Contact Networks for Digital Reciprocation

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Abstract

Since their establishment, the movement of objects and information from communities of origin into European museums has typically been one-way. Over the last decade this has shifted with digital images and information connected to objects increasingly travelling outwards. As Museums engage with the expanding open-web economy they face pressure to embrace exchange and dialogue with diverse publics. Using the examples of digital research network projects at the University of Cambridge Museum of Archaeology and Anthropology and the British Museum this paper examines how in practice issues surrounding online interactions between community groups, objects and the museum have been played out past and present. Recent theorization has created a binary opposition between the real object and its digital representation. In this article we critique this separation and in doing so reveal the potential for contact networks, as an alternative reciprocal model of engaging with things to move us into a new realm of digital possibilities for object-based engagement.

Key words: Contact network, Digital reciprocation, Digital object, Object-based engagement

Introduction

Of particular importance for the 21st century, in a world in which access and engagement has taken on a global remit through the digital and communication revolutions, are questions about objects housed in museum collections and the creation, and custodianship, of the information connected to them. Historically, the flow of non-Western objects has been one way, from the communities and contexts in which these objects were obtained into the museums of the world. However, the rapid development and global reach of the internet and the movement of museums towards the digitization of objects and archives in their collections, has created a situation whereby digital images and the information connected to them are increasingly traveling out from the physical boundaries of the museum. Reversing the trend, with images of objects and the information connected to them being made accessible online, represents one approach aimed at redressing the power/information/access imbalance linked to indigenous objects housed in European museum collections. However, the digital domain has the unique capacity to do much more.

Recent theorization has created a binary opposition between the real object and its digital representation (see for example Dudley 2010 and Parry 2010 for opposing approaches). Within this structure of meaning and significance the effective qualities of the real object are privileged whilst its digital representation is seen as the poor relation. In this article we critique this separation and suggest that interactions with digital versions of museum objects can be meaningful in their own unique ways, going beyond what is possible in the context of the museum. In transcending the museum walls something transformative happens to objects and the information connected to them. Through digital networks, objects not only become accessible to distributed audiences but the knowledge collected, exchanged and created around them undergoes a process of change. We argue that projecting the object into the digital domain frees it up from the ties of the physical museum and in doing so shifts the balance of power and authority associated with it. This decentralization of the museum and the objects and knowledge housed within it, is key to this article and our argument for the need for a different

way of working with digital objects. In this study we examine how information can be digitally brought together from distributed locations (sometimes located thousands of miles away from the physical objects themselves) to instigate new connections between people and things. We investigate how information is connected to, and flows around objects within this digital domain as well as proposing an alternative way of working with online communities through a digital contact network model. The case studies presented examine how in practice issues surrounding online interactions between community groups, objects and the museum have been played out in the past and present - and in doing so we reveal the potential for online networks, as an alternative reciprocal model, to move us into a new realm of digital possibilities for object-based engagement.

The term community is used by the authors in this article to refer to a wide range of groups of individuals and includes source communities, diasporic, specialist interest and student groups. The term is deliberately used in this broad way to demonstrate how our argument is pertinent to all levels of museum users and non users whose interest in museum collections at present varies from a high to a low level of engagement. We recognize that *who* and *what* constitutes a community is fluid and changes depending upon the nature of the working relationship. However, this article focuses on how the contact network approach to collections shifts power, access and 'interest' dynamics to provide a mechanism through which those groups who currently have a low level of engagement with the museum might become more actively involved (on their own terms) with the interpretation of its collections.

From physical in-reach to web in-reach

Museums have been developing a strong in-reach discipline for decades, working in collaboration with community partners to bring new perspectives and voices into the museum thereby influencing its work. In light of this fact it would seem natural that, given the communicative qualities of the World Wide Web, a movement from a physical in-reach offering to a web equivalent would be a likely progression. The 1999 National Museums Directors' Conference publication a Netful of Jewels (1999:5) stated that 'the seeds for future development are already present in today's museums...', citing 'participatory galleries' and 'content created by visitors as well as museum staff...' as examples of accepted museum work practice that could pave the way for technological change. Similarly, Parry (2007) also notes that in the mid-1990s the outreach framework, fundamental as scaffolding for a web equivalent, was already in place.

