

Four steps in the history of museum technologies and visitors' digital participation

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The hypothesis of this article is that the authentic and auratic exhibited objects in museums enter into a dialogue with surrounding paratexts. The paratexts anchor and change the meaning of the exhibited object in the museum context. Recent years have indicated a tendency for museum paratexts to grow increasingly allographic, i.e., visitors generate them both in situ and online as a part of Web 2.0 participation. The verification and documentation of this hypothesis are partly empirical, partly historical. The empirical research consists of an examination of the exhibition and display technologies used today in three different museums and galleries: the Bode Museum in Berlin, the Victoria and Albert Museum and Dr. Johnson's House in London.

The historical verification and documentation in this article describe four steps in the development of exhibition technologies: the Boydell Shakespeare Gallery (1789-1805), the post-photographic museum (the 1850s), audio guides, as well as a special focus on how museum paratexts have become independent today in its digital and participatory form. In this way, the article sketches the historical development of curating towards the digital and paratextual participation of visitors and audience. Here the argumentation is based on how the displayed object creates signification in its position between its autonomy and its contexts. The following display technologies are described and analysed: stipple engraving, photography, the audio guide, and the interactive, digital Anota pen and its Internet server.

In conclusion, the article asks where the place of signification or meaning of the exhibited object has moved to in the face of the increased degree of visitor participation. The tentative answer is that the signification generating process has moved away from the historical context of the object and towards the contemporary world of the visitor. The article connects this change in cultural discourse with Karin Sander's archaeological imagination and in a wider sense with the concept of negotiation from new historicism.

The way meaning or signification is formed in and by an exhibited object in a museum is dependent on a complicated connection between the object and its physical shape and condition, its original context, its museum context, i.e., the way it is displayed and curated, as well as the museum's architecture, and finally its dialogue with the museum's visitors. There are several ways to describe and analyse how signification is formed in the museum. In this article the analyses of how signification is created in the museum are based on the history of technology, semiotics, narratology, cultural materialism and new historicism. The article will employ these approaches to analyse cases, which all represent a step in the history of museum exhibition and curating, and it will point to a development in which the tendency seems to be that the centre of the signification and meaning creating process has moved from the exhibited object towards the museum visitor. This movement has gone through various modes of display and their changing technologies. The four steps the article will describe are the decontextualisation of the auratic object and work of art, the post-photographic museum, the anchored museum experience, and digital, interactive participation. In this article, these four steps are represented by the Boydell Shakespeare Gallery (1789-1805), the Victoria and Albert Museum in London, the Bode Museum in Berlin and Dr. Johnson's House in London.

The Boydell Shakespeare Gallery: The mass-produced, auratic work of art

In 1789, the Boydell Shakespeare Gallery opened in London. Thirty-four oil paintings were exhibited in it. Their subjects were scenes from Shakespeare's plays. By the time the gallery closed in 1805, the number of paintings had grown to 167, produced by 33 different artists, many of whom were the leading painters of the time, e.g., Sir Joshua Reynolds, George Romney, Thomas Stothard, Angelika Kauffmann, and Johann Heinrich Füssli (or Fuseli). The public gained access to the gallery by buying reasonably priced tickets. It had been very expensive to establish the gallery, with payments to the artists amounting to £100,000 (Christensen, 2006, p. 19), and its economic foundation was not based on entrance fees. The initiator of the gallery, "Alderman" John Boydell, had made his fortune as a printer, and the concept and business model of the gallery rested to a great extent on remediation or transference from one medium to another, as Shakespeare's plays did not just wander from the theatre stage to the canvas of oil paintings, but from here they were again remedi-

ated to mass produced graphic prints. An integrated part of the concept of the gallery was that the audience could purchase the exhibited original works of art in the form of graphic reproductions of them. The paintings were engraved in two sizes. These could either be bought collected in a book, or they could be purchased one by one at a price of one Guinea for the large folio size. This was affordable also for a craftsman, for example. The gallery did not become an economic success in the end, and it had to close down in 1805. The reason was primarily that the war against France closed the lucrative European market, which had been a substantial part of Boydell's business model.

The Boydell Shakespeare Gallery is quite an early example of how exhibition technologies change the relationship between the work of art and an audience, but it is also an example of how the museum exhibition has taken part in the development of technologies, as a new stipple engraving technology was applied, tested and passed the test with flying colours. First of all, the original and unique work of art was made accessible in the public and commercial gallery. Secondly, reproductions were sold from the museum. Already, here one notices a change in the art institution, which in this early bourgeois period was on its way, moving away from noble and aristocratic patronage and going in the direction of the anonymous mass market. Here there is a parallel to the development of the prose genre, the novel. It too developed in the cross-current of a new and literate middle-class readership and the availability of the technology of a cheap printing press. The novel was mass media, and the difference with the Boydell prints is that a novel is not based on an auratic original, but only on a manuscript. The poignant point about the business model and overall concept of the Boydell Shakespeare Gallery is that it combined the exhibition of original art with a mass audience and a new technology into commercial distribution of the unique and original. The very accessibility of the work of art in the Boydell Shakespeare Gallery, at 52 Pall Mall in London, was enormously and qualitatively extended when the gallery visitor could have relatively cheap reproductions of the oil paintings at home. It was technology that made the mobility of the work of art possible, for it was the technique of stipple engraving that bridged the gap between original and copy.

Stipple engraving on copper plates could imitate the gradients, shades and chiaroscuro of oil paintings, and at the time it was the closest one could possibly get to reproducing the original work of art, the colours of which were rendered to grey scale. For most of the Boydell prints, the engravers used the stipple technique together with the prevalent line engraving technique. Stipple engraving was well suited for mass production because the copper plate could stand thousands of prints, and the engraving itself was relatively fast for the trained craftsman, who hammered small dots into the copper plate with varied closeness and of varied sizes to reproduce the shapes of the subject instead of only using the contour lines of line engraving.

