Harmonized Spaces, Dissonant Objects, Inventing Europe? Mobilizing Digital Heritage

By Alexander Badenoch

Abstract

Technology, particularly digitization and the online availability of cultural heritage collections, provides new possibilities for creating new forms of 'European cultural heritage'. This essay analyzes the emerging sphere of European digital heritage as a project of technological harmonization. Drawing on Andrew Barry's concepts of technological zones, it examines the various ways in which agency and European citizenship are being reconfigured around cultural heritage. It explores the "Europeanization" of digital heritage in three areas. In the first section, it analyzes the recent agenda for digital heritage of the European Union as a harmonizing project to create a smooth space of cultural heritage. In the next sections, the development of a harmonized virtual exhibit on the history of technology in Europe forms a case study to explore processes of harmonization at the level of the web platform, and in the aesthetics of digitized objects. It argues that rather than seeking to elide the points of unevenness and 'dissonance' that emerge in harmonization processes, we should instead look for ways to embrace them as points of dialogue and discovery.

Keywords: Technology, cultural heritage, digitization, Europe, virtual exhibit, collections

Introduction

In November of 1939, during the first months of the Second World War, the festive opening of a new bridge over the River Sava in Belgrade inaugurated a new highway designed for car traffic from Belgrade to the Hungarian border. This was a nationally-funded project, but was undertaken as part of a larger project to build a road for cars that would pass from London to Istanbul. The Yugoslav Minister of Public Works told the assembled crowd that 'the obligations we have accepted and the fact that the Western states, as well as Hungary, have constructed their part, have faced us with a pressing duty' to get the road finished. Now constructed, however, the road would 'bind our capital to the large countries of Europe' (in Badenoch 2007: 192). The meaning of this new connection to Europe remained ambiguous, however. To elite readers of the French-language *l'Echo de Belgrade*, which reported regularly on such developments in the country's tourist industry (as well as the arrival of western tourists), such connections were presented as signs that Yugoslavia was entering into a modern age of motorways at roughly the same time as the West. For motorists from the West, whilst providing a sign of the country's modernization, it also afforded an opportunity to gaze upon the countryside of the Balkans and its natives, who were portrayed as living in Europe's past, as well as a route through to its colonial holdings.

This may seem an unusual point of departure for a discussion of digitized cultural heritage, and yet there are a number of aspects of it that will help guide the inquiry at hand. First, it provides a cogent example of the way in which following the transnational circulation of technology can open windows onto the shared, entangled and uneven pasts of Europe (Misa&Schot 2005; Badenoch&Fickers 2010). Indeed, it forms one story in the collaborative online exhibition *Europe, Interrupted* dedicated to exploring such routes.[1] This exhibition was designed to challenge dominant narratives of technology's role in integrating Europe by pointing instead to a series of technological 'interruptions' in European spaces. Within the online exhibition, the story explores the tensions between grand visions of European automobility and the slow and uneven rise of car travel between the wars. Closer engagement with the story's objects reveals further transnational entanglement: the images of the road were produced in London and Quetta, respectively, and reproduced from documents held in the archive collection of the Dutch touring club ANWB in The Hague. In addition to this, the exhibit also presents to users links to other digitized objects in science and technology museums that suggest further stories about topics such as motorization, car manufacture, and tourism both in national and international contexts.

While these elements of the story highlight the case for critical attention to the role of technology in European integration, in this essay I am interested not so

much in exploring the transnational entanglements of the past, but in thinking about the construction of Europeanized digital heritage spaces in the present. As such, the London to Istanbul road also provides a powerful analogy for exploring the way objects and knowledge are being harmonized for circulation in European spheres. In particular, the London to Istanbul road was a project of technological harmonization, in this case focussed on the road systems of a number of European nations. The *Alliance Internationale de Tourisme* (AIT), an umbrella organization of national bicycle and auto clubs, had proposed a trajectory for the road based on existing roads, and developed a series of standards for improving them to meet the needs of motor tourists. This included minimum technical specifications for roads to accommodate motor cars, a series of special, standardized road signs, but also streamlined border controls and 24-hour access to border checkpoints. While the organization itself had very little political power, it was able to translate its area of expertise into a series of standards that presented governments with a relatively cheap and flexible option for opening up to international flows of traffic. What was in fact often a series of modest road improvements carried out on a national level could appear – at least on paper – as a unified road spanning the continent. Much of the rhetoric surrounding the road had to do with the modernization of nations, as well as boosting economies through international traffic and job creation. At the same time, however, the emerging structure was built around the ideal subject of the (Western) motor tourist, free to speed through picturesque landscapes or stop and engage with local populations and sights at will. Embracing the analogy of a tourist infrastructure rather than that of a museum, as is often used for digital heritage, reminds us that defining, constructing and creating access to European heritage is a technological project of mobilization and harmonization. This raises a new set of analogous questions for analyzing the emerging environment. What are the spatial dimensions and technological configurations of European heritage spaces? What are the technical devices and skills required to navigate them and how do these construct and/or subvert boundaries? How do these emerging heritage spaces construct ideal subjects – and objects – and what sorts of movements within and views on European heritage do they privilege?

Tony Bennett has pointed to the important role traditionally played by technology in museums, in attempting to foster both technological skill and narratives of progress (1995: 200-201). In looking at the emerging European Union, Andrew Barry (2001) has pointed to the changing role of technological displays in reconfiguring political participation. Interestingly, he theorizes the science museum as an ideal location for understanding this emerging constellation of technology, interactivity and citizenship, where the latter is bound up not so much in discipline as in interactivity, that is, in acquiring new technical literacies and actively exploring cultural zones. Barry's work is useful here in that it follows the implications of the technological society through a range of zones and sites,

thus placing museum and heritage displays in the broader context of European technological projects, which sheds new light on the stakes of such projects.

