Early Korea in East Asian Context: Online Timeline as Content-Rich Metadata

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Librarians' work is pre-eminently that of organizing recorded knowledge. The traditional library, that based on paper records—mostly printed—organizes knowledge by collecting, categorizing and storing books, journals, and documents from a range of subjects in such a way that they can be easily located by people who need them. As the content is primarily textual, so is the organization based on textual principles. The development of the library catalog was based, first, on an exacting identification of individual records and their representation in a database that grew as the library's collections grew. Secondly, there was a need to arrange those collections by an increasingly detailed parsing of subject designations. A book, for instance, could then be found in a library of whatever size, either by knowing its title or author or by its grouping within set subject areas.

The organization of libraries and bibliographic devices evolved in direct relationship with the development of the publishing industry, with its separately articulated roles of author, editor, and publisher. Publishing was—and is—concerned with the process of creating, re-creating, and disseminating "authoritative knowledge," the assumption being that, as long as each role is properly served, what ends up being printed is information upon which the reader can rely on as being accurate and well-reasoned, according to prevailing standards. Libraries, then, assumed the role of preserving and maintaining the viability of accumulated printed knowledge and of providing access to it through classification schemes. In order for the librarian to be able to provide "authoritative information," s/he not only has to be able to navigate the catalog, but also must be able to rely on the author-editor-publisher to have produced an authoritative text.

The advent of the digital information environment presents an alternative to the textual organization at the core of the library's operations, delivering, along with increases in speed, quantity, and reach of access to information, far greater flexibility in relational connections. Perhaps the most obvious change is the rise in importance of graphical representations of information, in place of textual. Images are more immediately engaging than text, and much easier to grasp. In the digital environment, they are also increasingly easier to transmit. Beyond that, the boundaries between subject areas dissolve as it becomes increasingly easy to jump from one item to another. The challenge is not, however, confined to the role of the library in the information process. It confronts, as well, the roles of the publisher, the editor, and ultimately the author. Anyone with access to a computer and a modem has the ability to issue text over the

internet, thus displacing the publisher. The guarantees of editorial oversight that are implicit in the printed text are largely absent from text on the internet. And the ease of manipulation of the internet's content is so great that the integrity of a text—or a photograph or recording, for that matter—can be compromised, potentially calling "authorship" itself into question as well.

Even so, the fundamental purpose of the library in a digital environment remains the same: to gather authoritative content, to place that content in a context that will allow for easy access, to act as intermediary between the information and those who need to use it, and to provide a space for intellectual interaction. Exactly how we can best continue to perform that function—how we provide genuine digital value for the academic community—is the question we now face.

I suggest that one way forward is to create "content-rich metadata" structures that combine the rigor of analytic cataloging with a greatly broadened matrix of associative and relational linkages, while taking advantage of the internet's graphic possibilities. Instead of metadata that is abstracted away from its subject and serves only as an isolated signpost pointing to the relevant material (eg. "Koguryo (Kingdom) – History"), content-rich metadata builds a framework that in itself carries interest and content and uses that framework to provide links to subject material.

The approach I am presenting today is the use of an online timeline in which subjects can be arrayed graphically in a chronology from which linkages can be made to all manner of information relating to the subject and period in question. Most, perhaps all, cultural information can be shown to have a temporal (as well as a spatial) aspect. By arranging subject matter chronologically on a graphic platform, it is possible to suggest entire ranges of relationships that remain hidden or are completely absent in a text-based, syndetic subject system.

The advantages and possibilities of such an approach are most clearly illustrated in subject areas that overlap traditional subject boundaries. For my purpose, the example of Koguryŏ offers a useful model to illustrate the utility of online timelines for arranging access points to bibliographic information. During the turbulent period in East Asian between the 2nd and 7th centuries A.D., Koguryŏ played a key intermediary role in Northeast Asia, contributing significantly to the development of the state and culture in the Northern Plain of China, the Korean peninsula, and the Japanese archipelago. There has been considerable discussion in recent years about whether Koguryŏ most properly belongs to Korean or to Chinese history. My own view is that the controversy results from viewing events of 1300-1800 years ago from the perspective of 20th century textual culture. A graphic approach can help to reveal relationships that span national and textual borders.

