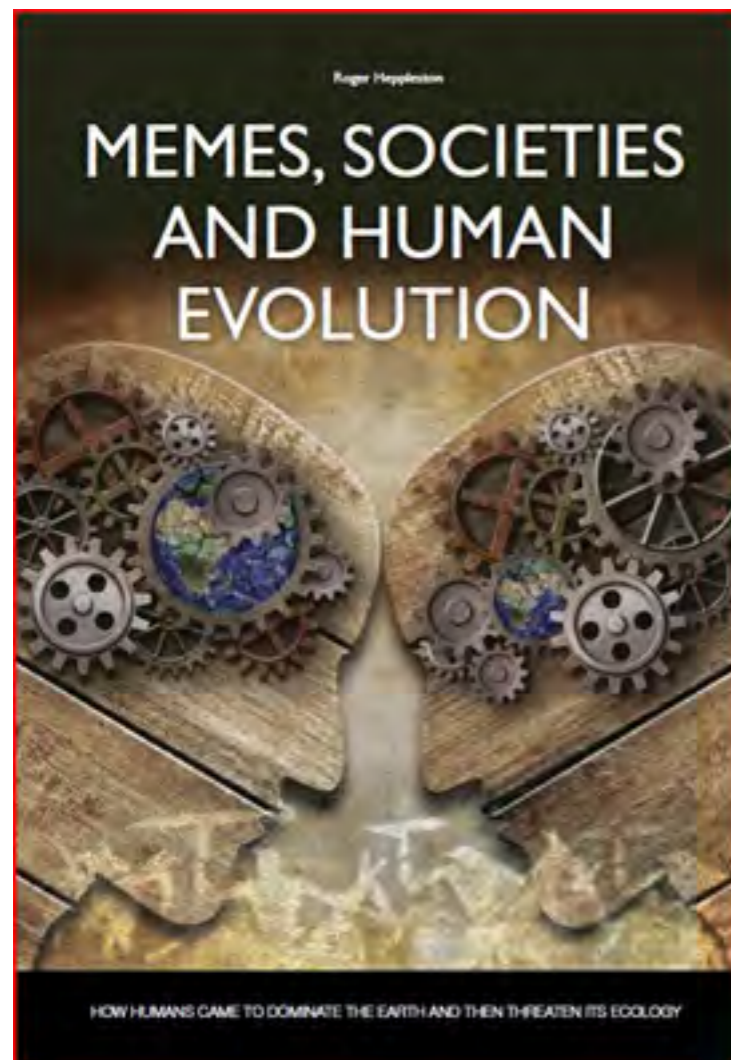
This book develops Dawkins' idea. It describes how memes are dependent on communities of animals for survival. Our ape-forebears lived in simple bands. The first humans lived in a 3 level nested community structure: the family, the band and the near community of bands speaking the same dialect. The story of human evolution is about how, as their technologies improved, human communities changed and developed. Improved food gathering technologies allowed higher population densities; this led to the formation of tribes, states and empires. As transportation improved, trade increased; towns, banks and companies were created. The nature of superstition changed at the same time from shamanism, to ancestor worship, to state-supported gods, to popular religions aimed at ordinary people.

The theory of memetic evolution provides the last links in the chain for the big history project. In the early twentieth century Marxism and the theory of class antagonism provided the intellectual background for many historians' view of history. The development of memes provides an alternative explanation of the evolution of the many types of human communities and their political cultures. It also provides a framework for considering future risks to the human race such as climate change.



Roger Heppleston read Mathematics at Jesus, Cambridge and Statistics at Birmingham University. He had an international business career in planning and distribution, working for scientific and pharmaceutical companies.

Roger is a passionate humanist and seeks to promote humanist values from his [web site www.eco-humanity.co.uk](http://www.eco-humanity.co.uk).



2016



IBHA Post-Conference Tour

A TASTE OF EUROPE

JULY 18–27, 2016



Craig Benjamin, pioneering Big Historian and tour lecturer, on the Jungfrauoch.