The digital revolution, which has fuelled the recent explosion in techniques and technologies of archiving and exhibition, has both pushed and complicated the transnationalization of cultural heritage in Europe. Increasing physical travel to cultural heritage institutions, as well as increasing efforts to create online access to digitized objects of memory and documents have in turn increased the need for heritage collections to address broader audiences. Just as new media technologies are said to be driving forces in a broader digital "convergence culture" (Jenkins 2006)practitioners and theorists alike have noted how the boundaries between museums, archives and libraries are being eroded or restructured, as are the boundaries between these institutions and the flows of global commerce. Objects are here broadly understood as the discrete units of cultural heritage collections, whether physical objects, photographs, texts, sound recordings or audiovisual documents. Digitizing objects, that is, creating digital avatars and affixing accompanying metadata, profoundly transforms how users can engage with them when they are published online. On the one hand, their infinite reproducibility allows them to be easily re-contextualized, downloaded as well as commodified in a number of ways. On the other hand, their flat appearance on small screens and playback devices, as well as circulation within a broad range of commodities, places new aesthetic demands on them that differ from those of previously controlled display environments. Paradoxically, the increased value of circulating digital objects as signs of democratic access to materials and interpretations of the past has coincided with a shift in emphasis in heritage presentations *away* from objects (as traditionally understood) toward experience and affect (Witcomb 2007). This appears within European contexts as a focus on routes, pathways and journeys through (virtual) spaces – of the museum, such as in the *C'est notre histoire!* exhibit in Brussels, but also cities, or the entire continent – and various mediations of embodied experience over objects (NicCraith 2008; Macdonald 2008).[2] Such a focus on routes not only grounds a (self-) construction of the EU as a networked state, it also builds on and emphasizes a longer history of constructing European identities around forms of mobility (Buzard 1993; Jensen & Richardson 2004; Badenoch 2007; Verstrate 2009; Badenoch&Fickers 2010). As GinetteVerstraete argues, pointing to the long history of such discourses, 'the underlying belief is that touring European locations and receiving strangers at home will orientate the individual toward other Europeans and produce identification beyond one's own locality on a larger European scale' (Verstraete 2009: 157-8). At the same time, as she highlights, new media storytelling, in part incorporating digital heritage documents, has also been important in artistic endeavours to challenge dominant narratives of European mobility and technological unity to present a more nuanced view of past and future connections.

The role of technological connections – and disconnections – in generating new ways of narrating and displaying a 'European' heritage are thus doubly implicated in the *Inventing Europe* virtual exhibit project currently being developed (and of which the author is the chief curator), and due to go online in the Autumn of 2011. The exhibition is an experimental collaboration between scholars and a range of cultural heritage institutions of varying sizes in eight countries, as well as the European digital library Europeana.This project has grown out of an ongoing scholarly effort embedded in a broad research network to tell the history of Europe since the transport and communication revolutions 'through the lens of technology'.[3] By following the contingent paths of technological development, this approach seeks to explore more precisely transnational processes of circulation, connection and integration prior to and parallel to the formal processes of political and economic integration after WWII. At the same time, such a critical exploration of technology also remains alert to processes of disconnection, fragmentation and splintering. Attention in particular to the building of technological infrastructures has been central to this agenda (Misa&Schot 2005, Kaijser and Vleuten 2006, Badenoch&Fickers 2010). In building a technological infrastructure in Europe to connect various institutions and users, *Inventing Europe* is thus an instance of the very historical processes with which it seeks to engage. This article embraces this reflexivity and turns the critical tools of historians and sociologists of technology toward the project itself to use it as a case study for understanding the pressures and potentials of the new digital environment for generating new narratives of European heritage. In what follows, I will discuss both the prototype exhibition, *Europe, Interrupted* as well as objects and discussions from two workshops (October 29, 2010 and January 12, 2011), in which heritage professionals were invited to bring and discuss sample objects from their collections with book authors and project developers.

Analyzing the Europeanization of digital heritage as a project of technological harmonization provides a way of examining the various ways in which agency and European citizenship are reconfigured around cultural heritage. I proceed here in three parts, each focussing on a different arena in which digital heritage is Europeanized, analogous to constructing mobility structures such as the London-Istanbul road. In the first section, 'Network', I will examine the European Union as an agent in the Europeanization of digital heritage, looking in particular at the recent agenda for digital heritage laid out by the European Commission's high-level consultation committee. As I will show, such interventions have marked parallels to planning procedures in other technological zones – such as transport and communication – that envision the frictionless mobility of things and people through European space. In delegating action in the sphere of digitization to states and institutions, the guidelines laid down by the Commission construct digital heritage around a mobile and (inter)active European subject configured as both consumer and enricher of heritage. In the next section, "Landscape", I will use

Inventing Europe and other online exhibits to explore the role of online platforms in configuring users' navigation through the emerging digital spheres. This will look both at the forms of technological and procedural harmonization that creating such a platform entails, and particularly at how platforms can shape the uses and potentials of harmonized collections. The analysis will focus in particular on the points of disharmony, where borders in the digital sphere become apparent and explore potential strategies for guiding users across them. The final section, 'Souvenirs', queries how objects are selected, produced and presented as 'European' within 'European' digital spaces and explores the possible implications for generating new knowledge of European pasts. In this section I will look in particular at how the new engagement with aesthetics in the interactive digital sphere potentially redefines the role and importance of objects in online European heritage. I will argue that the wealth of potential new narratives generated by digital collections could potentially be undermined by new aesthetic demands placed on objects in the digital sphere.

Network: Creating an Interactive Zone

At the start of 2011, a 'Committee of Sages', a high-level reflection group released its recommendation for the future of digital heritage in Europe (European Commission 2011). The report, entitled 'The New Renaissance', which will be taken up as part of the Commission's 2010 'digital agenda' (European Commission, 2010), not only makes recommendations for generating, preserving, and creating access to digital heritage within the EU, but also lays out an agenda for EU involvement in the field of digital heritage. These documents are instruments of harmonization in that they are ultimately aimed at delegation: they create responsibility for others to act in producing a European zone (Barry 2001: 73). They also generate discursive frameworks which cultural heritage institutions increasingly need to adopt to move within national and European policy spaces.

