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Citation

Bertens, L. M. F., & Polak, S. A. (2019). Using museum audio guides in the construction of prosthetic memory. *Journal Of Conservation And Museum Studies*, 17(1), 1-12.
doi:10.5334/jcms.182

Version: Publisher's Version

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Downloaded from: <https://hdl.handle.net/1887/3200875>

Note: To cite this publication please use the final published version (if applicable).

RESEARCH ARTICLE

Using Museum Audio Guides in the Construction of Prosthetic Memory

Laura Bertens and Sara Polak

The intimacy and affective impact of the audio guide – and the spoken voice – could make it a suitable medium to represent and construct cultural memory. Research on the relevance of the audio guide in the context of cultural memory has, to the best of our knowledge, not yet been conducted. This article will address this by presenting experimental findings on the impact of two custom-made audio guides on visitors and subsequently examining these within a theoretical framework based on Alison Landsberg's concept of *prosthetic memory*, as well as Gérard Genette's writings about *paratexts*. In doing so, the focus is on examining the emotional distances perceived between the audio guide and the object on the one hand and the audio guide and its user on the other, as well as the balance between these two. We show that a close link between object and audio guide can either help emotionally engage the user or feel restrictive. A close connection between audio guide and user may be perceived as misleading but can also involve the user in creating prosthetic memory.

Keywords: prosthetic memory; audio guide; paratext; affect; authenticity

Introduction

In devising strategies to engage visitors, museums can be seen to move from traditional storytelling to more interactive ways of creating meaning (Christenson 2011: 7–8). While museums have traditionally focused mostly on providing historical and factual contexts of objects – for visitors to passively take up – the significance of objects is nowadays often established in collaboration with the visitor (Christenson 2011: 8).

The move away from singular and 'objective' historical narratives, towards an understanding of objects as context-dependent and polysemic, runs parallel to a shift in focus from history to memory. In recent years the field of Cultural Memory Studies has truly bloomed. Readers, journals and conferences (e.g. Erll and Rigney [eds.] 2009; Olick et al. [eds.] 2011; Cubitt 2007; Wertsch 2003; Macdonald 2013; journals like *History and Memory* and *Memory Studies*) have created a vast body of knowledge on the topic. In the context of the museum, this developing interest plays a role as well. Exhibited objects, in museums of history, ethnology or art, are often not just 'explained' but also connected to the lived reality of the visitor, inviting her into a larger narrative of cultural memory and identity.

A shift has been visible in the ways in which museums have treated the role of cultural memory in the museum since the so-called 'memory-boom' of the 1990s (Winter 2001).

Creating contexts for the objects on display can happen in various ways; exhibited objects can be contextualised in traditional, 'static' ways through for instance wall texts, catalogues and captions. More recently, increasingly interactive methods have gained popularity. These draw the visitor in and engage her in more affective ways. Amongst these methods is the audio guide, offered by most museums.

This article investigates how audio guides relate to the construction and communication of cultural memory. The intimacy and affective impact of the audio guide – and the spoken voice – could make it a suitable medium to represent and construct cultural memory. Research on the relevance of the audio guide in the context of cultural memory has, to the best of our knowledge, not yet been conducted. This article will address aspects of this by presenting experimental findings on the impact of two audio guides on visitors.

The exhibition *I Am a Native Foreigner* at the Stedelijk Museum Amsterdam showed artworks dealing with issues of migration. For a selection of four works from this exhibition, user tests were conducted with two different audio guides, to explore the link between audio guide and cultural memory, in this case of a range of migration contexts. In studying this, the focus is on examining the emotional distances users perceive between the audio guide and the object, and the audio guide and its user, as well as the balance between these two. We show that a close link between object and audio guide can either help emotionally engage the user or feel restrictive. A close connection between audio guide and user may be perceived as misleading but can also involve the user in creating prosthetic memory.

