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Cover Page Footnote

The authors would like to acknowledge Joseph C. Williams, Ph.D. Candidate in Art History, and Lee Sorenson, Resource Specialist for Visual Studies and Dance, for their collaboration in the development of the Introduction to Art History course and interactive syllabus.

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The Living Syllabus: Rethinking the Introductory Course to Art History with Interactive Visualization

Caroline Bruzelius and Hannah L. Jacobs

Abstract

This essay describes an experiment in adopting mapping and timeline technologies in the Introduction to Art History course taught at Duke University. The creation of an interactive, “living,” syllabus in Neatline and Omeka allowed us to embed maps, course powerpoints, links to museum websites, news articles, videos, and clips from movies. In this article, we describe how the integration of mapping tools and multimedia transformed our approach to the discipline of Art History, enabling us to engage with trade and exchange networks for raw materials, artistic ideas and motifs, and the art market.

Introduction

The syllabus is an outline of the work to be accomplished during a semester, a schedule of topics, readings, and assignments. Usually distributed in printed form, the syllabus also has taken on some aspects of a contractual document: a form of agreement between students and teachers on what will be covered, the learning expectations, and the calculation of grades.

In Spring 2015, the authors introduced a new concept of the syllabus¹ in a one-off teaching experiment that used Neatline and Omeka² to visualize the progress of a course over the weeks of the semester in conjunction with the flow of cultures and connections covered in the material (Art History, Part 1: Prehistory to the Middle Ages). In a Neatline exhibit, we created a course narrative that combined historical content with the class schedule. This narrative linked the syllabus' practical information with spatial and temporal visualizations, embedded media (images, videos, maps), and links to supplementary content (links to museum collections, news articles). The online mapping display capacities of Neatline enabled us to show students that the ancient cultures of the Mediterranean in Egypt, the Near East, and the Aegean existed *simultaneously*, not sequentially, as implied by the linear format of chapters in a book.³

¹ Access the interactive syllabus at <http://arthist101.dukewired.net/>.

² Omeka (<http://omeka.org>) is a web content management system designed for scholars,

² Omeka (<http://omeka.org>) is a web content management system designed for scholars, librarians, museum professionals, and others interested in curating digital archives and exhibits. Neatline (<http://neatline.org>) is a plugin for Omeka that enables users to present content stored in Omeka in spatiotemporal narratives.

³ See, for example, the chapters in Fred S. Kleiner, ed., *Gardner's Art through the Ages: A Global History*, 15th ed., vol.1 (Boston: Cengage Learning, 2016).

