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The Stele of Various Victories: Thoughts on the Ethics of Digitizing Cultural Heritage

Art has long been a tool of war.ⁱ The Victory Stele of Naram-Sin is one of countless examples. This stele was carved in the mid-3rd millennium BCE to celebrate the victory of Naram-Sin, king of the Akkadian Empire, in modern Iraq, over a tribe in the mountains of what is now Iran.ⁱⁱ **[Insert Thompson- Fig 1 here]** The king, colossally sized compared to the other human figures etched into the 6.5 foot tall stone stele, strides over the puny, prone bodies of his dead enemies. At the top of the stele, twinned stars representing his patron deities shining down on him. Ambassadors from the conquered tribe would have seen this artwork when they came to pay their annual tribute to the Assyrians. The stele had a clear message for these ambassadors, and all other representatives of the peoples conquered by the Assyrians: do not rebel. The stele reminded them that, even though it was onerous to pay their tribute, this pain would be nothing in comparison to the pain of having an Assyrian king exact a victory once more.

The Victory Stele is not only an example of how war sometimes creates art; it is also an example of how war sometimes attacks it. A closer look at the stele reveals that Naram-Sin's face has been hacked away. Another inscription was carved into the stele, which tells us that this symbolic regicide happened nearly a thousand years after the stele was carved. At this time, a king in what is now Iran conquered the territory that had once been ruled by Naram-Sin. This conquering king ordered the stele to be moved over three hundred miles to his capital city. In this new context, the mutilated monument communicated a new message: revenge, even if delayed by a thousand years, is sweet.

The Victory Stele – or, as we might more accurately call it, the Stele of Various Victories – remained in Iran for another 30 centuries, until it was excavated by a French team in 1898 and

brought to the Louvre Museum. In its current context, standing within an encyclopedic museum, it has stood for a variety of ideas. One way to read it is as a masterpiece of the shared cultural heritage of mankind. Another way is to see it as a lesson about the power differential between modern France and the Middle East, in that the Stele came to Paris but no comparable French masterpieces were sent to Tehran.

The Victory Stele it is an example of what archeologists have been insisting more and more fervently (and seemingly more and more fruitlessly as the looting of archeological sites around the world accelerates): context matters.ⁱⁱⁱ Where, how, by whom an object is created, modified, displayed, and even destroyed changes the meanings its audiences are most likely to receive (we are all free to imagine our own interpretations, of course, but much of the time we see what we are shown). But somehow, we seem willing to forget that context matters when it comes to digital objects.

In the last few years, conflict in Syria and Iraq has led to heavily-publicized deliberate destruction of antiquities, sacred architecture, and other cultural heritage.^{iv} There has also been less-publicized destruction in other simultaneous conflicts, including in Yemen, as well as ongoing destruction of cultural heritage as a result of urbanization, resource exploitation, or other causes.^v The deliberate destruction of cultural heritage has long been a part of conflict. It is an efficient, low-risk way of lowering the enemy's willingness to fight by attacking their sense of identity and purpose. At the same time, it can increase your own forces' morale by giving them an opportunity to destroy something antithetical to their sense of what they are fighting for.^{vi}

But recently, this long tradition of destruction has been greeted with something new: a spate of initiatives seeking to digitize threatened or destroyed cultural heritage.^{vii} These projects use either existing or newly captured photographs to develop mathematical representations of the

three-dimensional surface of objects or entire sites. Most of these models exist entirely digitally, as files that allow viewers to examine an object or site virtually. These digital models can also be used to direct 3D printing technologies, which create physical versions of digitized cultural heritage artifacts, from scale models to life-sized replicas.

In this paper I will discuss these digital recreations generally. I do not wish to single out any particular project for criticism, since all those I have encountered thus far are well-intentioned, even if problematic. My goal in this paper is to suggest principles for improvement.

The desire to experience distant wonders is certainly nothing new. Some of the earliest compositions we have, from Homer to Herodotus, describe Eastern architecture, art, and other marvels. And in fact, the West has long been interested in precisely the project we now so often see described as so new and innovative – that is, in the creation of 3D models of Eastern cultural heritage. For example, in the late nineteenth century, the British Museum went to great expense to obtain plaster casts of ancient Persian monuments.^{viii} Even before this, the newly-invented technology of photography was almost immediately brought to bear on the study and dissemination of Eastern objects. The great early photographer Roger Fenton built a glass studio on the roof of the British Museum in the 1850's to photograph the ancient Near Eastern cuneiform tablets then arriving in the Museum.^{ix} Fenton also experimented with stereoscopic views of other ancient Near Eastern artifacts in the Museum's galleries, taking two photographs from lenses positioned a few inches apart; the resulting prints create the illusion of three-dimensionality when seen in a special viewer.

Current digital recreation projects are thus using new technologies to achieve an old goal of allowing people who have not traveled to a certain place to experience the cultural heritage found there. Such experiences can result in beneficial outcomes, as when people use various

technologies to learn more about times or places they would not otherwise have encountered, potentially forging empathetic connections with people they may otherwise think themselves very different from. But we have thus far not invented any technology that can be used exclusively for the good.