The next section will explain the design of the research and the user tests. This is followed by a discussion of Alison Landsberg's *prosthetic memory* and Gérard Genette's *hypotext* and *paratext*, providing the conceptual tools for understanding how the audio guides impact the visitors and how this relates to cultural memory. In the analysis the findings are discussed from three perspectives: the relationship between audio and object, the construction of meaning, and the authenticity and affective impact of the voice.

Methodology

Audio guides and participants

From the exhibition *I Am a Native Foreigner (Ik ben een geboren buitenlander)*, at Stedelijk Museum Amsterdam (September 2017–June 2018), four artworks were selected. To arrive at a selection that participants would be able to relate to, and which would engage with existing memories or images of migration, we selected only works that represented the migration of people (rather than goods or resources). The following works were selected: a photo series by Kors van Bennekom of Surinamese migrants to the Netherlands following Surinam's independence (*Aankomst Surinamers na onafhankelijkheid*, 1975); an installation by Rémy Jungerman (*RUTH*, 1997); a photo series by Bertien van Manen portraying the dire circumstances of Turkish migrant women in the Netherlands (1977), and a video installation by Aslan Gaisumov reflecting on his experience of leaving Chechnya as a refugee (*Volga*, 2015).

Two audio guides were used in the experiment, both including the four mentioned works. The museum provided its own audio tour, recorded in mono and containing basic information about the artworks and artists, as well as excerpts from interviews with artists and migrants and news recordings. No ambient sound was used in the audio guide, which from this point on will be referred to as the standard tour. A selection of the four tracks accompanying our selected works was created and this formed the first audio guide for the experiment.

The second audio guide was developed for this project by a media design company and shall be referred to as the alternative tour. The company was commissioned to create an affective experience of the four works in the exhibition (using ambient sounds and actors), focusing on the emotions and memories of artists and represented people, rather than the factual context of the works (which was the focus of the standard tour). All design decisions were made by the company and the resulting product was strictly designed and used for this study. There were no commercial interests and the audio guide has not been available outside this study.

To test the audio guides, we organized an open museum event, marketed by the museum to engage regular visitors. This symposium took place on Saturday, January 27, 2018. Forty visitors participated in the evaluation of the audio guides. We asked them to tour the four selected artworks of the exhibition and to evaluate the tours. The group was divided in two sub-groups, to which participants were assigned at random; the first sub-group started with the

standard tour, followed by the alternative tour, while the second started with the alternative tour and then did the standard tour. Since no difference was found between the two sub-groups, the data are presented together in the sections below.

Given the limited number of test subjects and the logistics of having the different groups be taken to the right artworks and assisted with the technology by volunteers, we decided to test the two groups without a control group (without audio guide). Since this study focuses on the difference between different audio guide approaches, rather than the difference between using or not using audio guides (as studied by e.g. Lee 2017; Bauer-Krosbacher 2013), the gathered information was deemed sufficient for the purposes of the study.

Data collection

A detailed questionnaire with open and closed questions was used. Participants filled out a consent form, allowing us to analyse and quote anonymised answers. They took clipboards, pens and questionnaires with them while touring the artworks and filled out eight sets of questions, one for each artwork in each audio guide (all questions can be found in the appendix). They were encouraged to answer questions for a track immediately upon listening to it and not to wait with filling out the questions until after the entire tour (to ensure detailed and exact answers).

The standard tour was used on a device provided by the museum, while the alternative tour was opened in the application SoundCloud on the participants' own smartphones, using earphones. Volunteers were present to help all participants access the audio guides. There is a wealth of literature on the use and design of technological devices for audio guides (e.g. Marshall *et al* 2016; Dickinson 2014; Lee 2017). Our study is not concerned with this and focuses solely on the content of the audio guides and its effect on the user. We therefore specifically asked users to disregard the devices' ease of use in answering the questions.