At the time in question, at least in terms of a state, there was no "Korea" per se, nor was there an entity we could call "Japan." Arguably, for most of this period, there also was no "China," as the north was occupied by a series of steppes peoples and the south by refugees from the north. A major factor in achieving the Han state had been the assertion of a sharp distinction between the agricultural society of the Central Plain in north China and that of the incompatible livestock herders who occupied the grasslands to the immediate north. This required pushing these peoples away from the border and forcing those on the steppe into full nomadic pastoralism. In one sense, this made their threat more imposing, by prodding them into forming a powerful

military presence. At the same time, it simplified the threat: as long as the Han state could dominate the single Xiongnu confederation, the danger from the steppe could be managed. On their part, in reaction to the threat posed by the agricultural society to its south, the Xiongnu sought dominance over all of the disparate peoples excluded from the Han economy, in the deserts, the lands, the pastures, and the forests across the borderlands.

When the Han state faltered, however, initially in the early first century and especially following its final fall in the early third century, peoples who had been forcibly pushed away from China began to be drawn in all along the borders to the Northwest, the North, and the Northeast. Among the groups attracted south from the deserts, pasturelands and forests along civilization's northern border were the Di and Qiang in the Northwest, the Xiongnu themselves to the North, and the Xianbei and Koguryŏ peoples in the Northeast. By the time a reunified empire had been accomplished under the Sui and the Tang, it was a significantly different political formation from that of the Han state from four centuries earlier. The key institutions that led to the rejuvenation of the Chinese empire under the Tang were developed in the north over the course of several centuries by the interaction of the Chinese society and steppes rulers. In fact, it could well be said that the widespread state building that took place all across East Asia during the 4th through the 8th centuries A.D. resulted, in large part, from the political vigor of foreign peoples drawn in by the collapse of the previous state in North China.

The Koguryŏ were very much a part of this process. Koguryŏ's appearance in written records roughly parallels that of the Xianbei. Both originated from the margins of the Northeastern Plain, the Xianbei from the eastern slopes of the Great Xing'an Mountains[1], the Koguryŏ from the upper reaches of the Sungari River. And both migrated south at about the same time, becoming involved in border struggles and contending, at times, for much the same territories. For fully two hundred years following the fall of the Han state in 220 A.D., the various Xianbei peoples— the Murong, the Tuoba, and others—and the Koguryŏ struggled for territory and power, sometimes in alliance with each other, sometimes in opposition.

The Koguryŏ ruling house aside, individual Koguryans were drawn across what we now think of as borders to become involved at all levels in Chinese and Japanese matters. In 407, for example, the Northern Yan state emerged amidst the struggles in North China, with a Koguryan, Gao Yun 高雲, as its first king. And even though he was killed and replaced two years later, the Northern Yan state continued to maintain close ties with the Koguryŏ regime until its fall in 433. By that time, the Koguryŏ king, Changsu, had moved his capital to the area of Pyongyang, as the Xianbei Tuoba consolidated their hold in China. But Koguryŏ, and individual Koguryans, continued to play important roles in North China for several centuries, politically, intellectually, and artistically.

In turn, Koguryŏ had significant impact on the transmission of ideas and techniques to the Japanese islands and on the development of the early Japanese state and of Buddhism. (I refer

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[1]干志耿。关于鲜卑早期历史及其考古遗存的几个问题。民族研究 15(1982.1):17-8.

here to historical influences, mostly of individual Koguryans, not to the ethno-linguistic relations that indicate a common origin for Koguryŏ and Japanese.[2])

In order to access information about the early development of Koguryŏ and the range of its involvement in the development of Korean, Chinese, and Japanese states, religion and culture, here are the sorts of subject headings to which you would be limited:

Korea—History—To 935
Korea—Foreign relations—To 935
Japan—Foreign relations—To 794
Korea—Relations—China
Koguryŏ (Kingdom)—History
Koguryŏ (Kingdom)—Relations—China
China—Relations-- Koguryŏ (Kingdom)
Koguryŏ (Kingdom)—Relations—Japan
Koguryŏ (Kingdom)—Relations—East Asia
Kwanggaet'o Wang, King of Korea, 375-413 …

Together, they will open up a vast and growing body of recorded knowledge and reflection on the matter of Koguryŏ. The headings themselves, however, represent a pale reflection of the depth and texture of the subjects to be explored, and contain within them political-cultural assumptions of the 20th century. Some of these headings, for instance, are based on the assumption that "Korea," "China," and "Japan" existed as unitary political formations during this period, to the extent that interactions among people of the respective areas could be characterized as "foreign relations," or even as "relations." In fact, political identities and distinctions were much more fluid, and such standard textual subject headings do not provide a hint at the degree to which Koguryŏ played critical cross-border roles in East Asian history.

Online, you may alternatively combine keywords to focus in on particular topics or issues. Combining "Koguryŏ" with other terms ("Buddhism," "tombs," "painting," etc.) Again, however, this text-based approach still relies on the cultural assumptions made and utilized, in this case by the author and still do not in themselves arrange the information in a meaningful and fully useful relational manner.

Instead, I would like to advance the application of timeline software freely made available by the SIMILE (Semantic Interoperability of Metadata and Information in unLike Environments) Project, jointly developed by MIT Library and MIT CSAIL's (Computer Science and Artificial Intelligence Laboratory). <http://simile.mit.edu/timeline/> Timeline is a DHTML-based AJAXy widget for visualizing time-based events. Single events are represented as points arrayed along a horizontally chronological display. Alternatively, spans of time can be represented on the timeline by line segments with a beginning and end time. For each of these timeline events and spans a text box can be opened by a click, allowing for explication and links to more information. On this foundation, it is possible to create an entire network of timelines—some covering broad, general periods of history, others focusing in on specific subjects, individuals, or minutely timed

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[2] Beckwith, Christopher I. Koguryo, the Language of Japan's Continental Relatives. Leiden: Brill, 2007.

episodes. All could be linked together to form a graphic sense of an historical period. And each level affords opportunities to provide links to additional information, whether illustrative, multimedia, or bibliographic.