The mass produced, engraved commercial versions of the original, exhibited oil paintings meet the wish of the audience to acquire the work of art. The graphic print makes



Johann Heinrich Fuseli, Midsummer-Nights Dream, Act IV, Scene i, engraved by Thomas Ryder, 1803.

it possible for the buyer to have a relationship of ownership to art, when it is released or redeemed from its museum context and brought into a private context. This form of opening the exhibited object towards an audience in an exhibition may, however, be regarded less positively as a weakening of the autonomy of the object. The classical description of this weakening of autonomy is found in Walter Benjamin's concept of aura, in which Benjamin describes the advantages and disadvantages of the mechanical reproduction of a work of art. The advantages are primarily ideological, as the work of art is made available to all through its reproductions. The disadvantages are the loss of codes, as when the Boydell oil paintings are made monochrome in their reproductions, and there is the loss of aura:

Man kann, was hier ausfällt, im Begriff der Aura zusammenfassen und sagen: was im Zeitalter der technischen Reproduzierbarkeit des Kunstwerks verkümmert, das ist seine Aura. Der Vorgang ist symptomatisch; seine Bedeutung weist über den Bereich der Kunst hinaus. Die Reproduktionstechnik, so ließe sich allgemein formulieren, löst das Reproduzierte aus dem Bereich der Tradition ab. Indem sie die Reproduktion vervielfältigt, setzt sie an die Stelle seines einmaligen Vorkommens sein massenweises. Und indem sie der Reproduktion erlaubt, dem Aufnehmenden in seiner jeweiligen Situation entgegenzukommen, aktualisiert sie das reproduzierte. Diese beiden Prozesse führen zu einer gewaltigen Erschütterung des Tradierten... (Benjamin, 1936/1974, p. 477)¹

The loss of aura is a double decontextualisation. When the audience experiences the work of art detached and removed from its original time and place, its capability to be perceived and understood has dwindled. The audience will not be able to place it within the functional context that it originally belonged to, or as Benjamin suggests, it is detached from the domain of tradition.

The Boydell Shakespeare Gallery can be regarded as an early milestone in the history of art museology. The very concept of making works of art accessible to the general public in an exhibition is of direct significance in itself. However, what makes the gallery important in the argumentation of this article is that already here in an early phase of the history of curating there is a new technology, and it is this technology that creates an opening in the exhibited object or work of art and its relation to an audience. Stipple engraving as it was employed by Boydell in the 1790s made it possible for the public to experience and own the work of art physically, and this is an ancestor of the museum visitors' participation of later times, when it is simply other technologies that are used, e.g., interactive, digital ones.

The post-photographic museum

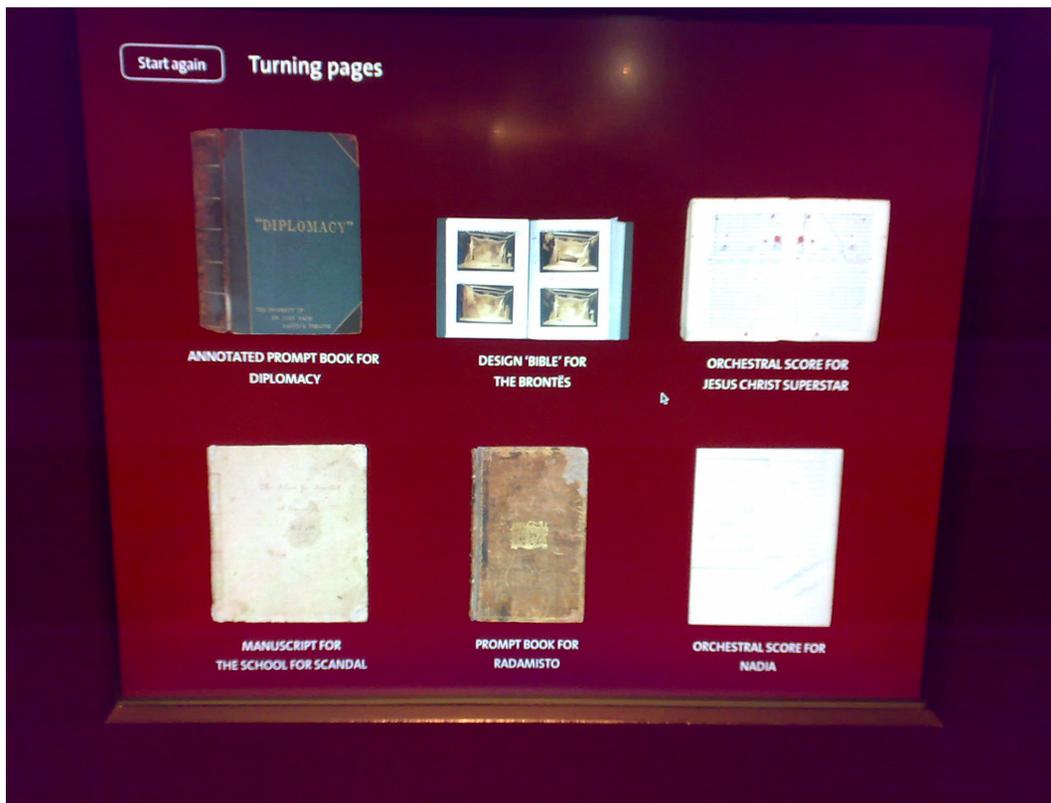
Peter Walsh turns Walter Benjamin's concept of aura and mechanical reproduction upside down. When Benjamin claims that a reproduction of a work of art is without the original's aura, it is Walsh's claim (Walsh, 2007, p. 29) that photography in conjunction with the museum institution affects and changes the aura of the original. The more a work of art is reproduced photographically, and the more it is printed on postcards, on posters, in art books, and one may add on the websites of museums as their highlights, the more aura the original work of art acquires, and the audience appreciates it the more. Walsh's argumentation is in a way a reduction of Benjamin's concept of aura. It is Benjamin's crucial point that the effect of aura is created by the place of the work of art in a historical tradition, and that it carries traces of this tradition in, e.g., its age, patina, and provenance, whereas Peter Walsh concentrates on its uniqueness and originality: there is only one single instance of it. However, it is tradition and patina that today can create a sense of aura, as when one is holding an actual "original" Boydell engraving in one's own hands. It is the relationship between the original and the mass-produced that Walsh focuses on in his discussion with Benjamin when he writes: "It is... the reproduction that confers status and importance on the original. The more reproduced an artwork is – and the more mechanical and impersonal the reproductions – the more important the original becomes" (Walsh, 2007, p. 29). And the other way around is true as well: "the unphotographed, unpublished work of art exists in a kind of limbo. In fact, under the aura of the post-photographic museum, the unphotographed work can hardly be said to exist at all" (Walsh, 2007, p. 30). This elegant and provocative claim that it is the copy that creates the original is nevertheless an indication of the importance that photographic technologies in their various forms have had for museums and curating. In the following, this importance will be briefly and systematically

described, and the creation of the post-photographic museum will be exemplified with the case of the South Kensington Museum, today the Victoria and Albert Museum.