Theoretical framework

Prosthetic Memory

Alison Landsberg's *Prosthetic Memory: The Transformation of American Remembrance in the Age of Mass Culture* (2004) theorizes a form of mediated memory that operates in mass culture: 'prosthetic memory'. This refers to memories generated not through direct 'lived' experience or 'organic' family memory but through experiential representations. Prosthetic memory develops as an individual experiences an affectively intense cultural text, such as a film or an immersive museum exhibition. These experiences are commodified and make use of technology to artificially transfer 'memory' to audiences. She argues that prosthetic memory can be made useful to 'bring about social justice' (Landsberg 2004: 154), that is, it uses the means of late capitalism (commodification, technological advancement) towards a progressive politics. Although it was not made explicit in the exhibition, it is clear that an exhibition titled 'I am a native foreigner' embraces a similar political stance. As the museum's curator, Margriet

Schavemaker, has informally confirmed (in conversation, June 20, 2017), the exhibition implicitly aimed to play a progressive role, inviting visitors to empathise with the 'other', in a society deeply divided regarding migration politics and policies. Thus, an audio guide aimed at enhancing this process is both in line with the exhibition's logic and may have the effect on memory-making that Landsberg predicts.

Landsberg argues that the intense experience of cultural texts such as films or museum exhibitions allow the person to connect personally with the larger represented history. She discusses the potential of museums in facilitating this through an analysis of the Holocaust Museum in Washington DC, which she considers a 'transferential space'. The transference that occurs in the museum is, she claims, a real experience (for visitors) but under artificial, or constructed, parameters (Landsberg 2004: 135). Our project builds on this notion of the museum as a space in which prosthetic memory may be transferred, specifically to analyse the work audio guides can do in relating migration art to visitors' lived experience and pre-existing perceptions of cultural memory.

Because experiential museum exhibitions offer a visceral route to empathy, they establish a transference between the narratives told or otherwise represented, and the personal experience and lived memory of the visitor. As such, they may be able to impart what the visitor experiences as a form of memory (albeit under artificial parameters). Prosthetic memories, then, 'are privately felt public memories that develop after an encounter with a mass cultural representation of the past, when new images and ideas come into contact with a person's own archive of experience' (Landsberg 2004: 19).

It is crucial for the process of turning information received into prosthetic memory that the visitor actively participates by integrating the narratives in her own archive of memory in a fitting manner. Few museum exhibitions actually present a continuous embodied experience. This is one element that audio guides, as an assistive device worn close to the body, can add. However, this specific aspect of the concept of prosthetic memory has also been criticized (Abel 2006; Kase 2007), both because it is unclear that the visceral experience of the visitor is in any way like the experience shown, and because this process may seem to let go of the distinction between memory (which by its nature is an imperfect reconstruction of 'what really happened') and fiction. By applying the theoretical notion of prosthetic memory to the medium of the audio guide, we hope to get a clearer sense of both the possibility of successfully constructing prosthetic memory and the idiosyncratic nature of the audio guide.

The distinction between cultural and communicative memory, introduced by Jan Assmann (Assmann 1995; 2008), can play a role in the possible construction of prosthetic memory in the audio guide. While the artworks in an exhibition might be said to contribute to cultural memory, in the way they represent and keep alive important historical events, an audio guide might function in several ways. Listening to audio fragments consisting of descriptive curatorial texts can add to the understanding

of objects and cultural memory, but is unlikely to make experiencing the works very personal. On the other hand, listening to fragments including the voices of the people who own the original memories could create a (false) sense of communicative memory, in which the participants feel more personally addressed, as if brought in direct contact with the original event. Here, a conflation of memory and fiction could become productive; the fiction does not concern the content of the narrative, but rather the form it takes, mimicking oral history accounts and creating the illusion that the listener participates in communicative memory.