10
DAYS

Jump into world history and scientific discovery in Five European Countries

From First World War battlefields in Belgium and Paleolithic cave art in France to world-class wine vineyards in Germany and thematic lectures provided by leading historians, this tour has it all. Discover distinct style, substance and science in the cultural capital of Paris, among the magnificent *chateaux* in the Loire Valley and in the center of particle physics research at CERN. You'll absorb the best of history and beauty on this fascinating tour through five European countries.

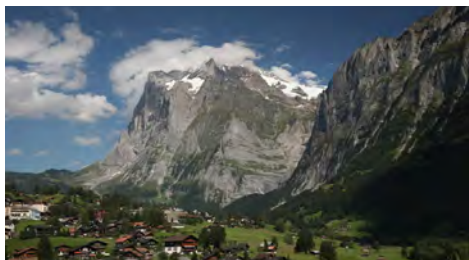
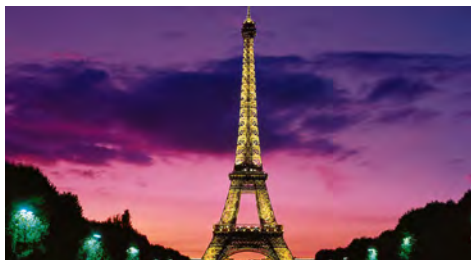
Go Ahead

Start planning today | Contact Charlie Thurston **1.617.619.1133** or charlie.thurston@goaheadtours.com

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Overview

A TASTE OF EUROPE



Let us handle the details



Expert
Tour Director



Local
cuisine



Handpicked
hotels



Sightseeing with
local guides



Private
transportation



Personalized
flight options

Your tour includes

- 9 nights in handpicked hotels
- Breakfast daily, 4 three-course dinners with beer or wine
- Multilingual Tour Director
- Private deluxe motor coach
- Guided sightseeing and select entrance fees

Your tour highlights

- World-class museums and beautiful gardens in Paris
- Magnificent architecture and rich history at Château de Chenonceau
- Stunning replicas of Paleolithic art in the Lascaux II Cave
- Sweeping, mountainous landscapes in Auvergne
- Impressive scientific technology at CERN, the European Organization for Nuclear Research
- Medieval castle views in the UNESCO-recognized Rhine River Valley
- Daily lectures by leading historians

Where you'll go

OVERNIGHT STAYS

2 nights • Paris
2 nights • Dordogne Region
1 night • Geneva
2 nights • Grindelwald
2 nights • Heidelberg



Price is on a sliding scale for 20-40 travelers - \$3439-\$3139.

Paris | 2 nights**Day 1: Arrival in Paris**

Welcome to France! Say goodbye to some of your fellow conference-goers and hello to your Tour Director as you transfer from Amsterdam to Paris by deluxe coach. Stop en route in Ypres, Belgium, which was a site of heavy fighting during the 1916 Battle of the Somme.

- Tour the In Flanders Fields Museum, which focuses on the futility of war
- Visit the Menin Gate, a memorial to British and Commonwealth soldiers whose graves are unknown

Later, enjoy free time to explore and eat lunch in Ypres before continuing on to Paris. If time allows, additional stops will be made in Antwerp and Amiens.

Day 2: Sightseeing tour of Paris & the Musee d'Orsay

Included meals: breakfast, welcome dinner

Paris was central to the French Revolution in the late-eighteenth century and largely rebuilt under Napoleon III in the 1860s. A guided tour introduces you to the architecture and history of the City of Light's neighborhoods, called *arrondissements*.

- Drive down the sycamore-lined Champs-Élysées to view the famous Arc de Triomphe, a tribute commissioned by Napoleon
 - Pass Pont Neuf and the Notre-Dame Cathedral, located on the Seine River
 - Make a photo stop at the Eiffel Tower viewpoint to see the wrought-iron landmark
 - See the opulent Palais Garnier opera house, Hôtel des Invalides and Place de la Concorde, the city's grandest square
- Later, enjoy the Musee d'Orsay Museum's rich collection.

- Enjoy free time for lunch in the afternoon and tonight, sit down with your group and your Tour Director at a welcome dinner.

Dordogne Region | 2 nights**Day 3: Périgueux via the Loire Valley**

Included meals: breakfast, dinner

Transfer to Périgueux in the Dordogne Region today. Stop along the way in the Loire Valley, which produces world-class wines and was once known as France's "Playground of the Kings." You'll learn more about the area's royal past on a guided tour of the extravagant Château de Chenonceau.