Audiences see photography used in a museum context as various display technologies. This exhibition use of photography may be digital or analogue, it may be at the museum or remote from it, it may be a static object or it may be as interactive-participatory. As a rule, in all of these cases photography is an element of a multimodal text with a montage of printed or spoken verbal text and other graphic elements in a layout system. The photos may show the primary exhibited object, or they may, as in the case of the printed verbal text, be paratexts, which surround the primary text and anchor and contextualise it. Photographic reproductions of the exhibited object can substitute for it when it is on loan to another museum, when it has vanished, or it has been destroyed. This last example of loss may be seen in exhibitions at Staatliche Museen in Berlin or in their multi-volume catalogue *Dokumentation der Verluste* (Michaelis, 1995-). The combination of printed verbal text and photos on graphic panels is now just as classic an exhibition technology as the glass showcase; but when the graphic panel is remedialised digitally, and interactivity is added, then it affords possibilities for visitors' participation. The multimedia exhibition form has the implicit condition that the (digital reproductions of the) exhibits must be touched by the visitor with a computer mouse or with other kinds of interfaces, such as touchscreens. This digital exhibition mode can be expanded spatially, as it may take place outside the walls of the museum through the Internet and mobile media. The exhibition and its artefacts can be set free from their local museum context, and the artefacts can then be inserted into other contexts, perhaps their original ones, although in paratextual and multimedial, virtual representations.

Photography is used as a tool of registration, filing and documentation. It may be analogue, in catalogues and books, and digital in databases. By merging databases with exhibitions, archives are connected to exhibition, which opens the archives of museums to the public, and the public is allowed to go through the digital archives at the museum or on the Internet. A simple and efficient example of the possibility of visitors gaining access to material that is not exhibited are programmes such as "Turning pages", where the visitor to the museum on a touchscreen can browse through and read fragile manuscripts and early books.

In marketing, photos are used on posters, in brochures and on websites, and photographic reproductions of exhibits are available for sale in museum shops. Here postcards are a classical medium, but there may also be mugs, refrigerator magnets or tea towels. At the other end of the hierarchy of taste, the photographic work (of art) may be an exhibit in its own right, which paradoxically does not allow itself to be reproduced if it is on loan to another museum, as the art photo is the original. If it is away on loan, it is only supplanted in its home exhibition with a sign with verbal print. An oil painting in the same situation is often depicted with a small photo on the sign. Both in the museum shop and when the photo



Turning pages, the Victoria and Albert Museum, London, 2009.

becomes the primary and independent exhibited work, the relationship between copy and original is stressed. And in this connection, it may be remarked that when a photo is reproduced, the unstable history of photography belonging or not belonging to the institution of art is also stressed. It was this very ability of the photographic technology to be reproduced and to reproduce that became an obstacle to its recognition as an independent art form. A definition of art that stresses originality tends to exclude photography because of its technological ability to be (re)produced in many copies. Only when photography was included in the art institution could it be exhibited in museums and galleries in its own right, and not just as an exhibition technology.

In the earliest technological history of photography, lenses were developed so that they used the linear perspective of the Renaissance to simulate space, a mode of depiction that the non-mimetic artistic language of modernism gradually abandoned and distanced itself from. In contrast to the formal and aesthetic language of modernism, photography was and is characterised by mechanical and optical mimesis, and so is well-suited for the documentary and scientifically objective reproduction of reality. At The Great Exhibition of Works of Industry of All Nations, in Hyde Park in London 1851, many photos were exhibited, a few in the department of "Fine Art", by far the most in the department of "Philosophical Instruments and Objects Depending on Their Use" (Haworth-Booth, 1997, p. 25). Furthermore,

this division shows photography's unstable and insecure position in relation to the institution of art. In his discussion of the early French photographer Eugene Atget, Walter Benjamin even points to the forensic use of photography as evidence, when he mentions that Atget depicted empty Parisian streets as scenes of crimes, which are also empty of people: "die unvergleichliche Bedeutung von Atget, der die Pariser Straßen um neunzehnhundert in menschenleeren Aspekten festhielt. Sehr mit Recht hat man von ihm gesagt, dass er sie aufnahm wie einen Tatort. Auch der Tatort ist menschenleer. Seine Aufnahme erfolgt der Indizien wegen" (Benjamin, 1936/1974, p. 485). Outside the institution of art, photography found a home in popular mass culture as the printed news photos in newspapers, private snapshots and advertisements.

In general, art museums did not begin to purchase photos for their art collections until the 1950s (Christensen, 2007, p. 68); but the pioneering museum within this field goes a long way back. Already in 1858, the South Kensington Museum had the world's first international photographic exhibition, and two years earlier the museum had bought its first art photo, a study of a nude, which was followed by 21 others photos. In 1853, the founder of the museum Henry Cole began to use photos to register and document both exhibits and works that the museum had on temporary loan (Haworth-Booth, 1997, pp. 31-32). As early as the 1850s, we can see that photography is both an object of exhibition in its own right and a museum tool. This double status and function reflect photography's own double position both within science and within art. The fact that it was the South Kensington Museum that was one of the very first museum institutions that took photography to its heart, in both its scientific and artistic forms, can be seen in connection with the identity of the museum itself. The museum was complex, as it was a conglomerate of the Museum of Education, the Museum of Animal Products, the Museum of Oriental Art, the National Art Training School, the Patent Museum, the Offices of the Department of Science and Art and the Architectural Museum (Haworth-Booth, 1997, p. 36).

Charles Thurston Thompson's albumen photo from 1858 is in itself a manifestation of the way museums use the medium of photography, which was initiated by the South Kensington Museum. It is a photo of a museum exhibition with attendant, exhibits and exhibition technologies. Thurston Thompson worked freelance for the museum until 1859, when he got a permanent position as its photographer. The subject of the photo is "Exhibition of the Photographic Society of London and the Société Française de Photographie", with its very close salon hanging of the 705 photographic works and also tables for viewers using the popular stereoscopic photos, available for the visitors' use. This exhibition contained photos that later became major works in the canon of photography, e.g., Robert Howlett's portrait of the engineer Brunel in front of the enormous iron chains from his ship The Great Eastern. In light of the history of mechanical reproduction, it seems almost ironic that this photo was first published in *The Illustrated Times* engraved as a xylograph. The interest of the public for this exhibition was so great that it had 456,288 visitors in 1858



Charles Thurston Thompson, Exhibition of the Photographic Society of London and the Société Française de Photographie at the South Kensington Museum, 1858, the Victoria and Albert Museum, London.