Both cultural and communicative memories are performative (Erll and Rigney 2009; Widrich 2014). They are constructed – through active experience – rather than passively reproduced (Erll and Rigney 2009). The illusion of communicative memory, along with the active, physical process of walking through the museum, might help give the visitors a sense of performatively and personally constructing the memory. Although the audio guides are of course fixed and no true participation of the visitors in the represented narrative takes place, a sense of being engaged in communicative memory can be created, the result of which might be called *prosthetic communicative memory*: communicative due to connotations of the memory's 'true' voice, and prosthetic due to the visitor's artificially achieved sense of active and performative participation in this memory, made personal by the experience of the audio guide's medium. The success of such an approach will be influenced by the willingness on the part of the audience to allow for the transference despite the artificial parameters of the situation.

Hypotexts and paratexts

As a medium, the museum audio guide is rarely autonomous; most tracks are connected to displayed objects and meaning is created in the interplay between objects and audio guide. The relationship between object and audio guide is of a symbiotic nature, each complementing and interacting with the other. Reactions of the visitors to the audio guides evaluated in this study – both positive and negative – will be discussed below in light of the advantages and disadvantages of this symbiosis.

The interplay between these two 'texts', the image or object and the verbal text, can be described in terms of *paratext* and *hypotext*, categories introduced by Gérard Genette in his book *Seuils* (1987). Genette's theoretical concepts can usefully be applied to audio guides (Christensen 2011). The hypotext is the main text, or in our case the exhibited object. Paratexts are accompanying texts, which are not inherent parts of the hypotext, yet add to its meaning – such as the audio guide. In discussing the paratext, Genette distinguishes between texts which are physically connected to their hypotext and texts which exist at a distance from their main text. The first type Genette calls *peritexts* and examples are the title or author's name on the cover of a book. The second type, such as book reviews, he calls *epitexts* (Genette 1997).

Thinking about the audio guide and exhibited objects in terms of this theoretical framework raises questions

about the exact nature of their relationship. In his article on museum technologies and audience participation, Christensen discusses the exhibited objects and the corresponding audio fragments as hypotexts and paratexts, respectively (2011: 18). This classification is not always straightforward, however. The audio guides in our experiment seem to blur these boundaries. In an attempt to speak to the audience more directly and help construct prosthetic memory, the hierarchical relationship between hypotext and paratext becomes muddled at times. While in some cases this proves to be a successful strategy, in others it seems counterproductive. A close look at the audience response in the context of the theoretical framework will yield a better understanding of the distances between object and audio guide, on the one hand, and audio guide and user, on the other. This, in turn, will help us understand how audio guides might help construct prosthetic memory.

Analysis

The survey contained both closed, numerical questions and open ones. The numerical results have been summarized in **Tables 1** (data on the participants) and **2** (questions about the audio guides), while **Table 3** provides a summary of answers to the open questions. Judging from the results in **Table 2**, the alternative tour seemed to succeed in emotionally connecting the participants to the represented narratives. This was true to a lesser degree for the standard tour. Neither guide seemed to strongly elicit emotions or call up personal memories, although the alternative guide was evaluated slightly better for these two questions (3 and 4 in the Table), with the difference being largest for the works by Van Bennekom and Gaisumov. None of the guides strongly overshadowed the works; this seems clearest for both guides accompanying the work by Jungerman (most likely because this work is hard to understand without additional information) and for the alternative guide accompanying Gaisumov's work (about which more below). On the whole the alternative guide seemed to engage participants more with the works, which is also reflected in the overall grades (on a scale of

10) given to the audio guides: a 6.9 for the standard tour (dev. 1.0) and a 7.7 for the alternative tour (dev. 0.9). However, except for Gaisumov's work this difference was not very pronounced.

The responses to the open questions were remarkably diverse, as can be seen from **Table 3**. In most cases aspects of the audio guides that were appreciated by some as emotionally engaging and creating a personal connection were felt by others to be restrictive or overpowering the artworks. This diversity in answers might be explained by looking at the perceived relationships between audio fragments and objects. The next section will elaborate on this. Furthermore, two observations kept coming back throughout the test: a sense of, or interest in, *personal* engagement with the narrative and the importance of hearing the 'true' voice of the artist (in particular in the case of Jungerman and Gaisumov), instead of a voice-over recounting the same story. These observations support the idea that a fictive sense of communicative prosthetic memory can be created through an audio guide. This will be analysed in the second section of the analysis. Finally, the last section of the analysis will take a closer look at the importance of authenticity (versus staged or acted recordings) in the audio fragments.

