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DIGITAL HERITAGE

Behind the scenes of the museum website

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This article examines the role of online resources hosted by museums as a means to communicate, engender research and reach out to new audiences. A number of scholars have already analysed the online presence of institutions and created an innovative new field of study by critiquing and theorising the emergence of 'digital heritage'. Building upon these developments, this article examines museum websites from a new perspective, through the markup and programme languages used to deliver the online content to the user. Drawing upon the nascent field of 'critical code studies', this article analyses the online exhibition 'Ancient Cyprus in the British Museum', to illustrate the value of this approach. This analysis highlights the manner in which the 'virtual' visitor experience is structured in a fashion comparable to the 'real' visitor experience. Using theories of 'intertextuality', this article examines the analogous relationship between the markup and programme languages and wider museum practice.

Keywords: HTML; Internet; online presence; museum websites; digital heritage

Introduction

Over the past decade, a veritable revolution within the museum sector has been quietly undertaken through the provision of online resources which have become a significant outlet and engagement facility for institutions (Gander 2001; Jones–Garmil 1997; Peacock 2007; Tallon and Walker 2008). Museum websites have developed exponentially – from simple website designs created in the 1990s, which provided only a modicum of information, to modern online catalogues of objects, 'virtual' exhibitions and downloadable content that now offer an accessible resource for the cyberspace visitor (see Besser 1997; Bowen 2000; Crow and Din 2009; Din and Hecht 2007). This online presence delivers an ever-increasing array of interactive features for visitors to access images, interpretations, historical contexts and details of provenances. The use of the Internet to provide greater access, support exhibitions or engage with communities and researchers has developed quickly, to a point where nearly all major institutions and the majority of local or specific interest museums have their own existence online (see Jones–Garmil 1997).

Correspondingly, the significance afforded to museum websites by practitioners and by commentators has also increased (see Sarraf 1999). Although differing in style, content and usability across institutions, depending on time, resources and expertise, the museum website is now a central feature of an institution's work (see Besser 1997). The significance of an online presence for museums in communicating

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and preserving cultural heritage has even been recognised by the United Nations Educational Scientific and Cultural Organisation's (UNESCO) *Charter on the Preservation of Digital Heritage* (2003). Indeed, such is the pervasive nature of the Internet in everyday life that museum visitors may well possess an expectation that information and further details will be available online to discover more about an institution and its exhibitions (Marty 2007, 2008).

As more museums, libraries, archives and galleries move towards digitising displays, exhibitions and objects for their websites, a series of questions have emerged from scholars as to how visitors and wider society view these 'online museums' and their 'digital heritage' (Cameron 2007; Parry 2005, 2007). These questions have enabled the development of a new field of museum studies specifically designed to address the political, social and philosophical ramifications of virtual displays (Marty 2008, Marty 2010; Marty and Burton Jones 2007). In many ways, this continues the tradition of study which has analysed the role of the museum in the representation of the past, as the reliquary for the objects of a nation's history, or as a physical, political and social presence (Bennett 1995; Message 2006; Walsh 1992; Witcomb 2003).

Scholars have assessed the ways in which museum objects are displayed, the construction of distinct spaces within exhibitions, and the texts used in displays to reveal the constructs and assumptions that underlie the social, political and cultural act of producing content within a museum (Knell, Macleod, and Watson 2007; Macleod 2005; Pearce 1994; Ravelli 2007). These studies examine the visitor experience as a 'mediated interaction' with an institution and its collection, as implicit and explicit structures of interpretation and representation organising visitor perceptions and experiences (Hooper–Greenhill 1999).

However, the online presence of museums and issues of 'digital heritage' provides an innovative area of study for critical approaches to the way in which the visitor interacts with online catalogues, digital objects and virtual exhibitions (Marty 2007, 2008, Marty 2010). In this respect, the development of museum websites has presented challenges for understanding how visitors consume, regard and correspond with digital objects and digital heritage (Cameron 2007, 2008; Marty 2007; Parry 2005). These new relationships have also been the subject of a number of studies which have sought to understand how museums and their collections are mediated through their websites (Besser 1997; Marty 2007; White 2004). Frequently, researchers in this field have utilised Benjamin's (1992, 236) work on the 'aura' of artworks in the age of mechanical reproduction, emphasising a fundamental difference between the real and the virtual museum experience (Jones–Garmil 1997; Kalay 2008). This point of alterity, that the 'virtual' experience provides a different set of relationships to objects, texts and knowledge, thereby forms the point of analysis for a variety of studies (see Thomas and Mintz 1998). Scholars have also focused on the alternative points of access for the visitor, such as the computer screen or mobile device through which the user accesses the online content (Arvanitis 2009; Sorenson 2005; Tallon and Walker 2008).

Using these areas of study as points of contrast and comparison, the similarities rather than the differences between the virtual and real museum experience will be explored in this assessment (see Witcomb 2003, 119–20; McTavish 2006, 242). This investigation considers the manner in which the online representations of institutions are structured in comparable ways to the exhibitions and displays housed in

museums (de Groot 2010). This analysis is undertaken through the means by which museum websites are 'read' by computers and created by website designers: the markup and programme languages such as HTML and JavaScript. This area is a significant field of research as it indicates the nature, form and function – the metadata – of the online presence and the procedures and policies employed by the institution and its website developers (see Baca, Coburn, and Hubbard 2007).

Therefore, building upon the extensive studies already undertaken within 'digital heritage', a continuation of the critical analysis of museums can be extended into cyberspace. Rather than forming a technical study of website design, this paper uses the concepts derived from 'critical code studies' to examine computer 'languages' in the light of theories of intertextuality and critical discourse analysis (see Marino 2006; Wardrip–Fruin 2009). The particular discourses which construct the idea of 'digital heritage' within the museum's website will be examined (after Smith 2006). In this manner, the computer languages which are used to create museum websites are assessed as analogous to the 'traditional' museum discourse which structures visitor experiences in 'reality'.

