PLYMOUTH COLLEGE of ART

Making Futures

Remixing the Past: Memory objects in a digital realm

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Abstract

Museums frequently provide rich material to inspire creative processes. Memories of personal or cultural stories that are linked to prior knowledge or experience can be stimulated by museum displays and objects. In this way museum collections can generate a wealth of associated ideas; these can be synthesised to produce completely new concepts. Digital three-dimensional (3D) models of museum artefacts hold the potential to inspire creative processes and promote the exchange of ideas in a similar fashion. Digital 3D models of heritage objects can provide a means of rapid interaction and translation from physical artefact to malleable virtual form that can help synthesise imaginative thought. Digital data is fluid and malleable; there is no fixed cut-off point where it can be said that a 3D model is complete; it can always be edited and transformed further. Research into the functions of the human mind suggests, that memories also frequently change and transform. They are far from fixed and constant. This paper explores how digital 3D models of museum artefacts can function as memory objects that engage with the historical imagination.

Keywords

Museum, 3D models, 3d scanning, museum dream space, mnemonic imagination, memory objects.

Museum artefacts as memory objects

The task of museums is to collect, display and preserve historical, cultural and exemplary artefacts and specimen. However, the role these objects play remains ambiguous. When objects enter the museum, they are taken out of their previous context; artefacts, which previously were one of many become unique, formerly useful items become inactive and objects previously in private collections enter into public possession (Branham 1994). They are removed from primary use and embedded in museum narrative. In the eighteenth century, definitive meaning of museum objects was believed to lie within their physical form, and descriptive data was seen as objective fact (Lewis 2013). Objects were thought to communicate perfectly by being what they are.

This model came under critique at the end of the eighteenth century (ibid.) and a climate of institutional reflexivity has since reshaped understandings about museums and the objects they contain since the 1970s (Ross 2004). Today, museum artefacts are no longer understood as complete educational experiences; they are now seen to benefit from forms of display and use, which foster discussion and enable viewers to respond actively (Smith 1989). Some theorists still hold that objects can communicate; Gibson maintains that 'in some sense memories through objects are already there and, like photograph negatives, are just waiting to be printed out' (Gibson 2008). However, most theorists reject the notion of 'eloquent' artefacts (Crew and Sims 1991). The interpretation of museum objects is now widely understood to be a 'highly fluid and complex activity' (Smith 1989). In the museum, the historical, or 'mnemonic', imagination of viewers supplements and fills in gaps in knowledge and understanding with personal associations, memories and desires (Keightley and Pickring 2012). For an understanding of the significance of museum objects 'we should reckon more with memory, embracing all its subjective viewpoints' (Kwint et al. 1999).

Museum objects and dream spaces

While museums can impart knowledge and provide informational experiences, they also nurture experiential events and trigger creativity and free association in the minds of their visitors (Carr 2001). Memories of personal or cultural stories that are linked to prior knowledge or experiences can be stimulated by the physical characteristics of objects. These affective events take place within the realm of the museum dream space.

The term 'dream space' describes a field of sub-rational thought in which museum artefacts interact with viewers' memories, imaginations and emotions (Annis 1986). Annis (1987) defines three forms of engagement, or 'symbolic spaces', in the museum; cognitive space, pragmatic space, and dream space. In her book Dream Spaces: Memory and the Museum (2000), Kavanagh expands Annis' theory of the dream space. She adopts Annis' terminology, but uses the term 'social space' in place of 'pragmatic space' (Kavanagh 2000). The cognitive space describes the rational contemplation of the museum. The pragmatic, or social space is the field in which the viewer moves and interacts with other people, and in which we act out our social roles in the museum. The dream space is the point at which inner and outer experiences blend together (ibid.). Memory is not 'a static, nostalgic condition, but an active and on going dynamic' (Mack 2003). Keightley and Pickering (2012) argue, that it is necessary to recognise that remembering and the visualisation of the past involve creative and imaginative processes, what they term the 'mnemonic imagination': 'We can posit the mnemonic imagination as generating the action which allows continuity with the past to be achieved while also allowing for the accumulation of new experience, and the sense that it will contribute to a story that is still unfolding. It makes possible the grasping together of the past, present and future in ways that create new meaning.' (Keightley and Pickring, 2012)

Digital 3D models of museum objects and the mnemonic imagination

A growing number of museums are creating digital 3D models of artefacts from their collections (Koller et al. 2010). It is now commonplace for museums and other heritage institutions to create and deliver digital representations of cultural and historical documents, artefacts and images to foster greater understanding and to improve access to the collections they hold (Callaway 2014). 3D scanners are now being marketed towards the hobbyist consumer and free and premium photogrammetry software such as Autodesk's 123D Catch[ii] enable users to create digital 3D models from physical objects without the need for specialised equipment. A range of free and commercially available 3D editing programmes are available online and in stores. These programmes are becoming increasingly easy to operate and find use in a vast number of fields, including product design, game design, animation, advertising, art and architecture. Table-top 3D printers have also made their way into the domestic market at prices that are affordable to private users (Walmsley 2011). These developments lead to new pathways of content production and use (Fig.1) and make it possible for a wider audience to engage with digital 3D content.