(Haworth-Booth, 1997, p. 52), and this is an indication of how important the South Kensington Museum was for the status of photography as an art form, just as the museum was the place for an innovative and fertile interplay between art and technology, in which the two merged. This merging must be perceived in the context of the mission of the South Kensington Museum as a communicator of culture in an age that was characterised by industrial technology, which was regarded by many as hostile to culture.

Education and communication represent the foundation of the post-photographic museum. The South Kensington Museum with its focus on design was created in a Victorian age affected by a concern for cultural impoverishment caused by industrialisation. Cultural critics such as Thomas Carlyle and Matthew Arnold expressed this concern and suggested remedies to stop and cure this cultural poverty. Arnold wrote:

Faith in machinery is, I said, our besetting danger; often in machinery most absurdly disproportioned to the end which this machinery, if it is to do any good at all, is to serve; but always in machinery, as if it had a value in and for itself. What is freedom but machinery? what is population but machinery? what is coal but machinery? what are railroads but machinery? what is wealth but machinery? what are religious organisations but machinery? (Arnold, 1869/2006, pp. 37-38)

As an antidote to this materialistic attitude, Arnold thought that both the working classes and the middle class should be educated with cultural products, which he defined as "the best which has been thought and said in the world" (Arnold, 1869/2006, p. 5). Within design and architecture, John Ruskin and the Arts and Crafts Movement were exponents of the same view. The South Kensington Museum would and should spread its collection to the whole nation. The museum was also open outside the working hours of working-class people, and the photographic reproductions were used as teaching materials, which were not limited to the museum itself, but were also sent to provincial towns. The value of these reproductions was stated by the first curator J.C. Robinson, who in a memorandum to the Department of Science and Art wrote: "the photographic art is calculated to be of extraordinary utility in extending the influence of collections such as this. Perhaps the most valuable characteristic of this extraordinary process being the perfect accuracy with which objects of art can be copied, the absolute identity in every point of detail thus received being just that which is literally unobtainable by the draughtsman" (Physick, 1975, p. 2). A governmental committee, which evaluated the museum, wrote in its report that the collection of reproductions by photography and as casting had been made primarily for use in 80 art schools, and that the photographs were also sold at cost price to the general public to promote art education (Physick, 1975, p. 11).

The concept of the post-photographic museum can be seen in the first two paragraphs of the Danish Museum Law: "§ 1. The aim of the law is to promote the activities and cooperation of museums in order to ensure the cultural and natural heritage of Denmark as well as access to knowledge about it and its interaction with the world around us..." and "§ 2. Through collection, registration, preservation, research and communication it is the duty of the museums

- 1) to work for the protection of Denmark's cultural and natural heritage,
- 2) to shed light on the history of culture, nature and art,
- 3) to develop collections and documentation within their field of responsibility,
- 4) to make collections and documentation accessible to the public and
- 5) to place collections and documentation at the disposal of research and to distribute the knowledge of the results of the research." (My translation², <https://www.retsinformation.dk/Forms/R0710.aspx?id=12017>, 10.8.2010).

Both paragraphs have communication, access and availability as pillars, and it is self-evident today that photos, analogue in catalogues or in art books or school books printed in colour, or digital on the Internet and in exhibition applications are a tool that cannot be missed.

The anchored museum experience: The audio guide

The Boydell Gallery and the post-photographic museum employed mechanical reproductions in their exhibitions. We will now focus on the next step in the history of the development of exhibition technologies. Here the interest has moved from the displayed object itself, or maybe its reproduction, to the information and communication around it, in other words, to museum paratexts. The concept of paratexts is based on Gérard Genette's narratological and textual typological survey published in 1987 in the book *Seuils* (translated as *Paratexts. Thresholds of Interpretation*, 1997), but their roots go further back in the history of semiotics to Roland Barthes' anchorage concept (Barthes, 1964). All these narratological devices add something to the meaning of a text, and they can be defined and described briefly like this:

- Anchorage: a verbal text that anchors and controls the reading of an image is called an anchoring text. It is placed in close proximity to the image. It is practically impossible to find an image without an anchoring text. The reason is that images are polysemic, i.e., they contain so many codes that a sender must necessarily lead the reader's perception of the image in the intended direction with the help of the anchoring text.

Paratexts are texts that are placed around the main text and which add extra meaning to it. The main text is called the hypotext. There are different types of paratexts each with its own designation:

- Peritexts are paratexts that are physically connected to the hypotext without being an integral part of it. This is for instance a book's title printed on its cover.
- Epitexts are paratexts removed from the hypotext. This is for instance a review of a book in a newspaper.
- Autographic paratexts have been made by the producer of the hypotext himself. For instance, a director's spoken commentary of a film on a DVD.
- Allographic paratexts have been made by someone other than the producer of the hypotext. For instance a review in a magazine of a film.

As an illustration of how important paratexts are to the formation of meaning of an exhibited object, we can take a look at an exhibited chair. A paratextual, anchoring text can completely change the museum visitor's understanding of it. A beautiful carved chair from the 17th century is exhibited at the Victoria and Albert Museum. However, the chair is sur-

rounded by paratextual signs that anchor its meaning for the visitors. The headline is “What makes a fake?”, and the signs go through the details of how the chair has been faked through the centuries. Before the visitors have read the paratextual signs placed in the showcase of the chair and on the chair itself, it presents itself as a perhaps aesthetically pleasing historical testimony, but the reading of the signs totally transforms the meaning of the chair. Now it is a forgery.