Structuring the experience of the museum website

To focus this study, an online catalogue hosted by the British Museum will be the subject of analysis. This catalogue, entitled 'Ancient Cyprus in the British Museum' is a relatively recent addition to the museum's website. The catalogue provides information and digital images from the late Bronze Age site of Enkomi on Cyprus. The website is part of a wider project concerned with the digitisation of objects from Ancient Cyprus which came to fruition in 2009. The catalogue lists just under 1800 objects and its intended aim is stated as:

> To provide a detailed and fully illustrated database of the entire Cypriot collection, together with essays outlining the history and archaeological development of the sites represented in the British Museum. (British Museum 2010)

Visitors to this online catalogue are offered a variety of choices from the 'homepage' of the site. They are provided with options to peruse and linger, to revisit and rethink the objects and text they view through the museum's catalogue. Options to explore the wider history of the excavated site of Enkomi are provided in a side menu, whilst specific searches for objects and information are also enabled through a 'search box' embedded in the online catalogue's website. Through this device, artefacts are summoned at the visitor's command as they are able to search key terms, examine dimensions and compare provenance. In the side menu, the website provides a series of links, descending in scope, from the first detailing the wider history of Ancient Cyprus, then to the excavations and particular finds, through to the references and acknowledgements. The website structure is ordered, moving from the contextual information to the specific details, but open for the visitor to explore with any individual objective (see Figure 1).

The website appears to offer the visitor greater access to the material – the ability to investigate and interrogate aspects of the catalogue without intrusion from the museum or curatorial practices (see Marty 2008). Despite this appearance, the website is governed and organised by structures comparable to museum practice in

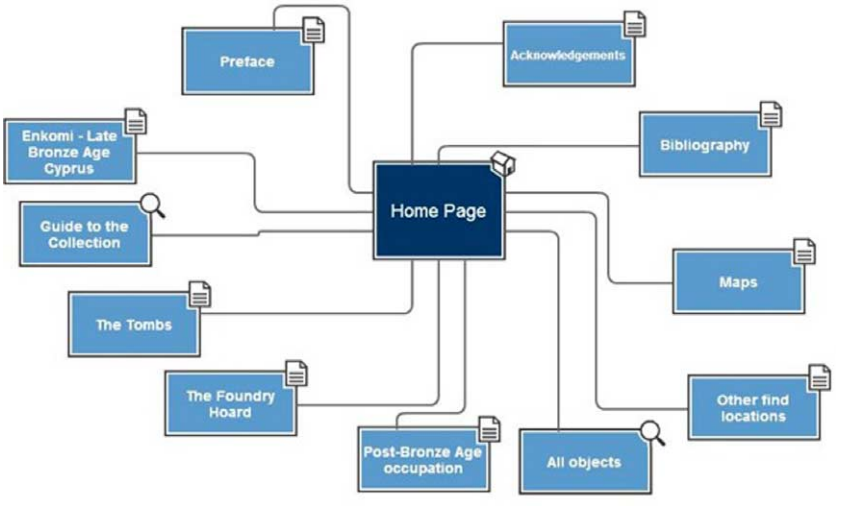

Figure 1. Plan of the 'Ancient Cyprus in the British Museum' website.

'reality'. Underpinning the various interactive features and abilities of the website are a series of commands which are embedded within the codes used to design and execute the functions of the website. The online catalogue, 'Ancient Cyprus in the British Museum' is structured for the user through the markup and programme languages that create the experience for the online visitor.

Loosely defined, a markup language is a means to 'annotate' information to detail how it should be presented by the Internet browser. The most prevalent markup language, and the one which has been used by website designers since the advent of the World Wide Web, is Hypertext Markup Language (HTML). A markup language, such as HTML, controls the 'static' elements within the webpage, such as the logo or menus. These are formed through HTML elements consisting of 'tags', which are codes contained within triangular brackets which detail information for web browsers to decode and present specific pages on the Web. A programme language, however, provides the dynamic elements within a webpage – the interactive features which enable the user to manipulate objects, contribute to forums and search databases. The most common programme languages used in website design are Java, JavaScript, C, C + + and PHP.

These markup and programme languages have developed since the early 1990s to enable individuals, companies and organisations to build up complex websites and provide users with the ability to implement a variety of functions. These languages can be seen on any webpage by using the Internet browser to produce the 'source' codes it uses to create the webpage. In the two most popular browsers, Internet Explorer and Firefox, the source codes can be accessed respectively by selecting 'View/Source' or 'View/Page Source' on the toolbar. On the 'Ancient Cyprus in the British Museum' website, this process produces a new screen containing details of the markup and programme languages which provide the layout and functions of the website (see Figure 2).

Examining these codes reveals the particular characteristics of the British Museum's website. At the outset of the page, the code states what type of language