There has been extensive analysis of the ethical problems arising from the desire to experience the cultural heritage produced by others.^x After all, an enthusiastic appreciation, study, and acquisition of cultural products has been one of the recurrent appurtenances of colonialism. One need only think of the artifacts collected by Captain Cook, or the conquistador Hernan Cortes giving the spectacular feathered headdress of Moctezuma, the Aztec ruler he had conquered, to Charles V, ruler of the Holy Roman Empire.^{xi} This desire to experience the cultural property of others has led to harms including looting, theft, smuggling, and the refusal of justified repatriation demands, as well as participated in the larger harms of the colonial projects that collecting and display have helped to justify.

The public perception of digital recreation projects only very rarely acknowledges that such projects might have potential downsides.^{xii} But we need to apply the same ethical scrutiny to the desire to experience the cultural property of others when this old goal appears in new, digital forms that we have been applying to previous expressions of the same desire. Digitization is not an automatic, objective, or neutral process. It requires the intervention of humans. These interventions, as is everything we do, are based on our biases, assumptions, hopes, and fears – whether conscious or unconscious. In other words, every human creation is made within a context, or rather, within a nesting set of contexts – individual, societal, temporal, and so on.

Often, the features of that context are difficult for those of us who live within it to see. But even if we cannot precisely delineate all the messages communicated by a digital model – if

we cannot as easily interpret it as we can parse the messages in a nineteenth-century museum display – we can see some of the broad outlines.

I have previously written about my concerns with some of the common features of digital models made by Americans and Western Europeans of cultural artifacts or sites destroyed during the current conflict in Syria and Iraq.^{xiii} These creators overwhelmingly focus on pre-Islamic heritage. In reality, only a small percentage of the cultural sites that have been destroyed in the current conflict are pre-Islamic, while most of the destroyed cultural heritage are sacred sites important to contemporary religious groups, including shrines, mosques, and churches.^{xiv}

Another way in which the models elide history is in their selective choice of time. Most current digital projects display, at most, the artifact as it existed at the moment before its destruction and the artifact as the creator of the digital model imagines that it existed when it was first created. This selective choice of time leaves out information about the way the object or site has had a lived, post-antique history – the way in which it has passed through time and had meanings accreted onto it. For example, Palmyra's Temple of Bel, a popular subject of digital recreations, is generally shown as a Roman temple or just before its 2015 destruction. These choices do not acknowledge that between these two points in time the Temple became a Christian church, then a mosque, and then that the entire population of the modern village of Palmyra lived in mud-brick houses built in the temple's courtyard until a French archeological expedition demolished their homes in 1929.^{xv}

The current trend of digital recreation projects separates cultural heritage from one context – the environmental, social, and political context in which these sites or artifacts physically existed – and recreates them in another context – that of the digital world. And this digital world, like any other, has messages and agendas, even if they are not immediately clear.

One potentially disturbing feature of the current digital recreations is their foregrounding of destruction. The text accompanying the recreations specifies that the sites have fallen prey to IS-related destruction. This focus on current destruction might provide an excuse to allow Westerners to restart their colonial-era project of justifying collecting art by painting its current owners as unsafe and uncaring. Indeed, the recent situation in Syria and Iraq has resulted in calls to “reduce the risk of catastrophic damage to antiquities by distributing them over many locations.”^{xvi} The American Association of Art Museum Directors has recently established a “safe haven” provision, permitting member museums to accept endangered artifacts “until they can be safely returned.”^{xvii} These protocols do not specify who is to make this determination, probably since it was obvious to the drafters that it would be the museums holding the objects rather than the countries from which they came. Given enough discretion, a temporary safekeeping might never end. Indeed, in violation of international law mandating the return of stolen cultural property, thousands of Syrian antiquities looted and smuggled out of the country since the conflict began remain in limbo in the countries that have seized them but either do not consider it safe enough to return them to Syria or do not wish to cooperate with the current regime by doing so.^{xviii} If so many assumptions about the proper role of Syria vis-à-vis the Western world come into play when Westerners are deciding what to do with physical antiquities, it is hard to believe that similar assumptions do not provide some of the context surrounding current digital recreations.

Most of the current state of digital recreations leave context unacknowledged, unexplored, or hidden. We would do better to remind ourselves that cultural heritage is always context-bound by making context-rich digital models. There are indeed numerous examples of such context-rich models (although not all are digital).

A few come directly out of the current conflict itself. For example, Iconem, a French for-profit startup seeking to make a name for itself in the field of large-scale digital models, volunteered its technology for the use of the Syrian Directorate of Antiquities, which needed help recording the destruction at Palmyra.^{xix} The resulting digital models are intended for use in future prosecutions of the destroyers. They show the exploded Temple of Bel with the remains of the bombs that destroyed it and the Antiquities Museum of Palmyra, looted and filled with rubble from a collapsed ceiling. These models look very different than the models made by those who approach monuments from a predominantly aesthetic or historical point of view. Their aim is not to recreate missing beauty. Instead, they record the mess.