The audio guide is a popular, simple and widely used exhibition technology which facilitates an efficient communication of paratexts to museum visitors. Often it is possible to choose one's language, and the individual visitor can change the speed of the reading, select repetitions and also deselect comments, as the interface and digital content of the audio guide make navigation easy. To some extent, it also offers visitors' participation in its paratexts, which interact with the exhibited works and artefacts. These may be called hypotexts, and it is primarily in this interplay between the hypotext and the anchoring paratexts that meaning is created, and only secondarily with the museum visitor as an operator of this interplay in his or her use of the audio guide. Later on, we shall see how the creation of



What makes a fake? The Victoria and Albert Museum, London, 2009.

meaning moves closer to the museum visitor, when he or she is allowed to produce paratexts and to a much higher degree when the museum visitor even produces the hypotext himself or herself through the use of digital exhibition technologies.

What narrative devices does the audio guide use in its communication of significance? This question may be advantageously rephrased as: Is the audio guide the soundtrack of the visitor's museum film? The case is here the audio guide of the brand Antenna Audio (<http://www.antennaaudio.com/>, 10.8.2010), which is used at the Bode Museum in Berlin, but similar narrative devices can be found in many other museums' audio guides. The elements of an audio guide can be described as film narration. The main part of the narrative about the exhibited object is a voice-over, i.e., a text read aloud, which may contain data about the object, such as, for instance, where it was found, provenance, iconography, and an analysis of its shape and materials. The voice-over accompanies the tour of the visitor, and it enlightens him about the exhibited objects and offers interpretations of them. The voice-over as a narrative technique has its own internal meanings. For example, the human voice one listens to is apt to take on a personality, for instance, based on the speaker's gender. The voice-over is an anchoring paratext, yet it does not interfere with the autonomy of the exhibited object, as it is a non-diegetic narrative form that is not available in the original universe of the object, but only in the universe of the museum for its visitors. Similarly, regarded as a paratext, it is an allographic paratext, as it has been produced by somebody other than the producer of the hypotext or exhibited object. Again, here there is a clear distinction from the exhibited object.

In the audio guide, the voice-over is supplemented by spoken lines, for instance Bible quotations in the case of Christian art, where different readers are used. Here Roland Barthes' concept of anchorage must be expanded with his concept of relay. The anchoring text is physically outside the image, but a relay text is inside the image itself and an integral part of it. As such, the relay text does not control the overall meaning of the image. Examples can be found in speech balloons in comics. In the same way the spoken lines of the audio guide are relay or internal to the object, as for example when the thieves on each side of the crucified Christ are given voices in the audio guide soundtrack no. 323 for inventory no. 8369 of the Bode Museum. The voices belong to two gilded bronze sculptures of the good and the evil thief. These diegetic lines, which may even have echo effects added to them, interfere with the autonomy of the exhibited object, as they, literally speaking, belong to its iconological space, and they are autographic paratexts. In contrast, underscoring music, which is also used in some soundtracks in audio guides, are non-diegetic, as they only have an anchoring function primarily at the connotative level of reception, and therefore they do not infringe on the autonomy of the exhibited object.

Underscoring music is a narrative film device, and the audio guide also has similarities with film narration at a metafictional level. Here the audio guide corresponds to a film script of the museum visitor's experience of the exhibited objects. The audio guide is more than a soundtrack, for in some cases it is directly a film script defining the eye movements

of the visitors, which are then given the function of being a camera. "Place yourself directly in front of the middle of the triptych", spoken by the audio guide will result in what corresponds to the travelling of a camera, as the museum visitor walks to the recommended position, and when next the left side of the triptych is mentioned, the eyes will move in the same way as a panning camera, especially because a subsequent reference to the right-hand side seems to be obligatory. This physical and bodily management of the museum visitor's movements adds a form of signification that has a high potential for participation.

The disappearance of the authentic exhibition object and its participatory rebirth

The Bode Museum in Berlin has a special problem with regard to preservation, exhibition and authenticity. During the Second World War, the museum lost a great number of works, which were stored in an air raid shelter, which burnt. How to exhibit vanished objects? One solution, which is described below, is to use pictures of them, but at this point in the article, the case to be described is a work that has not vanished, but merely been preserved, i.e., stored and restored so that its authenticity has been lost. Nevertheless, the work is exhibited prominently at the museum in several rooms, and the informative text of the audio guide is crucial in this connection, reinforced by a museum education exhibition.

Inv.-Nr. 6642 is a Byzantine apse mosaic from Ravenna. It is dated to around the year 545 C.E. The mosaic was originally in the church San Michele in Africisco. It was bought by King Friedrich Wilhelm of Prussia in 1843 and transferred to the museum. Its motif is the young Christ with the archangels Michael and Gabriel in an Eden landscape; there is a codex with a scripture from the Gospel of St John and a banner of the cross. At the top there is a frieze with the enthroned Christ flanked by the holy doctors of medicine Cosmas and Damian, though they are lost today, and only their positions remain, empty. Their names are preserved, though, in the mosaic. The apse mosaic dominates museum gallery no. 115, and it is floodlit from the floor. Its height is 432 cm, and it is 615 cm wide. The style of the mosaic has surprising and attractive historical traits from Jugend or Art Nouveau style, which fit perfectly into the style of the museum building from c 1900. However, it is through the paratexts of the mosaic the visitors are informed that it is far from authentic. There is a comprehensive lecture about it in the audio guide. This lecture informs the audience that the mosaic is a total reconstruction, and certain stylistic aspects of it are even wrong. The audio guide describes the provenance of the mosaic; for instance, at one time it was owned by a fishmonger, until a collector bought it, and stored it in an incorrect way. The partially restored mosaic in 1849 was hit by an Austrian cannon bullet in Venice, and at two later restorations, every single one of the preserved tesserae mosaic tiles were reallocated, cleaned of the original mortar, and hardly any ended up at their original places (Effenberger, 1975, pp. 36-38). In the very last days of the Second World War, the apse mosaic in the Bode Museum collapsed, when the Monbijou Bridge over the River Spree just on the other side of the museum wall

was blown up, so the jigsaw puzzle had to be collected once again. From reproductions of the mosaic (engravings, watercolour paintings) from before it was removed from its place of origin, it is possible to form a vague impression of its original shape, and a watercolour painting of it is exhibited in a glass showcase close to the mosaic itself. However, without the audio guide and a couple of sentences in the printed catalogue (Mietke, 2006, p. 24), the museum visitors would be lacking knowledge about provenance and authenticity. It must be added, though, knowing about the very fate of the mosaic, through European wars and power struggles, is in itself of great value to the museum audience.

