

## **BIG HISTORY**

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### **Summary**

Big history surveys the past on multiple scales, from those of world history to those of cosmology. It offers a coherent account of the past that is as all-embracing as traditional creation stories or universal histories, but it does so using the information generated by modern scientific scholarship. Though historians rejected such large-scale narratives for much of the twentieth century, new, scientific forms of big history began to appear in the last decades of the twentieth century. Modern big history attempts to unite into a single, coherent story modern understanding of the origins of the universe, the creation of stars and solar systems, the history of the earth and biosphere, the origins of human beings, and the course of human history. Big history courses are now taught at universities in the USA, Australia, the Netherlands and Russia; and there exists a small body of inter-disciplinary scholarship in the field. At the teaching level big history can help students understand the underlying unity of different historical disciplines, from cosmology to world history. As a body of scholarship, the central question of big history is whether there exist universal structures or patterns of change that can be found at many different scales and within many different disciplines. The initial answer appears to be that such structures do exist. Complex but fragile structures can be found at many scales; they all rely on significant flows of energy, and it seems that, over time, the most complex of these structures have become *more* complex. Limiting the potential impact of big history are the powerful conventions that separate different areas of scholarship in modern universities. However, big history has attracted considerable interest and if it thrives, it will have to do so by creating new institutional structures that encourage interdisciplinary teaching and research.

## 1. Introduction

Big History surveys the past at multiple scales, from those of world history and human history, to those of geology, biology and even cosmology. So it is by its nature interdisciplinary, and one of its main goals is to explore links between these different scales. Though the humanities and social sciences frowned on such projects for much of the twentieth century, in the last decades of the twentieth century, big history has made a comeback. This is not entirely surprising as most human societies have constructed coherent accounts of the past at many different scales. We know these accounts as creation stories or universal histories. However, the construction of a modern creation story based on scientific evidence became possible only in the 1960s when the new scientific paradigm of big bang cosmology showed that it was not just living creatures and astronomical objects that had histories; so, too, did the Universe as a whole. At the same time, new techniques for dating events in the distant past began to yield reliable absolute dates extending from prehistory back to the origins of the Universe. As a result, modern big history can tell a coherent, scientifically based story linking the history of the Universe, the earth and the biosphere with that of our own species, *Homo sapiens*. The first modern texts and courses in big history appeared in the 1980s. Their authors and teachers included astronomers, geologists and historians. There now exists a small corpus of scholarship in big history and courses in big history are being taught in the USA, Australia, the Netherlands and Russia. At present, it seems likely that the most fundamental question faced within big history will be whether or not there are similar structures and patterns of change across all the many disciplines embraced within big history, from cosmology to human history. Initial attempts to answer these questions suggest that there are, indeed, fundamental similarities, for in all these domains it is possible to describe the evolution of complex entities, from stars to chemicals to living organisms to modern human societies. The significant differences that exist between these different complex entities determine the different techniques and paradigms used within different scholarly disciplines. The main difficulties faced by big history arise from the powerful conventions that confine research and scholarship within particular discipline boundaries. If big history is to thrive within modern scholarship, it will have to do so by helping to break down the many institutional and conceptual barriers that continue to inhibit inter-disciplinary teaching and research. (On the importance of breaking down these barriers, see E.O. Wilson, *Consilience*, 1998) However, the enthusiasm of students for courses in big history, and the striking successes of grand theory in the sciences suggest that there may well be an important role for the inter-disciplinary scholarship and teaching of big history in the early twenty-first century. The chapter ends with a short bibliography of writings on or about big history.

## 2. Definitions

“Big history” can be defined as the attempt to construct a coherent account of the past at many different scales, from those of human history to those of biology, geology and cosmology; and to explore the links between these scales. The task can be approached from many different disciplines, and scholars in different fields use different labels (“universal history” and “cosmic evolution” are two alternatives to “big history”). But underlying these overlapping definitions and labels is a single project: to construct a unified account of the past across different spatial and temporal frames and different

disciplines. The account that follows is that of a historian, but much of what is said here also applies to big histories constructed within other scholarly disciplines.