The first requirement for a timeline is an event-based measure of time. Content-neutral measures abstracted away from events—centuries, decades, years, months, etc.—are, naturally, used to lay out the timeline. A more genuine sense of a period of history, however, can be represented by an array of known events or other datable items. At the most general level, for the period of early medieval East Asia, a sense of time can be shown by the span of each regime in East Asia during this period, of which there were more than fifty. The names of some, even many, of these fifty regimes might be familiar, but when their respective time-spans are arranged along a timeline, an immediate impression of the overall period, as well as the temporal relationships between the separate regimes, is easily conveyed. It can only help to place Koguryǒ in its proper historical context to show graphically how its time-span related to those of contemporary regimes, in Korea, but also in China and Japan.
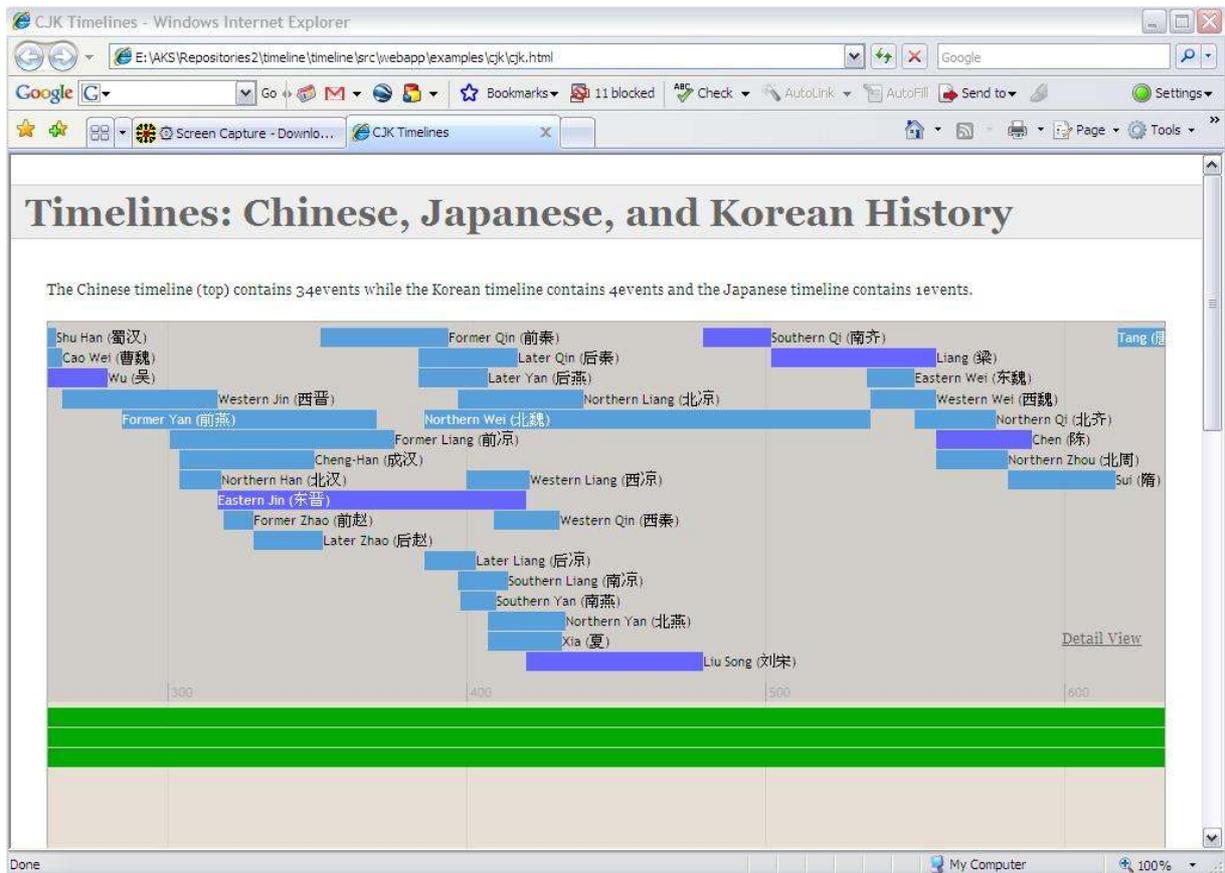