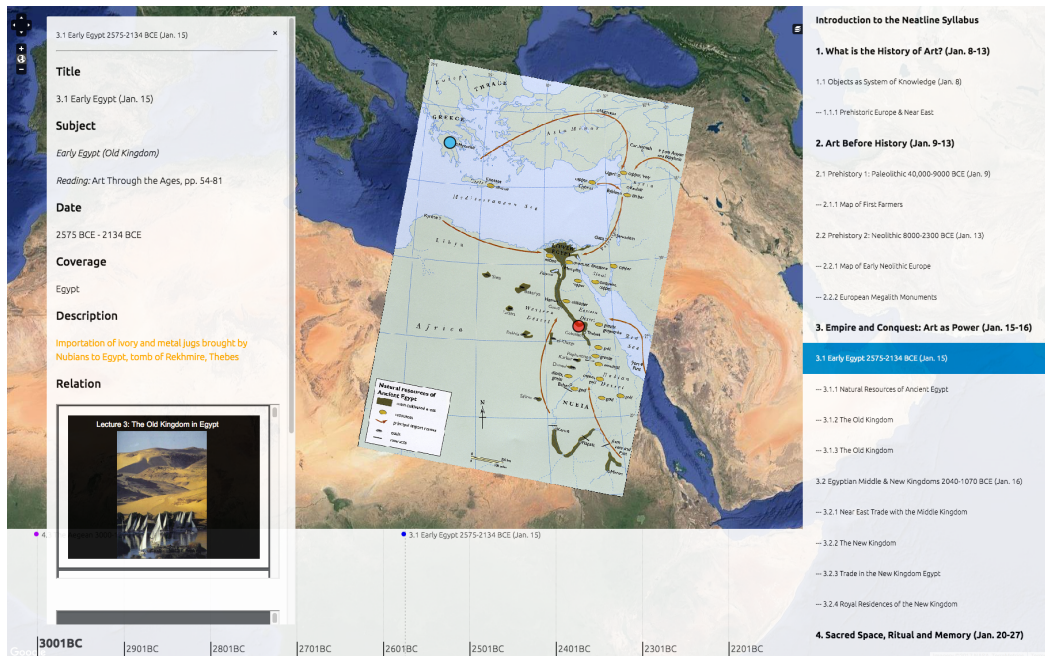


Figure 1: The Neatline Syllabus: The first lecture on Egypt.
<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/22>.

This brief essay outlines a pedagogical experiment in which timeline and mapping tools were adopted as an integral part of course design and for student research projects. Our questions for the course were the following:

- *Could we re-envision a syllabus as an ongoing visualization that represented both the time of the semester and the time periods covered in the course content?*
- *Could we teach art history through maps that represented trade, exchange, “making,” and the commerce or acquisition of artworks—all at once?*
- *Could the syllabus itself model the use of database and mapping technologies that students would use in their semester assignment?*

New ways of thinking, working, and teaching often do “take a village.” Our decision to adopt the concept of an interactive, living syllabus depended upon a particularly productive collaboration that designed and taught the class as a team

effort, engaging four different areas of expertise and competence: the authors of this article consist of an art historian (Bruzelius) and a digital humanities instruction specialist (Jacobs), but we also planned the project and taught the course with an embedded librarian, Lee Sorensen, who assisted students in finding new types of information on trade, travel, and raw materials, and a doctoral candidate, Joseph C. Williams, who populated the Neatline exhibit with images, film clips, links, and other types of data that were linked to Neatline's map and timeline.⁴

1. The History of Art and the Digital

Because art, architectural, and urban historians study places and things, and because physical objects can be modeled, mapped, and recorded through photogrammetry and laser scans, for example, the history of art is a discipline uniquely well-suited to digital visualization technologies. We can show how sites (cities or buildings) changed over time through the use of animations. We can reconstruct the original settings of paintings and sculpture.

In this historical moment, digital technologies are also emerging as critical tools for documenting monuments. The world's cultural and historic patrimony is at risk, especially that of the Near East after the invasion of Iraq in 2003, though the challenges extend to many other areas as well. The creation of databases, visualizations, models, and maps thus has particular relevance and urgency in our time.⁵ Databases are now essential for tracing the illegal market of antiquities, as well as for recording works of art displaced by war and disruption—for example, the paintings and sculpture stolen and appropriated by the Nazis.⁶ Using new

⁴ Teamwork is central to the Wired! group's commitment to integrating visualization technologies into courses in the history of art, interdisciplinary collaboration, and student "learning by making." See the Wired! website: <http://www.dukewired.org/>

⁵ The gathering of information about sites is also vitally important; one new database with which Bruzelius has been involved is the *Kingdom of Sicily Image Database*, a resource for historical views of medieval sites in South Italy prior to war damage and subsequent restoration in the twentieth century: <http://kos.aahvs.duke.edu/index.php/>

⁶ For a collection of such databases, see http://provenance.si.edu/jsp/lost_art_databases.aspx/

technologies to track objects as they move from site, to market, and to public or private collection is emerging as a new form of knowledge, as well as a collective responsibility. This also applies to the thefts of objects from museums or private collections.⁷ In short, in the face of ongoing loss and destruction (as recently as last year in Palmyra), the results of scans, aerial photography, tracking databases, and photogrammetric models have become not only important forms of analysis and study for art historians, but they also offer potential career and research areas in our field.⁸