As Nanna Thylstrup argues in her article in this issue, the EU vacillates in its discursive positions between one of cultural authority and one as defender of the single internal market. Both of these agendas are clearly visible within the most recent policy documents. The digital agenda in particular is concerned with producing and strengthening a 'single digital market'. Michelle Henning has noted more generally that discourses of access, interaction and participation in the museum environment 'are also marketing terminology, overlaid on another discourse of profitability, cost, customer satisfaction' (Henning 2006: 314; see also Macdonald 1998).Such overlaps are not necessarily new. Berteke Waaldijk has compared the Web 2.0 user with visitors to world exhibitions, and has pointed above all an analogous flexibility of identities in the configuration of both. She argues that

> both kinds of visitor can create their own trajectories, swapping the identity of a citizen for the identity of a consumer and back again.If we want to understand the participation and citizenship that results from these alternating roles, it is crucial to see how this implies a close link between political participation and consumerist 'picking and choosing'. (Waaldijk 2009: 117)

Particularly in its role as network co-ordinator, digital heritage is an area in which the EU can easily slip back and forth between its roles as moral force and market force.

Reading the EU's agendas for digital heritage as a project of technological harmonization, both positions are supported by a positioning of the EU as technical expert, overseeing processes of mobilization. As Barry stresses, processes of harmonization involve diffusion and delegation of action (2001: 73). The EU in particular operates – similarly to the AIT in the example at the start of this article – by creating spaces for others to act. The European Union defines itself and its citizens around 'four freedoms of movement' (people, things, ideas and capital). Generating flows over borders forms the underpinning for a range of technological and political interventions, not least in the areas of transport and communication (Shore 2000; Jensen & Richardson 2004), but also in the realm of cultural heritage, where projects such as the European digital library seek to create new platforms for circulating objects and stories across national boundaries to help its mobile citizens to engage with a common past. While the borders of this 'common past' are usually elided, borders in the present, and the need for 'promoting the widest access to the digitised material *across borders'*(European Commission 2011: 8, emphasis mine) are stressed. Transnational circulation of heritage objects appears at once as a means of breaking down internal borders within Europe as well as presenting a unified and conscious picture of Europe beyond. The narrative sketched by the committee mirrors broadly the one seen in a number of white papers and recommendations for intervention in a range of technological sectors. Technological development is portrayed as generating a (potential) crisis which only a uniform strategy and harmonized action can avert. In laying out their agenda for digitization, the committee argue from an explicitly moral position as defenders of 'European civilization' that:

> digitization is more than a technical option, it is a moral obligation. In a time when more and more cultural goods are consumed online, when screens and digital devices are becoming ubiquitous, it is crucial to bring culture online (and, in fact, a large part of it is already there).
> If we don't pursue this task, we run the risk of progressively eroding and losing what has been the foundation of European countries and civilization in the last centuries. It must be clearly understood that if access is the final objective, a tall order, it can only be achieved through preservation of the work. (European Commission, 2011: 9)

This moral encoding of the mission of digitization is further placed in the classic modernist framework, reminiscent of the role of the nineteenth century museum in displaying the progress of the nation-state (Bennett 1995). Digital heritage

appears here as what Bennett (1995: 179-181) calls a 'backtelling' of the European project: 'Europe was constructed with the notion of evolution, thought, creation, research and ingenuity. No one will disagree: each phase of this process is worthy of conservation and study' (European Commission 2011: 43).

If the visitor to the nineteenth century museum was meant to be disciplined to follow specific paths through the museum space, as Barry stresses, the subjects of the new European state are meant to explore these broad new spaces of heritage, using a range of technical skills. Already a decade before, a research framework written for the EC's Information Society directorate noted that:

> The focus of service delivery is becoming the active user in a shared network space. The user wants resources bundled in terms of their own interests and needs, not determined by the constraints of media, the capabilities of the supplier, or by arbitrary historical practices (Dempsey 1999).

Within the current digital agenda, expanding access to internet and literacy is a further key component in promoting European citizenship (European Commission 2010: 24ff.). The committee argue that Europeana must approach such mobile and skilled users by '3) distributing cultural heritage to the users wherever they are, whenever they want it, 4) helping users engage with their cultural heritage in new ways' (European Commission 2010: 22). On the one hand, they assume a heritage user in the classic position of the consumer: they know what heritage they want, when they want it, and demand a service that is available to them in their own time. At the same time, they require expert assistance in engaging with heritage once they have received it. Like the ideal visitor to the new interactive science museum analyzed by Barry (2001: 149-151) as the model for emerging models of technological citizenship in Europe, the ideal subject of (European) digital cultural heritage expected to be driven by curiosity to explore and connect. Rather than being disciplined to follow the paths set by museum authorities toward individual improvement like their classical counterparts, the new 'users' of digital heritage are meant to *interact* with heritage objects using a range of technical skills they have acquired for grasping, re-connecting and re-combining the past as part of their lives. Throughout the report, and indeed in its title, the stress on digitization and digital heritage is predicated on its being recombined and re-connected by the users, who are expected actively to create new uses for heritage, not least through acquiring new technical skills. 'Digitization relies on technological progress, but, in turn, may also spur innovation and creativity. It can contribute to job creation, growth and business development in sectors linked to technology, culture, creativity and innovation' (European Commission 2011: 43). This promise of growth, based on increased energizing of the mobile citizen in space, echoes through a range of European spatial projects. A website to promote the Magistrale line (of which the contested Stuttgart 21 project is a key node) similarly expounds: 'The Magistrale increases the population's choices in terms of work, education, free time and consumption. And the predicted economic growth can be expected to lead to increases in income' (Magistrale 2011). This, in turn,

draws on a much longer-standing 'myth of networks' that has played an important role in structuring visions and projects for Europe since the early twentieth century (Schot&Lagendijk 2008; Badenoch 2010).