- Explore the interior and gardens of the castle, which sits on the River Cher and is a famous late-Gothic/early-Renaissance architectural gem
- Discover how it got the nickname "Château de Femmes"—some of its famous female residents included Diane de Poitiers and Catherine de' Medici

Take free time for lunch at the chateau and then continue on to the Dordogne Region for an included dinner this evening.

Day 4: Lascaux II Cave & Les Eyzies-de-Tayac-Sireuil

Included meals: breakfast

Explore the Dordogne Region to discover prehistoric remnants, ancient history and spectacular Paleolithic art, and then eat lunch during free time.

- Follow a guide as you marvel at the reproductions of Paleolithic paintings in the Lascaux II Cave, a 39-meter replica of the original cave
- Transfer to the village of Les Eyzies-de-Tayac-Sireuil this afternoon, where you'll enter the National Prehistoric Museum and see awe-inspiring archaeological finds from some of the most famous excavation sites in the Vézère Valley

Geneva | 1 night**Day 5: Geneva via Auvergne**

Included meals: breakfast

Make your way to the historic city of Geneva, Switzerland today, stopping along the way in the mountainous region of Auvergne.

- Take in scenic surroundings as you drive through the Auvergne Volcanoes Regional Park, a well-preserved site that boasts stunning landscapes, beautiful villages and 10,000-year-old volcanic peaks
- As you drive through the park, stop for photo ops at the Puy de Dôme, a large lava dome, and the Puy de Sancy, the highest volcano in France
- Revel in the park's beauty as you enjoy free time for lunch

Grindelwald | 2 nights**Day 6: Grindelwald via CERN**

Included meals: breakfast, dinner

Today, explore the European Organization for Nuclear Research, known as CERN. Follow a CERN staff member on a guided tour of the laboratory, where scientists do groundbreaking research on particle physics.

- View the Large Hadron Collider, a massive particle accelerator that is responsible for some extraordinary discoveries, including the pentaquark

Later, take free time to eat lunch and explore CERN's permanent exhibitions before continuing on to Grindelwald for tonight's included dinner.

Day 7: The Bernese Oberland & Jungfrauoch

Included meals: breakfast

Today, head into the Bernese Alps and discover the UNESCO World Heritage site of Jungfrauoch, a windswept mountain pass known as the "Top of Europe."

- Ride a railway car to the Jungfrau plateau, where you can enjoy free time for lunch 11,617 feet above sea level
 - Take a train to view the Sphinx Observatory and enter the Ice Palace
- Later, enjoy a spectacular hike on the trails below these formidable mountains.

Heidelberg | 2 nights**Day 8: Heidelberg via Basel & Strasbourg**

Included meals: breakfast

Transfer to Germany today, making a brief stop for free time in Basel, Switzerland's third-largest city. Then, continue on to Strasbourg, the capital of France's Alsace region and the official seat of the European Parliament. Take a guided tour of the city's Parliament building and eat lunch during free time. Then, make your way to Heidelberg, which has a history of human occupation dating back at least 200,000 years and is home to one of the most influential universities in the world.

Day 9: Wine Tasting & Rhine River Cruise

Included meals: breakfast, lunch, wine tasting, farewell dinner

Start your day with a guided tour of Bopparder Hamm, the largest wine vineyard in the Middle Rhine Valley.

- Tour the cellar and vineyards before sitting down to a lunch accompanied by a tasting of some signature vintages
- Enjoy magnificent views over the Rhine valley as you learn about the cultivation of wine in the region

Later, take in the spectacular sights of the UNESCO-recognized Rhine River Valley on a scenic cruise from Boppard to St. Goar.

- Marvel at breathtaking landscapes and fine architecture of the Middle Ages
 - View medieval castles along the river, including Kurtrierische Burg in Boppard
- After disembarking, say goodbye to your group at a farewell dinner.

Day 10: Amsterdam via Cologne

Included meals: breakfast (excluding early morning departures)

Make a brief stop in Cologne, home to a UNESCO-listed cathedral, before transferring back to Amsterdam with your group.