A discipline that focuses on works of art also addresses the raw materials from which art is created: materials that have been traded, transported, purchased, and exchanged from the Neolithic period up through the present.⁹ Trade in materials has often taken place as part of long-distance networks (for example lapis, ivory, or gold) in complicated systems that evolved in tandem with new political or economic conditions.¹⁰ It is probably fair to say that the need for raw materials often generated networks of trade and colonial expansion. Materials and works of art thus have long trajectories and numerous “lives,” from extraction, to trade, to production, to acquisition by patron or donor, and, finally, to commodification within art markets and insertion into collections. These observations fundamentally reframe the disciplines of art and architectural history as inherently and profoundly interdisciplinary enterprises.

But how can this wide variety of concepts about systems of trade, production, acquisition, and appropriation be integrated into the classroom and into the regular series of courses that departments of art history generally offer? Are there ways to present the ancient cultures of the past more effectively than through the

⁷ See for example the database of the Art Recovery Group: <http://artrecovery.com/About/>

⁸ A major organization that concerns itself with the application of digital technologies to archaeological and historic sites is CyArk: <http://www.cyark.org/>

⁹ A marvelous recent contribution to the discipline is Cyprian Broodbank, *The Making of the Middle Sea: A History of the Mediterranean from the Beginning to the Emergence of the Classical World* (Oxford: Oxford University Press, 2013).

¹⁰ Sarah M. Guérin, “Forgotten Routes? Italy, Ifrīqiya, and the Trans-Saharan Ivory Trade,” *Journal of the Medieval Mediterranean*, 25 (2013): 70-91.

linear format of the printed survey book, which, for example, places cultures in sequential order (Mesopotamia before or after Egypt and the Aegean), even though these were simultaneous and deeply influenced each other? In the classes associated with the Wired! Lab, we decided to teach art history through maps and databases in order to “break through” the linear narrative of textbooks. We did this by rethinking the syllabus as superimposed timelines linked to multiple maps, museum websites, videos, class powerpoints, and reading assignments.¹¹

Although we used the canonical objects illustrated in the standard introductory textbooks, we approached these places, objects, and the raw materials of which those objects were made as points of departure for a semester-long meditation on the lives (and trajectories) of things. As a result, we practiced visualizing narratives about:

- Why did certain works of art (and not others) “make it” into the canon, and why are these almost always objects from the major museums of American and European capitals: the Louvre, the British Museum, the Cleveland Museum of Art, and the Metropolitan Museum of Art, for example?
- What is the significance of the materials from which works of art were made?
- Why do we find certain types of objects in certain types of places (for example, Egyptian obelisks in Rome, Paris, and London)?
- How were these or other objects transported, and what part did they play in networks of exchange?
- What are the dynamic relationships between objects and spaces?
- What were the systems of exchange—what were valuable materials (ivory, lapis, and gold, for example) traded for, and why?

2. A Case Study: the Introduction to Art History Course in Omeka and Neatline

The Introduction to the History of Art course is a good example of the kind of rethinking that digital technologies can stimulate. The course is taken by a broad

¹¹ Most readings were drawn from Kleiner, ed., *Gardner's Art through the Ages*.

spectrum of undergraduates, many of whom might be majors in Engineering or various branches of the natural and social sciences. These students sometimes have few electives; the introductory course may be their only opportunity to engage with art history.

Students studying art history through time-referenced maps that engage with the long trajectories of materials and objects can participate in a new version of art history: one that would meet the world of objects head on. For example, the trove of Amarna sculpture at the Brooklyn Museum does not merely tell a story about the objects themselves, but it also teaches about the excavation and the collection acquired in Brooklyn. Teaching art history through time-referenced maps that engage with the life of an object—a research and teaching theme framed as “The Lives of Things”—means that students not only learn about networks of trade, exchange and production of art, but also about why certain objects are now found in certain museums and in certain places. Students learn to reflect upon and represent issues of taste, acquisition, appropriation, and commodification.¹² This art history also enters into a discourse with the ongoing challenges and issues presented by the art market, such as trade in antiquities, as mentioned above. It is an approach that involves students directly in the problems of what it means to buy art and the responsibilities of collectors and museums towards the complex issues of provenance, colonial appropriation, and acquisition. These art historical concerns highlight for students the spatial, temporal, and cultural relationships that can be creatively visualized to make non-linear, complex interconnections explicit across course content. As part of our experimental course, we created a timeline that included trade routes, the sources of raw materials, acquisition by a collector or museum, and other types of information within the structure of teaching as well as within the framing of the topic.