Grand historical narratives have not been fashionable in modern scholarship or teaching. In part this is because of the spectacular successes of reductionist approaches to research that rely on extreme specialization. Grand narratives have also fallen under suspicion because, like both religion and science, they can so easily become mere props for the powerful. However, in the late twentieth century, interest in large historical narratives has revived. Within a broad historiographical context, this is not surprising for, as this chapter will show, the idea of big history is very ancient; indeed, it has been central to the evolution of historical thought in all human societies. Big history represents the revival of an ancient project.

This chapter will begin by describing the antecedents of big history. Then it will describe the emergence of modern forms of big history since the 1970s. It will discuss some of the central themes and questions of big history, and it will end with a brief discussion of the challenges and prospects of this re-emerging discipline as a framework for teaching and scholarship.

### **3. Antecedents**

All human communities have told cycles of stories about the origin of our world and its component parts, from the Universe as a whole, to the stars and planets, the earth and sea, other life forms, social institutions, and the gods and devils of the spirit world. Though creation stories use different temporal and spatial frames, they all try to see the chaotic flux of the here-and-now within larger patterns that can give meaning to the present moment. To do so, they have to be credible, so it is important to recognize that, however implausible they may seem today, to those who constructed and told them, traditional creation stories had the “feeling” of truth. That is why the maps of reality that they constructed had such psychic and spiritual power. They helped individuals and entire communities to understand their place and role in the larger scheme of things.

Like traditional creation stories, big history tries to construct a coherent account of origins at many different scales, using the best available information. However, big history differs from traditional creation stories in two striking ways. First, it draws on a much larger body of information and that information has been tested more rigorously. Traditional creation stories drew on the information stored within particular cultures using traditional forms of communication and knowledge dissemination. However, as networks of exchange have expanded, creation stories have had to incorporate new and more diverse information, and that has required the making of choices. Which account of origins is to be believed? We can see these choices being made in some of the earliest written histories. Herodotus, for example, is aware of conflicting origin stories (for example, amongst the Scythians), and understands that choosing between different stories is not always easy. Big history, like modern science in general, tries to synthesize information from the entire world and the sheer abundance of information available forces it to select ruthlessly, choosing only that information that can survive the most rigorous tests of evidence and logic. Yet it must also remain open to new information. While traditional creation stories, like island species, faced limited

competition, modern origin stories, like continental species, are the products of fierce, wide-ranging and prolonged contests for survival. In short, the truth standards of big history are those of modern science: it is based on more information and subject to tougher tests than traditional creation stories, but its conclusions are also more qualified because it always remains open to new information.

The second distinctive feature of modern big history is its historicity. Modern big history sees change everywhere whereas in most traditional creation stories, the realm of change was usually contained within a larger realm of permanence. Mircea Eliade has argued that most cultures have distinguished between a sacred realm of permanence and perfection, and a profane realm of change, decay and imperfection. (Mircea Eliade, *The Myth of the Eternal Return*, 1954) The profane realm was the domain of everyday existence and of history. But the two realms were always linked. Indeed, one role of creation stories was to help individuals reground their existence by periodically touching the sacred realm.