Two further contemporary artistic recreation projects are shaped by a concern about who participates in digital recreations. The first is the work of the Iranian-American artist Morehshin Allahyari, one of the most vocal critics of Western-controlled digital recreations. In “Material Speculation: ISIS,” Allahyari created digital models of selected archeological artifacts destroyed by the Islamic State during the current conflict.^{xx} She then produced 3D printed objects from these models. The final step of Allahyari’s project is to disseminate her files, allowing anyone to download the files necessary to 3D print the objects.^{xxi} Her project thus offers an alternate proliferation of images to combat the Islamic State’s attempts to go viral with its images of destruction.^{xxii}

Allahyari thus makes the destruction of the antiquities into the beginning point of a new, endlessly repeatable series of creative collaborations between the artist and public communities, who are free to manipulate the models and put them to their own uses. Allahyari inserts memory cards within each object filled with images, maps, videos, and writings, from multiple sources in multiple languages, including English, Farsi, and Arabic. The information on these memory

cards is also available to download. In these data collections, staff from the Mosul Museum as well as other archeologists and historians in Iraq, Iran, and America offer alternate and often conflicting viewpoints and interpretations. Allahyari prints her objects in clear resin at a much reduced scale, meaning the viewer cannot mistake them for the originals. Her models are clearly the product of a modeler, rather than neutral representations of the past.

Another recent attempt to de-emphasize mimetic recreation in favor of the inclusion of broader contexts is the 2016 “Memory Matrix” project conceived of by Azra Aksamija at MIT.^{xxiii} The installation consisted of chain link fences hung with more than 20,000 plexiglass tiles. Each “pixel” was laser cut with a small image of a lost monument, chosen and drawn by a wide range of people, from those within the MIT community to participants in workshops in Cairo and Syrian refugee camps in Jordan. The lost monuments they drew include a German synagogue destroyed during World War II and a clear-cut tree in the Amazonian forest, representing lost indigenous knowledge. These “pixels” coalesce into an image of Palmyra’s destroyed arch. The image is not very accurate, not very detailed – but it embodies a chorus of voices, not just one. Its lack of mimetic illusion permits or even forces viewers to arrive at their own interpretations of the heritage that is being evoked.

I am not a technophobe. Digital technologies have proven helpful to archeology in many (relatively) uncontroversial ways. We now have the ability to keep paperless records of excavations, monitor archeological sites via drones, and “restore” faded ancient paint via digital projections.^{xxiv} But we always need to shape our use of technology in archeology according to ethical principles, instead of using new technologies unquestioningly.^{xxv} We have let our excitement about the possibility of countering destruction with digital recreations hurry us past

the necessity of asking ourselves the hard questions about what responsibilities we have when we represent cultural heritage.

So, what ethical principles should digital projects aim to follow in order to create context-rich digital models? I will attempt to lay out some proposed best practices. In doing so, I am drawing on an extensive literature of the ethics of archeology, preservation, and display in general. There are even a few codes of ethics or best principles for digital cultural heritage,^{xxvi} including some sections of the Council of Europe's 2005 Framework Convention on the Value of Cultural Heritage for Society,^{xxvii} the International Council on Monuments and Sites' 2008 Charter on the Interpretation and Presentation of Cultural Heritage Sites,^{xxviii} and, most relevantly, the 2009 London Charter for the Computer-Based Visualisation of Cultural Heritage.^{xxix} However, many of the principles advocated for by these conventions are not being put into practice by current digital recreation projects. Many are also worded so broadly that it remains necessary to point out specific tasks and goals that might be good ways of satisfying their all-encompassing principles.

The goals I propose are those of transparency, hospitality, and dissonance. Transparency is a well-established good, both in preservation in general and digital visualizations in particular.^{xxx} Under this view, digital recreation should have as many elements as possible based on facts, with any inferences or guesses clearly noted, and should make available the references to the sources used and explain the process used to determine which of these sources provided the most reliable information.

But I wish to expand this to a more personalized concept of transparency. Our biases are a part of our personal as well as our social histories. Thus, I would propose that the creators of digital recreations should ask themselves why they chose this particular artifact or site and why

they are the ones who should initiate or direct or participate in this project. These answers should be made public, alongside the recreation itself. The motivations of a project's funders should be transparent, too. Users should know who has commissioned or funded a model and for what purposes. Whom do the funders and makers hope will be the audience for the model, and what do they wish for them to see in it?

I am not claiming that there are right answers to these questions,^{xxx} or that we are even always capable of giving coherent or complete answers to them. But the answers to these questions, and even the attempts to formulate answers, can be deeply meaningful to audiences seeking to understand digital recreations. A model, like the Iconem model, made to document destruction will be very different from one made to overcome destruction by digital recreating a monument as if it had never been harmed. There are other differences between recreations that seek to communicate new archeological discoveries, advertise a political take on a monument (anything from patriotic pride to nationalist agendas), advance an artistic career, fund-raise for a preservation campaign, or propose a physical recreation of a destroyed monument. All of these different goals will give different values and priorities to different aspects of the representation. For example, an archeologist might include data about associated burials, for example, which might be left out by a recreation focused more on the aesthetics of a monument.

All these different types of recreations have their uses. I do not wish to rank them or claim that one is more valuable than another. What I am arguing is that any recreation would be more valuable to me, as viewer and user, if I can ascertain how well my own goals for experiencing the recreation line up with the goals of its creator. For example, I would want to know if a digital model does not include associated burials because there are none or because its makers or sponsors were not interested in them.