But we went further. Since a course takes place in time, we asked ourselves if it would be possible to use the chronological mapping and database tools Neatline and Omeka to create a syllabus that took place in historical time, with timelines that represented the simultaneous flourishing various cultures. (Figure 2) Could

¹² On the topic of commodification of works of art, see Arjun Appadurai, ed., *The Social Life of Things: Commodities in Cultural Perspective* (Cambridge: Cambridge University Press—Cambridge Studies in Social and Cultural Anthropology, 1988).

our syllabus, like the course itself, take place in multiple *types* of time—the time of the course *and* the historical periods under discussion?

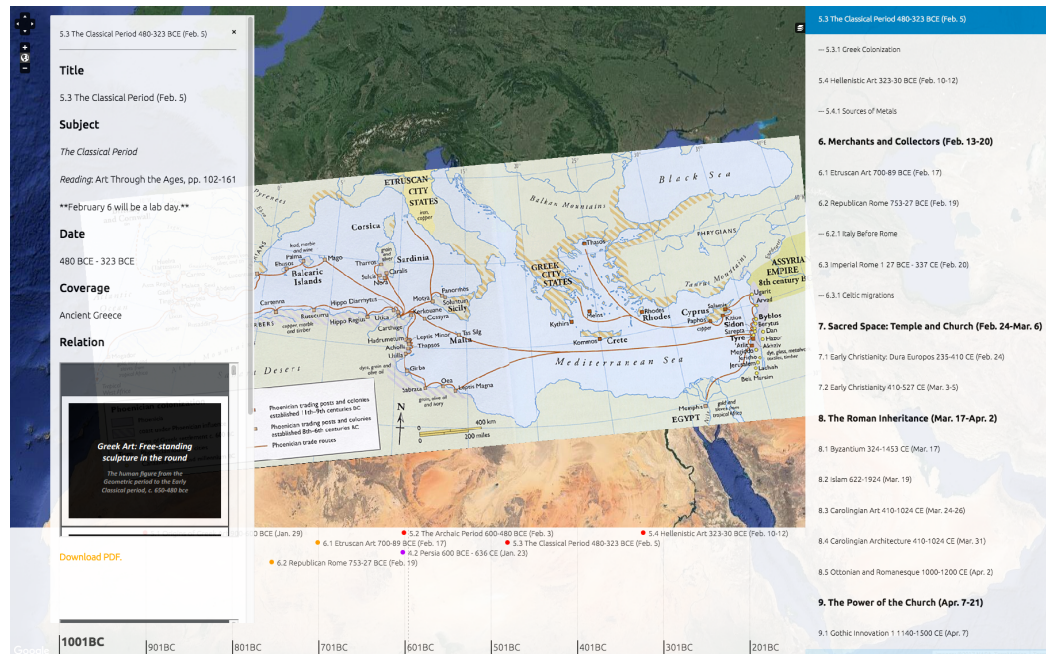


Figure 2: Simultaneous cultures.

<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/29>.

We found the answer to our questions to be a resounding “Yes!” The combination of a digital collection management system, Omeka, and a digital storytelling tool, Neatline, provided the means necessary to build a syllabus that visualized spatial, temporal, and conceptual causes, effects, and uncertainties across pre-modern art history. Neatline and Omeka enabled us to curate course topics and present them on a map and timeline, providing both a visually oriented way of understanding course material and an example of how these tools for historical presentation and analysis might be employed.