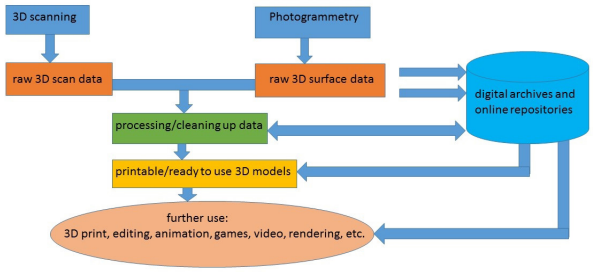

Fig.1 Typical production and distribution pathway of 3D content © Sarah Younan

The 3D scanning of physical artefacts translates the form of physical objects into digital models 'open to further amendment or reconstitution' (Parry 2007). Unlike the original artefacts from which they derive, digital 3D models of museum objects are malleable and can be transformed through further derivation (Neely and Langer 2013). They permit creative experimentation and play. Museums, primarily in the United States but increasingly also in the UK and across Europe, are beginning to embrace and foster creative digital engagement with their collections (Terrassa 2012).

Some museums, for example the Metropolitan Museum, New York, have begun to make digital 3D models of objects from their collections available online.
The emergence of inexpensive and flexible 3D digitisation technologies, increasingly easy to use and intuitive 3D editing software, as well as affordable and accessible 3D printing, has both lowered the bar for entry into digital 3D editing and led to an increase in the number of people engaging with museum collections through digital activities. These technologies hold the potential to break the 'interpretative monopoly' of scholars (Callaway 2014). While original museum artefacts rest within the museum, digital 3D models can cross the threshold into the private sphere of individuals. 3D models of museum artefacts appear to hold a strong popular appeal; a vast number of 3D digital models of museum artefacts can be found across various file-sharing websites, where they are added as user generated content.
3D space and the possibility to negotiate the museum environment assist dream space experience:

'The symbolic landscape of the museum…is three- rather than two-dimensional. The visitor can move into, through and past. He can slow down images, speed them up…In museum dream space there is a flow of images and meanings.' (Annis 1986).

Digital 3D editing enables users to apply similar actions to digital 3D models of museum objects. Digital 3D models of museum artefacts can function as memory carriers, through which memories and thoughts can be recalled, engaged with and transformed.

Examples

The following examples of creative engagement with digital 3D models of museum artefacts, gathered from the (Im)material Artefacts exhibition at the National Museum Cardiff, illustrate how digital 3D models of museum artefacts can be used to engage creatively with memory and the mnemonic imagination.
The (Im)material Artefacts exhibition was set up as a collaborative case study at the National Museum Cardiff. For this study, ceramic artefacts from the storage collections of The National Museum Cardiff were selected and 3D scanned by the researcher. The resulting digital 3D models were shared with a number of artists, who were invited to respond to the digital artefacts by creating new work from them. A design brief was shared with participating artists outlining the project. It laid out the following guidelines:

- Artists were invited to access the 3D models of museum artefacts from the ceramics collection at the National Museum Cardiff online.

- They were asked to select one or several of the 3D models and to create new artworks based on the digital models.

- Any form of work created using the digital 3D models was welcome, including screen-based work and digital files for 3D printing.

All work received was included in the (Im)material Artefacts exhibition at the National Museum Cardiff. 3D printed objects, as well as screen-based works, were exhibited with the original ceramic museum artefacts from the 29th of April until the 29th of June 2014 in the ceramics galleries of the National Museum Cardiff.
The following three examples from this show illustrate, how memories, every-day experiences as well as popular culture and media have become a source of information that affects the mnemonic imagination.
Jonathan Monaghan's animation video Alien Fanfare was created for the (Im)material Artefacts exhibition and includes 3D models of a cup, a snuffbox and a cream jug from the National Museum Cardiff. The animation also makes references to gaming culture[iii] and includes everyday objects such as satellite dishes, a giant observation camera and a Mercedes star (Fig.2).

Fig.2 Alien Fanfare, Jonathan Monaghan, still image from animated film; 2014 © Jonathan Monaghan

Monaghan's animation also blurs conceptual divisions between the organic and the inorganic. The spacecraft has biological features, such as a large gaping mouth and whip-like tail. Today, science and technology are moving towards bionic states. Researchers are developing manufactured body parts, computer chip implants, genetically engineered organs, and digital technologies, which link human brains with computers (Soper 2003). By including cyborg creatures and digital surveillance technologies in his animation Monaghan taps into contemporary anxieties about where developments in digital technologies might lead. His animation uses digital 3D models of museum artefacts to create a surreal vision of the future; 'I am thinking about how technology is changing us, as a society, but also as a species' (Monaghan).
Everyday experiences and contemporary culture also influenced the creation of the piece Monkey Heaven (Fig.3). The artist duo Davis and Parker created Monkey Heaven for the (Im)material Artefacts exhibition using 3D models of an Egyptian ushabti figure, a dog figurine, an archaic rider figure and a ceramic teapot from the National Museum Cardiff. The artists described their creative process as a process of goofing around, juggling and riffing[iv] of real and digital artefacts. The title Monkey Heaven was inspired by a pop song by the Pixies. By infusing artefacts with contemporary meaning Davis and Parker aim to make old objects relevant by tying them into present-day culture; 'we are searching to reanimate old tattered things, to make them precious'. This playful approach led to unanticipated results; the monkey with his loot seems to reference King Kong movies, or is the primate with his cultural artefacts a comment on evolution and culture? While Davis and Parker allowed pop culture to influence their work, they did so in a sub-conscious, rather than a thought-out manner; 'we do ask ourselves what does it mean? What does a monkey mean? What does the teapot on its head mean' (Davis and Parker).