The relationship between audio and object

A wall text or caption in a museum is read before or after looking at the object it accompanies, not simultaneously. This keeps the separation between the two clear and keeps the focus on the object. The object functions as the hypotext, while any accompanying texts – whether they are meant to explain, contextualise or question the object – are immediately understood as paratexts. Audio guides differ from these wall texts and captions by being audible rather than visual, which means they can be experienced at the same time as the objects they refer to. In a strictly technical sense, the audio guides function as epitexts, since the objects exist and are complete without the audio guide; the visitor can choose freely whether to connect the audio to the object. But when experiencing object and audio together, the connection can feel more profound

Table 1: Information about the participants, concerning age, migration background, frequency of museum visits and use of audio guides. Note that not all participants answered the question about migration background (total is 26).

		Number	%			Number	%
Age	<15	1	2.5	Museum visits	Never/rarely	0	0
	15–24	4	10		2–4 times a year	1	2.5
	25–34	13	32.5		5–10 times a year	15	37.5
	35–44	1	2.5		Once a month	11	27.5
	45–54	9	22.5	Using audio guides	More than once a month	13	32.5
	55–64	6	15		Have never used one	1	2.5
	65–74	6	15		Rarely	26	65
	≥75	0	0		Often	10	25
Migration background	Yes	7	26.9		Whenever possible	3	7.5
	No	19	73.1				

Table 2: An overview of the averages of answers to the closed questions asked for each artwork for each audio guide (ST = standard tour, At = alternative tour), plus number of answers and standard deviation. Categories of answers: 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree.

	Van Bennekom		Jungerman		Van Manen		Gaisumov	
	ST	AT	ST	AT	ST	AT	ST	AT
1. Allows me to emotionally connect to the represented narrative	n. 32 av. 3.8 d. 1.0	n. 29 av. 4.0 d. 1.0	n. 32 av. 3.9 d. 1.0	n. 28 av. 4.3 d. 0.7	n. 33 av. 3.6 d. 0.8	n. 29 av. 4.0 d. 0.8	n. 32 av. 2.9 d. 1.0	n. av. 4.3 d. 0.8
2. Is a good addition to the work	n. 32 av. 3.6 d. 1.1	n. 29 av. 3.7 d. 1.0	n. 32 av. 4.2 d. 0.8	n. 28 av. 4.3 d. 0.8	n. 33 av. 3.8 d. 0.8	n. 29 av. 3.9 d. 0.7	n. 32 av. 3.8 d. 0.8	n. 28 av. 4.4 d. 0.9
3. Elicits emotions in me	n. 25 av. 2.7 d. 1.2	n. 23 av. 3.0 d. 1.1	n. 29 av. 3.1 d. 1.0	n. 24 av. 3.1 d. 1.0	n. 28 av. 2.9 d. 0.8	n. 25 av. 2.9 d. 0.9	n. 30 av. 2.9 d. 1.2	n. 23 av. 3.7 d. 1.0
4. Calls up personal memories	n. 25 av. 2.3 d. 1.1	n. 23 av. 3.0 d. 1.3	n. 26 av. 2.7 d. 1.0	n. 23 av. 2.7 d. 1.1	n. 27 av. 2.7 d. 1	n. 21 av. 2.9 d. 1.0	n. 25 av. 2.3 d. 1.1	n. 22 av. 2.6 d. 1.3
5. Overshadows the work	n. 31 av. 2.5 d. 1.1	n. 27 av. 2.7 d. 1.2	n. 29 av. 2.1 d. 1.0	n. 26 av. 2.3 d. 1.1	n. 32 av. 2.4 d. 1.1	n. 29 av. 2.7 d. 1.0	n. 32 av. 2.5 d. 1.1	n. 28 av. 2.2 d. 1.0

and the audio guide comes to be perceived as peritext, reducing the distance between audio guide and object. In this section, we will look at responses to the audio guides in order to establish how objects and audio guides were understood in relation to one another.

