

History as Time Travel: Current Events, Deep History, and Big History

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Welcome to an experience I am calling Time Travel based on Science-non-fiction use of history.

Millennials and History

- Where do they get their news?
 - The challenge of reliability of social media and any Internet source.
 - The challenge of moving beyond gossip and trivia to thought and analysis.
- What assumptions do they carry into history classes?
 - The barriers of “dead facts” and memorization.
 - The barriers of lacking experience or historical imagination.
 - The barrier of lack of commitment.
- How can history compete in an age of computerized games based on science-fiction stories of time and space travel?

What is your experience with these two questions?

I am often disturbed by two patterns among my millennial students. First, they approach history without imagination or life experience, expecting it to be essentially memorization of dates and events. No matter how much I emphasize understanding and insight as I teach, they invariably ask for a “study guide” for exams – by which they mean lists of dates, events, and people to be memorized.

Second on my list is how uninterested they are in important current events. To the extent they hear about important issues of the day, it is through social media (especially Facebook). If it isn't snappy, in a video or photo that goes viral, or gossip – they aren't interested. And they tend to believe what they encounter on social media too much of the time. Also they tend too often to sit on the sidelines without strong convictions on important issues impacting their futures.

My conviction is that now, more than ever, students need to learn the skills of a historian and to apply both serious knowledge and imagination to present and past events.

History = Time Travel (Science-Non-Fiction)

- Three approaches to time travel: present, remote past (Deep History), and cosmic view (Big History)
- They require use & interpretation of historical sources – usual written sources + sciences
- All three are evidence-driven & engage imagination – not focused on memorization of static events and dates

Today I invite you to join me on an imaginary time voyage – in fact three forms of time travel using history.

The first mode begins with the present and how it reshapes our view of the recent past as we look for what is most significant today. Teaching American history always involves discussing current events as they manifest new versions of old themes or lead to reinterpretation of what we thought we knew about American history. The presidential campaign of 2016 and the first hundred days of President Trump have been unusually loaded with unprecedented developments that require understanding similar developments in the last century or so.

Deep History and Big History are combinations of science with history. Deep History focuses on exploration of the “deep” past using “soft sciences” along with genetics and anthropology. Big History starts with the Big Bang and uses physics and both hard and soft sciences to study the remotest past, present, and probable future.

All three modes of history use sources, but each focuses on different kinds. All three are evidence-driven and engage the imagination and understanding.

History Teacher Credo

Knowing history and the skills of the historian are more important today than ever.

- *History is not about a dead past but the living present.*
- *Information about the past is important, but putting it to use today and for the benefit of tomorrow is most important.*
- *Our personal and cultural identities are tied to current variations in patterns that are tied to the entire history of the human species – and the future of the human species.*
- *Learning to distinguish reliable historical sources and interpretations is an essential skill for informed participation in our political system.*

[History Teacher Credo](#)

In the last year, I began sharing with classes an explicit Credo of values that would accompany my teaching. The four points are meant to overcome the barriers encountered in their initial expectations.

I point out that they will see my political views as we talk about current events, but they are not expected to agree or disagree with those views. What is important is to use historical thinking to understand and make up your own mind about issues of the day based on knowledge and evidence.

I especially emphasize the danger of believing everything encountered on the Internet or in social media. This became especially relevant last year as it became increasingly obvious Russia had “weaponized” their use of propaganda over the Internet.

Study of the Present (Recent Times)

- History = Now (Time Travel in last 2 centuries to know the present)
 - Campaign of 2016 & 100 days of Trump – Rich with many historical precedents important for understanding present & future
 - Andrew Jackson; Hitler & Mussolini; Clinton & Nixon
 - “Return to Normalcy” [Campaign 1920](#) – agenda same as Trump’s
- Success of Efforts Today Causes New Understanding of Recent Past
 - “How could Germany do such a thing?”
 - “How could Nixon think Watergate could be covered up?”

Our national experience with Trump Republicanism has been especially fertile in prompting historical analysis – or at least the imperative need for it.