Prior to the course, the instructional team collaborated to design the syllabus, integrate project assignments, and develop the interactive syllabus presentation. This required balancing both historical and technical content; students would be

introduced to art history, the primary subject, through the medium of digital technologies. Once an outline of historical topics was established, the team integrated the interactive syllabus structure with the assignments: the Neatline syllabus was itself an example of the technology learned for the course project. Students were trained through in-class technical workshops, a practice project designed to train students in data gathering and visualization in Omeka and Neatline, and a final digital project, in which they presented advanced knowledge of the historical content through innovative uses of the digital tools.

In the planning stages, the team decided that it would be crucial to teach Omeka and Neatline early in the semester through a practice project that would ensure that students could harness the tools' affordances to the best of their abilities in the final project. The students, therefore, learned Omeka and Neatline during two in-class technical workshops that Jacobs offered in consecutive weeks.¹³ They then produced practice projects in which they created individual Omeka archives and Neatline exhibits from the same historical material, Sarah M. Guérin's article on medieval ivory trade routes.¹⁴ Students were asked to "construct an annotated and time-referenced map that engages in questions of the origins of the materials as well as possible trade routes that brought them to the place of manufacture as well as to the collection(s) in which they are now found. Your project should consist of 6-10 nodes of information with proper citations from which you will construct an argument based on citations/documentation."¹⁵

For their final projects, students chose topics in consultation with the instructional team. They consulted with the librarian, Sorensen, on source materials;¹⁶

¹³ These workshops were structured around the Wired! Lab's Omeka and Neatline tutorials, available here: <http://www.dukewired.org/workshops/tutorials/>

¹⁴ Guérin, "Forgotten Routes?" 70-91.

¹⁵ The practice projects as a feature of the course worked so well that a number of Wired! courses have adopted this format for teaching digital tools, in which students learn the tools early, have an opportunity to test them on assigned research content, and then work with them in a more in-depth individual final project.

¹⁶ Sorensen writes that, because students were tasked with finding specific information about movements of ancient objects beyond what may be found in scholarly articles, they learned the wider aspects of college research as they searched through, for example, twentieth-century British shipping schedules.

Bruzelius and Williams on analysis; and Jacobs and Williams on technical implementation. Each project included an Omeka Collection of objects, places, or events (Omeka Items) that were central to their research, as well as a Neatline Exhibit that visualized these Items in a spatiotemporal narrative that illustrated students' historical analyses.¹⁷ All projects were presented orally to the rest of the class and the faculty.

As noted above, the syllabus itself was a platform for the collection of data and visualization of the students' final projects. Following the course outline, Jacobs built the overall structure of the Neatline syllabus, cataloging each unit and lecture as an Omeka Item and visualizing them in Neatline. Together with Williams, she created metadata for each unit and lecture that included the relevant geographic area, time period, important locations and objects, lecture slides, and additional materials. Williams provided links to museum catalog entries for significant objects and worked with Sorensen to identify relevant film clips and other visual resources. Jacobs then linked each unit and lecture to the base map and timeline and added georectified maps that provide contextual information about the specific cultures covered in each unit. The majority of this work was completed prior to the semester, but Jacobs and Williams also added supplementary materials throughout the semester in response to both in-class discussions and current events.

The final Neatline syllabus (Figure 3) is divided into three interactive linked areas: maps in the central and left area, a timeline below the map, and a content outline to the map's right. When a Record in the outline, map, or timeline is selected, a popup window appears, containing textual and/or visual narrative elements. These elements, or Neatline Records, can thus be experienced in spatial, chronological, and narratological sequences. We organized our Neatline syllabus chronologically, using both art historical and course time scales; each bolded item in the outline to the right represents a course unit, while individual lectures are listed below these units with map layers nested within lectures. Units move chronologically forward in time from 40,000 BCE to approximately 1200 CE.

¹⁷ A selection of students' final projects may be viewed at <http://arthist101.dukewired.net/neatline/>

Their corresponding spatial movement begins in northern Africa and spreads across the Middle East and Europe.