The artwork by Rémy Jungerman is accompanied in both audio guides by excerpts from an interview with the artist, in which only the artist is heard. In the standard tour this is combined with a curatorial voice-over providing an explanation of the work. In the alternative tour no curator is added and ambient sounds can be heard throughout the narrative of the artist, mimicking a studio space. On the whole, both audio guides are evaluated as good additions to the work and little difference is reported between them, although the alternative tour allows participants to emotionally connect to the represented narrative more easily (Table 2). When asked how the audio guides compare to the wall text in the exhibition, the responses could roughly be grouped into two categories: most participants felt more emotionally engaged with both the work and the artist when hearing the artist speak, while several others experienced this as distracting from the work and focusing too much on the intentions of the artist (Table 3). In general, it was clear that the interview was not part of the work, but rather a reflection on the work, functioning as an anchoring epitext, separate from and dependent on the autonomous hypotext.

The audio guides accompanying the silent video work by Aslan Gaisumov evoked a very different response. The standard tour consisted of a voice-over providing contextual information, while the alternative tour consisted of a (staged) interview with the artist, against background sounds of

war scenes (e.g. exploding bombs). What is striking in both cases is the way several participants considered video and audio to be one combined entity (Table 3). In response to a question about the interaction between the artwork and the audio guides, one participant replied that it was hard to get them to run synchronously, even though no synchrony existed between them. Another wrote that the audio of the alternative tour added nicely to the video, since you expect sound when watching a video. A third participant described experiencing the video without the audio as “alienating.”

Whereas Jungerman's artwork is clearly separated from the audio guides and the audio guides were experienced (either positively or negatively) as complementing the work, Gaisumov's artwork seemed to incorporate the audio guides, in particular the alternative tour. This seemed to drastically reduce the autonomy of video and audio, bringing them closer together into one perceived whole. This is a result not so much of the content of the audio guides, but rather of the medium of the artwork. While most of the participants appreciated the interaction and felt it deepened the impact of the work, especially when hearing the artist's voice (describing it for instance as more personal and intimate), a few felt it interfered with their ability to make sense of the work by themselves, preferring to be given extra information beforehand or afterwards (or not at all). Due to the nature of the artwork's medium, both audio guides seemed to shift from paratext to part of the hypotext. This was particularly true for the alternative guide, which is in line with the focus on emotional experience, rather than factual context provided by this guide. The closeness between artwork and guide can be seen as either an advantage (making the audio more

Table 3: Summaries of participants' responses to a selection of the most relevant open questions from the survey (translated from Dutch). For an overview of all questions see the appendix.