Next: the value of hospitality. As long as Westerners have travelled East to see antiquities, they have assumed that local populations would not be interested in what they came to study. Fortunately, these assumptions are much less common in recent decades, which have featured developments such as greater collaboration of foreign and domestic archeologists, educational programs for local populations, and collaboration of museums with local leaders for the display of sensitive artifacts such as religious items or human remains. But these advances are in danger of being lost. The race to preserve destroyed heritage, as well as the displacement of many Iraqi and Syrian heritage professionals and the populations of inhabited sites by the conflict itself, has meant that many current projects entirely elide modern populations' presence, attachment to, and expertise about the sites.

And so, I am advocating hospitality: the inviting into a project of a diversity of voices. And not just hospitality, but what some in the art world have begun describing as “radical hospitality.”^{xxxiii} This is the practice of assuring that your project or space are welcoming not just to people like you, but to people unlike you, by seeking out advice and corrections so that you can take down barriers to access that you did not even realize were there. A digital recreation project for Palmyra, for example, would increase its hospitality if its text were in Arabic and Kurdish as well as English.

Hospitality also requires that using or contributing to the project does not require special technical knowledge (or none that could not be taught within the project itself). And since large portions of the world get online on mobile phones, not desktop computers, a truly hospitable digital project must be mobile accessible. Since significant portions of the global population can access the internet only rarely and expensively, a radically hospitable project might seek non-digital contributions, like the MIT *Memory Matrix* project collected drawings in refugee camps.

And finally: I wish for digital recreations that are dissonant. This is where I break the most from the tradition of historic preservation, which is grounded on Riegl's insistence, in a 1903 manifesto, that preservation and restoration of historic monuments should be taken out of the hands of creative artists who "improved" monuments, corrupting them as they cared for them, and put instead in the hands of technicians supervised by historians, scrupulously preserving everything that is old and true.^{xxxiii}

Of course, few scholars would now admit to believing, like Riegl, that there is only one true version of the past. Now we are much more likely to agree with Homi Bhabha that history, culture, and identity are made up of the "scraps, patches and rags of daily life" as lived by everyone, not just the elite.^{xxxiv} As Neil Silberman has argued, objects of cultural heritage are not just made of stone or clay or their other physical materials; instead, "[t]hey are made of meaning," and digital models must honor those memories, those "spontaneous constellation[s] of facts, sights, and feelings" because if a model

doesn't resonate in our hearts as well as our minds and help us understand who we are and assist us in navigating into the murky uncertain future, it's trivia; it's entertainment; it's a curiosity; it's a selective representation of empirically observed visual attributes. But it is not heritage in the deepest and most profound sense of the word.^{xxxv}

Archeological insistence on the importance of engagement with a multiplicity of voices is nothing new.^{xxxvi} But we seem to forget those principles when we use new technologies, including digitization. Many practitioners' discussions of proper approaches to digitizing heritage reveal that their aim is to collect a number of different approaches or hypotheses, but that their ultimate goal is to compare these and choose the set of facts that is, if not Riegl's most *true*, then a softer but still univocal goal of being the most *probable*. This approach was designed for determining core facts about a monument's location, material, height, etc., but quickly runs

into problems when we move to communicating information about the interpretation or meaning or experience of a monument, whether in antiquity or at any point in its history.

It is tempting, when creating a digital model, to think that our own ideas and conclusions really are the most reliable. We do not want to clutter up our simple, comprehensive and comprehensible model with other ideas. To push back on this urge, I want to remind us that what seems a perfect representation to us when it is new will age, often quickly and badly. Ideas, technologies, and styles of representation will change, so we might as well expect imperfection, expect for our own contributions to be outmoded, and thus focus on different priorities than getting everything absolutely “perfect” or “true.”

Our general unwillingness to abandon the idea of our own authority is best seen in the possibilities of digital modelling and presentation that we have failed to use. Even with calls for multivocality in the presentation of heritage in general, we mostly stick to traditional, univocal, linear forms of heritage communication, such as the academic article or monograph, a documentary film, or the linear, directed museum exhibit where an interpretation is unfolded as the visitor walks from case to case.^{xxxvii} So, too, despite the expanded possibilities of digital presentation, most digital models use what Tara Copplestone and Daniel Dunne identify as a “passive linear nodal narrative” – “a structure in which narrative sequences are set out one after the other in a linear, didactic fashion that audiences passively receive rather than actively construct or alter” and which thus “sets a power dynamic in which the creator is the sole, authoritative content provider and the audience is the receiver.”^{xxxviii} A digital recreation in this schema might take the form of a series of webpages in which the viewer proceeds through a number of aspects of the recreated monument in a pre-determined order.

New technologies allow us to create more active presentations, in which the audience can make choices about how and what aspects of the narrative to experience. But, as Coplestone and Dunne point out, these technological possibilities are not generally pushed to a transformative experience. Instead, what we usually find is what they identify as a “nodal network structure,” where the audience can determine which narrative node to experience next, but “the overall relationship between nodes is not necessarily causative or contingent to the narrative construction.”^{xxxix} Imagine, here, a digital recreation where the viewer can click on various features of the monument to receive more in-depth information. I do not follow Coplestone and Dunne in calling this an active presentation; rather, to me, it is a passive presentation that gives the illusion of active participation, since the viewer still learns only what the authoritative content provider wants to present.