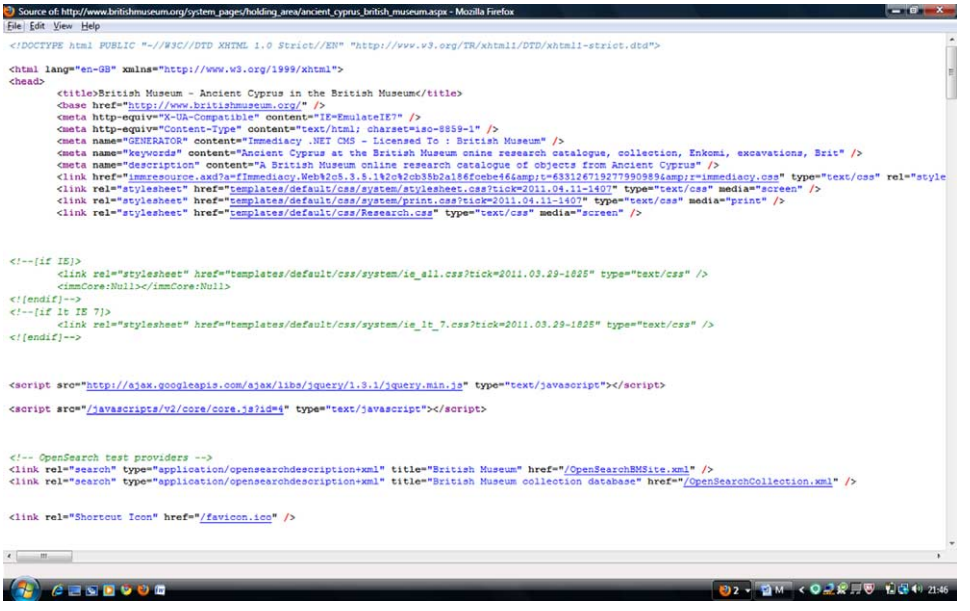

Figure 2. Source codes for the 'Ancient Cyprus in the British Museum' website. © Trustees of the British Museum.

the website is composed in, known as a 'Doctype declaration', to enable the browser to read the page and present it correctly. The opening of the British Museum webpage contains the following code:

<!DOCTYPE HTML PUBLIC "–//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">

This code indicates to the browser that the webpage is written in HTML 4.01, a version of the markup language that was first published in 1999. HTML 4.01 was a significant development in web authoring, as it provided support for a number of new elements within web design such as, Cascading Style Sheets (CSS), which allow the style of webpages to be controlled by an external document and 'cascaded' down; embedding objects, which allows websites to state the exact dimensions of images or graphics placed on the webpage; and a range of accessibility features for people with disabilities. The development of HTML 4.01 and other programme languages for the World Wide Web have been monitored and directed by the World Wide Web Consortium (W3 2011). This international organisation, led by the inventor of the Web, Tim Berners–Lee, has sought to provide a series of Web standards which enable access and development of the Web by designers and visitors.

Examining the 'source' codes of the 'Ancient Cyprus in the British Museum' website reveals the features enabled by the use of HTML 4.01. The website uses CSS to create a uniform appearance for the website as seen in the link to an external document, 'link rel = "stylesheet"'. Accessibility features can be seen in the use of the keyboard shortcuts enabled through the coding 'accesskey = "1"', which allows users with visual impairments to return to the British Museum homepage.

Other standard features of HTML are also observable within the website. The 'hyperlinks' in the webpage, used to move from one page to another to link documents and terms, are denoted through the HTML 'href' attribute. For example, the link to the page entitled 'Enkomi and Late Bronze Age Cyprus' is coded:

```
<a href="/system_pages/holding_areaancient_cyprus_british
museum/enkomi/enkomi–late_bronze_age_cyprus.aspx" title="Enkomi and Late
Bronze Age Cyprus">Enkomi–Late Bronze Age Cyprus </a>
```

This code specifies the page the visitor is to be directed to and it also controls how the links should appear on the webpage. Similarly, JavaScript features are also present in the webpage, enabling the main 'search box' function of the website:

```
    <script type="text/javascript">
$(document).ready(function() {
        $.BM.start("searchBox", function() {
                $('#siteWideSearch').BM().SearchBox();
        });
    });
    </script>
```

However, whilst these languages may appear to be a value-free tool, used to display information to online visitors, they contain a series of structures that provide a particular 'designed' and managed experience (Kittler 1995). Although computer coding such as HTML and JavaScript seem to be wholly undecipherable without considering the wider effect they have on a webpage's appearance, they are nevertheless composed of 'simple points' which organise the interaction between the user and the website (Latour 1996, 217). Following this, although computer languages were once the preserve of the technician and programmer, a growing awareness within the humanities has led to the development of 'critical code studies' – a field of enquiry which analyses and interprets how computer languages interact with, and frame knowledge and experience, within society (Marino 2006). Indeed, one may now speak of the 'hermeneutics' of computer languages, as analysts have described the metaphors, relationships and allusions present within computer codes (Fuller 2008).

This new branch of study echoes Marshall McLuhan's (1964, 10) maxim that 'the medium is the message'; it also draws upon the earlier applications of critical theory to the Internet and the manner in which websites structure information (Landow 1992; Poster 1990; Ulmer 1989, 1994). One of the most prominent areas of exploration within this approach was the application of theories of 'intertextuality' in association with HTML (Bolter 2001; Mehler 2006). This point of connection was established particularly with regard to the hypertext element within HTML, which links pages to one another and allows designers to connect ideas and terms on a webpage. Hyperlinks were observed to bear close association with Kristeva's (1986, 46–47) notion of 'intertextuality' (see Landow 1992). This philosophy holds that apparently separate discourses, whether in the print media or modern media, could not be considered in isolation, as they all act upon and influence each another within an intricate field of often subtle, dialectical relationships (see Bakhtin 1981).

'Intertextuality' can, therefore, be described as a means of analysing how discourses are situated within a nexus of social, political and cultural concerns, and highlights the assumptions that discourses are drawing upon to underpin their position. In this perspective, HTML and other markup and programme languages are considered to both induce and exhibit a high level of intertextuality (Landow 1992). The significance of this approach is that museum websites and the 'virtual presence' of institutions cannot necessarily be considered as providing a different perspective from their counterparts in reality. Indeed, the markup and programme languages used to construct the online presence of museums can be regarded alongside the same heavily–critiqued discourses that construct the object, texts, spaces and visitor experiences in the 'real' museum. The similarities between the two are strong – both seek to represent to the visitor, both provide a format which structures visitor experiences, both rely on specific interjections to alter presentational styles, and significantly, the commands and processes of both are largely absent from wider public perception.