Artwork	Question	Summary of participants' responses
Van Bennekom	Which of the two guides makes it easier to emotionally connect to the memory of Surinamese migration? Why (consider form of the fragment, chosen speakers, ambient sounds)?	10 participants preferred the standard tour, 15 the alternative tour. The standard tour provides more factual information, whereas the alternative tour is more emotive, but can sometimes feel disruptive and distracting as a result. Both tours are referred to as authentic, due to their factual and emotive nature, respectively.
	In the alternative tour the news fragment is authentic, but the interview is staged by actors. Does this change your experience of the guide and if so, how?	For 13 participants this information did not change their experience, for some because they had already assumed it was staged while doing the tour, for others because they did not mind. For 12 participants it did matter, mostly because authenticity was seen as essential in the context of the museum.
Jungerman	A wall text, like the one behind you [in the exhibition space], can offer the necessary information to understand a work. Does the spoken text of the audio guides add to this and if so, how?	Varied responses: – More and clearer information in the spoken text. – Hearing the artist's voice provides more emotional connection to the work and the artist. – Voice 'colours' the work too much, too much emphasis on the artist's intentions, no room for personal interpretation. – Written text is more neutral and trustworthy, spoken text diminishes the work's credibility.
Van Manen	In both audio guides you hear an interview with a woman who is not shown in the photographs, but does represent the portrayed group of Turkish migrants. When listening to the audio, do you feel more connected to her or to the women in the photographs?	About half the participants feel more connected to the woman in the audio guides; for some this is positive and it strengthens the impact of the photographs, for others it is distracting and reduces the photographs from artworks to illustrating snapshots. About half feel more connected to the women in the photographs; to some the audio distracts and manipulates the participants' own interpretation, to others the audio nicely complements and contextualises the work. About half the participants focus on the photographs as main object, accompanied by the audio guides, while for the other half the spoken narrative of the audio guides seems to become foregrounded.
Gaisumov	This is the only video work in the series. What effect does this have on your experience of the audio guides and the interaction between the audio guides and the work?	Most participants think both audio guides complement the work very well, especially since video and audio usually go together and tend to form a whole. For a few it is hard to concentrate on both at the same time and the audio is distracting, but to others the simultaneous experience feels more natural and emotive.

essential and its affect more powerful) or a disadvantage (violating the space of the object) (Highmore 2010; Gregg and Seigworth 2010).

The two remaining works, by Kors van Bennekom and Bertien van Manen, illustrate a similar blurring of hypo- and paratexts. Both works consist of black and white photo series' documenting the daily lives of two groups of migrants, from Surinam and Turkey, respectively. In both cases the guides provided (amongst other fragments) parts of interviews. Van Bennekom's work was accompanied by an interview with a Surinamese woman in the standard tour and a staged interview with Surinamese migrants arriving at Schiphol airport (against ambient background sounds) in the alternative tour. For Van Manen's photographs, a real interview with a Turkish woman who

migrated to the Netherlands was used in the standard tour, and altered to include ambient sounds for the alternative tour, creating the illusion that the participant is present at the interview, which seems conducted in the woman's kitchen. In both cases, the fragments could be misunderstood as interviews with the actual people represented in the photographs.

This close connection between artwork and interview, i.e. hypotext and paratext, created an interesting tension, in particular in the case of Van Manen: for some visitors, the audio guides functioned as paratext and provided helpful context and explanation of the photographs, which were unambiguously understood as hypotext. For others, the roles became reversed and the audio guides were foregrounded, functioning as hypotext (Table 3).

This reduced the photographs to mere illustration, which frustrated several of the visitors. Some of the answers illustrating this frustration:

'They [the audio guides] provide too much information and reduce the work of Bertien van Manen to documentary/illustration.'

'The engagement happens at the expense of the artistic value of the photos. They could have just been 'snapshots' with the same effect.'

'(...) interesting story, but it detracts too much from the photos.'

(This and all following translations are by the authors; original answers to the questionnaire, in Dutch, can be provided upon request.)

The split between visitors perceiving the audio guide as supporting the artwork and visitors perceiving the artwork as supporting the audio instead was more or less even and in both cases the word 'illustration' was used in answers, describing the audio guide and the photographs, respectively.

The construction of meaning

In his discussion of audio guides, Christenson states that '(...) 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' (2011: 27). Is this really the case? While audio guides might in some cases strengthen the role of the audience in creating meaning, they can also limit it. On the one hand, both audio guides were experienced by many of the participants as emotionally engaging as well as helpful in understanding obscure references and historical contexts. Some responses to the interview with Jungerman (used in both guides) illustrate this:

'Voice/explanation of the artist and emotional background of the artwork [are] elucidating.'

'Hearing the artist makes it easier to engage with the narrative and the artwork, almost to the point of forgetting that you're in a museum.'

On the other hand, however, several people remarked that they preferred to interpret the works on their own, without being pointed in a particular direction by an audio guide:

'The explanation of the artist can add something, but in this case, for example, his own emotions while seeing the work in his studio provide too much interpretation for me.'