Trump compares himself to Andrew Jackson, and their temperaments, manners, and human rights attitudes are similar. The Trump political rallies, verbal inappropriateness, and generally boorish behavior have bought comparisons with tactics of Hitler and Mussolini in the 20s and 30s. The Russia scandal is also leading many news commentators to bring up comparisons with impeachment procedures for Nixon and Clinton.

Most fruitful, in my view, is the remarkable parallel between the agendas of Harding in 1920 and Trump in 2016. Harding turned his back on international involvement at the end of WWI to “Return to Normalcy” or the good old days. Tax cuts to the wealthy started a stock market surge while American banks pursued national interests that helped push Europe deeper into economic problems. The 20s also saw legislation against Eastern European immigrants and Asians while there was a national surge of membership in the KKK along with religious fundamentalism.

People said they believed Trump lied but didn’t care or didn’t take him literally. Now Watergate comparisons make you wonder how much standards of behavior have changed.

Sources and Historical Skills

- Citizens Must Be Historians
 - Draw conclusions based on reliable primary & secondary sources
 - Insist on checking evidence first & basing judgments on reliable evidence
- Special Problems of Internet Sources
 - Proliferation of the snappy & superficial – gossip, videos, pictures
 - Real information mixed with propaganda promoting hate, terror, division
 - “Weaponized” phony news/propaganda spread by national enemies

Talking about primary and secondary sources sounds academic, but paying attention to evidence is essential for citizens today.

Internet sites and social media put the intellect to sleep with video, pictures, and snappy cute items. It is through Internet propaganda that terrorist groups reach and “radicalize” people with bizarre and murderous values.

The 2016 election is now recognized as being tampered with by “weaponized” propaganda over the Internet.

Skill and knowledge are necessary to make appropriate use of Internet sources. History courses are the front line for teaching those skills.

Science & History – 2 Approaches

- Deep History – Looking backward, breaking loose from the “straitjacket” of shallow history – Puts aside “human exceptionalism” and “origins” to focus on trends and patterns among hominins – uses “absolute time” dating based on radiocarbon technology – focus on anthropology, genetics, and “soft” sciences
- Big History – Cosmic view from Big Bang to present and beyond relying on full range of scientific and historical disciplines – History notable for “thresholds” as upward movements of complexity bring ranges of new possibilities along with new dangers and increased vulnerabilities

Today 2 visions for combining history and science are being developed. Both use scientific information that is non-literary & thus not previously accepted as historical sources. Science keeps making discoveries that redefine beliefs about what is or is not a source.

Deep History is oriented backward, ever deeper in time beyond previous beliefs about human origins. These scholars often attack “human exceptionalism” or “anthropocentrism” in history, taking pleasure in debunking views of origins derived from Genesis. Measures of absolute time are used in looking further and further back.

Big History uses more sciences and a longer absolute time scale to present a cosmological story from the Big Bang to ultimate cosmological conditions.

Absolute Time Dating

- Backward from Present: BP = years before present – Ga or Gya= billions of years before present – Ma or Mya = millions of years before present – Ka or Kya = thousands of years before present
- Geological Eras: Based on geological changes to earth, set by a geological society; Debate over Anthropocene, entered 200 BP as industrial age began rapid extraction and consumption of non-renewable fossil fuels, metals, and minerals
- Designations by Tools Used, Evolutionary Stages, and Migration Patterns
- All of these amount to ways of visualizing backward time travel
- See the chart in Shryock and Smail, *Deep History: The Architecture of Past and Present* (2011), xvi.

Bringing in science means avoiding traditional cultural divisions (BCE, CE, BC, AD) or calendar-based times (except for years), or period dating (Ancient, Medieval, Modern).

The most common method is to count backward from a shifting present – years before now. This is classed with absolute timing but is not entirely absolute because of the moving present time.