A new framework of study for 'digital heritage studies'

Drawing upon both the work conducted within 'critical code studies' and the wider debates on 'digital heritage', there exists great potential in utilising critical theory to analyse and understand the manner in which computer languages structure online museum visitor experiences. Utilising Bakhtin's (1981) work on critical analysis, four main areas of investigation can be identified:

- Concepts of Dialogue – the existence of programme languages in relation to other forms of discourse within the museum and wider heritage sector. This area of investigation enables the study of how markup and programme languages can be related to wider concepts regarding access, engagement and experience. In short, the intertextuality of markup and programme languages.
- Functions of Genres – the examination of the function and form of programme and markup languages and their representation of digital objects and digital heritage. This considers the manner in which programme languages are able to frame and situate the viewer's experience of online resources, websites and virtual museums.
- Chronotopes – the production of specific temporal and spatial concepts through markup and programme languages which represent digital objects and digital heritage. This area of analysis works towards an assessment of how online resources situate viewers in relation to the website: local-orientated, distant-orientated, present-orientated or past-orientated (Parry 2005).
- Carnivalesque – the emergence of multiple voices and the disruption of structure regarding digital objects and digital heritage, most noticeably with Web 2.0 technologies. This study considers how visitors can arrange and rearrange online sources to suit their own narratives, perspectives and experiences.

To examine the 'Ancient Cyprus in the British Museum' website, its 'concepts of dialogue' will be studied, revealing the relationships between the website and other forms of discourse. This analysis highlights the value of this approach, as it enables

the study of the 'intertextuality' of the online catalogue – the discourses and concepts it draws upon to create the virtual experience. To accomplish this objective, the markup and programme languages need to be grasped as a discourse which is linked and entwined with other forms of discourses, and which serves a particular function within a social context (after Fairclough 1989, 158). Fairclough (1989, 1995) has forwarded a critical approach of analysing the discourses used in society to understand how the means of representation structure experience. In analysing markup and programme languages to assess how they frame the online experience for the visitor, the categories provided by Fairclough (1995) can be adapted and utilised:

- Genres
- Discourses
- Styles

To explain these terms and their application to the study of museum websites, the following definitions will be used. First, 'Genres' refers to the particular ways that are drawn upon by markup and programme languages of organising, framing and structuring online content. This term refers to the overall framework which is used to understand online content. Genres are significant in this regard because they provide a structure from within which an audience may attempt to understand digital objects and digital heritage. Second, 'Discourses' are understood here to mean the different storylines that are drawn upon to represent and understand the world. This term refers to the particular slant or perspective that might be considered in the construction of the website. This particular group is crucial in assessing the means by which apparently similar aspects such as 'heritage' or 'the past' can be appreciated and understood from different perspectives or positions. The sorts of things one might look for in terms of 'discourse' include the themes represented, the presentational style and what may be included and excluded. Finally, 'styles' are the ways in which discourses are enacted and used to constitute a sense of being and identity. This refers to the ways the online content is structured to relate to a specific concept of self within the individual. Using these three categories, the analogous relationship between the practice of the museum and the markup and programme languages can be examined.

Consumer discourses within the museum website

The website 'Ancient Cyprus in the British Museum' exhibits particular genres, discourses and styles in its markup and programme languages. To consider the aspect of 'Genres' initially, the content of the online collection is presented in a specific manner which frames the experience of the catalogue for the visitor. The 'homepage' of the online catalogue provides the viewer with a number of choices on the left-hand menu of the page. The structure of the website is controlled through referencing to external style sheets, but the consistent form of the site is ordered through a wider Content Management System (CMS), which allows multiple authors to contribute to the museum's website, but maintain a harmonious appearance:

<meta name = "GENERATOR" content = "Immediacy.NET CMS – Licensed To: British Museum"/ >

This tag indicates that the software used for the CMS is supplied through the product 'Immediacy' which is operated by the company Alterian (2011). The use of CMS to build websites enables a uniform appearance, as data are inputted by web authors into prearranged frameworks. The information contained within the website is thereby laid out within existing structures. As exhibitions and displays conform to the confines of the spaces within the museum, online resources are themselves subject to particular borders. However, the nature of these structures is specific. 'Immediacy' is offered to its customers to 'Build a consistent, relevant brand across websites, email campaigns and social media channels' (Alterian 2011).

The appearance of the British Museum website that 'Immediacy' provides is not dissimilar to the noncommercial CMS products which are used by museums, libraries and galleries worldwide to enable users to search content and access information (see Artstor 2011; Eduserv 2011). However, the objective of the commercial CMS products is to establish a visual and continuing relationship between businesses and clients. The website is, by this means, formed into a dialogue with the commercial websites for car companies or sporting goods stores that also utilise 'Immediacy' (see Alterian 2011). The 'Genre' of the 'Ancient Cyprus in the British Museum' is thereby structured as one of a commercial relationship between the visitor and the institution (after McTavish 2006, 242).

This feature of the website is particularly apparent in the webpage entitled 'All Objects' within the catalogue. Within this page, the viewer is presented with an array of artefacts in a clean, orderly fashion. Objects are tiled vertically to enable the viewer to scroll down the webpage, examining thumbnail size images and small amounts of descriptive text (see Figure 3). As the CMS provides similarly styled pages across the wider museum website, the structure of the webpage for this online catalogue is thereby highly similar in its layout to the online shop at the British Museum. Both webpages use the same manner of display, with an array of objects exhibited with their best face forward, each vying for attention from the viewer to engage with them further. The similarity in form between these two webpages, the online catalogue and the online shop (see Figure 4), thereby replays the critique of the modern museum as an exercise of consumerism and capitalism (Witcomb 2003, 21).