As the Comité des Sages note, institutions' orientation toward Europe, and particularly the European digital library Europeana, remains quite varied (European Commission, 2011: 22). In addition to their very different collections, the institutions involved in *Inventing Europe* all have differing agendas both with regard to Europe and to digitization. Many, like the Science Museum and the Norwegian Technology Museum, already have extensive catalogues online, although none have anything near their entire collection online. Especially for larger institutions, Europe is clearly on the agenda as well. Many of the national institutions involved with the project are also oriented toward the central engine of Europeana, which they view both as a tool for networking their collections and as a means for attracting funding for digitalization. Other, more specialized, collections involved are not oriented toward Europeana at all. For them, *Inventing Europe* represents a relatively small investment that will potentially engage a relatively wide audience with their collection, as well as a demonstrated added value when seeking funds for further digitization. A further attraction of *Inventing Europe*, even for those institutions that are involved with Europeana, is precisely the narrative contexts into which objects are re-embedded. As one curator remarked, comparing their institution's involvement with Europeana to potential involvement with *IE,* that Europeana 'is actually just a big bucket of objects that is easy to search through. The stories are missing. And those are what you find here' (e-mail communication, 28 October 2010). The curator's words also speak to the motivation for Europeana to use this as a pilot project for their API. Much akin to Europeana's trial exhibit on Art Nouveau, designed as a 'showcase' of Europeana content (http://exhibitions.europeana.eu/exhibits/show/art-nouveau-en), *Inventing Europe* offers an opportunity to demonstrate what is possible using its massive and growing collection of objects. Notably, the goal of all of the stakeholders is not merely to *display* collections, but to *enrich* them, with new contexts, new meanings and new uses. If there is a shared meaning and importance of 'Europe' among the project stakeholders, then, it is precisely the potential enrichment gained by the objects as they circulate through European space – and among the mobile subjects who will interact with them.

Landscape: Configuring European Navigation

While there have long been calls for technological standardization for archives, galleries and libraries in Europe, the push toward a smooth space of European digital heritage is still very much in its infancy (Sieglerschmidt 2006; Waibel&Erway 2008; Erway&Waibel 2009). As Barry has pointed out (Barry 2001: 68-75; see also Turnbull 2000), processes of technological harmonization

are seldom smooth, but are riddled with contestation, and not infrequently reveal and/or maintain ongoing points of difference and friction. The visibility or invisibility of borders is also not merely a question of technical standards, however. Both in the context of the emerging 'single market' of Europe as well as the agenda of public access to digital heritage, the crossing of national and institutional borders also has an ideological and a performative character. Such performances could be said to operate along what Thomas Diez has called the 'subversion paradox', which entails that 'the decreasing importance of borders within the EU is based on the recognition of those very borders' (Diez 2006: 237). Within the supposedly limitless and borderless space of the internet, the place where these boundaries are rendered visible or invisible and their transgression is performed or elided is not at territorial boundaries but within the web platform.

Web platforms play a key role in structuring and labelling user interaction, and as such they are the site of institutional power. As museum designer Nina Simon argues in relation to both web and physical platforms in museums, the agency that works through them is primarily suggestive.'Platform designers grant users a few specific, designed opportunities—to create their own content, to prioritize the messages that resonate best for them personally—in the context of a larger overall ecosystem' (Simon 2010: 121). As the digital media theorist Lev Manovich has argued, new media environments privilege the form of a database or a navigable space of narrative – or both in tension with one another (2001: 191). Each sort of interface raises questions of boundaries in different ways. The networked nature of much European heritage, coupled with the agenda of democratic access to heritage collections has led to heritage platforms that have, for the most part, favoured forms of display that lean heavily toward the database. The practice of digitizing internal museum catalogues for online access supports such interfaces. The portal of Europeana (www.euroepana.eu) is a case in point, which presents a single search interface, performing quite deliberately as a one-stop shop of European heritage. When a search result is returned, national and institutional boundaries appear as possible search filters based on the standardized metadata that are available within the classification system – they can either be engaged, or clicked away.

As noted, however, the purely database quality of such an interface appears increasingly ineffective at creating engagement with European pasts. This strongly echoes Manovich's argument that

> in the information age narration and description has changed roles. If traditional cultures provided people with well-defined narratives (myths, religion) and little 'stand-alone' information, today we have too much information and too few narratives which can tie it all together (Manovich 2001: 193).

Museum displays, and web portals inspired by them, attempt to take up this challenge by placing objects within a more narrative environment, where objects and their metadata are embedded in a spatial environment that allows a user to follow stories as they move from object to object. Within more narrative

environment, such as the showcase exhibit on art nouveau, by contrast, the issue of borders becomes more prevalent as users move between objects. The exhibit displays art nouveau as a European phenomenon, growing out of the metropoles of Europe before the First World War. The exhibit displays items from a collection gathered from Europeana's database, and supplied with links to the item within Europeana's database. The exhibit focuses primarily on the visual engagement with the objects, removing the metadata except for the caption from view unless clicked. The visitor is thus invited to make visual connections that support the narrative theme. In viewing the metadata and the captions, the divisions between the collections then become visible – while the narrative sections are available in a uniform language, the captions and metadata of the objects are in the language of their home collections.

With its explicit agenda of revealing the multiple levels of agency surrounding technological processes and circulation in Europe, *Inventing Europe* embraces the emerging paradigm in museum practice – and Web 2.0 – of looking to multiply the voices and connections around objects. Itseeks to do this in part by means of a technical platform similar to that used by Europeana, geared toward showing objects in multiple contexts, thus multiplying and highlighting border crossings, and generating a vision of uneven space. Besides a series of 'static' objects embedded in the narratives of the site, so-called 'dynamic' objects on the websites of contributing institutions are shown as 'related content' via RSS feeds aggregated on the IE site, as well as a separate feed from Europeana API. A 'dynamic' object thus appears as related to the themed narratives constructed by the IE editorial team, to the coalitions of objects represented by the dynamic content feed, to the objects *in situ* on their originating sites. Users will be able to 'collect' both static and dynamic items within the exhibition, adding tags and notes to create 'theme paths' they will have the option of publishing. Besides their appearance in these multiple 'expert' contexts, users will be able to share objects in social media, add links, tags and commentary and use them in making their own connections in the broader realm of the web. As the project develops, ways of feeding such enriched content back into the other spheres will be sought.