Geological periods, based on rock conditions, is one method. What is debatable now is that some scientists (not the Geological Society responsible for the time periods) consider 1800 to make a new era in which rapid consumption of fossil fuels, metals, and minerals have inaugurated the Anthropocene, human-centered age.

Other methods are used by archeologists to designate tools used, by evolutionary scientists to designate stages of evolution, or by others to show human migratory stages.

Big History

- Cosmological View of History
 - Physics and all “hard sciences” used to tell story of past and future projections
 - Focuses on solar system, life, and then human history – continues human exceptionalism
 - Identifies 8 points of transition to increased complexity along with greater danger and vulnerability
- Largescale View of Current Time – Industrial Age
 - Impact on planet – extraction and use of fossil fuels, population growth, nuclear power, urbanization of planet, human-generated climate change
 - Accelerating pace of technological change – increasing danger and fragility in dealing with opportunities and dangers of mounting change

Big History begins with the Big Bang 13.8 Ga using all sciences to tell a story of increasing complexity in the universe leading to the present day and beyond to anticipations of the far distant future of the universe.

Human exceptionalism is maintained as attention focuses on origin of the earth, life, humanity, then human history in describing cosmic transitions. The two most recent transitions were the human use of agriculture, through which organized societies and largescale reshaping of the earth began; and the industrial age marked by accelerating social and technological change transforming the planet as well as continually revolutionizing human societies.

Using all physical and social sciences, Big History shows largescale trends in historical developments such as the impact on the planet and problem of accelerating change.

Big History is also being used by universities as a method for bringing disciplines across the university together to support a common educational program with a comprehensive view of science and the humanities in a historical framework. This was first done at Dominican University in Santa Rosa, California.

Big History Timescale -- [Chronozoom](#)



The link on this slide takes you to a website sponsored by the University of California at Berkeley, featuring geologist Walter Alvarez. Along with informational videos, you see a zoomable timescale through which to explore chronology from the Big Boom to the present day.

The origin of the universe is on the left and present day is on the right. The initial view covers a long span of time. Zooming in at any point of the scale takes you to smaller and smaller time periods.

Question of Sources

- Current History
 - Skill in recognizing primary, secondary, and fake evidence
 - Challenge and opportunity of Internet
 - Problem of interpretation – Understand Trump seriously or literally?
- Science and History
 - Rejects distinction between pre-history and history for sources
 - Unified view of world combining science and liberal arts
 - Uses science to shatter old cultural norms based on “shallow” history
 - Demands cross-disciplinary teaching with sensitivity to cultural receptivity

Two big challenges of current history are recognizing legitimate from fake evidence and basing interpretations on evidence.

Knowing how to detect, use, and interpret primary and secondary sources, especially when they are taken from the Internet, is increasingly difficult. Even mainstream news outlets are tending to downplay clear evidence such as established climate science by reporting, as legitimate, the “honest beliefs” of climate deniers or that Donald Trump “sincerely believes” the false information and conspiracy theories he distributes through Twitter.

Interpretation is also difficult when people deny clear statements of intent with “I take him seriously, not literally.”

Science nullifies the distinction between written and non-written sources. Universities are beginning to use Big History as a course taught with interdisciplinary staff seeking to provide a framework for unifying all current knowledge without endangering the integrity of sciences or liberal arts. The experience at Dominican University and Spencer Wells also warn us that “our research does not take place in a vacuum, and science can sometimes run roughshod over cultural beliefs.” (Spencer Wells)

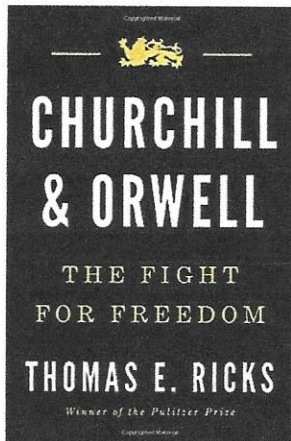
Genetics as Evidence

- “Our DNA carries, hidden in its string of four simple letters, a historical document stretching back to the origin of life and the first self-replicating molecules, through our amoebic ancestors, and down to the present day. We are the end result of over a billion years of evolutionary tinkering, and our genes carry the seams and spot-welds that reveal the story.”
- “The argument ... is that genetics provides us with a map of our wanderings and gives us a rough idea of the dates – and it is up to us to reconcile this data with the archaeological and climatological record in order to fill in the picture.”