This use of markup and programme languages to engender a 'consumer perspective' genre for the 'Ancient Cyprus and the British Museum' website is also demonstrated in the website's use of 'OpenSearch' for the main search function:

<OpenSearchDescription xmlns = "http://a9.com/–/spec/opensearch/1.1/">

This software was developed by the online retailer Amazon to ensure customers on their site were able to locate similar products and that search results were presented in an accessible and appealing fashion (A9 2011). The 'Ancient Cyprus and the British Museum' website can, therefore, be considered to be in dialogue, both directly and indirectly, with websites that provide commercial functions. The online visitor is correspondingly cast as the consumer of the objects and information provided by the museum's website.

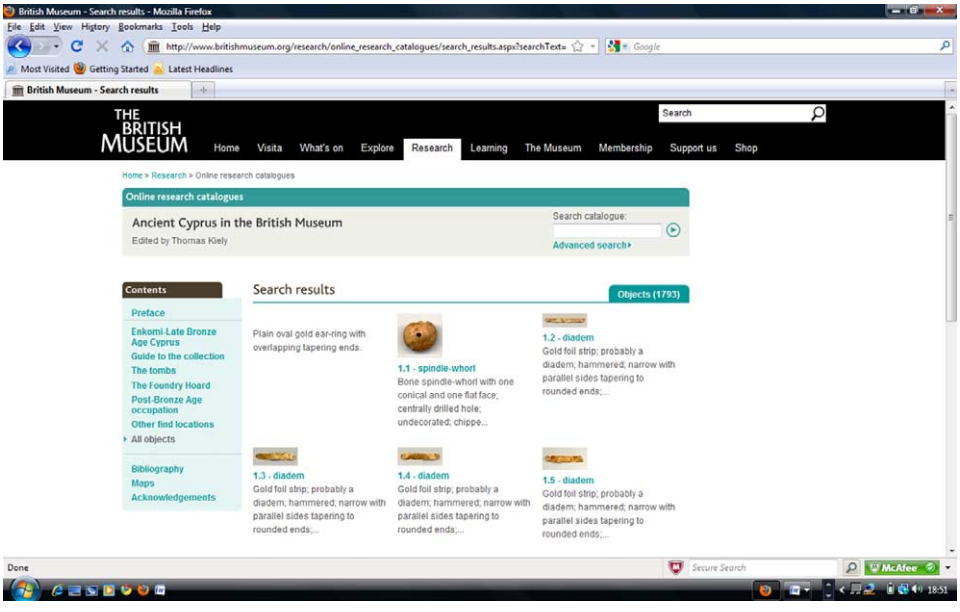

Figure 3. Screenshot of the online catalogue. © Trustees of the British Museum.

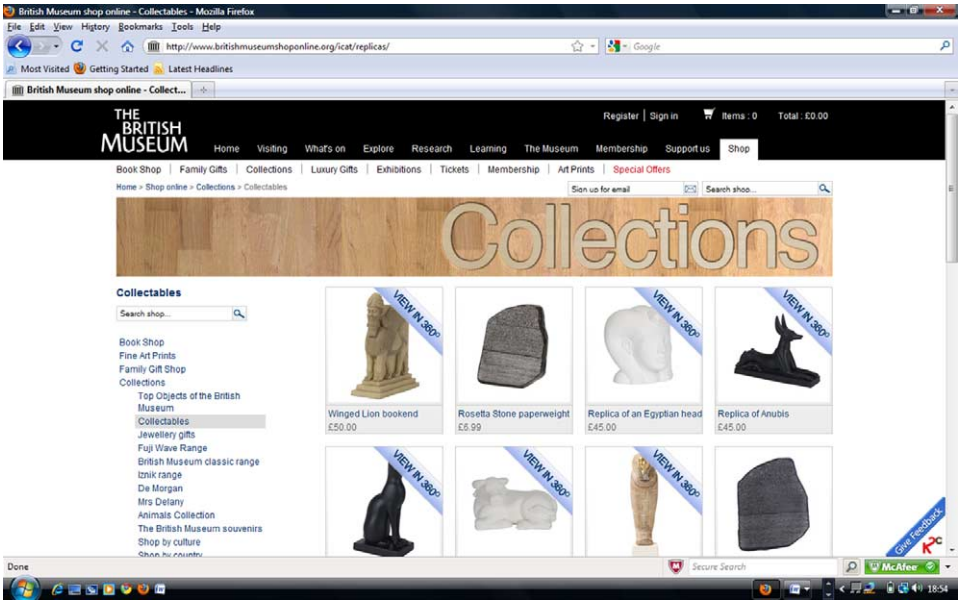

Figure 4. Screenshot of the British Museum Online Shop. © Trustees of the British Museum.

This aspect of the website is further affirmed in the display of objects within the catalogue. Hovering over an image with the cursor in the online catalogue summons a description of the object, called the ALT text, which is used in website design both for accessibility reasons and to replace the image if it fails to load on the webpage. Whilst this type of text is usually shortened to approximately 50 characters, these words are specifically tapered off in the museum's catalogue in a description of the object, rather than forming a précis of its use, function or role. This curtailed narrative leads the viewer into wanting to know more about the object and its associations in a manner reminiscent of an online shop. This feature is created through the coding on the webpage:

<img alt = "Gold ear–ring consisting of a plain rounded ring taperi. . ."