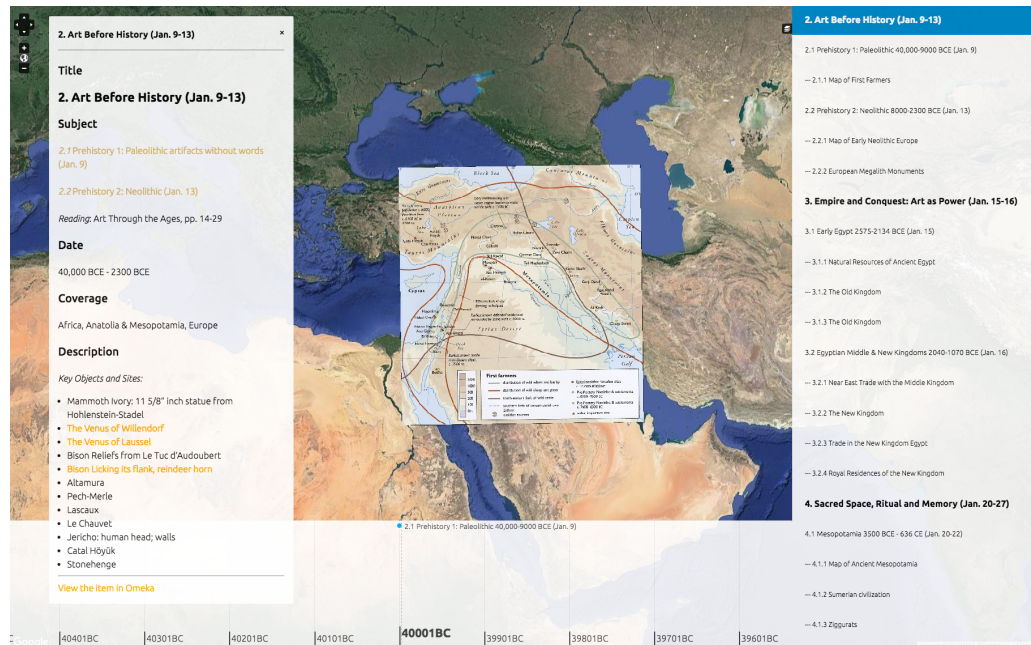


Figure 3: The Neatline syllabus interface.
<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/148>.

Although an individual unit may focus on a specific space and time, Neatline’s map and timeline features make it possible for students to discover spatial, temporal, and cultural connections between units by visualizing multiple units at once (Figures 4, 5). What they may find in their exploration is that units do not march linearly through time, nor do civilizations exist in spaces detached from one another. Rather, students may begin to understand the overlaps that occur across human history, fueling economies, art practices, and intellectual exchanges.

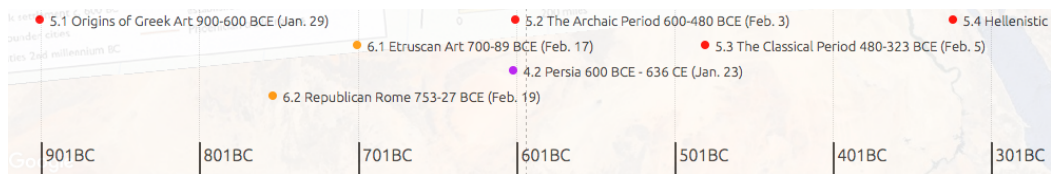


Figure 4: Temporal overlaps in lectures. Units are coded by number and color.



Figure 5: Mapping two notable ivory objects from civilizations that engaged with one another politically, economically, and creatively.

<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/159>.

To further enhance spatial understandings of pre-modern art history, we included map overlays (Figure 5) that provide more contextual information about movements of people, objects, and materials. These overlays, viewed in concert with individually mapped objects, function as portals into the physical and conceptual networks that connect diverse civilizations and their ephemera. Each unit includes these contextual overlays chosen in correlation with specific lecture topics. In addition to their spatial and temporal information, unit and lecture Records contain topical information revealed in popup windows (Figure 1). Units include lists of important objects and sites with hyperlinks to relevant museum

web pages. They also include relevant secondary sources in the form of video clips, images, and other media. Lecture content includes not only slides but also links to readings and supplemental information.