The most active structure Coplestone and Dunne identify is what they call the “multilinear nodal narrative schema,” where a participant’s decisions “determine the direction in which a story can unfold and potentially the ultimate ending.”^{xl} For example – although it is more or less impossible to find examples of this schema in practice – a viewer might choose to experience Palmyra’s Temple of Bel as it would have been seen by a 2nd century CE slave, or a 19th century resident, or a 21st century archeologist, and would come to a very different understanding of the site based on this choice. Multilinear projects can also add choices and voices in real time, such as by integrating audience contributions into an unfolding presentation.

Multilinear projects offer many benefits. They can easily tell multiple stories instead of a single supposedly authoritative story about the past. Conflicting narratives and different voices can have their own narrative strands, instead of an uneasy co-existence within a single linear presentation. And digital roles are easy to switch; although within a single play-through, some

choices will mean that certain nodes cannot be experienced, viewers can “play” again, making different choices, to get to different narratives and interpretations.

To me, the most important benefit of a multilinear presentation is that it encourages both creators and audiences to think about how and why narratives are made is created. Copplesone and Dunne praise the multilinear mode as “a structure that excels at facilitating reflexive, abstract, ephemeral, personal, interpretative or collaborative narratives in a way that focuses on the systems for heritage narratives and the systems by which the audiences’ voices can be made to matter.”^{xli} In other words, it can be a structure with built-in reminders about transparency and hospitality.

We cannot perfectly recreate or reproduce the past. Perfection is unobtainable. Instead, our reproductions should be honest about our fallibility, uncertainty, and humanity. Otherwise, we will end up creating digital models that function like Victory Stele – models that boasts of their makers’ superiority and victory over the forces of destruction instead of helping us remember what we have lost.

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<http://rhizome.org/editorial/2016/feb/16/morehshin-allahyari/>.

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Captions

Thompson-Fig 1: The stele of Naram-Sin, detail. ca. 2270 BCE. Akkadian. Pink limestone, h. 198 cm. Found in Susa, Iran. Louvre, Paris, France. Credit line: Photo: Franck Raux. © RMN-Grand Palais / Art Resource, NY.

Abstract

In the last few years, conflict in Syria and Iraq has led to heavily-publicized deliberate destruction of antiquities, sacred architecture, and other cultural heritage. In response, a spate of initiatives seeking to digitize threatened or destroyed cultural heritage has arisen. But while there has been extensive analysis of the ethical problems arising from the desire to experience the cultural heritage produced by others, the public perception of digital recreation projects only very rarely acknowledges that such projects might have potentially problematic ethics. This essay surveys some of these projects while proposing ethical best practices for digitization of threatened cultural heritage.

Keywords

Cultural Heritage; Ethics; Digitization; Preservation; Syria; Iraq

ⁱ See, e.g., Erik Nemeth, *Cultural Security: Evaluating the Power of Culture in International Affairs* (London: Imperial College Press, 2015).

ⁱⁱ Pierre Amiet, *L'Art d'Agadé au Musée du Louvre* (Paris: Ed. de la Réunion des Musées Nationaux, 1976), 29-32.

ⁱⁱⁱ See, e.g., Donald C. Haggis and Carla M. Antonaccio, eds., *Classical archaeology in Context: Theory and Practice in Excavation in the Greek World* (Berlin: De Gruyter, 2015); Demetra Papaconstantinou, ed., *Deconstructing Context: A Critical Approach to Archaeological Practice* (Oxford: Oxbow, 2006).

^{iv} The UNESCO Observatory of Syrian Cultural Heritage compiles reports at <https://en.unesco.org/syrian-observatory/damage-assesment-reports> and the UNESCO World Heritage Centre maintains updates about damage to Iraqi cultural heritage at <https://whc.unesco.org/en/statesparties/iq/>.

^v The UNESCO World Heritage Centre maintains updates about damage to Yemini cultural heritage at <https://whc.unesco.org/en/statesparties/ye>.

^{vi} Erin L. Thompson, “Op Ed: Islamic State’s War on Art Turns a Profit,” *Bloomberg View*, May 18, 2015, <https://www.bloomberg.com/view/articles/2015-05-18/islamic-state-s-war-on-art-turns-a-profit>; Kristin Romey, “Why ISIS Hates Archaeology and Blew Up Ancient Iraqi Palace,” *National Geographic*, April 14, 2015, <http://news.nationalgeographic.com/2015/04/150414-why-islamic-state-destroyed-assyrian-palace-nimrud-iraq-video-isis-isil-archaeology/>; Graham Bowley and Robert Mackey, “Destruction of Antiquities by ISIS Militants is Denounced,” *New York Times*, February 27,

2015, <http://www.nytimes.com/2015/02/28/world/middleeast/destruction-of-antiquities-by-militants-is-denounced.html>.

^{vii} I have described these projects in more detail in previous papers, e.g., Erin L. Thompson, “Legal and Ethical Considerations for Digital Recreations of Cultural Heritage,” *Chapman Law Review* 20.1 (2017). Accordingly, I will summarize the pertinent part of my thoughts here, but refer readers to my prior writings for more in-depth descriptions of individual digital recreation projects.