A key issue for harmonizing collections is that digitization practices in heritage institutions have often been far more oriented toward maintaining collections than toward placing objects in new and potentially infinite networks of knowledge and expertise (Cameron 2008; Cameron &Mengler 2009). Fiona Cameron has stressed that online heritage collections tend to remediate catalogues and inventories, which classify the objects themselves in a hierarchical taxonomy designed largely for internal use, rather than engaging online users with the multiple meanings of the object (Cameron 2008 on the concept of 'remediation' see Bolter &Grusin 2000). This was brought home in an eloquent presentation at *Inventing Europe's* October workshop by a curator from the Norwegian Technical Museum, who showed a number of objects from the Norwegian national digital catalogue

(www.digitaltmuseum.no). Many of the objects were visually engaging, and, as the curator demonstrated, each had a compelling story of transnational social and cultural entanglement that fitted well within the parameters of *Inventing Europe*'s agenda. However, the curatorial knowledge surrounding the objects had not been included in the online documentation of the collection, but was rather knowledge held and transferred – often orally – by curatorial staff. Making this knowledge publicly available raised new questions about the value and meaning of online objects within a national context. As the curator noted, disappointment with the catalogue, precisely for not including the contextual material that would help users to engage with the objects, has led to the placement of a button on the site for users to do this work of enrichment themselves by adding a story about any particular item.

Such regimes of classification also highlight clear boundaries in collections to be linked from the platform. While the DigitaltMuseum displays objects with basic catalogue data, the Science and Society Picture library (in which much of the online collection of the Science Museum can be found), for example, presents images and objects accompanied by texts that offer some cultural interpretation, and a range of keywords, but does not always offer precise information about the specific object and/or image, such as when it was collected or from whom. Comparing Singer sewing machines featured on each portal: (Figures 1 and 2) reveals a remarkable difference. The machine on the Science and Society page is accompanied by a short narrative which includes the contexts of manufacture, the specifications of the object, and the conditions of its purchase and use. It also presents a large range of keywords that would allow a user to seek related content within the collection. Some of these categories, such as 'personalities' and 'musician' are clearly related to a different definition of 'singer', but it offers a wide range of contexts which a user might explore further. My point is not to hold the SSPL up as a more desirable or 'user-friendly' portal for digital heritage objects. Indeed one could argue, to the contrary, that while the DigitaltMuseum's more limited and largely domain-specific set of identifiers potentially make it more difficult for a casual browser to place the sewing machine in other contexts, there is much here that allows for more interaction with the object and participation in generating new meanings for it outside the collection. These include allowing the user to enlarge the image, which shows the pedal and electrical connection, but also an increased capacity to *network* the object outside of the context of the collection, such as sharing the item on social networking sites, and looking up additional information either on Google or Wikipedia. This leads to the crux of my argument, which is that the juxtaposition not only of objects, but of collections, opens up new and potentially complex sets of relations and ways of engaging with and classifying digital heritage objects. The exhibit's performance of border-crossing also invites users to perform acts of *translation* between different realms of knowledge and their own varying spheres of

experience. Appropriately enough for an online environment, users are called upon to find what Latour calls 'plug-ins' of a cosmopolitan nature to bring these various networks within and between collections and within their own networks and interests. Latour uses the term, borrowed from small pieces of adaptive software that allow files to be read or played online, to refer to 'pellets' of competence that people can adopt from available social repertoires to perform as active subjects in specific contexts (Latour 2005b: 207-8).Networking allows museum collections to step into the new form of agency described by Cameron and Mengler 'not just as a symbolic technology but as an influential force, as an attractor in a network bringing together serendipitous elements and as a border zone where heterogeneous systems of representation might meet' (Cameron &Mengler 2009: 213).

Figure 1 Singer Sewing Machine, Science Museum, Science and Society Picture Library, http://www.scienceandsociety.co.uk/results.asp?image=10221460
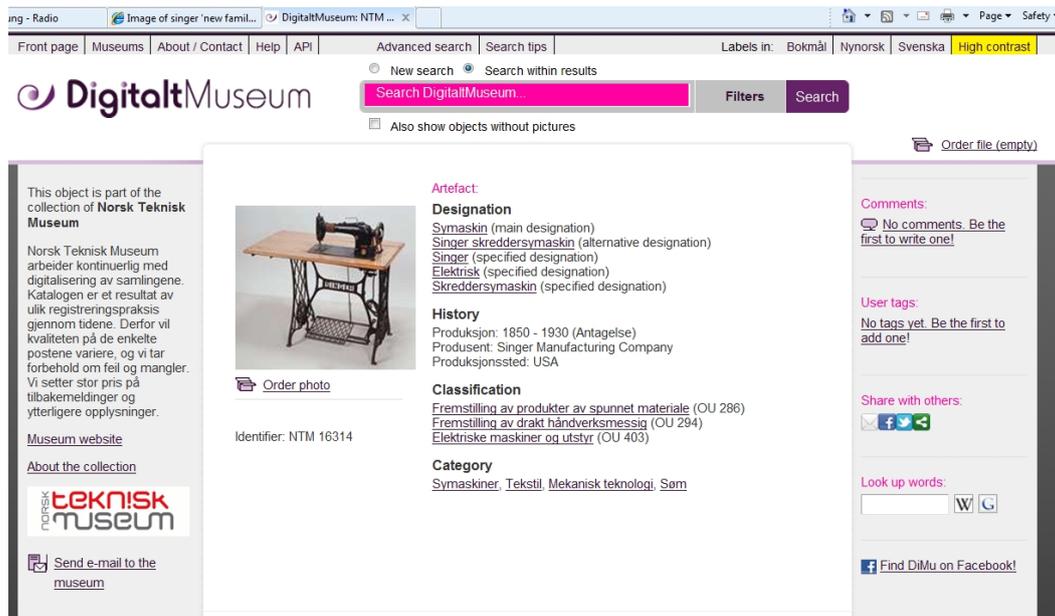
Figure 2 Singer Sewing Machine, Norsk Teknisk Museum, Digitaltmuseum
http://www.digitaltmuseum.no/things/symaskin/NTM/NTM%2016314?pos=2

While visually or nominally related material ('sewing machines') offers an easy basis for establishing relationships, generating relations on the basis of conceptual keywords is also a risky endeavour. From user feedback on 'Europe, Interrupted' it rapidly became apparent that the 'related content' section had been too well integrated into the site, and that many visitors did not understand that these were displays of content in other contexts. By contrast, a curator from one of the participating museums responded with doubt as to the related nature of the content in one of the thematic essays on standardization and adaptation (http://www.inventingeurope.eu/invent/exhibits/show/europeinterrupted/lost):

> Also it is not clear what the objects have to do with the stories. What for example does the Pye television adapter have to do with broad-gauge railways?I suspect it is actually connected to a related story on colour TV but that will not be clear to the average reader. (Email communication, 26 August 2009).

