

# I. EVOLUTION AND UNDERSTANDING OF BIG HISTORY

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### The Evolution of Big History: A Short Introduction

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#### **Abstract**

*Big history represents a modern scientific form of an ancient project: that of constructing unified, coherent and universal accounts of reality. Such projects can be found within the origin stories of most human societies. But in the late 19<sup>th</sup> century, the universalistic project vanished within both the humanities and the sciences, as scholars in field after field coped with the modern tsunami of information by narrowing the scope of their research. The sciences began to return to larger and more universalistic perspectives from the middle of the 20<sup>th</sup> century as new unifying paradigms emerged in field after field, and physicists even began talking of 'Grand Unified Theories' of everything. New information and new dating techniques made it more reasonable than ever before to attempt scientifically grounded universal histories and such attempts began to reappear in the 1980s. But not until the first decade of the 21<sup>st</sup> century has that project really begun to take off.*

The website of the International Big History Association defines Big History as 'the attempt to understand, in a unified, interdisciplinary way, the history of Cosmos, Earth, Life, and Humanity' (<http://www.ibhanet.org/>). It seems likely that most human societies have tried to construct unified histories that embrace all areas of knowledge. We often refer to these as creation myths or origin stories. Such stories, or cycles of stories, can be found within all religious traditions. They could even be found within the more secular intellectual traditions of Europe as late as the 19<sup>th</sup> century, within attempts such as those of Hegel or Marx to construct unified and coherent accounts of how the world had evolved to be as it was.

Origin stories are powerful precisely because they aim at a sort of completeness. They attempt to link all areas of knowledge into a more or less

*Evolution: A Big History Perspective 2011 20–25*

complete account of how things came to be as they are. The result of such projects is the creation of a sort of a map within which individuals and societies can identify their place in time and space, and to which they can tether their deepest intuitions and convictions about existence, meaning and ethics. Without origin stories, we are fated to live within a fragmented, endlessly shifting intellectual universe, deprived of the philosophical and ethical anchors of a more unified vision of how things came to be. We can think of Big History as a modern form of this ancient project. Big History returns in a sense to the old tradition of ‘universal histories’.<sup>1</sup> What gives the idea such salience right now is the fact that universalist accounts of the past vanished from serious historical scholarship in the late 19<sup>th</sup> century. They have been absent from serious scholarship and teaching for over a century.

Instead, historical scholarship and teaching have been contained within more fragmented intellectual and institutional structures that divided the histories of humanity from those of the natural world, and divided the histories of humanity itself into multiple regional or national histories. Because these were normally based on written evidence, modern histories were also fractured by the presence or absence of literacy, so that they excluded large areas of human history for which no written evidence existed. Sharply focused scholarship of this kind appeared in field after field, in both the humanities and the natural sciences, and its achievements have been immense. Furthermore, there can be no doubt that scholars had good reasons to eschew the more grandiose visions of the 19<sup>th</sup> century universal histories, because in most fields of study, particularly in the humanities, the available information was too thin to discipline large speculative theories, so that all too often ideology overwhelmed hard fact. Social Darwinism was merely the most obvious expression of the dangers of attempting overly grandiose accounts of the past in an era of limited information and nationalist or imperialist ideologies.

But a lot has changed since then. Careful empirical scholarship within many different scholarly disciplines has generated vastly more information than was available late in the 19<sup>th</sup> century. And particularly in the natural sciences, scholars from different disciplines have begun once again to explore unified, inter-disciplinary accounts of the past. These accounts have been associated with the appearance of powerful paradigms within geology (plate tectonics), biology (the idea of natural selection reinforced by a modern understanding of genetic mechanisms), and – perhaps most spectacularly of all – in cosmology. Big Bang cosmology arose from a unification of nuclear physics (the study of the very small) and cosmology (the study of the very large). So powerful was the resulting synergy that cosmologists and physicists began to speculate quite

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<sup>1</sup> I have developed this argument more carefully in *The Return of Universal History* (Christian 2010).

seriously about the possibility of constructing ‘grand unified theories’, theories that would encapsulate most of physical reality within one grand account of how the Universe works.

The Humanities disciplines remain more fragmented. But the field of Big History is based on the assumption that the time may now have come even for historians to return to large, unifying questions about the past. One reason for saying this is that new dating techniques developed since the 1950s, beginning with C<sup>14</sup> dating, have made it possible to construct chronologies embracing the whole of time. When H. G. Wells tried to construct a universal history, at a time when such projects were frowned on by professional historians, he had to concede that he had no reliable absolute dates reaching back more than a few thousand years, because absolute dates still relied on the presence of written evidence.

Today, we have a whole range of new techniques for dating events in the remote past, so we can construct reasonably precise absolute chronologies dating back, literally, to the origins of the Universe. Such chronologies allow us to form narratives of the Universe's history that run the gamut from cosmology to geology, to biology and, eventually, to human history. It is possible, as a result, to see human history not as something separate from the history of the Earth and biosphere but rather as a part of that larger history. This, of course, is a narrative that aligns very well with the growing awareness of the ecological embeddedness of human history that has evolved since the middle of the 20<sup>th</sup> century.

Another factor that may have encouraged more expansive accounts of the past is the sheer pace of globalization in the late 20<sup>th</sup> century, accompanied, as it has been in many fields of scholarship, by the creation of genuinely international communities of scholars. The rise of world history is one expression of a growing awareness among historians that, in a more globally interconnected world, global interconnections need to be taken very seriously indeed. No longer does it make sense to think that the history of each nation can be understood adequately without seeing how it is embedded within a wider world. Increasingly, world history is a project undertaken and shared by historians from many parts of the world; the 2011 conference of the American-based World History Association will meet in Beijing.