The museum web offering was initially seen as a convenient way to provide wider access to museum collections. Entire collections databases of information were presented online, often displaying information originally intended for museum internal use (Durbin 2003). If access to museum collections is simply about addressing the needs of the specialist then this approach is fine, but for many museums public access is more than simply about making vast quantities of information available (Levenson 1998). Analogies have been drawn between the web museum and the physical museum itself with the former adopting the latter's past mindset of overwhelming visitors by filling galleries with hoards of objects and presenting labels of scientific information (Durbin 2003); as such it could be argued that this accessible web museum was not really accessible. Further comparisons to past museum practice were also raised in that the web museum was accused of being nothing more than another broadcast medium or a one-to-many distribution channel (Gere 1997).

Towards the end of the 20th Century however, UK government funding saw a move towards supporting museum IT innovation. The web museum increasingly incorporated educative interactivity into its online offerings and in 2005 the Museums Association (MA) acknowledged that museums '...are starting to harness new technologies and the huge potential they have to reach new audiences and change the ways collections can be used' (Museums Association 2005: 8). Museums were beginning to look to the latest phase of the web the social phenomena of user content driven sites, for ways to engage online users. Two years later, in recognizing this transition from an accessible web to a social web, the Museums Libraries and Archives Council (MLA) observed that 'whereas once people were dependent on their information broadcast by official channels, we can now access the views and experiences of ordinary people' (Stanziola 2007: 5). Information decisions and choices would now depend upon collective social ranking. In representing collections the accessible web museum could

become the social web museum; poly-vocal, participative and representative. Just as museum in-reach programs throughout the 1990s had transformed how visitors physically engage directly with museums, now, with the facility to move from broadcast to omni-directional communication, so too could the social web museum transform museum representation of collections and the ways in which their online visitors engage with object-based information. Museum web in-reach could be a possibility.

The turn of the 21st Century saw a clear museum transgression from physical to digital as a number of innovative museum exhibitions² on both sides of the Atlantic began to join the physical museum space with the web via user generated content. It took some years, however, for the same to occur with museum in-reach. In 2005 the notion of museum non-professionals being actively engaged to enhance the collections workflow of the museum gained momentum with the release of the MA's Collections For The Future strategy. In a gesture towards the involvement of museum non-professionals with special interests in aspects of collections, the MA suggested the 'volunteers and enthusiasts also represent a valuable source of knowledge'. and whilst acknowledging that 'some museums have worked hard to harness this...it is clear that museums could do more to ensure they draw on external sources of knowledge and make it publically available' (Museums Association 2005: 26-27). Accommodating non-curatorial voices in the documentation and representation work of the museum has been challenging for a field that prides itself on its collections expertise (Durbin 2003). The MA's strategy further enthused that 'Museums need to engage actively with this debate and work out its implications for the way that their collections are presented. They should be authoritative without being authoritarian' (2005: 14). But how to accommodate this tension within the museum profession?

Throughout the last decade, the online solution implemented by museums to collaborate with expert users over the web has largely concentrated on a social-web user-generated content model: websites present collections information and users are invited to provide feedback or contribute information in response³. Such websites are accessible to all Internet users and consequently the web in-reach community becomes the entire Internet audience. Any potential for collaborative dialogue greatly diminishes, as opportunities for reciprocity are often lost amongst the 'noise' created by the large amount of information received (Cameron and Mengler 2011). Therefore, to what extent this user-generated content actually informs the work of the physical museum obviously becomes questionable since factors of scale (size of collaboration) and source (where information is coming from) come into play in a way that are not a concern of physical in-reach programs. It could be argued that, whilst physical in-reach connects the museum to expert users, to date, museum websites assuming web in-reach characteristics ultimately do the opposite, they distance specialist interest users from potentially informing museum collections. Scale and source therefore become key variables in the relationship between physical and web in-reach and determine the nature of a museum's web in-reach community.