Ironically, the television adaptor singled out by the curator is related to broad gauge railways in the context of the exhibit: both have to do with standardizing technical systems for circulation. 'Standard' was the keyword that linked them. These examples of course point to the need for careful design to strike the balance between portal and display environment, but I would like to highlight here the multiple possibilities for constructing border crossings and spaces for European digital heritage that can make use of the uneven heritage terrain in ways that open viewers and institutions to the unexpected.

Souvenirs: 'Dissonant' Objects?

I want to turn now to the objects themselves that are selected and mobilized within the digital heritage environment. The promise of digital heritage is that not only exhibits, but also entire collections become available to suit a range of purposes. At the same time, however, visually-driven online environments and the destabilization of collection boundaries place new demands on objects.While on the one hand, the circulation of objects into new contexts can assemble new voices around them, it is also clear that circulation alone is not sufficient; the new contexts of embedding must offer sufficient enrichment and engagement with the object. The same curator cited above offered particularly sharp criticism on this point:

> [A]s a curator the biggest disappointment for me is the site's treatment of objects. The pictures to the right are too small in my view [...] Also we never learn anything about the object qua object, not even its inventory number. The object is treated purely as an image. [...] [T]he key disappointment for me is that no effort is made to actually engage the reader with the objects themselves (Email to the author, 26 August 2009).

While the curator speaks primarily of the impoverished visual appearance of the objects on the site, it is noteworthy that the fear of loss is connected to the loss of its context as *part of a collection* (note that it is the inventory number that seemed the bare minimum of information) as it moves into new narratives.

As noted, the cataloguing practices surrounding digital collections present challenges for their re-circulation in the multi-vocal, polysemic narratives that Web 2.0 applications seem to promise. In their study of the uses of digital collections in Amsterdam's Tropenmuseum, however, de Rijcke and Beaulieu (2011) show that particularly for curators, digital catalogues can also create a renewed engagement with the objects *as images*: 'The images are therefore not only the main material presented, but become themselves forms of engagement and of embedding, that shape access and production of knowledge.' The referent object, but also the style and aesthetics of the *image* begin to play a more important role in platforms set up for interactivity. In harmonizing the spaces of circulation, the role of objects becomes, in part, to become *dissonant*, that is, to speak simultaneously with a number of voices. At the same time however, they seem to be called upon even more to be instantly (visually) engaging and/or self-explanatory. These dynamics are best captured with an item presented as a potential contribution at the January workshop, and queried as unsuitable by some in the discussion.

Figure3: Table-top Radio 'Sonra', Dokumentationszentrum Alltagskultur der DDR
http://www.museumsmedien.de/dok/sam/objekt_slg2.php?ido=155

One item that was produced as a suggestion for a story on the development of broadcasting in Europe was an East German table-top radio (See Figure 3). Stored in an online catalogue similar to those mentioned above, some present at the workshop argued that the metadata was not able to engage a viewer, whilst the object itself did not illustrate anything in particular, other than being an everyday object. The provenance given in the metadata seems to cement a role for the object in a national narrative (of a state that no longer exists), particularly if the viewer is able to decode VEB as *VolkseigenerBetrieb*('People's Company'), a term unique to the GDR and indexical for GDR state-run production. At the same time, the photograph of the object itself, outside of the context of the home, makes it less visually attractive and difficult to engage with. It was suggested by one participant (a museum curator) that this would be suitable if a number of similar objects from different collections could be presented. Indeed, a number of transnational narratives about the shared qualities of domestic design, or the evolution of broadcasting infrastructures could be illustrated using the object. Within the context of a European exhibit, objects are not necessarily expected to be dissonant, but to be localized instances of European processes. This can, inadvertently, lead away from establishing an object in a range of new networks to its capture and cementing in a new sort of *Heimatmuseum*(See Confino 1997)that grounds a narrative of parallel development and steady integration.

A frequent challenge to this and to other such 'local' objects was 'what's European about it?' Andreas Fickers and I have coined the playful term 'Europe/technology uncertainty principle' to describe the difficulty historians have trying to hold technology and Europe in the same frame when studying

infrastructures (Badenoch&Fickers 2010: 7-10). This is due not least in part to the shifting ideas of what and where 'Europe' is, and the discourses of rationality and neutrality which have tended to surround technological projects up to the present day. A similar phenomenon can be observed with the development of *Inventing Europe*. Paradoxically, without the *a priori* definition of Europeanness implicit in Europeana (an object there is European if its collection is in a member state of the European Union), objects are called upon to speak with a European voice to justify their circulation in a 'European' environment. While the processes of harmonization can present the tools for creating new, open and multi-vocal narratives of Europe, at the same time, we run the risk of limiting the possible insights and connections by a selection of objects that is too narrowly focussed on cross-border travel and specific forms of visual aesthetic.

Conclusion

The London to Istanbul road was only ever a 'virtual reality': a loosely harmonized vision of a smooth roadway that in fact revealed very different positions and divisions within Europe that were soon overlaid with other visions. While most, if not all, of the sections of road that would have comprised the road were indeed completed (or rebuilt) after the Second World War, new borders, new movements, and new stories about Europe emerged. The road was mostly incorporated as route E5 in the new E-road system in Europe. Not just a road for tourists, the South-Eastern section of the E-5 became a corridor of migration, particularly into Germany, and later became a 'priority corridor' of the European Union's Trans-European Networks (TEN-T). Verstraete (2009) has highlighted how visual artists have used new media storytelling to complicate the road's stories to challenge a vision of Europeanness based around neo-liberal frictionless movement and development of the region.[4] Examining the processes of digital heritage in Europe shows similar promises and similar pitfalls. The promise of democratic access to cultural heritage, as with other sectors, is often predicated on similar ideas of a Europe of total movement and individual ideal subjects moving within and interacting with that space. Rather than seeking to elide and eradicate boundaries within the heritage sphere, I hope to have shown how online exhibitions also present an opportunity not to generate smooth spaces but to bring various spaces into dialogue, and to generate new points of dialogue and discovery through acts of translation.