As the semester progressed, we continually added content to the syllabus to highlight important concepts—such as the significance of triremes to Greek economic and political dominance (Figure 6)—and objects, such as Trajan’s column (Figure 7).

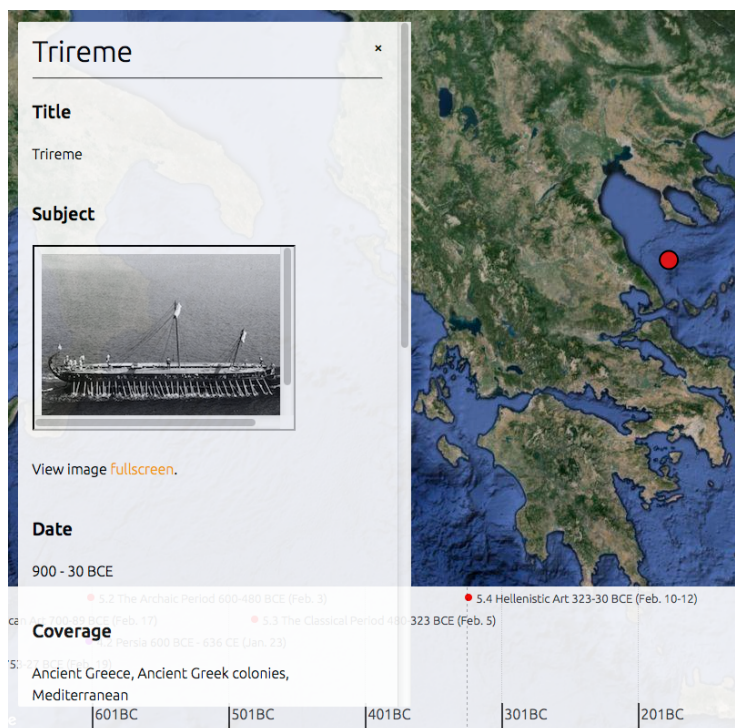


Figure 6: On the importance of triremes in the Hellenistic period.
<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/158>.

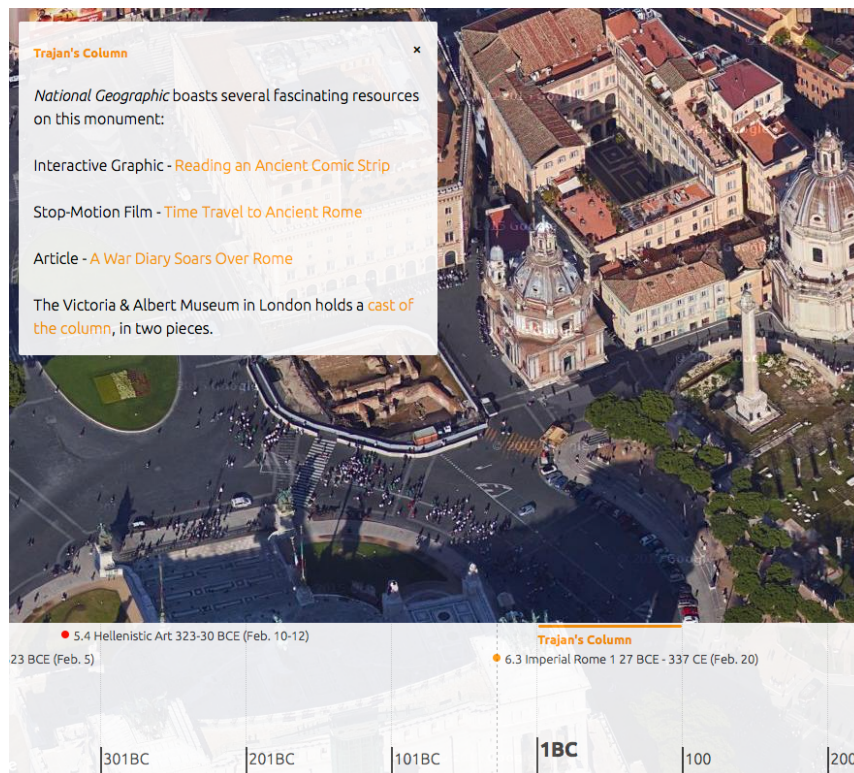


Figure 7: Highlighting Trajan's column and interesting multimedia resources concerning its history and content.