Talking Objects at the British Museum

Talking Objects is an intensive object-based engagement programme that connects museum collections with new audiences to unlock the dialogic potential of historic objects. The initiative began in 2008 with a pilot project focusing on the Rosetta Stone, working with a group of young people who were all recent arrivals to London. The programme has since developed and diversified. To date the British Museum has worked with groups of young people from across London to focus intensively on single objects in the British Museum's collections via funding from the John Lyon's charity. In 2010 the Esmée Fairbairn Foundation came onboard to fund the national element of the programme through which we have partnered with six of the British Museum's national partners to develop and extend the programme's methodologies. As part of this intensive engagement with objects participants work closely with museum curators and creative practitioners to 'unpack', question and creatively respond to the meanings and histories of these objects. During this process specific pieces of information are distilled out of the wealth of information and questioning presented around the object (Poulter 2010). The project culminates in a 'debate session' during which the participants present the story of the object, reshaped by then, back to the museum and participatory methods are used so that the

contemporary relevance of the object is discussed and debated, resulting in new perceptions of the object being created (ibid). Five minute films produced through the project, which are coproduced by the project participants, are then made available online on the British Museum's website.⁵

In addition to this funded programming, over the summer of 2010 Emma Poulter in collaboration with Deakin University in Australia and the University of Amsterdam, developed and ran a pilot Digital Talking Objects Project that used the online platform Drupal and web conferencing facilities to network the British Museum with these two remote student communities. This cross-disciplinary exchange and the resulting performance, was created in response to an indigenous Australian barkshield in the British Museum collections, which was obtained by Captain Cook at Botany Bay. The Talking Objects Digital pilot project was set up as an experimental way of working which transported an object-based research framework into the digital domain to create a dialogue with a disparate online community. The exchange with Australia and Holland, which took place over a three month period resulted in a live broadcast theatre piece and an online, real-time dialogue and debate session with the project participants which included curatorial and other staff at the British Museum and the Museum of Archaeology and Anthropology in Cambridge.

Digital Talking Objects



Fig 1. screenshot from live performance created around bark shield

For this digital Talking Objects pilot project the contact network – in the form of a Drupal site-was created by Deakin as they had prior experience of setting up a digitally networked environment as well as technical support staff who could take responsibility for administering and trouble-shooting any issues which arose. Essential to the process was the existence and availability of conferencing facilities at all three institutions in order to enable link ups to take place, as well as to connect with the final live-streamed performance.



Fig 2. screenshot from the live debate which look place immediately after the performance

Capturing a range of information relating to the histories of this object was essential for establishing a rich starting point for the digital interaction and response. Unlike the first day of Talking Objects projects which take place at the British Museum, where participants are introduced to the real object in the gallery space and hear the object's narrative from the curator, for this digital interaction with the bark shield all information about it was located on, or was accessible through, Drupal. Information connected to the object was posted online in the form of text documents provided by curators, academics and other specialists, there were references to published work which related to the bark shield as well as via video footage of curator Natasha McKinney at the British Museum and Nicholas Thomas at the Museum of Archaeology and Anthropology in Cambridge, talking about the object from their own perspectives. The long leadin to the project and the sustained engagement with the barkshield which was enabled through the process of connecting and responding to it via Drupal enabled a wealth of information to be build up around this object, creating a unique networked digital research environment. This contact network provided a digital (and non-museum based) location for object-centered information to be located and created a new space for students to respond and question the information they were accessing, as well as to request further contextual information. As the project progressed students used this forum to post their developing response to the object in the form of scripts, for comment and feedback from the project partners at all the nodes in the network. As well as the interactions taking place online, two conference call link-ups took place in order for the Deakin students to show their work in progress to students in Amsterdam and British Museum staff and to get their feedback.