Alexander Badenoch (1971) is Instructor in Media and Cultural studies at the University of Utrecht, and researcher and editor for the Foundation for the History of Technology. He received his PhD in Modern Languages from the University of Southampton (2004) and was Post-Doc on the Transnational Infrastructures in Europe (TIE) project at the TU Eindhoven (2004-8). He is main editor of the 'Inventing Europe' international virtual exhibit.E-mail: a.w.badenoch@uu.nl.

Notes

[1] See Inventing Europe (2011).

[2] See the parallel cases of the Council of Europe's European cultural routes' programme with its emphasis on physical tourism, and the "Virtual Museum of European Roots"(European Virtual Museum 2011),which brings together heritage collections in various interactive 'itineraries' throughout the continent; also the new initiative of the Amsterdam Museum *Significant Sights* which similarly takes a 'touring' approach to online European heritage (Plaatsen van Beketenis 2011) and aims to be a collectively assembled *Guide Michelin* to sights (or sites, in a more literal translation from the Dutch) in Europe.

[3] See Tensions of Europe (2011) for an overview of the scholarly projects and output attached to this research network and Making of Europe (2011) for the specific scholarly agenda of the book series.

[4] See Angela Melitopoulos' "Corridor X" project (Melitopoulos 2011).

References

Badenoch, Alexander (2010): "Myths of the European Network: Constructions of Cohesion in Infrastructure Maps", Alexander Badenoch& Andreas Fickers, (eds): *Materializing Europe: Transnational Infrastructures and the Project of Europe,* Basingstoke: Palgrave.

—— (2007): "Touring Between War and Peace: Imagining the 'Transcontinental Motorway', 1930-1950", *Journal of Transport History*, 28:2, 192-210.

Badenoch, Alexander and Fickers, Andreas (2010): "Europe Materializing? Toward a Transnational History of European Infrastructures", Alexander Badenoch& Andreas Fickers (eds): *Materializing Europe: Transnational Infrastructures and the Project of Europe,* Basingstoke: Palgrave.

Barry, Andrew (2001): *Political Machines: Governing a Technological Society,* London: Athlone Press.

Barry, Andrew (2006): "Technological Zones", *European Journal of Social Theory*, 9:2, 239–253.

Bearman, David & Kati Geber (2008): "Transforming Cultural Heritage Institutions through New Media", *Museum Management and Curatorship*, 23:4, 385-399.

Bennett, Tony (1995): *The Birth of the Museum: History, Theory, Politics,* London: Routledge.

Bolter, Jay David & Richard Grusin (2000): *Remediation: Understanding New Media* Cambridge, MA: MIT Press.

Buzard, James (1993): *The Beaten Track: European Tourism, Literature, and the Ways to 'Culture' 1800-1918*,Oxford: Clarendon.

Cameron, Fiona (2008): "Object-oriented Democracies: Conceptualising Museum Collections in Networks", *Museum Management and Curatorship*, 23:3, 229-243.

Cameron, Fiona & Sarah Mengler (2009): "Complexity, Transdisciplinarity and Museum Collections Documentation: Emergent Metaphors for a Complex World", *Journal of Material Culture*,14:2, 189–218.

Cameron, Fiona & Helena Robinson (2007): "Digital Knowledgescapes: Cultural, Theoretical, Practical and Usage Issues Facing Museum Collection Databases in a Digital Epoch", Fiona Cameron & Sarah Kenderdine (eds): *Theorizing Digital Cultural Heritage: A Critical Discourse*, Cambridge, MA and London: MIT Press.

Cameron, Fiona and Kenderdine, Sarah (eds) (2007): *Theorizing Digital Cultural Heritage: A Critical Discourse*, Cambridge, MA and London: MIT Press.

De Rijcke, Sarah & Anne Beaulieu (2011): "Image as Interface: Consequences for Users of Museum Knowledge" *Library Trends*, 59:4, 663-685.

Diez, Thomas (2006): "The Paradoxes of Europe's Borders" *Comparative European Politics* 4, 235–252

Dempsey, Lorcan (1999): "Scientific, Industrial, and Cultural Heritage: A Shared Approach", *Ariadne*,22 http://www.ariadne.ac.uk/issue22/dempsey/ (accessed 02/10/11).

European Commission, (2010): "A Digital Agenda for Europe" Document COM (2010) 245 final/2, online at:
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2010:0245:   FIN:EN:PDF (accessed 02/10/11).

—— (2011): "The New Renaissance: Report of the 'Comité des Sages' Reflection Group on Bringing Europe's Digital Heritage Online",
http://ec.europa.eu/information_society/activities/digital_libraries/doc/refgroup/final_report_cds .pdf (accessed 02/10/11).

European Virtual Museum (2011): http://www.europeanvirtualmuseum.net/index.asp (accessed 02/10/11).

Hazan, Susan (2007): "New Lamps for Old: The Crisis of Authority", Fiona Cameron & Sarah Kenderdine (eds): *Theorizing Digital Cultural Heritage: A Critical Discourse*, Cambridge, MA & London: MIT Press, 133-148.

von Grote, Claudia (1994): "Anschlüsse an den Alltag. Versuche zu einer Hermeneutik technischer Infrastrukturen", Ingo Braun & Bernward Joerges (eds): *Technik ohne Grenzen*, Frankfurt am Main: Suhrkamp, 251-304.

Henning, Michelle (2006): "New Media", Sharon MacDonald (ed.): *A Companion to Museum Studies,* Wiley-Blackwell, 302-318.

Inventing Europe (2011):
http://www.inventingeurope.eu/invent/exhibits/show/europeinterrupted/bold (accessed 02/10/ 11).

Jenkins, Henry (2006): *Convergence Culture: Where Old and New Media Collide*, New York/London: New York UP.

Jensen, Ole B. & Tim Richardson (2004): *Making European Space: Mobility, Power and Territorial Identity,* London: Routledge.