The paratexts about the apse mosaic in the audio guide open a debate about museum exhibition practices, where conservation and preservation are necessary evils, which may almost smother the original and authentic object through time. The Bode Museum has responded to this challenge in a way that leads towards the digital participation of the audience, which again in many ways has become a solid and robust practice. A museum education exhibition "Das Spiel der Farben und Formen – Mosaikkunst im Bodemuseum" [The Game of Colours and Shapes – Mosaic Art in the Bode Museum] has school children as its main target group. They are allowed to recreate a mosaic or parts of it, namely a part



*Apse mosaic, Ravenna, c 545,
The Bode Museum, Berlin, 2009.*

of the mosaic floor of the demolished church San Michele in Africisco, the original location of the apse mosaic. Fragments of the floor are found in the National Museum in Ravenna. In this educational exhibition, the point is that the museum visitors themselves create or recreate the hypotext, and not just paratexts. As we shall see below, this is repeated in Dr. Johnson's House in London, in a purely digital form. In the Bode Museum, the apse mosaic is represented in a museum education exhibition situated in a large basement room far away from the mosaic itself, partly through a flat screen picture and partly through an exhibition about the technique and technology of mosaic production, its materials and tools. These may be handled by the children. Here they can form Byzantine patterns with tesserae. The exhibition is presented as a building site in the 6th century, in which a wall mosaic is being constructed. To let an audience recreate the work or parts of it in this way is a creative solution seen in relation to the fact that the original work does not exist after all, and that it therefore only has existence as a sort of replica, which is left to the museum visitors to create themselves.

Digital, interactive audience participation: Dr. Johnson's House of Words

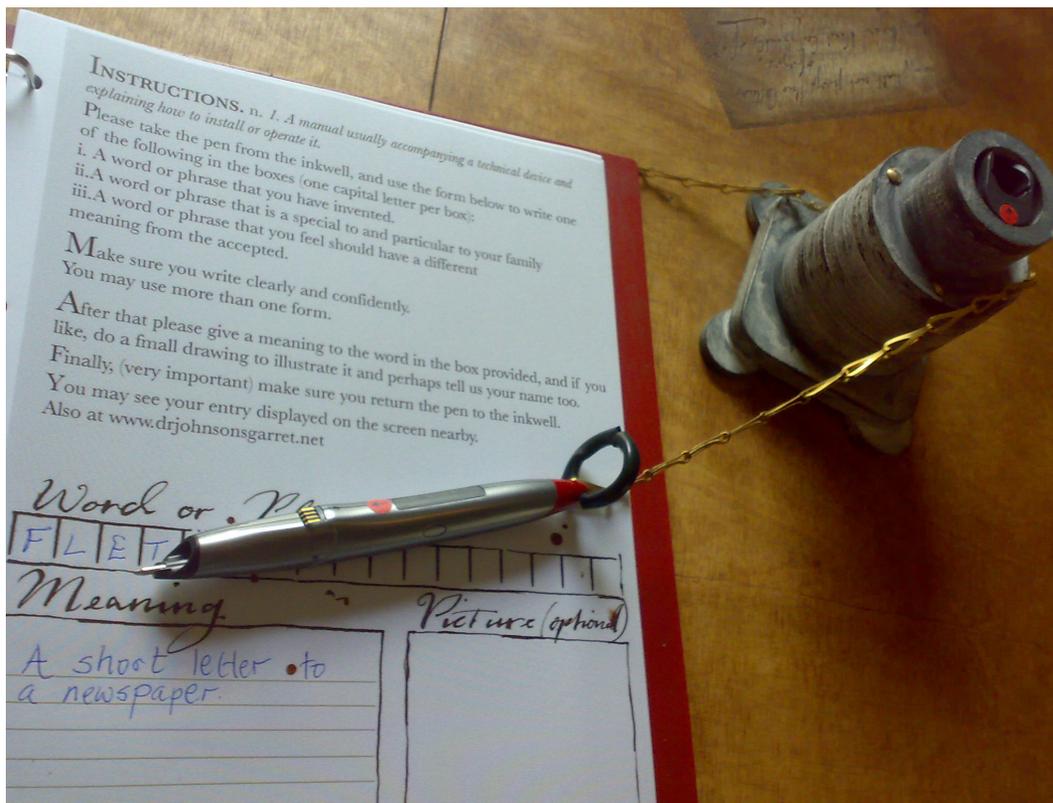
Dr. Johnson (1709-1784), a British man of letters from the Age of Enlightenment, is primarily known for his great dictionary from 1755, *A Dictionary of the English Language*. He compiled this dictionary together with six amanuenses while he was living in the house at 17 Gough Square from 1748 to 1759. In spite of the fact that the house was damaged thrice during the Blitz of London, it is well preserved. There has been admission for the public since 1912, and together with the permanent exhibition, the house has a number of changing exhibitions. In 2009 it was "The House of Words". This exhibition will be used as the conclusion of this article, as it in an exemplary way embodies the completion of the development of the exhibition technologies, which the article has delineated so far: the connections between autonomy and authenticity, audience participation and formation of meaning. Below, the digital exhibition technologies used in "The House of Words" will be regarded as the most recent steps in the curatorial use of technologies seen already in the Boydell Gallery, the post-photographic museum, and the participatory recreation of a partially vanished exhibit in the Bode Museum.

Many installations use digital, interactive exhibition technologies. In "The House of Words", installations interact with the permanent exhibition and the house itself, for instance Era Vati's installation projects video portraits of Dr. Johnson's friends on the interior of the house. The friends are impersonated by modern actors in period costumes, and the audience is surprised by the live projections, and feel surrounded by them, or perhaps by ghosts from the 18th century. In connection with this article's discussion of the autonomy of the exhibited artefact or work of art, it is relevant to point to the fact that the information sheet of the exhibition (Peters, 2009, p. 2) characterises the exhibition itself as consisting of "installations and interventions". Interventions are interference with the exhibited object.