Whilst partners in Amsterdam and at the BM were involved in informing and commenting on the Australian students' developing response to the bark shield, because the creative response was taking place remotely, from the positioning of Australia, the outcomes of this creative interaction were shaped in a way which would not have been possible if the project had taken place within the museum. Engaging with the object digitally removed it from the limitations of the museum setting and worked to free-up the interactions created through it. Taken out of the glass case it became a pivot for new interactions which were controlled and directed by the

students. As one student commented during the first online link-up: 'everytime someone gazes on history they are doing it through their own preconceptions...we wanted to show how people view it – rather than the history of it...' Whilst the real object remained in the physical space of the Enlightenment Gallery at the British Museum its digital representative, located online, as for all Talking Objects projects, acted as a springboard and catalyst for engagement. As a student commented in his end report on the project: 'we have not tried to solve the issue since it is too complex for any performance to encapsulate but instead we simply showed the issue for what it was; a complicated set of ideas whose roots stretch back for centuries and whose effects will be felt for centuries more'. Projecting the bark shield into the digital domain enabled elements of its history and story to be engaged with and re-conceptualized whilst the shield itself remained in its museum location.

Encountering the object digitally also allowed issues arising from its location (past and present) and history to be compared and contrasted. The background of the group informed their interactions with the object and affected the voice they gave the barkshield during the writing and staging of their performance. For many of the Australian nationals there was a frustration expressed that there was an object in the British Museum which was 'significant to Australian history but no-one knows about it – not part of official Australian history'. The object also provoked interesting reactions from international students, in her report one student comments:

the project made me realise how a simple object can mean so many things, have its own story, has potential [to] transform and become a symbol over time, an object can be broken down and made into a play, a dance, a film and so on. It also taught me more about Australian history which I think is important as an international student to understand the community I am living in where it derives from and why it functions the way it does.

One student in particular used the shield to reflect on his country's colonial background and on his positioning to both that history and to the distinctive colonial history embodied by the shield. In initial discussions about this object the student aired his views — 'what about the shield's voice? We always speak of the different races and which country the shield belongs to but what about the shield itself? Look at the story from the shield's point of view'. The monologue written and staged by this student, through his voice as an imagined museum security guard, projected his personal thoughts and feelings about this object and his relationship with it to the audience:

Isn't she beautiful? When I say beautiful, I don't mean it the same way your experts mean it. Not the same way your history books or wikipedia describe. Not even beautiful like the way you see it. She's beautiful to me in a way I cannot put into words...

What is this dance? This is the dance that attracted all of you here today. It has attracted many like you for decades now. What is it about her dance that make all of you stare. Like you've never seen her dance before. You've seen it before. It's famous! It's all over your history books, you've seen pictures of her, some know the dance, some know of it and yet you flock from all over the world just to come over to this little space to watch her dance? I can understand if you do that to watch an 800 year old building slowly topple over itself. Or if you do it to see first hand the most talked about smile in history. But this?

I get it. I understand why you do it. Hell, even I did it. Just like you, I came all the way here just to watch her dance. Only difference is, I never left. Her dance is special to me. No, it's important to me. Why? Because every single gesture she makes tells a story. These aren't stories you've read in your carefully written history books. These are her stories. Her life story... Someone had hurt her a long time ago. Someone she loved, and someone she had sworn to protect forever. But there was lightning and thunder. And mortals fear the voice of god. Fear. So they dropped her. They left her to the wrath of the Gods. And now. She dances. Over and over.

Talking Objects Digital was intended as a pilot project to open up conversations about what objects in different contexts can do and to reveal the processes involved in setting up a digital object-based engagement. The pilot worked to question the dichotomy currently seen to exist between object-centered and experience-focused museum practices, revealing that whether experienced in the gallery or online, museum objects have the ability to precipitate new interactions with people, highlighting the potential that exists for digital technology to develop and enhance practices concerning digital object-person engagement. Furthermore, this engagement, small-scale, highly connected, democratic and user-influenced, demonstrated the potential for web in-reach to open up a multitude of possibilities concerning new ways to access, understand and respond to objects situated in museum collections via an online community network. The authors are aware however, that whilst Talking Objects Digital connected with student communities, it did not include indigenous Australian individuals. A contact network for Museum collaboration with Indigenous communities, or communities of origin – 'the communities from which museum collections originate' (Peers and Brown 2003: 1) - inevitably raises questions of ownership and control. In considering the nature of Indigenous knowledge, Turnbull suggests this to include an augmentation of local knowledge, "knowledge generated through observations of the local environment or a particular site... unique to a given culture or society" and traditional knowledge, "a cumulative body of knowledge and beliefs, evolving by adaptive process and handed down through generations by cultural transmission" (2009: 4). A consideration of the indigenous knowledge connected to objects is of fundamental importance to the use of the contact network model as a usable framework for digital reciprocation. How this works in practice will be detailed below.