If the viewer takes the invitation to continue looking at the piece, clicking on this individual object in this online catalogue creates a separate webpage where visitors can access further information. It is in this particular page that the frameworks provided by the markup and programme languages are especially pertinent in understanding the specific online visitor experience. The viewer is offered an opportunity of 'possessing' the object, as the website coding presents a means of utilising the object in a number of ways (see Figure 5). The possibilities are listed as icons themselves:

- Display larger image
- Use digital image
- Commission photography
- Print record

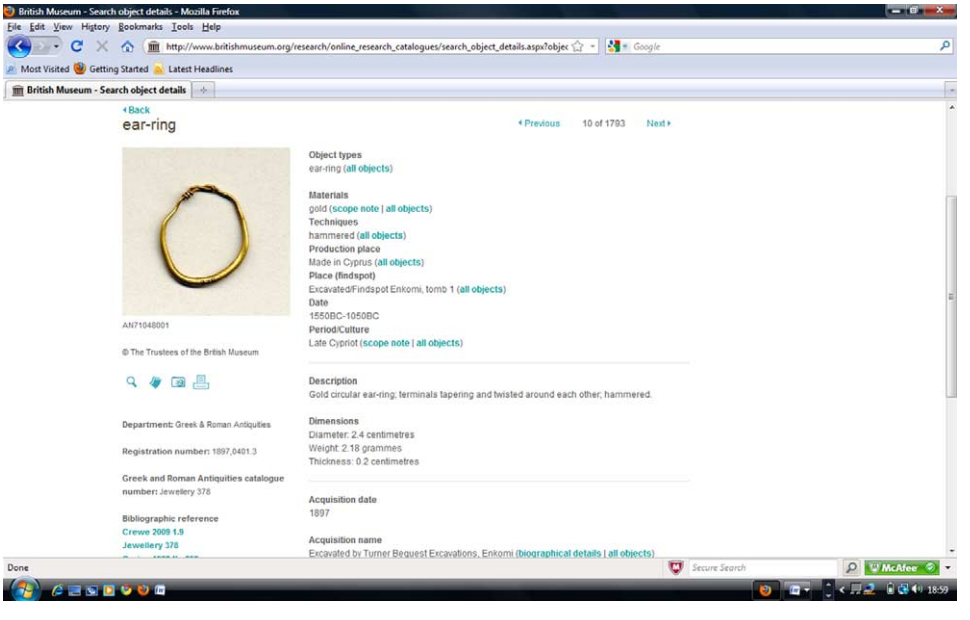

Figure 5. Detail of a screenshot of the online catalogue. © Trustees of the British Museum.

The coding for displaying a larger image uses a link to direct the viewer to a new page, responding to the viewer's demands to obtain more information about the object – to gain greater access and possession of the object:

```
<em>Display larger image </em></li><li class = "digitalImage" ><a
href = "/join_in/using_digital_images/using_digital_images.aspx?asset_id = 71046&obj
ectId = 436236&partId = 1">
```

Therefore, the structure of the experience of the digital object appears amenable to the desires and demands of the viewers, whilst constraining the appearance of the object along the lines of consumption. The markup and programme languages used enable the visitor to achieve a sense of possession and ownership – reaffirming their role as the consumer as they visit the online catalogue.

This particular structuring of the website is also continued within the 'discourses' present within the webpage coding. In this circumstance, the HTML coding provides a specific storyline for visitors in their engagement with the site. This is largely achieved through the ways in which the webpage is arranged, the narratives that are provided for the viewer to read the website, and its context. If the viewer remains with the same digital object, the earring, we can see how the webpage is designed to flow for the viewer through the use of tags. These tags are used to assign particular attributes to certain areas of content:

```
<h1 class = "noBliss">ear–ring </h1><div id = "researchObject"><div
class = "researchImage"> <div class = "imageContainer">
```

They divide the webpage into a specific arrangement, organising information for the viewer and separating the object from its interpretative text. This structure provides a dispassionate view of the digital object-divided, arranged and divorced from its wider context. To follow the line of the consumer model, viewers are provided with a means to search for objects of a similar or corresponding nature, mirroring the features of online shopping catalogues. Links are constructed to enable visitors to view lists of objects from the same geographical area or objects constructed with identical techniques or materials:

```
<strong> Period/Culture </strong ><br/ > Late Cypriot (<a title = "scope note for Late
Cypriot"
href = "/research/search_the_collection_database/term_details.aspx?scopeType = Terms
&amp;scopeId = 15790"
```

Viewers can follow the arrangement of this narrative, constructing a particular storyline regarding the object, its associations and its relations (after Witcomb 2003, 119–20). Whilst the online representation appears to provide a 'neutral' or objective resource where visitors can examine information themselves, the 'storyline' of the website excludes alternative narratives (Walsh 1997). As the majority of the artefacts from the catalogue are taken from the 1896 excavation by the British Museum, at a time when Cyprus was under direct British administration, the potential for alternative narratives are certainly present. However, these are closed off for the online viewer, as the markup and programme languages structure the experience of

the website as an exercise in the 'colonial gaze' of ownership and possession (Barringer and Flynn 1998).

This 'storyline' is present throughout the 'Ancient Cyprus in the British Museum' website, as it reaffirms a particular perspective for the viewer. In this respect, the analogy of the HTML coding used and wider museum practice provide a useful point of reflection on the relations between the online visitor and the website. For example, images of the artefacts on the website are held on a main filestore and embedded onto the page, a feature which can be seen in the coding of the website:

```
<img src = "/collectionimages/AN00071/AN00071046_001_m.jpg" alt = "Gold ear–
ring consisting of a plain rounded ring tapering upwards; at the top the open ends are
twisted round one another...
```

The image of the object is itself 'imported' into the webpage, as from the coding we can see its source in another folder on the institution's hard drive. Just as the object itself, housed in the museum's collection, is imported and extracted from its place of origin to be exhibited, the computer languages used to display the image of the object are comparable in their own 'sourcing'. The digital object experiences the same relationships as its material counterpart; it is an item which is stored, catalogued and employed for display. This is significant in terms of the style of the markup language, as it casts the online viewer in the same narrative as the museum visitor to an exhibition, which is itself marked by issues of power, possession and post-colonialism. The style of the HTML coding is one which provides a sense of power and possession over the contents of the website – corresponding to a consumerist model of the museum experience (Bennett 2004).