Spencer Wells, *The Journey of Man* (2017), xvii-xviii

These comments by Spencer Wells present a case for genetic evidence for understanding present and past evolution and migration of our species. This evidence can also be used to determine which of us had ancestors that mated with Neanderthals or other hominin predecessors.

Sources for History as Present

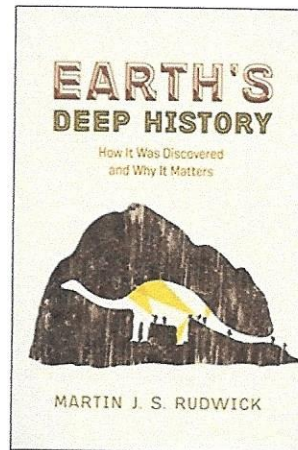
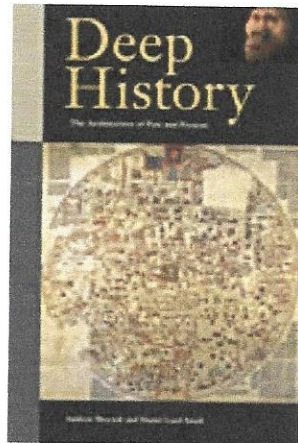


“When they were confronted by a crucial moment in history, Churchill and Orwell responded first by seeking the facts of the matter. Then they acted on their beliefs. They faced a genuinely apocalyptic situation, in which their way of life was threatened with extinction. Many people around them expected evil to triumph and sought to make their peace with it. These two did not. They responded with courage and clear-sightedness. If there is anything we can take away from them, it is the wisdom of employing this two-step process, especially in times of mind-bending crisis: Work diligently to discern the facts of the matter, and then use your principles to respond.” p. 265

Thomas E. Ricks, Pulitzer Prize winning author

An example of understanding the present through recent past is found in Thomas Ricks' very recent book. He describes the lonely battle of George Orwell and Winston Churchill in the 1930s as fascism spread over Europe. His narrative clearly has current events in mind so that his two heroes provide healthy guidance for those of us contending with an epidemic of “fake news” and propaganda. The quotation above is the first paragraph of his final chapter, in which the correlation between the dangers of the 1930s and dangers of today are seen.

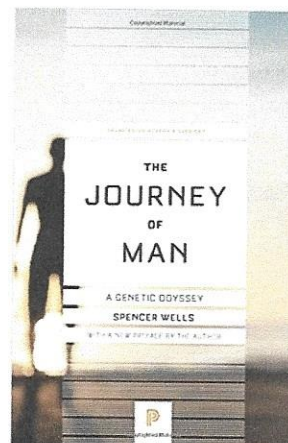
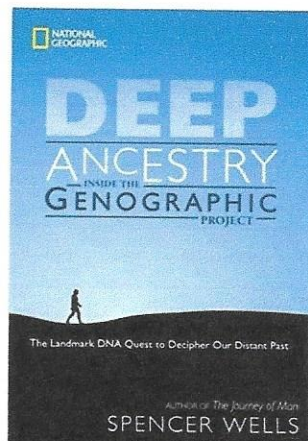
Deep History Sources



Andrew Shryock and Daniel Lord Smail edited *Deep History* as an introduction to some approaches and methods for this new field. They make clear an intention to eliminate historical notions based on Genesis. To some extent they are insensitive to the fact that Christians need not turn against biblical views to accept the combination of science and history.

Martin Rudwick is a Cambridge historian who writes a history of the earth and of the science of understanding evolution of the earth.