Online communities, museums and networks

Many research studies of online activity concur that the primary motivator for user engagement in virtual communities is 'anticipated reciprocity' (Kollock 1999: 227). In terms of a network such as Facebook this is not only the opportunity for establishing new friends, but also 'content gratification' (Joinson 2008). Kollock (1999: 228) points to two further motivators, 'reputation' and a 'sense of efficacy' that drives user online participation. To be seen by all members of the community as contributing quality information and there being a recognition of this, is likely to increase participation. Participation will be further sustained if a contributor is perceived by the community to have an impact that causes changes through their actions to the community environment. In all cases content information is stored centrally by the network provider, essentially a hub in the network, and viewable by all members of the online community.

In drawing parallels between physical museum community engagement and online museum communities, Susan Hazan comments that online communities'...can be instrumental in collecting digital artefacts or scientific data, giving meaning to them and thus building on and enriching shared knowledge and community narratives.' Leadership of the online community, Hazan suggests, can be fluid, and the network is founded on a freely voiced offering and acceptance of each other's views. 'This is the essence of a socially driven virtual community, a democratic space where everybody can become an expert and where each member may learn from one another' (2004: 8). Since factors of scale direct the usefulness of physical inreach, so the same would naturally apply to a web equivalent. On this basis, a model for web in-reach would require a small-scale, highly connected, democratic and user-influenced network.

In early 2008 the Museum of Archaeology and Anthropology in Cambridge (MAA) implemented its redeveloped collections management system, based on open-source web technology, that can accommodate multiple interpretations of its object, photographic and archival collections. For every collections' record there is always a museum interpretation, but one that does not deny any number of authored equivalents alongside (Boast and Hogsden 2008). Despite MAA's pioneering work, and in light of a current Revisiting Collections⁹ initiative to enhance collections practice, museums continue to grapple with how in practice to achieve these ideals.

Contact networks for digital reciprocation

To consider a contact network for Museum/Community of Origin information exchange we can look to the recent development work of the Reciprocal Research Network (RRN), an online initiative co-developed in Vancouver by the Museum of Anthropology, the Musqueam Indian Band, the Stó:lô Nation, Stó:lô Tribal Council and the U'mista Cultural Society. The RRN provides members with access to object information from the Northwest Coast collections of thirteen participating museums including the Museum of Archaeology and Anthropology in Cambridge (MAA). Users can research and engage in online discussion around object information which can then be fed back to the relevant partner museum(s) via the network.

In June 2010, an RRN member alerted MAA via the RRN network that information concerning a Heiltsuk Trumpet in MAA's collection (1954.133) should not be placed on public display; 'This is a whistle used in our winter ceremonies and should not be shown' (RRN 2010). Subsequent research showed this to be true and, within a matter of hours, MAA's collections management system catalogue record for the object displayed a new context authored by Senior Curator Anita Herle informing this fact. A reply via the RRN network to the contributor explaining MAA's response was substantiated when the RRN updated their object information as part of routine harvesting of MAA's data thus capturing Herle's new catalogue context note into the RRN system. This fairly straightforward but nonetheless fundamental process of collaboration between a museum and community of origin highlights the reciprocal potential for contact networks as mechanisms for web in-reach that can connect the web museum with the work of its physical counterpart. A feature of the RRN however raises an important consideration for the web in-reach model described earlier. Not all communities view an openness of collections information in the same way. Whilst the web in-reach model proposed above lists an open and democratic perguisite for information exchange, the nature of culturally sensitive information owned by source communities requires a different framework altogether. In keeping with community protocol, the RRN removes visual representation of culturally sensitive objects and provides users with the opportunity to conduct closed, private discussion. Information flows from museum to user and back again. By decentralizing the role of the museum in this process, control over what is being presented or represented is distributed, enabling the focus of empowerment to shift between the parties concerned, or around the network. Contact networks therefore provide a reciprocal system where control and ownership lies with each node. In such an online space, 'rather than being subject to the imposition of knowledge from above, communities are, at the least in theory, enabled to generate and structure knowledge themselves' (Gere 1997: 64).