Figure 1: Timeline for Chinese (blue) and Korean (green) regimes, 3rd-6th centuries.
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When more detail is required than such a broad overview allows, we need other event-based measures. If, for example, we were to focus on the single regime of Koguryǒ, a natural measure would be the reign-periods of its kings. This, after all, is how years and eras were identified traditionally in East Asia. Cross-border relationships, at this same level, can then be easily illustrated by displaying the reign-periods of two or more contemporaneous regimes side-by-side.
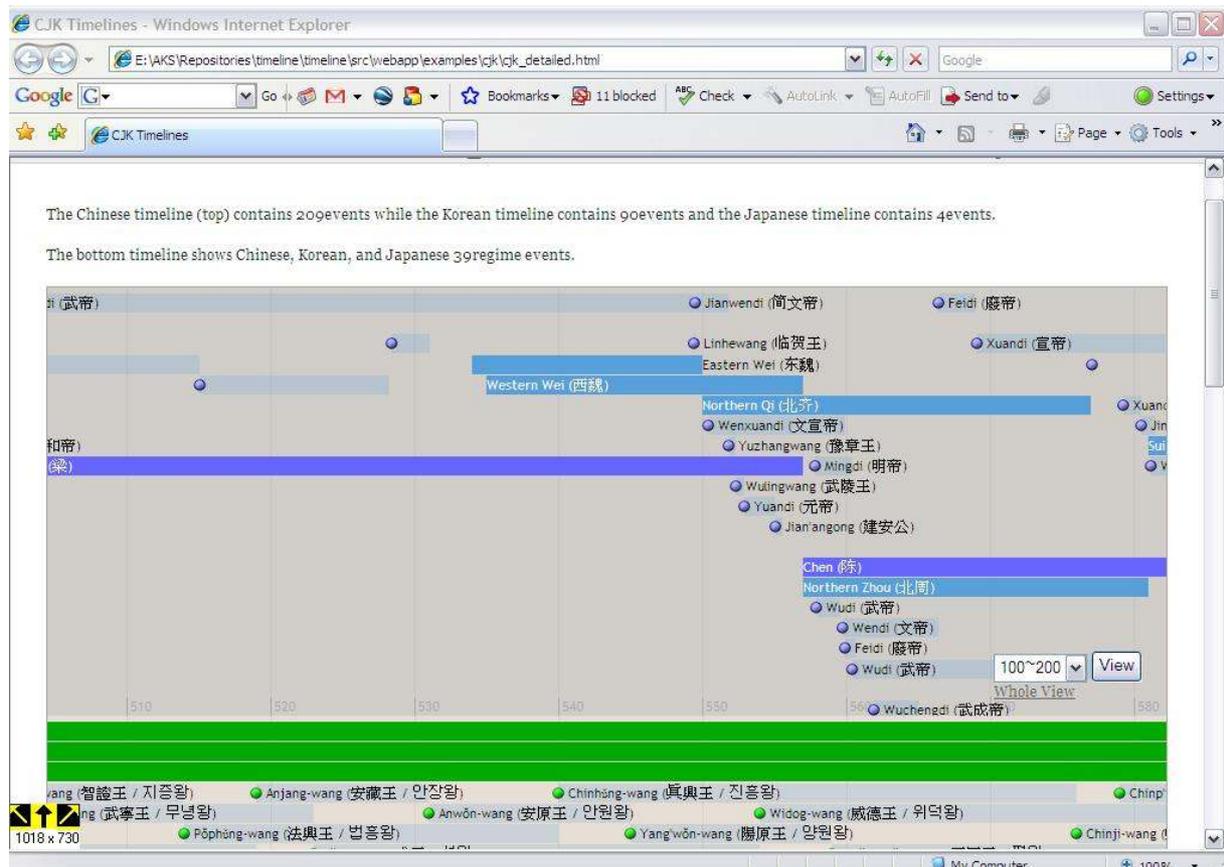

Figure 2: Timeline displaying reign-periods of contemporary rulers in Koguryǒ and China.

In the sixth century, the unity of the northern plain of China that had been accomplished by the Northern Wei in the previous century began to break down. As the power of the sinified Northern Wei ruling house declined, military leaders along the northern borders more oriented to steppe relationships and traditions emerged to assert control and establish order over the Wei. One of these, Gao Huan, by 532 had eliminated his rivals for control over the capital in Luoyang. He was opposed, however, by forces centered to the west, in the area around Chang'an. This eventually resulted in a situation wherein each power center had elevated a Wei heir as its puppet ruler. Gao's regime, centered in Luoyang and controlling the eastern portion of North China, became known as the Eastern Wei, while that established in Chang'an became the Western Wei.

In his effort to build support for his power base, Gao Huan turned to the remaining Chinese literati in the Hebei and Shandong. Not coming himself from the Xianbei or Xiongnu or any of the other various steppe peoples along China's northern border, Gao presented himself as a relative of the powerful Gao clan of Bohai and thus himself a Chinese, albeit a rather Xianbei-ified Chinese. Most scholars have accepted this claim, but some dispute it, arguing instead that Gao was not Chinese but rather a Xianbei. In recent years, however, there has also emerged the argument that Gao Huan was, in fact, from Koguryŏ.[3]