This is also realised in the 'styles' of the markup and programme languages used in the website, as the website enables the viewer to assume the identity of a customer, perusing a catalogue of objects. This particular style of the website is confirmed with the source codes revealing the use of Google Analytics (2011) for the site – a service which provides data on website traffic and marketing effectiveness to ensure a 'return on investment':

```
<script type = "text/javascript">
        var gaJsHost = (("https:" = =document.location.protocol)? "https://ssl.":
"http://www.");
      document.write(unescape("%3Cscript src = '" + gaJsHost + "google–
analytics.com/ga.js' type = 'text/javascript'%3E%3C/script%3E"));
</script>
```

This device provides companies with the ability to analyse data on the number of hits, links and visits to their website to develop information on how to convert 'visitors into customers' (Google Analytics 2011). Similarly, the website 'Ancient Cyprus in the British Museum' also uses the web analytics service 'Click Tracks' supplied by the company Lyris HQ (Lyris 2011):

```
//New Click Tracks code added: 05/08/2010 as supplied by BM Co.
  document.write('<'
          + 'script type = "text/javascript" src = "'
          + document.location.protocol
```

```
        + '//stats2.clicktracks.com/cgi–bin/ctasp–
server.cgi?i = RsvWAL95NlV9Ow'
        + '" ><'
        + '/script >');
```

This software enables the monitoring of how visitors interact with the site and its use on the page is connected to measuring the traffic to the British Museum shop from the website, as evidenced by the comments within the source codes which are not displayed by the browser but remain in the markup text, '<!—BM Shop —>'. These comment tags are used by web developers to assist in editing the website as they explain the particular function of the markup and programme languages and its purpose on the website. In this respect, the 'style' of the website appears to reaffirm the features of the 'genres' and 'discourses' of the 'Ancient Cyprus in the British Museum' online catalogue – that it draws upon and utilises discourses that are present within commercial websites, thereby casting the role of the online visitor as a consumer. The online resource therefore shapes the visitor experience in an analogous manner to a 'traditional' museum display – visitors are provided with a structure, enabled by the programme languages, to possess and own the objects on display (see Belk 1995). The online resource arranges objects and texts for approval and validation by the visitor as a customer.

Conclusions

The areas of analysis within this investigation suggest a means to examine how markup and programme language structure the reception of digital heritage. The drive towards greater technical ability and the utilisation of information technology within the heritage sector can only be regarded as laudable. Universities and training facilities are increasingly offering vocational courses on digital heritage, and software applications for museums and archives are a vital means of expanding and delivering information and resources on the past. In the rush to develop evermore sophisticated means of accessibility and engagement with the public, a process already ongoing with the use of Web 2.0 technologies, scholars have called for a greater reflection on the assumptions and issues behind the implementation of this online presence. Whilst many highlight the differences in relationships and experiences presented by the online presence of museums or heritage institutions, there also exists a great deal of similarities. This correspondence between the site of the museum and the museum website arises from the intertextual nature of the markup and programme languages used to construct the online catalogue or the virtual exhibition.

The examination of digital objects and the wider issues of digital heritage must necessarily ground itself in the technology used to supply and deliver those resources. This involves both the devices used to view and access information, the mobile phone or the laptop, and the markup and programme languages used to structure and disseminate that information, whether that is HTML, XHTML or JavaScript. These technical aspects are not merely neutral purveyors of data; increasingly, they constitute the very means by which individuals interact with the rest of society. In effect, they provide the framework for our digital lives. Therefore, the issue of examining museum websites cannot absent itself from these concerns and they must

be at the forefront of any study hoping to engage with how information technology is used within the museum sector.

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References

A9. 2011. http://a9.com/.

Alterian. 2011. www.Alterian.com.

Artstor. 2011. www.artstor.org.

Arvanitis, K. 2009. Museums outside walls: Mobile phones and the museum in the Everyday. In *Museums in a digital age*, ed. R. Parry, 170–6. London: Routledge.

Baca, M., E. Coburn, and S. Hubbard. 2007. Metadata and museum information. In *Museum informatics: People, information, and technology in museums*, ed. P.F. Marty and K. Burton Jones, 107–28. London: Routledge.

Bakhtin, M. 1981. *The dialogic imagination*. Austin: University of Texas.

Barringer, T., and T. Flynn. 1998. Introduction. In *Colonialism and the object: Empire, material culture and the museum*, ed. T. Barringer and T. Flynn, 1–10. London: Routledge.

Belk, R. 1995. *Collecting in a consumer society*. London: Routledge.

Benjamin, W. 1992. *Illuminations*. London: Fontana.

Bennett, T. 1995. *The birth of the museum*. London: Routledge.

Bennett, T. 2004. *Pasts beyond memory*. London: Routledge.

Besser, H. 1997. The transformation of the museum and the way it's perceived. In *The wired museum: Emerging technology and changing paradigms*, ed. K. Jones–Garmil, 153–69. Washington: American Association of Museums.

Bolter, J. 2001. *Writing space: Computers, hypertext and the remediation of print*. Mahwah: Lawrence Erlbaum Associate Publishers.

Bowen, J. 2000. The virtual museum. *Museum International* 52, no. 1: 4–7.

British Museum. 2010. *Ancient cyprus in the British museum*. London: British Museum. http://www.britishmuseum.org/system_pages/holding_area/ancient_cyprus british_museum.aspx.

Cameron, F. 2007. Beyond the cult of the replicant – Museums and historical digital objects: Traditional concerns, new discourses. In *Theorizing digital cultural heritage: A critical discourse*, ed. F. Cameron and S. Kenderine, 49–76. Cambridge, MA: MIT Press.

Cameron, F. 2008. The politics of heritage authorship: The case of digital heritage collections. In *New heritage, new media and cultural heritage*, ed. Y. Kalay, T. Kvan, and J. Affleck, 170–84. London and New York: Routledge.