However, with the RRN system information generated by online communities is invariably centralized with the network provider. However private information is to a community, someone else is ultimately looking after it as contributed information has left the ownership of the community. In 2008 MAA were confronted with addressing this concern when the museum proposed a new museum/community online collaboration. This project, Artefacts of Encounter (AofE), now in its third year, is concerned with digitally reuniting a number of museum collections gathered during early European voyages to Polynesia. By doing so, the team hope to shed new light on the nature of the encounters between early explorers and Polynesian Islanders, and also, through artefacts, to understand how socio-cultural change unfolds and the impact such artefacts and their encounters have on people today. To this end MAA approached Toi Hauiti, a working group of the Te Aitanga-a-Hauiti charitable trust, a Maori tribal organisation based in and around Uawa (Tolaga Bay) on the east coast of the New Zealand's North Island, to partner with the museum. From the outset it was vitally important to Toi Hauiti that they were able to control and retain ownership of their contribution to the exchange of museum and voyagerelated information that both parties were keen to achieve. For some communities the web inreach model therefore requires a rethink to enable control and ownership over the release of varying amounts of information to be retained. Similarly, it could not be assumed that all partner museums would either willingly permit multiple interpretations of their object information in a system that they were not administrating or be seen to actively privilege their engaging with one community over another. Furthermore, and understandably, the community felt a research interface suited to data analysis in Cambridge would not be relevant for Toi Hauiti. Clearly, a

central hub network with a one-representation-fits-all approach is not sustainable for Artefacts of Encounter. To this end, Carl Hogsden, technical lead for the AofE project, proposed a decentralized contact network that would allow Toi Hauiti to own and administrate their contribution to an AofE online research system housed at MAA (KIWA), by maintaining datafeeds from their own system in Uawa. This system will be co-produced by Hogsden and developers local to Uawa and will house the community's own repository whilst also providing the community with access to Artefacts of Encounter voyage and object related information. Routine data sharing will take place between the two networked systems thereby facilitating a reciprocal flow of information. Information that is either deemed culturally sensitive by Toi Hauiti or restricted to Artefacts of Encounter view only will remain with the respective node in the network (Figure 3). In this way whilst the ownership and control of information will lie with the source, and the network will become collaboratively produced. In this way the control of the interpretation of the digital object will move around the contact network thus decentralizing its representation. Following the establishment of this online collaboration the authors aim to reflect further on how the concept of a decentralized contact network can be achieved in practice.

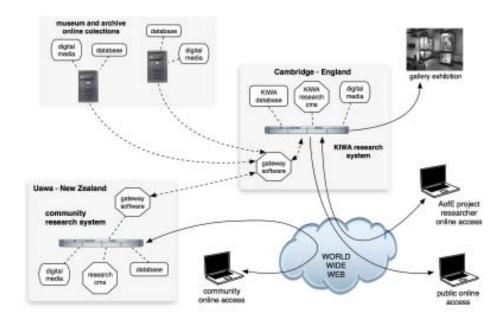


Figure 3 – Artefacts of Encounter/Te Ataakura contact network

Conclusion

It is well established that museums use physical in-reach to bring communities together to have small scale, intensive, object-based engagements which enable transformative interactions to occur. In this article we have suggested that a logical development for web in-reach could be the establishment of a contact network which assumes many of the characteristics of physical in-reach. Furthermore we have shown that a contact network has the potential not only to achieve the level of meaningful engagement currently witnessed within the museum, but to go beyond it (and the problems associated with it) by providing an alternative form of engagement with digital objects which is not constrained by either time or place. We argue that while the potential for the establishment of digital contact networks exists, currently the correct models are not in place to enable this level of digital reciprocation to be approached. Whilst having good

intentions and often succeeding in creating interesting connections and interactions, to date digital museum practice in many respects continues to work within a centralized arrangement.