Gao's Eastern Wei state was maintained for about sixteen years, after which Gao Huan's son deposed the Tuoba puppet-emperor and declared himself emperor of the the Northern Qi state. The Western Wei similarly gave way to the Northern Zhou state; the ruling clique that developed around this latter state was essentially the same that was to reunify China (under the Sui) and rule it for three hundred years (under the Tang). The Northern Qi and Northern Zhou struggled against each other for control of North China before the Qi state was conquered in 577. The Northern Zhou state had reunified the North and began to turn its attentions to conquering the South of China as well, but was overthrown soon thereafter by a faction of its ruling clique who then founded of the Sui dynasty and accomplished the final reunification task in 589, thus bringing to an end the longest period of division in Chinese history.

After two decades of consolidating the infrastructure of an unitary empire spanning both the North and South of China, the Sui emperor began a series of large-scale, and ultimately unsuccessful, military campaigns against Koguryŏ. Enormous armies were sent across the Liao River in 612, 613, and 614. Soon thereafter, and partly as result of these expensive failures, the Sui state devolved into civil war and was replaced, in 618, by the Tang state. Again, after a couple of decades of consolidation, Tang armies were sent against Koguryŏ in the 640s, again without full success. It was not until 668 that the Tang, in alliance with Silla, was able to bring an end to Koguryŏ as a military rival.

It might be argued, thus, that the ruling clique that began to coalesce in the area of Chang'an during the 530s had faced off against Koguryo-dominated states as one of its primary military rivals in the North, first in the guise of the Eastern Wei, followed by the Northern Qi, and then Koguryŏ itself.

For intellectual, artistic, literary, or religious history, neither a broad regime timeline nor a politically centered reign timeline would be appropriate. The event-based measures for representing the history of ideas might best be centered on the key individuals relevant to the subject. The spread of Buddhism in East Asia is one example.

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[3] 阎海。高欢族源探微。博物馆研究 93 (2006:1): 23-7. Also: 서병국. 고구려제국사 . 292-8.
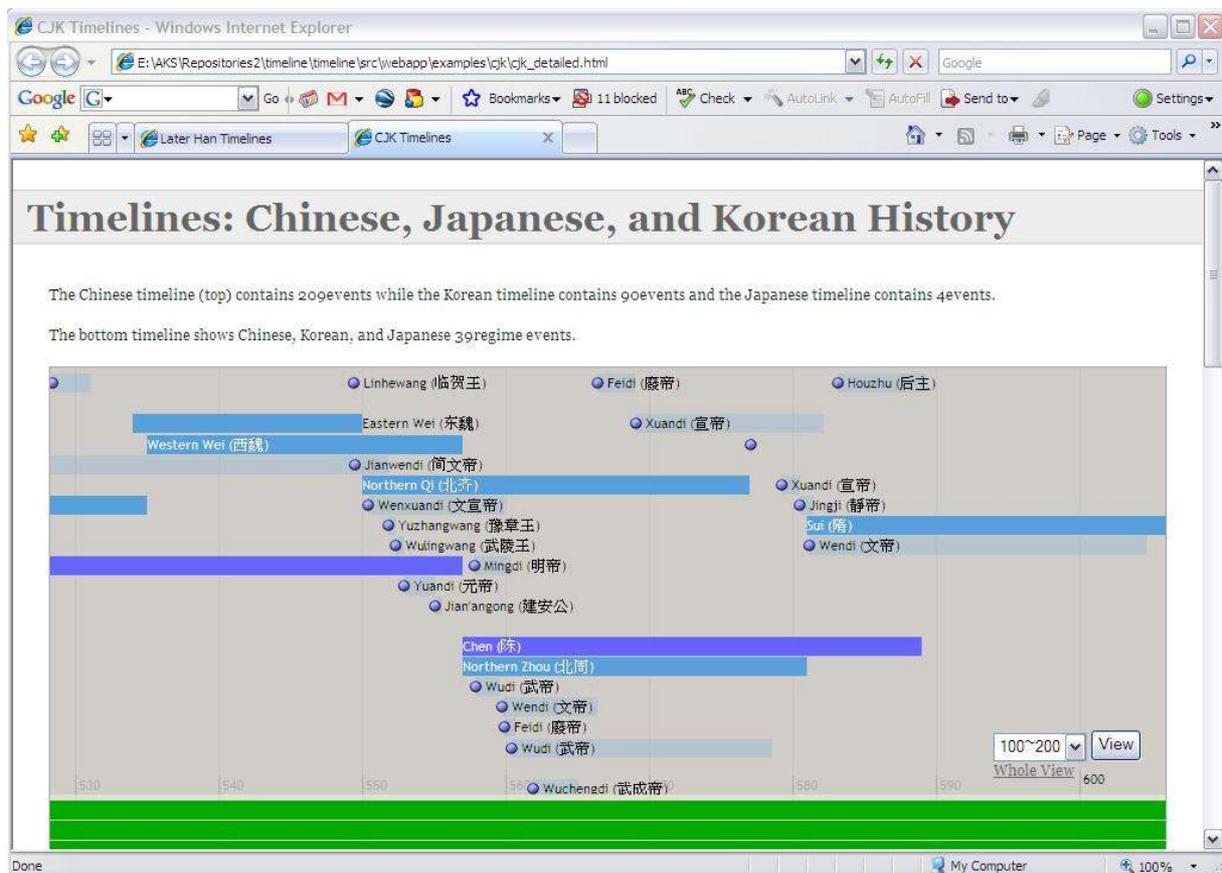
Figure 3: Timeline displaying reign periods in China, 6th to early 7th century

