

Panel B-8: Civilization and writing (3500 BC to now)

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Beginning with this panel, time intervals on the human scale make a difference in the geologists' system of "years before the present." It is necessary now to define "the present," and to specify dates in both the geologic and the humanistic systems. For the purposes of ChronoZoom, it is useful to define the present as midnight at the end of the year 1999, at the moment when the calendar changed over to 2000. If still more detailed panels were prepared, it could be specified that this is the end of the second millennium, Eastern Standard Time (in New York). Choosing "the present" in this way avoids the necessity of constantly changing the reference frame for human history, and it honors the humanist historians' recognition that "current events" (in the ChronoZoom case, defined as everything beginning January 1, 2000) are the province of journalists, lacking the chronological perspective that allows historians to make sense of the bewildering complexity of human events.

In humanistic history it is traditional to establish a reference date at some time in the past, with date numbers increasing toward the past prior to the reference date, and increasing toward the present and the future after it. ChronoZoom uses BC and AD (**A**), which are numerically equivalent to BCE (Before the Common Era) and CE (Common Era). There are other systems with different reference dates, and with complexities such as the use of lunar rather than solar calendars, and with improvements in the calendar introduced at times in the past (such as the change from the Julian to the Gregorian Calendar, adopted by Catholic countries in 1582, and at

subsequent times, up to 1923, in Protestant and Eastern Orthodox European countries). Calendrical conversions are a complex mathematical subject which a future, more sophisticated ChronoZoom might need to consider.¹

During the 5,500 years of this panel there have been a number of major natural disasters, including explosive volcanic eruptions, pestilences, and drought (**B**), of which only the Black Death of the middle 14th century was sufficient to produce even a brief downturn in the growth of global population of humankind (**C**). In fact, from the beginning of this panel to the beginning of the next one, at 1400 AD, the rate of population growth increased, reaching a global total of about 400 million.²

Human history prior to the invention of writing (Panel 7) is largely recovered from archaeological excavations. Tools and other artifacts provide much of the available information about how pre-literate people lived. The earliest tools may have been made mainly of wood, which rarely survives in archaeological sites. The main information comes from non-perishable tools, particularly those made from stone or metal. In many parts of the world, it has been useful to divide material cultures, from older to younger, into Stone Age, Bronze Age, and Iron Age (**D**), and those may be subdivided repeatedly (e.g., Cyprus Late Bronze Age II-C). In some places a Chalcolithic Age (stone plus the soft metal, copper) can be recognized between the Stone Age and the Bronze Age. The Near Eastern region surrounding the Eastern Mediterranean was a center from which these technologies diffused,³ so this panel

shows the ages in this region; each technology arrived later in peripheral regions. In contrast to the usual gradual changes in technology, the end of the Near Eastern Bronze Age, about 1200 BC, was evidently catastrophic, and remains puzzling; it has been attributed both to advances in warfare, rendering chariots useless,⁴ and to clusters of major earthquakes.⁵

The beginning of writing (**E**) marks a huge change in how history is understood. Before the invention of writing, the history of human affairs may have been told and remembered for a few generations, perhaps, and then it either entered the realm of legend or, more commonly, was simply lost. After people learned to write, historical records become available in human language, some of it intentionally documenting history, but much of it useful for historians although not written for that purpose — like merchants' inventories, and tax records. Written records are so abundant and rich that even now some historians argue that only written documents constitute real history — a view strongly rejected by historical scientists and Big Historians.

Because of the complexity and detail of global human history, it is not possible to present a useful summary of literate history on a ChronoZoom panel. So we have chosen to leave half of this panel empty, suggesting that users might wish to print out the panel and sketch in the history that interests them on this and the following panels.