^{viii} St John Simpson, “Rediscovering Past Splendours from Iran: 19th-Century Plaster Casts of Sculptures from Persepolis,” *British Museum Magazine* 36, Spring 2000, 28-29.

^{ix} Matthew Cock, “3D-Imaging the Assyrian Reliefs at the British Museum: From the 1850s to Today,” British Museum Blog, November 19, 2014, <https://blog.britishmuseum.org/3d-imaging-the-assyrian-reliefs-at-the-british-museum-from-the-1850s-to-today/>.

^x One among many collections of writing on this subject is Ruth B. Phillips and Christopher B. Steiner, eds., *Unpacking Culture: Art and Commodity in Colonial and Postcolonial Worlds* (Berkeley: University of California Press, 1999).

^{xi} See, e.g., Howard Morphy and M. Hetherington, eds., *Discovering Cook's Collections* (Canberra: National Museum of Australia Press, 2009); Jeremy Coote, ed., *Cook-Voyage Collections of 'Artificial Curiosities' in Britain and Ireland, 1771–2015* (Oxford: Museum Ethnographers Group, 2015); Khadija von Zinnenburg Carroll, “The Inbetweenness of the Vitrine: Three Parerga of a Feather Headdress,” in *The Inbetweenness of Things*, ed. Paul Basu (London: Bloomsbury, 2017); Jacob Mikanowski, “The Fight to Bring Home the Headdress of an Aztec Emperor,” *Atlas Obscura*, September 26, 2017, <https://www.atlasobscura.com/articles/moctezuma-headdress-mexico-austria>.

^{xii} One of the few exceptions is Emma Cunliffe, “Should We 3D Print a New Palmyra?” *The Conversation*, March 31, 2016, <https://theconversation.com/should-we-3d-print-a-new-palmyra-57014>.

^{xiii} Erin L. Thompson, “Legal and Ethical Considerations for Digital Recreations of Cultural Heritage,” *Chapman Law Review* 20.1 (2017).

^{xiv} Michael Danti, Scott Branting, and Susan Penacho, “The American Schools of Oriental Research Cultural Heritage Initiatives: Monitoring Cultural Heritage in Syria and Northern Iraq by Geospatial Imagery,” *Geosciences* 7.4 (2017), 95ff.

^{xv} Jean Starcky and Michał Gawlikowski, *Palmyre* (Paris: Librairie d’Amérique et d’Orient, 1985); Michał Gawlikowski, *Le Temple Palmyrénien: Étude d’Épigraphie et de Topographie Historique* (Warsaw: Éditions scientifiques de Pologne, 1973); H. Seyrig, R. Amy and E. Will, *Le Temple de Bel à Palmyre*, 2 vols (Paris: Geuthner, 1975).

^{xvi} James Cuno, “Opinion: Saving Antiquities from Islamic State,” *Wall Street Journal*, September 21, 2015, <https://www.wsj.com/articles/saving-antiquities-from-islamic-state-1442875759>.

^{xvii} Association of Art Museum Directors, “AAMD Protocols for Safe Havens for Works of Cultural Significance from Countries in Crisis,” October 1, 2015, <https://aamd.org/document/aamd-protocols-for-safe-havens-for-works-of-cultural-significance-from-countries-in-crisis>.

^{xviii} Countries that have announced seizures of Syrian cultural property include Bulgaria, Turkey, Israel, and the United Kingdom. See, e.g., Steven Lee Myers and Nicholas Kulish, “‘Broken System’ Allows ISIS to Profit From Looted Antiquities,” *New York Times*, January 9, 2016, <http://www.nytimes.com/2016/01/10/world/europe/iraq-syria-antiquities-islamic-state.html>

(reporting on the seizure of 9,000 items in Bulgaria in 2015, some reportedly antiquities from Syria, and the seizure of 6,800 artifacts, mostly coins, by Turkish authorities since 2011); “İstanbul’da Tarihi Eser Pperasyonu: 4 Süpheli Adliyede,” *Haber Turk*, 17 April 2016, <http://www.haberturk.com/gundem/haber/1226216-istanbulda-tarihi-eser-operasyonu-4-supheli-adliyede> (reporting on the seizure by Turkish authorities of three mosaic panels suspected to have been looted from a Syrian museum); “The Art Detective Fighting to Save Syria’s Past,” BBC News, November 11, 2015, <https://www.bbc.com/news/world-middle-east-34732945> (Christopher Marinello, chief executive of the London-based Art Recovery Group, stating that “we know of a recent container that was seized here in the UK with a great deal of Syrian looted objects on it, and I can't go too much beyond that because it's a current investigation here in the UK”). Additionally, the British Museum has stated that it is holding at least one object looted from Syria “in the hope of returning it when the country is stable”: “British Museum ‘Guarding’ Object Looted from Syria,” BBC News, June 5 2015, <http://www.bbc.com/news/entertainment-arts-33020199>. But in August 2016, the head of the Syrian agency responsible for antiquities claimed that only Lebanon and Jordan have returned any seized antiquities to Syria since 2011 – and that Jordan ceased to do so sometime after 2015: Shadia Nasralla, “Syrian antiquities chief says Turkey refuses to return looted art,” Reuters, December 11, 2015, <http://www.reuters.com/article/us-mideast-crisis-syria-antiquities-idUSKBN0TU19420151211>. It should be noted that the authenticity of a number of these seized objects has been called into question: e.g., Tim Cornwell, “Almost 70% of Smuggled Objects Seized in Syria and Lebanon are Fakes, Antiquities Chief Says,” *The Art Newspaper*, August 24 2016, <http://theartnewspaper.com/news/almost-70-of-smuggled-objects-seized-in-syria-and-lebanon-are-fakes-antiquities-chief-says/>. However, it is generally true of the illicit market for cultural

property that forgeries are mixed in with authentic pieces by sellers eager to increase their profits, and at least some of the seized materials is authentic.