The interference may be aesthetical and beautiful, but also destructive to the exhibited object. The artist Jane Prophet has created illustrations in *A Dictionary of the English Language* by creating delicate 3-dimensional sculptures by laser cutting copies of the dictionary, so that some of its terms rise as small paper sculptures from its pages as in a pop-up book. Butterflies are one beautiful example, and they are accompanied by Dr. Johnson's dictionary definition: "Butterfly: A beautiful insect, so named because it first appears in the beginning of the season for butter". In this case, it may be said that this artistically successful exhibition interferes totally with the exhibited object, so that the autonomy of the exhibited object is disregarded as a consequence. This is because the object is destroyed through its being exhibited. The curators of this exhibition have allowed professional artists to create this intervention, but also the visitors to Dr. Johnson's House are allowed to intervene digitally in the exhibited objects. Here, however, the opposite is the case, as the hypertext is not destroyed here, but rather the visitors add to it and expand it.

The Dictionary Garret on the top floor, in which Dr. Johnson and his amanuenses compiled the dictionary, is the authentic historical location with an auratic atmosphere. Here the museum guests are allowed not only to continue writing the dictionary where Dr. Johnson left off, but also to publish their additions to it. This is done through an advanced, but still simple and user-friendly interactive, digital technology. Jason Cleverly's installation "Interactive Work-table and Escritoire" intervenes in the dictionary, and it has integrated itself into the room, so that the audience has the experience of being co-producers of the dictionary. A computer monitor has been encased into an escritoire made of birch ply. Some of Dr. Johnson's editorial notes for the dictionary are etched on a large hardwood working table; a digital Anoto pen is also on the table. This type of pen is commercially available (<http://www.anoto.com/>, 10.8.2010), and the writer experiences it as a normal ballpoint pen. However, apart from its normal writing function, it contains a small digital camera and a microprocessor. It writes on so-called digital paper, which is actually only common paper printed with an invisible watermark grid. The digital infrared camera of the pen reads the grid in its movements and films between 50 and 100 images a second. In this way, the user's pen strokes are scanned and interpreted as vector data. When the pen is put back into its inkwell this information is sent through a USB connection to the computer that is placed in the escritoire, and the vector data are translated into letters. From here the museum visitor's addition to the dictionary is published to a website (<http://www.drjohnsonsgarret.net/>). This is made possible because the computer has been configured as an Internet server. The new dictionary headwords can also be read at once from the screen in the room at the museum. Typically, the museum visitors' participation is not limited to the museum itself. At home, the visitor can hardly help looking up the new dictionary entry on his or her own computer.

The instructions to the museum visitors are straightforward and simple:



Jason Cleverly, "Interactive Work-table and Escritoire", Dr. Johnson's House, London 2009.

Please take the pen from the inkwell, and on the form below write one of the following in the boxes:

- i A word or phrase that you have invented
- ii A word or phrase that is special to and particular to your family
- iii A word or phrase that you feel should have a different meaning from the accepted

There are many contributions from the visitors, and often they are imaginative and quite funny. Here are a few examples:

- BARISTER someone who argues the pros and cons of frothy coffee
- DYSLEXIQFLORA the greening and growing of misspelling
- TOFLU the vegetarian version of swine flu

The "Interactive Work-table and Escritoire" is notable because the interactive, digital participation does not only consist of the production of paratexts. The museum visitor actually becomes co-producer of an exhibited hypotext, which was originally produced in 1755. The digital technology used here is exceptionally and exemplarily user-friendly, and it allows the visitor to become a co-author to such an extent that his or her part of the exhibited work

is distributed and published to the whole world. With the help of digital exhibition technology, the museum audience is involved in the formation of the meaning of the exhibited object. This form of museum participation makes it possible for the exhibited object to be up-dated to the present, so that *A Dictionary of the English Language* and the museum, Dr. Johnson's House from the Age of Enlightenment, are made relevant to our time, so that the museum visit is both engaging and a source of experience and insight at the same time. This close connection between the past and the present will be the subject of the next part of this article.

The archaeological imagination and new historicism: The cultural discourse

How we perceive the true past is a question asked long ago by Aristotle in his *Poetics* in c 335 BCE. Part of his answer is to discuss who is to articulate the past, the historian or the poet:

...it is not the poet's function to describe what has actually happened, but the kinds of thing that might happen, that is, that could happen because they are, in circumstances, either probable or necessary. The difference between the historian and the poet is not that the one writes in prose and the other in verse...The difference is that the one tells of what has happened, the other of the kinds of things that might happen. For this reason poetry is something more philosophical and more worthy of serious attention than history; for while poetry is concerned with universal truths, history treats of particular facts. (Aristotle, c. 305 BC/1970, pp. 43-44)

Aristotle seems to be on the side of the poet. However, in the narrower context of this article, the notable point is the separation Aristotle creates between historiography and poetry, or to put it in another way, between history and story. Both of these terms significantly translate into the one Danish word "historie", so that what Aristotle separated has in a sense been joined by language. This dichotomy is reflected in the Danish literary scholar Karin Sanders' discussion of the concept of the archaeological imagination in her *Bodies in the Bog and the Archaeological Imagination*. The book is a thorough treatment of how bog beings such as, e.g., Grauballe Man and Tollund Man, have been understood in different periods, and also how each period and each reader of the bog beings have reformulated their significance and meaning to serve an ideological or ontological purpose. Sanders' impressive survey stretches from Tacitus to present-day land artists. Though the Danish archaeologist Peter V. Glob's historical and the Irish Seamus Heaney's poetical interpretations are central in Sanders' book, additionally Sigmund Freud, Carl G. Jung, Heinrich Himmler, Joseph Beuys, William Carlos William, Margaret Atwood, and a great number of other novelists, poets, and pictorial artists add to the meaning of these archaeological finds. The bog people have entered into a variety of cultural discourses from fascism and nationalism to gender politics. Perhaps due to the fact that there has been a paucity of other historical artefacts and

sources to anchor the meaning of the bog people, they are exceptionally open to interpretations, and at the same time their fascinating and enigmatic nature have acted as a motivation for artists. They have entered "the realm of the aesthetic" (Sanders, 2009, p. xvi) and the imaginative, as such outside the disciplines of the archaeologist or the historian. It is here that archaeological imagination comes into play. It is the combination of scientific knowledge and the use of imagination, be it artistic or on the part of the layman, that creates meaning in a hermeneutic way. Sanders defines the archaeological imagination as an extension of archaeology, as "scientific excavation and the study of humanity's past through material evidence", and the archaeological imagination is "concerned with the relationship between depth (past) and surface (present)" (Sanders, 2009, p. 14).