Crow, W., and H. Din. 2009. *Unbound by place or time: Museums and online learning*. Washington: American Association of Museums.

de Groot, J. 2010. Historiography and virtuality. In *Culture, heritage and representation: Perspectives on visuality and the past*, ed. S. Watson and E. Waterton, 91–104. Farnham: Ashgate Publishing.
Din, H., and P. Hecht, eds. 2007. *The digital museum: A think guide*. Washington: American Association of Museums.
Eduserv. 2011. www.eduserv.org.uk.
Fairclough, N. 1989. *Language and power*. Harlow: Longman.
Fairclough, N. 1995. *Critical discourse analysis: The critical study of language*. Harlow: Longman.
Fuller, M. 2008. Introduction. In *Software studies: A lexicon*, ed. M. Fuller, 1–14. Cambridge, MA: MIT Press.
Gander, N. 2001. New media special: A presence on the web. *Museum Practice* 16. http://www.museumsassociation.org/museum–practice/1284.
Google Analytics. 2011. http://www.google.com/analytics.
Hooper–Greenhill, E., ed. 1999. *Museum, media, message*. London: Routledge.
Jones–Garmil, K., ed. 1997. *The wired museum*. New York: The American Association of Museums.
Kalay, Y. 2008. Introduction: preserving cultural heritage through digital media. In *New heritage: New media and cultural heritage*, ed. Y.E. Kalay, T. Kvan, and J. Affleck, 1–10. London: Routledge.
Kittler, F. 1995. There is no software. *CTheory* a032. http://www.ctheory.net/articles.aspx?id=74.
Knell, S., S. Macleod, and S. Watson, eds. 2007. *Museum revolutions: How museums change and are changed*. London: Routledge.
Kristeva, J. 1986. *The kristeva reader*. Oxford: Blackwell.
Landow, G. 1992. *Hypertext: critical theory and new media in an era of globalisation*. Baltimore: The Johns Hopkins University Press.
Latour, B. 1996. *Aramis, or the love of technology*. Trans. C. Porter. Cambridge, MA: Harvard University Press.
Lyris HQ. 2011. http://www.lyris.com
Macleod, S. 2005. *Reshaping museum space: Architecture, design, exhibitions*. London and New York: Routledge.
Marino, M. 2006. Critical code studies. *Electronic book review, electropoetics*. http://www.electronicbookreview.com/thread/electropoetics/codology.
Marty, P. 2007. Museum websites and museum visitors: Before and after the museum visit. *Museum Management and Curatorship* 22, no. 4: 337–60.
Marty, P. 2008. Museum websites and museum visitors: digital museum resources and their use. *Museum Management and Curatorship* 23, no. 1: 81–99.
Marty, P. 2010. Museum informatics. In *Encyclopedia of library and information science*, ed. M.J. Bates and M.N. Maack, 3717–25. London: Routledge.
Marty, P., and K. Burton Jones, eds. 2007. *Museum informatics: People, information, and technology in museums*. London: Routledge.
McLuhan, M. 1964. *Understanding media*. London: Routledge.
McTavish, L. 2006. Visiting the virtual museum: Art and experience online. In *New museum theory and practice: An introduction*, ed. J. Marstine, 226–45. Oxford: Blackwell.
Mehler, A. 2006. Text linkage in the wiki medium – a comparative study. In *Proceedings of the EACL 2006 workshop on new text – Wikis and blogs and other dynamic text sources*, ed. J. Karlgren, 1–8. Trento: EACL. http://www.sics.se/jussi/newtext/working_notes/01_mehler.pdf.
Message, K. 2006. *New museums and the making of culture*. Oxford: Berg.
Parry, R. 2005. Digital heritage and the rise of theory in museum computing. *Museum Management and Curatorship* 20, no. 4: 333–48.
Parry, R. 2007. *Recoding the museum: Digital heritage and the technologies of Change*. Abingdon: Routledge.
Peacock, D. 2007. The information revolution in museums. In *Museum informatics: People, information, and technology in museums*, ed. P.F. Marty and K. Burton Jones, 59–76. London and New York: Routledge.

Pearce, S., ed. 1994. *Interpreting objects and collections*. London: Routledge.
Poster, M. 1990. *The mode of information: Poststructuralism and social context*. Chicago: The University of Chicago Press.
Ravelli, L. 2007. *Museum texts*. London: Routledge.
Sarraf, S. 1999. A survey of museums on the web: Who uses museum websites? *Curator: The Museum Journal* 42, no. 3: 231–43.
Smith, L. 2006. *Uses of heritage*. London: Routledge.
Sorenson, M. 2005. Virtual collections. *Museum Practice* 42: 46–8.
Tallon, L., and K. Walker, eds. 2008. *Digital technologies and the museum experience: Handheld guides and other media*. Lanham: AltaMira Press.
Thomas, S., and A. Mintz, ed. 1998. *The virtual and the real: Media in the museum*. New York: American Association of Museums.
Ulmer, G. 1989. *Teletheory: Grammatology in the age of the video*. London: Routledge.
Ulmer, G. 1994. *Heuretics: The logic of invention*. Baltimore: Johns Hopkins Press.
UNESCO. 2003. *Charter on the preservation of digital heritage*. Paris: UNESCO. http://portal.unesco.org/en/ev.phpURL_ID=17721&URL_DO=DO_TOPIC&URL_SECTION=201.html.
World Wide Web Consortium (W3). 2011. www.W3.org.
Walsh, K. 1992. *The representation of the past*. London: Routledge.
Walsh, P. 1997. The web and the unassailable voice. *Museums and the web: An international conference, Los Angeles, March 16–19, 1997*. Ontario: Archimuse. http://www.archimuse.com/mw97/speak/walsh.htm.
Wardrip–Fruin, N. 2009. *Expressive processing: Digital fictions, computer games and software studies*. Cambridge, MA: The MIT Press.
White, L. 2004. Museum informatics: Collections, people, access, use. *Bulletin of the American Society for Information Science and Technology* 30, no. 5: 9–20.
Witcomb, A. 2003. *Re–imagining the museum: Beyond the mausoleum*. London: Routledge.