^{xix} “Iconem: when a French startup brings heritage destroyed by Daesh back to life in 3D: #HistoiresdeFrance,” July 11, 2016, <https://www.gouvernement.fr/en/iconem-when-a-french-startup-brings-heritage-destroyed-by-daesh-back-to-life-in-3d>; Iconem, “Temple of Bel,” <https://sketchfab.com/models/02c4e194c6d64a4385a30990ed9899bf>.

^{xx} Morehshin Allahyari, “Material Speculation: ISIS (2015-2016),” <http://www.morehshin.com/material-speculation-isis/>; Alexis Anais Avedisian and Anna Khachiyani, “On Material Speculation,” http://www.morehshin.com/wp-content/uploads/2016/03/morehshin_allahyari-material_speculation_isis_brochure-1.pdf.

^{xxi} Paul Soulellis, “The Distributed Monument: New Work from Morehshin Allahyari’s ‘Material Speculation’ Series,” Rhizome Blog, February 16, 2016, <http://rhizome.org/editorial/2016/feb/16/morehshin-allahyari/>.

^{xxii} “[S]o much of the propaganda and promotion method for ISIS is about going viral and using memes and the internet to get as many views and as much attention as possible. So perhaps the many 3D models and 3D printed copies can become both a digital and a physical response to that”: Filippo Lorenzin, “Spread What Has Been Destroyed: Interview with Morehshin Allahyari,” Digicult: Digital Art, Design and Culture (blog), <https://web.archive.org/web/20170806211909/http://www.digicult.it/news/spread-what-has-been-destroyed-interview-with-morehshin-allahyari/>.

^{xxiii} “memory / matrix / exhibition,” <http://act.mit.edu/projects-and-events/events/exhibition/memory-matrix/>.

^{xxiv} For background on the role of digital technology within the study of cultural heritage sites, see Tom Evans, “Research Policy and Directions,” in *Digital Heritage: Applying Digital Imaging to Cultural Heritage*, ed. Lindsay MacDonald (Oxford: Elsevier, 2006), 549-574; Thomas L. Evans and Patrick Daly, eds., *Digital Archaeology: Bridging Method and Theory* (New York: Routledge, 2006); Mark Gillings, “The Real, the Virtually Real, and the Hyperreal: The Role of VR in Archaeology,” in *Envisioning the Past. Archaeology and the Image*, Sam Smiles and Stephanie Moser, eds. (Oxford: Blackwell, 2005), 223-239; Colleen L. Morgan, “(Re)Building Çatalhöyük: Changing Virtual Reality in Archaeology,” *Archaeologies*, 5.3 (July 24, 2009): 468-487; Donald H. Sanders, “The Present and Future of Virtual Heritage,” in *How Do We Want the Past to Be? On Methods and Instruments of Visualizing the Ancient Reality*, Maria G. Micale and Davide Nadali, eds. (Piscataway NJ: Gorgias Press, 2016); Juan Antonio Barceló, “Automatic Archaeology: Bridging the Gap between Virtual Reality, Artificial Intelligence and Archaeology,” in *Theorizing Digital Cultural Heritage: A Critical Discourse*, Fiona Cameron and Sarah Kenderdine, eds. (Cambridge: MIT Press, 2007), 437-455.

^{xxv} Indeed, a range of different ethical questions associated with the use of digital technology in the cultural heritage sphere other than recreation have been discussed; these questions include the political uses of representation and interpretation of cultural heritage; the accessibility of digital representations; the potential loss of the “authentic” or “real” that the use of technology might encourage; the correct approach to data transparency and sharing; and the ease both of manipulation and surreptitious capture of digital images. See, e.g., Fiona Cameron and Sarah Kenderdine, eds., *Theorizing Digital Cultural Heritage: A Critical Discourse* (Boston: MIT Press, 2007); Peter Johan Lor and J.J Britz, “An Ethical Perspective on Political-Economic Issues in the Long-Term Preservation of Digital Heritage,” *Journal of the American Society for*

Information Science and Technology 63 (2012), 2153–64; Anne Marie Sullivan, “Cultural Heritage & New Media: A Future for the Past,” *John Marshall Review of Intellectual Property Law* 15 (2016), 630ff; Sarah Colley, “Ethics and Digital Heritage,” in *The Ethics of Cultural Heritage*, Tracy Ireland and John Schofield, eds. (New York: Springer, 2016), 13-32; K. Bowrey and J. Anderson, “The Politics of Global Information Sharing: Whose Cultural Agendas are Being Advanced?,” *Social and Legal Studies*, 18.4 (2009), 479-504.