<http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/376>.

Our continued augmentation also meant that we could include relevant current events in the syllabus. This inclusion was especially important to us as news of the destruction of significant historical sites by political extremists featured heavily in the news throughout Spring 2015. As a form of response, we began collecting these stories and visualizing them on the map and timeline alongside our planned course content. Note the connection (Figure 8) between contemporary time, cultural heritage sites, and a unit focusing on ancient Mesopotamia and Persia. This kind of addition to the syllabus made explicit the still influential connections between thousand-years-old art objects and present-day societies.



Figure 8: This item in the outline was added to the syllabus later and continually updated with information as we heard new reports of cultural heritage destruction. The record text contains a list of events shown chronologically by article publication date. <http://arthist101.dukewired.net/omeka/neatline/fullscreen/syllabus#records/375>.

In the classroom, we initiated each meeting by viewing the syllabus, giving an overview of the day's topics in relation to previous and future topics, providing overall context for the individual objects discussed in lecture, and examining new additions to the syllabus. The Neatline syllabus enabled us not only to talk about places, networks, and periods, but to *visualize* them in a way that made explicit central threads of influence that connect art history across the ages. Through this kind of interactive and expansive concept of a syllabus (a "living syllabus"), we connected the past with the present, highlighting current events in connection with the historical legacies of ancient cultures.

3. Conclusion

Teaching art history with mapping technology, especially in an introductory

course on the ancient and medieval worlds, was a transformative experience. No longer was each work of art illustrated in the textbook as an aesthetic event in a historically linear evolution of form; rather, it became part of a system of learning in which we engaged with the materiality of the object and its life from creation to collection. By engaging with and—later—making maps, students activated their learning and expanded beyond the class and textbook to reflect upon the role of works of art in the broader context of networks and systems of trade, travel, and commodification. Art no longer exists as part of a distant and isolated episode of the past; rather, it is integrated into our understanding and knowledge about their role and meaning in everyday life from antiquity into the present.

For students, the creation of maps generated by their individual interests (such as the origins of the cedar used in the Pharaoh's boats at Giza) stimulated a higher level of research and engagement with the sources. We found that students used a broader assortment of primary materials, and proposed their own solutions or interpretations of the evidence.

Students benefitted by learning visualization and data collection technologies that could be useful for other courses and other types of projects. One of our students took the Omeka and Neatline tools to an environmental studies class to model pollution rates in North Carolina. This confirmed our view that the scholarly and intellectual use of digital tools is an increasingly important component of twenty-first-century literacy. As Sorensen notes, “one of the most attractive aspects of teaching through mapping technologies is how it captures students' existing interests. Thinking about objects as participating in trade, technological development, commerce, and power structures in both the ancient and modern worlds connects works of art to the realities of the way the world works today.”

It may seem ironic that technologies are so well-suited to material culture; however, it is precisely their capacity to record and to “capture” objects and places, as well as to bring disparate and widely scattered data into one coherent resource (a database, a map), that is remarkable. In the Wired! Lab at Duke University, we have found that technology enables a new level of engagement with *the thing, the place, the building*. The mapping projects introduced in the survey course, for example, showed students how to achieve an entirely new level

of engagement and understanding.

Finally, bringing the syllabus to life transformed it from static list to an open-ended and flexible container for all kinds of interactive resources relevant to the course. Visualizing the course in time and space highlighted cultural connections as part of larger narratives about social and economic development from the ancient world to the present.

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