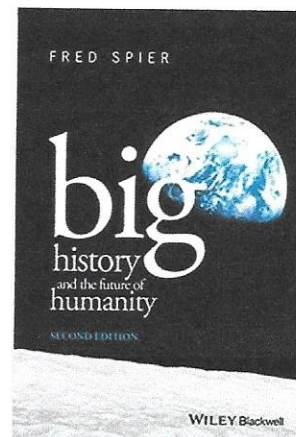
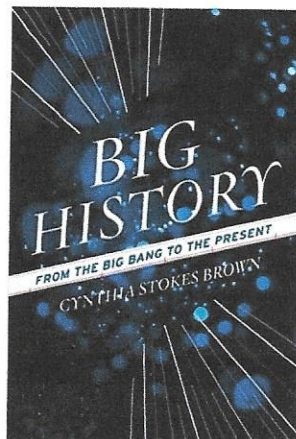
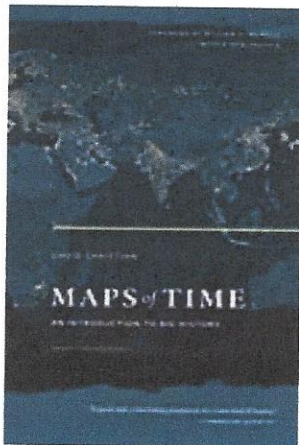
Spencer Wells and Genetics



Spencer Wells directed the Genographic Project for National Geographic, building quite a database for study of past population migrations. This is a 2007 book on the project and consumers can now obtain the kind of genetic assistance Wells provided through ancestry.com.

Wells has recently updated an earlier book describing population genetics and how they lead to identification of Y-Chromosome Adam and Mitochondrial Eve as our earliest common ancestors.

Big History Sources



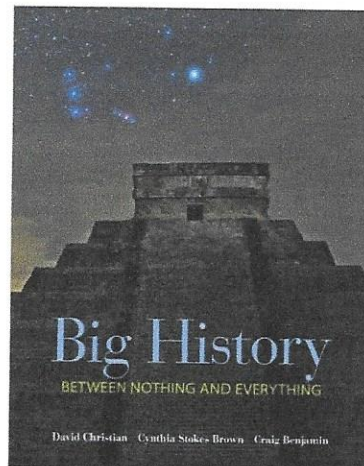
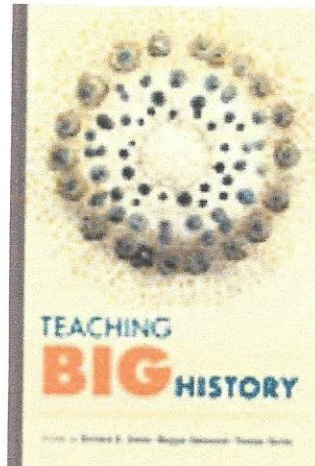
These are the three most significant books for Big History, written by three pioneers in the field. Both books are second editions with updated material.

David Christian coined the term Big History in his groundbreaking book that is long and heavy with analysis.

Cynthia Stokes Brown wrote an extremely popular and very readable history. She also gained cooperation of faculty and administration at Dominican University in California to make Big History the basis of the program for incoming freshmen. The university developed summer institutes to spread the word on how they taught science and history on a cross-disciplinary basis.

Fred Spier teaches at the University of Amsterdam and has spread support for Big History in Europe. He first developed the concept of 8 transition points in the history of the universe to date.

Big History Teaching Resources



Teaching Big History relates the experience by faculty at Dominican University in California as they taught Big History to all incoming freshmen. The book is filled with insights and practical tips from experience.

Big History by David Christian, Cynthia Stokes Brown, and Craig Benjamin is the first college textbook for teaching the subject. Content is built around the 8 major transitions as the universe achieved higher levels of complexity, through the biological, social, economic, and technological complexity of the contemporary world.

Back to the Present

- Thank you for traveling with me through time – a science-non-fiction trip using history in combination with science
- Time travel is possible and history + science is our time machine.
- Anyone wishing to continue exploring academic possibilities of Science and History can contact me:

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