^{xxvi} See generally Aleksandra Marinković, Aleksandra Mirić, and Filip Mirić, “European Policy on Digitisation of Cultural Heritage from 2005 Onwards,” *Facta Universitatis, Series: Law and Politics*, 14.1 (2016), 97-103 (although this focuses on digitization of print materials).

^{xxvii} Council of Europe’s Framework Convention on the Value of Cultural Heritage for Society (2005), Art. 14: “The Parties undertake to develop the use of digital technology to enhance access to cultural heritage and the benefits which derive from it, by: a encouraging initiatives which promote the quality of contents and endeavour to secure diversity of languages and cultures in the information society; b supporting internationally compatible standards for the study, conservation, enhancement and security of cultural heritage, whilst combating illicit trafficking in cultural property; c seeking to resolve obstacles to access to information relating to cultural heritage, particularly for educational purposes, whilst protecting intellectual property rights; d recognising that the creation of digital contents related to the heritage should not prejudice the conservation of the existing heritage.”

^{xxviii} International Council on Monuments and Sites. 2008. “ICOMOS Charter on the Interpretation and Presentation of Cultural Heritage Sites,” especially 2.4: “Visual reconstructions, whether by artists, architects, or computer modelers, should be based upon detailed and systematic analysis of environmental, archaeological, architectural, and historical

data, including analysis of written, oral and iconographic sources, and photography. The information sources on which such visual renderings are based should be clearly documented and alternative reconstructions based on the same evidence, when available, should be provided for comparison.”

^{xxix} The London Charter (2.1, February 2009) <http://www.londoncharter.org/>, particularly principle 4, which states that “It should be made clear to users what a computer-based visualisation seeks to represent, for example the existing state, an evidence-based restoration or an hypothetical reconstruction of a cultural heritage object or site, and the extent and nature of any factual uncertainty” (4.4); “A complete list of research sources used and their provenance should be disseminated.” (4.5); “Documentation of the evaluative, analytical, deductive, interpretative and creative decisions made in the course of computer-based visualisation should be disseminated in such a way that the relationship between research sources, implicit knowledge, explicit reasoning, and visualisation-based outcomes can be understood.” (4.6); and “The rationale for choosing a computer-based visualisation method, and for rejecting other methods, should be documented and disseminated to allow the activity’s methodology to be evaluated and to inform subsequent activities. (4.7)

^{xxx} E.g., Daniel Pletinckx, “Interpretation Management: How to Make Sustainable Visualizations of the Past,” http://media.digitalheritage.se/2010/07/Interpretation_Managment_TII.pdf.

^{xxxi} Although some would: e.g., “The discourse also denies the autonomy of professional Syrian archaeologists: the west can’t wait around for the war to end and for Syrian restorers to commence such a time-consuming restoration project. In Britain, we have funds to make a 3D model here and now, we might as well do that first. The desire to 'be first', to appropriate Syria's own need to restore its heritage by transcending time and space boundaries....” Maira al-

Manzali, “Palmyra and the Political History of Archaeology in Syria: From Colonialists to Nationalists,” Mangal Media (blog), October 02, 2016, <http://www.mangalmedia.net/english//palmyra>.

^{xxxii} See, e.g., Stephanie Smith, ed., *Feast: Radical Hospitality in Contemporary Art* (Chicago: Smart Museum of Art, University of Chicago, 2013).

^{xxxiii} Alois Riegl, *Moderne Denkmalkultur: sein Wesen und seine Entstehung* (Vienna: W. Braumüller, 1903); see also Michelle Lamprakos, “Riegl’s ‘Modern Cult of Monuments’ and The Problem of Value,” *Change Over Time* 4.2 (2014), 418–35.

^{xxxiv} Homi Bhabha, *The Location of Culture* (New York: Routledge, 1994).

^{xxxv} Neil Silberman, “What Are Memories Made Of? The Untapped Power of Digital Heritage,” http://coherit.com/resources/What_Are_Memories_Made_of.pdf.

^{xxxvi} E.g., I. Hodder and S. Hutson, *Reading the Past: Current Approaches to Interpretation in Archaeology*, Third Edition (Cambridge: Cambridge University Press, 2003).

^{xxxvii} Even with the theoretical shifts towards multivocality, multilinearity, active agency and reflexivity, many of the narrative structures employed in storing, disseminating and communicating heritage have remained bound to linear forms with few, notable, exceptions: J.H. Falk and L.D. Dierking, *Learning from Museums: Visitor Experiences and the Making of Meaning* (Walnut Creek: Altamira Press, 2000).

^{xxxviii} Tara Copplestone and Daniel Dunne, “Digital Media, Creativity, Narrative Structure and Heritage,” *Internet Archaeology* 44 (2017), <https://doi.org/10.11141/ia.44.2>

^{xxxix} *Ibid.*

^{xl} *Ibid.*

^{xli} *Ibid*; see also G. Howard, J. Pratty, and M. Stapleton, “Storymaker: User-Generated Content - Worthy or Worthwhile?,” in *Museums and the Web 2005: Proceedings*, J. Trant and D. Bearman, eds. (Toronto: Archives, 2005).