The growth and development of a major world religion such as Buddhism is highly complex, especially as the passage of time leads to greater articulation and sophistication and its passage into and through new and different societies and cultures introduces new interpretations and adaptations. All of the growth and alterations can be traced through the individuals who developed the various sects, sutras, and artistic interpretations, and carried them all from one place to another. A display of the life-spans of the key Buddhist personages does not, of course, begin to tell the whole story, but it can provide a vivid graphic image of the chronology and relationships that mark the introduction of this fundamentally new realm of thought to East Asian societies and its evolution.

Of course, it is well known that Buddhism was introduced via the Silk Road by travelers from South to East Asia. Broadly, then, it was carried from China to Korea and then to Japan. Koguryan monks came to play an important role in transmitting and developing East Asian Buddhism. Just as several Chinese monks made the journey to India and brought back deeper understandings of Buddhist precepts, the same was true for new adherents in Koguryŏ, and, in turn, Japanese converts crossed over to the Korean peninsula and to China to study. Early in the reign of Emperor Wu of the Liang state in southern China (502-556), Koguryan monk Sŭngnang was one of the key proponents and popularizers of the Sanlun 三論 school. In 576, King

Pyǒngwǒn sent the monk, Ŭiyǒn 義淵, to China to study and to bring back a more sophisticated level of Buddhism. In turn, Koguryan monks were important in bringing and promoting Buddhist teachings to the Japanese islands. Hyep'yon, in 584, was the first recorded Koguryan monk to actively promote Buddhism in Japan. Ten years later, another monk, Hyeja, taught several Buddhist texts to Japanese Prince Shotoku, traditionally credited with having been the first official sponsor of Buddhism in Japan.

The proliferation of schools within Buddhism, the complexity of the teachings and the volume of the written record make it difficult to gain an overview of Buddhism's history in East Asia. A timeline displaying the key figures according to their life spans, perhaps in combination with a display of important events in the history of Buddhism, performs this function very well.