It may be that the extreme fragmentation of scholarship as it evolved since the late 19<sup>th</sup> century has generated a counter-reaction. There were, after all, good reasons for thinking that an over-rigid breaking up of knowledge into separate disciplines was philosophically incoherent. After all, the very idea of reason seemed to imply an underlying unity between all forms of knowledge. The alternative, after all, was to suppose that reality was itself criss-crossed by arbitrary epistemological chasms that made the knowledge of one discipline incoherent beyond that discipline's borders.

These may be some of the factors that explain why from the 1980s, scholars in a number of different specialist areas began attempting large, unified, and even ‘universalist’ accounts of the past. Interdisciplinary anthropologist Fred Spier has shown that modern attempts to return to some form of universal history, either in written works or in university courses, appeared from the 1980s within a number of disciplines, and mainly in the USA.<sup>2</sup> Scholars who attempted such syntheses included Preston Cloud, G. Siegfried Kutter and Eric Chaisson, while the first attempt to develop a modern *theory* of Big History was probably Erich Jantsch's *The Self-Organizing Universe*, published in 1980. From the late 1980s, several historians undertook similar projects, including John Mears and myself, both of whom began to teach undergraduate courses in Big History.

Like many other historians who have become interested in Big History, I came out of a traditional scholarly specialization, in my case Russian history. As an admirer of Fernand Braudel, I had always been interested both in the idea of material life as a sort of ‘sub-stratum’ to conventional historical scholarship and also in the closely related idea of the importance of the *longue durée*. And it was these questions that encouraged me to study Russian material life over long periods. But, over time, I began to wonder about the limits of Braudel's *longue durée*. After all, how *longue* is *longue*? If we learn something of value by surveying trends over many centuries, is it possible that we will learn even more if we stand even further back and attempt to survey the past at scales of millennia? This was, of course, a very slippery slope and once embarked on it, it did not take long to ask similar questions at scales of millions or even billions of years, scales that took me well beyond conventional historical scholarship and into the territory of biologists, geologists and, eventually, cosmologists.

I am not at all sure how typical this path to Big History was. In the early 1990s, the sociologist, Johan Goudsblom, and the biochemist and anthropologist, Fred Spier, began teaching a Big History course at the University of Amsterdam. Goudsblom had always been interested in the sociology of the *longue durée*, particularly as developed in the work of Norbert Elias. And Spier had long been struck by the way that pictures of the Earth from space suggested the importance of a more global and interdisciplinary vision of today's world. In 1996, Fred Spier published a pioneering attempt to theorize Big History in *The Structure of Big History: From the Big Bang until Today* (Spier 1996), in which he identified distinct ‘regimes’ within many different realms, from those studied within astronomy and geology to those studied within biology and the humanities.<sup>3</sup>

<sup>2</sup> See ‘A Short History of Big History’ in Fred Spier's *Big History and the Future of Humanity* (2010).

<sup>3</sup> In 2010 he published an expanded version of this work in *Big History and the Future of Humanity* (Spier 2010: 9–16).

In the natural sciences, in an environment increasingly friendly to the idea of grand unified theories, such projects may have seemed ambitious but not unreasonable. However, in the humanities, they were generally treated with deep suspicion. Even world history has had to fight for respectability within the history profession. The conventions that had created modern disciplinary boundaries, with their built-in career structures, criteria for judging success, journals and academies, proved remarkably powerful, and interdisciplinary scholarship remains extremely difficult. As E. O. Wilson pointed out in *Consilience*, a powerful plea for more inter-disciplinary study, the largest of these divides remains today where C. P. Snow found it in the 1950s, between the natural sciences and the humanities (Wilson 1998). Wilson argued that one of the main scholarly projects of the near future had to be the search for unifications that could cross this border, and integrate the human sciences more firmly within modern scientific scholarship as a whole.

Then, somewhat to the surprise of those committed to the project of Big History, in the first decade of the 21<sup>st</sup> century, these barriers began to fall. Barry Rodrigue and Daniel Stasko have tracked the rapid evolution of college level courses in Big History, and they have also compiled a substantial bibliography of published scholarship in the field (Rodrigue and Stasko 2010; Rodrigue and Spier 2010). In April 2011, a formal scholarly association was created to support scholarship and teaching in Big History: the International Big History Association. And just a month earlier, the ‘Big History Project’ was launched, which will build a free online high school syllabus in big history in order to try to develop Big History education in secondary schools.<sup>4</sup>

And what should the field be called? These various projects have attracted several different names, including ‘cosmic evolution’, ‘the evolutionary epic’, ‘universal history’ and ‘Big History’. I first used the phrase, ‘Big History’ in an essay I wrote just three years after I started teaching a Big History course at Macquarie University in Sydney (Australia) (Christian 1991). I used it because it was simple, catchy, not too solemn, and seemed, by echoing the notion of the ‘Big Bang’, to capture something of the scale of the course I had begun to teach. The label has acquired broad currency particularly in the humanities, but other labels, such as ‘cosmic evolution’, may be preferred within the sciences. The labels do not matter too much. What is important is that we seem to find ourselves at a very exciting moment in the evolution of modern scholarship, one in which for the first time in over a century the project of constructing unified, coherent and scientific accounts of the whole of the past is back on the agenda again. Whatever we call the project, it holds the promise of re-creating, now on a firm scientific basis, the unified visions of reality that have

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<sup>4</sup> See the IBHA web site at <http://www.ibhanet.org/> and the Big History project web site at <http://www.bighistoryproject.com/>

been so powerful in most human societies. As E. O. Wilson argued in *Consilience*, there are immense intellectual synergies awaiting those who start bringing together the insights, the information, the methods and the paradigms of today's major scholarly traditions within a more coherent, less fragmented vision of our universe.

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