In traditional creation stories, the possibility of moving between the sacred and profane realms often generated a cyclical sense of time, for it allowed one to keep restarting the clock of history by returning in spirit to the realm of changelessness. In the slow-moving worlds of the Paleolithic era, cyclical creation stories made sense for, apart from the regular changes of seasons and life-cycles, little else changed within living memory. However, as networks of exchange expanded, a process accelerated by the appearance of agriculture some 10,000 years ago, difference and change became harder to ignore, and time itself seemed to uncurl, becoming more linear and more directional. Writing, another product of complex, agrarian societies, enhanced awareness of difference and of long-term change by preserving records of societies that had existed in the remote past. The Greek poet, Hesiod, writing about 700 BCE, described history as a sequence of distinct ages, those of gold, silver, bronze and iron. Each marked a step in a slow cosmological decline. The Greek historian, Herodotus (5<sup>th</sup> century BCE) and the Han historian, Sima Qian (2<sup>nd</sup> to 1<sup>st</sup> centuries BCE), describe worlds that are more varied and changeable than the worlds of most oral creation stories. And occasionally, philosophers such as Heraclitus or the Buddha argued that change was the one universal constant. Nevertheless, most of the universal histories that began to appear in the classical era continued to enclose the historical realm within a larger, divine realm of permanence. (Hughes-Warrington, “Big History”, p. 14) The Christian tradition of universal history, pioneered by Eusebius of Caesarea (4<sup>th</sup> century CE) and Augustine (354-430 CE), established conceptual structures that would dominate Christian universal historiographies for a millennium. Though aware of the importance of change in human history, Augustine explained the *meaning* of change by setting human history within a sacred realm ordered by an unchanging divine will. Similar accounts of the past can also be found within Muslim and Chinese historiography; indeed, they can probably be found within all literate cultural traditions.

The universal histories of the European Enlightenment retained the Christian sense that history had a direction, but they understood that direction in secular terms, as progress rather than as divine intent. The sense that history has a direction survived in the work of the great system-builders of the nineteenth century, from Hegel to Comte, Marx and Spencer. And some of the system-builders, particularly Spencer, were prepared to argue

that the directionality of human history was aligned with arrows of change that operated at universal scales. Such grand speculations were encouraged by the fact that Copernicus, Galileo and Newton had undermined the traditional distinction between the earthly and heavenly realms, by showing that the planets were as subject to change as the earth. In the nineteenth century, geologists and biologists began to understand modern landforms and living organisms as the products of slow change through inconceivably long periods of time. However, till late in the twentieth century it still seemed possible that the very largest scales might be free from change. Up to his death in 1945, V.I. Vernadsky, the Russian pioneer of biosphere studies, insisted that at the largest scales, science knew of no beginnings or ends. (See Nazaretyan, “Big (Universal) History Paradigm,” pp. 65-6) The idea of an unchanging cosmological realm also survived within “steady-state” cosmology until the 1960s.

Only in the second half of the twentieth century did it become apparent that the Universe as a whole is subject to change. The understanding that change occurs at all temporal and spatial scales made it possible, in principle, to construct the first modern forms of big history. However, their construction was to be delayed for several decades. In part, this was because in the late nineteenth century the human sciences had decisively rejected the idea of universal history. Within modern Universities, patterns of professional training and promotion kept research and teaching within well policed disciplinary borders, and few institutions or journals encouraged significant contact between disciplines. By the twentieth century, the grandiose visions of Comte or Marx or Spencer appeared over-ambitious, over-blown, and even dangerous. Particularly in the humanities, scholars began to set their sights on more modest intellectual targets. Universal history was expelled from historical scholarship and those such as H.G. Wells or Arnold Toynbee who persisted in trying to write large scale accounts of the past were treated as amateurs or cranks. For most of the twentieth century, universal history had to make its way outside of the academy.

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### Biographical Sketch

**David Christian** is a Professor of History at San Diego State University. He was trained as a historian of Russia and the Soviet Union, and taught for 25 years at Macquarie University in Sydney, before moving

to San Diego in 2001. He has published a textbook on the history of modern Russia and the Soviet Union, *Imperial and Soviet Russia* (3<sup>rd</sup> ed., 1997, Macmillan) as well as a study on the role of vodka and vodka taxes in nineteenth century Russia, *Living Water* (1990, Oxford University Press). He has also published a history of Inner Eurasia from prehistory to the Mongol Era, *A History of Russia, Central Asia and Mongolia* (1998, Blackwell). In 1989 he began teaching one of the first modern courses on big history, and in 2004 he published a survey of big history based on that course, *Maps of Time* (Berkeley).

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