Fig.3 Monkey Heaven, Katie Parker and Guy Davis (Future Retrieval), 3D printed model, 17.6cm x 9.7cm x 10.8cm; 2014 © Sarah Younan

For (Im)material Artefacts, the artist Ian Cooke Tapia added cannons, wheels and towers to the 3D model of a ceramic teapot from the National Museum Cardiff, turning the teapot into a fortified castle on wheels. This reminded him of how he used to build his own toys as a kid; 'It was almost like a flashback; as a kid I would always take old items or kitchen utensils, and make them into toys.' His piece Teapot Trainfortress is such a repurposed toy, created in the same playful manner as Cooke's earliest playthings. The resulting structure is a mixture of teapot, fortress and steam engine train; 'maybe it's because I live next to train tracks now' Cooke explained.

Fig.4 Teapot Trainfortress, Ian Cooke Tapia, 3D printed model, 14.7cm x 23cm x 10.8cm; 2014 © Sarah Younan

The blending of past and future and the acts of looking back and projecting forward inspired these artworks. They give examples of how personal memories as well as mass media, provide contexts, within which objects from the past are understood and brought into relation with the present and future. Keightley and Pickering argue, that the past is necessary in imagining the future; 'the past is continually being revised in order to accommodate an open and continually unfolding future.' (Keightley and Pickring 2012). Furthermore, they contend that 'mnemonic imagination', or an imaginative understanding of the past, provides a way to achieve continuity with the past, to accumulate new experiences and to contribute to a story that is still unfolding. 'It makes possible the grasping together of the past, present and future in ways that create new meaning' (ibid.).

Conclusion

Digital 3D models can play a part in helping museums and other cultural institutions to accommodate and respond to memory and dream space experiences. Digital 3D reproductions of heritage artefacts are capable of jolting 'memory or recognition' and of provoking 'internal associations or fantasy, desire and anxiety' typical of the museum dream space (Annis 1986). Digital 3D models of heritage artefacts can be accessible anywhere at anytime and are no longer necessarily connected to the experience of visiting a museum or seeing an original object. In one sense they are 'over-elaborated, redundancy writ large' (Mack 2003), virtual and superficial;

'Yet, in another sense, this is experience expanded through artificially widening the memory of it. This is not absurd behaviour. After all, what is the visit to a museum exhibition but a surrogate for visiting and experiencing material in the context from which it ultimately derived?' (Mack 2003) When digital 3D models of museum objects are appropriated the public and institutional interpretations of the original objects can become overwritten by personal associations. In this way, the digital artefacts are transformed into personal effects, inscribed with memories and personal meanings. With the necessary editing skill users are able to leave a personal mark on digital 3D models of heritage artefacts and forge personal connections. 'We alter the past to become part of it as well as to make it our own' (Lowenthal 1985). This can be seen as a forging of memories and historical fact.

However, as discussed previously, memories, historical facts and understandings of the past are also open to interpretation and transformation; 'it is far better to realize the past has always been altered than to pretend it has always been the same' (ibid.).

Poised on the threshold between reality and the imagination, digital 3D models of museum objects can be used to create any kind of digital imagery, artefacts or virtual reality; given the necessary digital editing skills, digital 3D models of museum artefacts can be transformed to depict the ideas and memories encountered in the museum dream space. Through creative digital acts, associative thought, personal memories, popular culture, everyday occurrences and personal identities can enrich museum artefacts. At first glance, this might appear like a replacement of real with virtual experience. However, these digital objects can also be understood to artificially widen experiences of heritage and to enrich memories of real events through associative processes. Furthermore, virtual and constructed experiences are part and parcel of museums. After all, museums are artificial places, in which objects are de- and re-contextualised in order to orchestrate experiences (Mack 2003). Museums are already engaged in a vital relationship with transmuted reality. The museum dream space is an essential, albeit not often recognised, area of experience in museums, which can be extended and explored through the creative use of 3D technologies.

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Endnotes

[i] See for example the Makerbot Digitizier https://store.makerbot.com/digitizer , a 3D table top scanner developed by 3D printer company Makerbot. Accessed 04.11.2014

[ii] 123D Catch is a free photogrammetry tool provided online by Autodesk see http://www.123dapp.com/catch , accessed 04.1..2014

[iii] For example, the animation includes a Mega Man figure. Mega Man is a popular video game character.

[iv] In this context the term 'riff' describes inspiration and improvisation expanding on something recognizable