The ideal model of a contact network would provide a linked environment where different or complementary interactions can take place. Rather than being seen as binary opposites (the museum and the community, the real and the digital objects) as part of this networked way of working these constituencies become connected and equal within a digital network consisting of many nodes. Furthermore, the exchange taking place between these distributed locations moves towards the ideal of creating a reciprocal engagement space. In such a scenario all partners in the network are motivated to contribute and receive something back from the process of the engagement and, importantly, the terms are set not only by one partner but are defined and mediated by all involved in a way which is collaborative in their ethos.

Our theorizing and practical applications of a new digital network model shows that objects and their meanings, when shared and made accessible digitally – can be used to foster new contact networks for digital reciprocation. We suggest that there is a need for more experimental practice to take place to trial and test the possibilities for digital contact networks and to further determine the limitations as well as the possibilities that exist for these types of digital exchanges. The collaborative work which can be approached via digital objects within the contact network should not be seen as an antithesis to the object-based interactions which take place in the Museum setting, but rather objects whether physical or digital have the ability to facilitate as well as actively shape interpersonal interactions. As such we argue that more emphasis needs to be placed on what objects in different contexts can do.

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Notes

- Whilst recognising the value of this work it is important to note that recent findings question the impact of this in-reach interventions on core museum practice (Lynch, 2011).
- The 2002 V&A exhibition Seeing Things: Photographing Objects 1850 2001 enabled visitors to photograph themselves replicating the iconic photograph of Christine Keeler by photographer Lewis Morley. The images were then displayed on a monitor outside the exhibition and some time later, on the web. Over the month, in total 5,500 images were taken by visitors (Durbin 2003). Since 1999, The Boston Museum of Science Virtual Fishtank exhibit allows visitors in the physical exhibition space to interact with online users of the exhibition by controlling and creating fish in the virtual fishtank (Hogsden 2003). See http://www.mos.org/exhibits_shows/current_exhibits&d=637 and http://www.virtualfishtank.com/
- ³ For example, the History of the World website a collaboration between the British Museum and the BBC: www.bbc.co.uk/ahistoryoftheworld.
- These partners are Tyne and Wear Archives and Museums, Colchester and Ipswich Museum Service, Newark and Sherwood Museum Service, Bristol Museums, Galleries and Archives, Tullie House Museum and Art Gallery and the Brighton Museum and Art Gallery.
- http://www.britishmuseum.org/channel/object_stories/talking_objects.aspx-date accessed 10/05/2012.
- The idea to collaborate on a Digital Talking Objects project focusing on the barkshield in the British Museum collections came about through conversations at the 2009 International Arts in Society Conference in Venice. Yoni Prior from the Drama department of Deakin University presented with Roos van der Zwaard and Manon van der Laaken from the English Department of the University of Amsterdam on a recent student led collaboration which had experimented with digital web-based performance (Prior et al 2009). At the same conference Emma Poulter reported on the Talking Objects programme and it seemed that a collaboration would form an interesting and innovative digital pilot project 'next step' for Talking Objects focusing on the barkshield in the British Museum.

- ⁷ The barkshield was one of the objects in the A History of the World in 100 objects series.
- Drupal is a free softeware package that allows 'designers to create highly usable, interactive experiences that engage users and increase traffic' (http://drupal.org/about - date accessed 06/07/2011).
- The Revisiting Collections initiative is an MLA-funded methodology to help museums work with communities in order to enhance collections practice. In targeting 'individuals or groups with a special interest: People with firsthand knowledge, perhaps of manufacturing the objects in a museum collection; People who have used the objects', the MLA cite Revisiting Collections as 'a framework for embedding new understandings and perspectives into museum CMSs' (Collections Trust 2009: 3).

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