Jones-Garmil, Katherine (ed.) (1997): *The Wired Museum: Emerging Technology and Changing Paradigms*, Washington, DC: American Association of Museums.

Keene, Suzanne (1998): *Digital Collections: Museums and the Information Age,* Oxford: Butterworth-Heinemann.

Kirchhoff, Thomas, Werner Schweibenz&JörnSieglerschmidt(2008): "Archives, libraries, museums and the spell of ubiquitous knowledge", *Archival Science*, 8:4, 251-266.

Latour, Bruno (2005a): "From Realpolitik to Dingpolitik or how to Make Things Public", Bruno Latour& Peter Weibel (eds): *Making Things Public: Atmospheres of Democracy*, Cambridge, MA: MITPress, 14-43.

—— (2005b) *Reassembling the Social: An introduction to Actor-Network Theory*, Oxford: Oxford University Press.

Macdonald, Sharon (1996): "Supermarket Science? Consumers and 'the Public Understanding of science'", Sharon Macdonald (ed.): *The Politics of Display: Museums, Science, Culture*, London: Routledge, 118-138.

—— (2008) "Museum Europe: Negotiating Heritage", *Anthropological Journal of European Cultures*,17(1), 47–65.

Magistrale (2011): http://www.magistrale.org/magistrale-vorteile.php (accessed 02/10/11, my translation).

Making Europe (2011): www.makingeurope.eu (accessed 02/10/11).

Marty, Paul & Katherine Jones (2008): *Museum Informatics*: *People, Information and Technology in Museums*,New York and London: Routledge.

Mason, Ingrid (2007): "Cultural Information Standards – Political Territory and Rich Rewards", Fiona Cameron & Sarah Kenderdine (eds): *Theorizing Digital Cultural Heritage: A Critical Discourse*, Cambridge, MA and London: MIT Press, 223-243.

Melitopoulos, Angela (2011): http://www.videophilosophy.de/tc-geographies.net/projects/melitopoulos/CORRX_story.html (accessed 02/10/11).

Misa, Thomas J. & Johan W. Schot(2005): "Inventing Europe: Technology and the Hidden Integration of Europe", *History and Technology*,21:1–20.

Müller, Eggo (2009): "Formatted Spaces of Participation", Marianne van den Boomen et al. (eds): *Digital Material: Tracing New Media in Everyday Life and Technology*, Amsterdam: Amsterdam UP, 49-63.

NicCraith, Mairead (2008): "Intangible Cultural Heritages: The Challenge for Europe", *Anthropological Journal of European Cultures*,17:1, 54–73.

Plaatsen van Betekenis (2011): http://www.plaatsenvanbetekenis.nl/english/ (accessed 02/10/11).

Rayward, W. Boyd (1998): "Electronic Information and the Functional Integration of Libraries, Museums and Archives", Edward Higgs (ed.): *History and Electronic Artefacts*, Oxford: Oxford University Press, 207-24.

Rectanus, Mark W. (2006): "Globalization: Incorporating the Museum", Sharon Macdonald (ed.): *Companion to Museum Studies*, Oxford: Blackwell, 381-397.

Russo, Angelina & Jerry Watkins (2007): "Digital Cultural Communication: Audience and Remediation", Fiona Cameron & Sarah Kenderdine (eds): *Theorizing Digital Cultural Heritage: A Critical Discourse*, Cambridge, MA and London: MIT Press, 149-164.

Sieglerschmidt, Jörn (2006): "Convergence of Internet Services in the Cultural Heritage Sector— The Long Way to Common Vocabularies, Metadata Formats, Ontologies", ISKO conference Vienna 2006. http://opus.bsz-bw.de/swop/volltexte/2008/276/ (accessed 02/10/11).

Shore, Cris, (2000): *Building Europe: the Cultural Politics of European Integration*, London: Routledge.

Simon, Nina (2010): *The Participatory Museum*, Santa Cruz: Museum 2.0.

Tensions of Europe (2011): http://www.tensionsofeurope.eu (accessed 02/10/11).

Trant, Jennifer (1998): "When all You've Got is 'The Real Thing': Museums and Authenticity in the Networked World" *Archives and Museum Informatics*,12:107–125.

—— (2009): "Tagging, Folksonomy and Art Museums: Early Experiments and Ongoing Research", *Journal of Digital Information*, 10:1:
http://journals.tdl.org/jodi/article/download/270/277 (accessed 02/10/11).

Turnbull, David (2000): *Masons, Tricksters and Cartographers: Comparative Studies in the Sociology of Scientific and Indigenous Knowledge*,London: Routledge.

Verstraete, Genette (2009): "Timescapes: An Artistic Challenge to the European Union Paradigm", *European Journal of Cultural Studies*,12:2, 157-172.

Waaldijk, Berteke (2009): "The Design of World Citizenship: A Comparison of World Exhibitions and the Web", Marianne van den Boomen et al. (eds): *Digital Material. Tracing New Media in Everyday Life and Technology*, Amsterdam: Amsterdam University Press, 107-120.

Waibel, Günter & Ricky Erway (2009): "Think Globally, Act Locally: Library, Archive, and Museum Collaboration", *Museum Management and Curatorship*, 24:4, 323-335.

Witcomb, Andrea (2003): *Re-imagining the Museum: Beyond the Mausoleum,* London: Routledge, 2003.

–––– (2006): "Interactivity: Thinking Beyond", Sharon Macdonald, (ed.): *Companion to Museum Studies*, Oxford: Blackwell, 353-361.

–––– (2007): "The Materiality of Virtual Technologies: A New Approach to Thinking about the Impact of Multimedia in Museums", Fiona Cameron & Sarah Kenderdine(eds): *Theorizing Digital Cultural Heritage. A Critical Discourse*, Cambridge, MA and London: MIT Press, 35-48.

Zorich, Diane M., Günter Waibel& Ricky Erway (2008): *Beyond the Silos of the LAMs: Collaboration Among Libraries, Archives and Museums*, Dublin, OH: OCLC Programs and Research, http://www.oclc.org/programs/publications/reports/2008-05.pdf (accessed 02/10/11).