The archaeological imagination as defined in *Bodies in the Bog and the Archaeological Imagination* shares an attitude with the construction of the meaning of the past that is found in new historicism. New historicists see their historical work not so much as discovering the past, as constructing it textually. New historicist historiography is a discourse that is specific to the contemporary period of the new historicist and not to the past period of the historical event, text or artefact. At best, the new historicist may hope to connect a system of past discourses with a system of present-day discourses in a negotiation between them. It is in this crucial new historicist concept of negotiation between past and present that meaning is created. Karen Sanders' book almost has the character of being an extensive catalogue of such negotiations, and each of these negotiations has a different outcome, which has been formed by two factors. The constant factor is the bog people, but the variable is each later period's ideological or ontological use of them. In "Towards a Poetics of Culture", Stephen Greenblatt stresses the merging of the historical and the aesthetic discourse (Greenblatt, 1989, p. 8), and in his article, his preferred cases represent the aesthetic expressions and documents of the past. As with Sanders, the underlying premise is a reconciliation and union of Aristotle's poet and historian and perhaps a wish that each new period can gain some contemporary ontological value or at least use from the past.

Both the archaeological imagination and new historicism stress the idea that the meaning generating process has moved away from the historical context of the object and towards the contemporary world. This point is not only of importance for the professional historian or archaeologist, but also for visitors to museums. The museum experience includes a negotiation between the visitor's own present world and the world of the exhibited objects. The amount of participation allowed by the curators can determine how strong this interplay or negotiation becomes, and also to what extent the exhibited object is treated as an autonomous entity. It is here that exhibition technologies can become a tool for the negotiation, and they can in themselves be a manifestation of the need for negotiation. In the case of the Boydell Shakespeare Gallery, the new anti-auratic stipple printing technology and the mass production of unique Shakespearian paintings are a manifestation of the new museum audience and the new bourgeois publicness (Christensen, 2006, p. 34). In the 20th-century post-photographic museum, mechanical reproduction techniques, such as photography,

were thus appreciated to the extent that photographic art had been acknowledged, but more importantly photos as well as verbal text in graphic panels opened the autonomy of the exhibited objects to the additional meanings of paratexts, just as the audio guide has become the tool of paratextual information. With the use of graphic panels and the audio guide, it is the curator or the museum as institution that negotiates the past partly on behalf of the visitor. When digital exhibition technologies become interactive, they provide further participatory affordances for the visitor. In Dr. Johnson's House, the "Interactive Work-table and Escritoire" directly allows the visitor to negotiate between his or her own time with the time of Dr. Johnson's dictionary in the way that the dictionary is actually updated and physically changed by the interactive and digital negotiation. Here the archaeological imagination or the new historicist negotiation is allowed to the extent that the past is being literally rewritten by the present.

Conclusion: The opening of the museum through exhibition technologies

The argumentation of this article has been that there is a fairly direct line from the late 18th century with its use of printing and reproduction technologies, through the use of photography both as a tool in museums to communicate and educate and as an exhibition object in its own right, to finally digital exhibition and curating technologies. These may be the audio guide or more advanced interactive forms. One part of this development is that the use of technologies has weakened the autonomy of the exhibited artefact or work of art. On the other hand, the exhibition technologies have strengthened the participation of the audience, not only in the exhibition, but also in the formation of the significance and meaning of the exhibited objects. We have seen that this involvement on the part of the museum audience has been of a paratextual nature, but we have also seen that it may be of a hypotextual nature, as when the visitors to Dr. Johnson's House can digitally add content to the exhibited dictionary in a digital installation where the weakening of the autonomy of the object and the strengthening of audience participation can both be characterised as intervention.

Location and place have also been part of the historical development of exhibition technologies in this article. The museum has not only opened itself to its audience in the form of participation. The museum has also opened its place. The Boydell Shakespeare Gallery allowed its visitors to take home remediated versions of the exhibited oil paintings, and in Dr. Johnson's House the "Interactive Work-table and Escritoire" allowed its audience to publish their own modifications of Dr. Johnson's dictionary to the world through an Internet server in the spirit of Web 2.0.

The development outlined by this article is richer than only technological determinism. The point is that it is in the interplay and negotiation between the exhibited object and its audience that values of experience and insights are found. One can conclude that in this interplay, changing exhibition technologies have shifted the centre of gravity between the

exhibited object and audience in the way that the audience's influence on the formation of significance and meaning has become notably strengthened, and the curatorial, narrative use of these technologies has resulted in a new mode of participatory reception with potential for new audience groups.

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Illustrations

Johann Heinrich Füssli, *Midsummer-Nights Dream*, IV, i, engraved by Thomas Ryder, 1803.

Turning pages, The Victoria and Albert Museum, London 2009.

Charles Thurston Thompson, Exhibition of the Photographic Society of London and the Société Française de Photographie at the South Kensington Museum 1858, The Victoria and Albert Museum, London.

What makes a fake?, The Victoria and Albert Museum, London 2009.

Apse mosaic, Ravenna, c 545, The Bode Museum, Berlin, 2009.

Jason Cleverly, "Interactive Work-table and Escritoire", Dr. Johnson's House, London 2009.

Notes

1. One might subsume the eliminated element in the term "aura" and go on to say: that which withers in the age of mechanical reproduction is the aura of the work of art. This is a symptomatic process whose significance points beyond the realm of art. One might generalise by saying: the technique of reproduction detaches the reproduced object from the domain of tradition. By making many reproductions, it substitutes a plurality of copies for a unique existence. (Benjamin, W. (1936). "The Work of Art in the Age of Mechanical Reproduction". (Translation retrieved October, 28, 2003, from http://pixels.film.vt.ucla.edu/gallery/web/julian_scaff/benjamin/default.html))
2. "§ 1. Lovens formål er at fremme museernes virksomhed og samarbejde med henblik på at sikre Danmarks kultur- og naturarv samt adgang til og viden om denne og dens samspil med verden omkring os..." og "§ 2. Gennem indsamling, registrering, bevaring, forskning og formidling er det museernes opgave
 - 1) at virke for sikring af Danmarks kultur- og naturarv,
 - 2) at belyse kultur-, natur- og kunsthistorien,
 - 3) at udvikle samlinger og dokumentation inden for deres ansvarsområde,
 - 4) at gøre samlinger og dokumentation tilgængelig for offentligheden og
 - 5) at stille samlinger og dokumentation til rådighed for forskningen og udbrede kendskabet til forskningens resultater."

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