For each entry on a timeline—a regime, a reign, an individual, an event—a textbox carries a brief description of the subject's identification and significance and links to all manner of information accessible on the internet. In this way, the textbox serves as the router for bibliographic and other information.
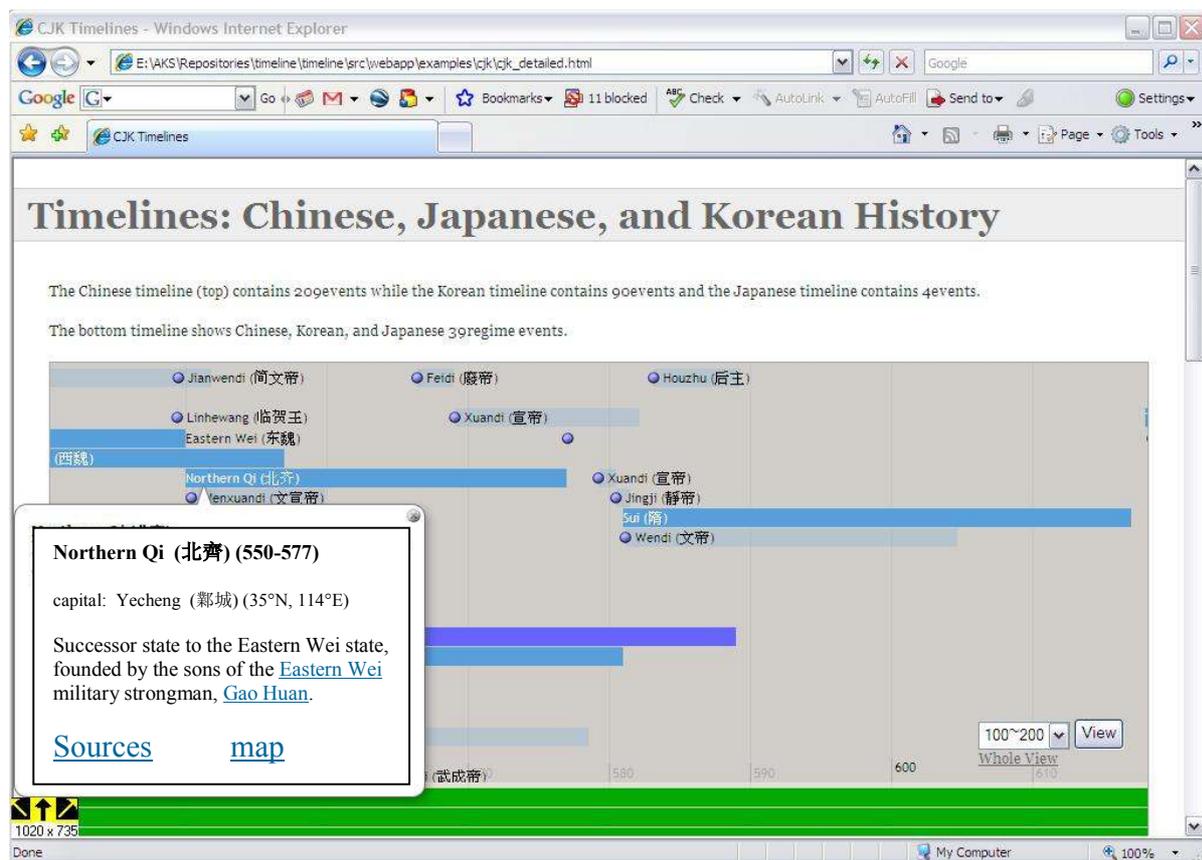

Figure 4: Timeline displaying textbox for the Northern Qi state

My proposal is, by no means, to offer up a replacement to the highly articulated system of text-based cataloging built up by many thousands of librarians over several decades of work. The online timeline and other content-rich metadata approaches are best seen as exploiting the opportunities afforded by digital technology and the internet, namely a means of accessing information graphically within a relational context that can more fully and accurately represent the nuances and blurred borders of a subject than can a subject heading or keyword.

The example of Koguryŏ, set in the context of the turbulent period of early medieval East Asian history, illustrates well the advantages of the online timeline. The timeline allows a researcher—whether casual or serious—to easily and quickly see the complexities of the political situation of the period. The embedded textboxes then make it possible to directly transition from the flexibility of the graphic interface to the power of authoritative text-based information. The timeline, though interesting in itself, is actually ancillary, bibliographically, to the bibliographies, search engines, rss feeds, images, sound files, blogs and other internet-based resources that represent the end-goal of the search.