'It's nice to hear the artist himself, but it takes away from the credibility of the artwork.'

'I prefer not hearing too much explanation about the work.'

In its function as paratext, an audio guide noticeably tries to steer the visitor in the direction of a particular understanding of the object and a connection to a bigger cultural memory, which the object represents. How-

ever, memory as a phenomenon takes much of its force from the intimate personal experience of it, the idea that it is one's own creation, even if it is shared with others. The paradoxical feeling of being 'pushed' into experiencing the narrative and object in a personal way might raise resistance, which explains some of the negative responses.

As we have seen in the last section, the perceived distance between object and audio guide can function to emotionally engage visitors, but also to frustrate them. A similar thing holds true for the space in which the audio guide allows the visitor to form his or her personal interpretation, in other words the perceived distance between the guide and the personal experience of the visitor. A guide that is too 'pushy' in telling the visitor how to understand or feel about a work will fail to draw the visitor in and instead result in frustration. Like a prosthetic limb, a constructed memory will work best if the recipient wears it willingly and is involved in the process of making it. A prosthesis is never 'one size fits all' and needs to be adjustable to the personal context, be it the body or – in this case – the horizon of experience, of the user.

Here the notion of prosthetic communicative memory might help explain the participants' responses. An audio guide mimicking direct interaction with a memory's owner, for instance by using fragments from an interview against background sounds of an informal space like a kitchen, can create a sense of participation. A successful audio guide will create the illusion that the visitor is actively and performatively engaged in constructing communicative memory in interaction with the recorded voices. This would explain the positive responses of participants who felt emotionally and personally affected by the audio fragments. However, if the audio guide's purpose (to forge a personal connection) becomes too obvious, this can frustrate visitors. This explains the negative responses of participants who felt the audio guides were overshadowing the works.

The importance of the 'true' voice of a memory, in suggesting communicative memory is illustrated well by the notable difference in the responses to the standard and the alternative tour for Gaisumov's video installation. In the standard tour a narrator provided factual context; the alternative tour had the participant listen to the artist's voice (in fact an actor, but the visitors were unaware of this). The higher scores found for the alternative tour in questions 1 to 4 (**Table 2**) are in line with the idea that, in this case, hearing the voice of the artist successfully mimicked the experience of communicative memory, by creating the sense of personal connection to the 'authentic' narrator of the memory. This seems to indicate a successful creation of prosthetic communicative memory.

While in the case of Gaisumov's work we might conclude that the illusion of communicative memory worked well, this conclusion does not apply to all findings, as we have seen. The varied reactions to hearing the voice of Jungerman illustrate this. For some, hearing Jungerman talk about his work was engaging and emotive, while to others it felt restrictive. All in all, the varied responses indicated several ways in which meaning was created, both emotionally and intellectually. What worked for

some of the participants, for instance by creating an illusion of personal contact with the artist and facilitating the construction of prosthetic memory, seemed counterproductive for others, by limiting the possible interpretations and therefore reducing the personal fit of any prosthetic memory. The complexity of the construction of such memory is nicely illustrated and made explicit by the results of our survey.

Authenticity and the affective impact of voice

As discussed, an audio guide that adds a recorded voice as an epitext, in order to forge an experiential connection between audience and artwork, can elicit diverse responses. While for some participants it mars the experience of authenticity, for others, the direct mode of address by the voice of the artist or of the people represented in the work in fact adds to the experience of authenticity.

The artworks in the exhibition are of course original, that is, they are authentic products of their makers. In the audio guide, the idea of authenticity becomes more complex. There seems to be a conflict between 'real' authenticity ascribable to originality or 'aura' (to use Walter Benjamin's term) and a form of authenticity that is a rhetorical device, that is, a work that comes across as authentic despite being presented in the form of a copy of the original (Benjamin 1968). This rhetorical authenticity relies on making a convincing claim that what is presented is real, but the quality of the construction is more important than the 'actual' truth. Whereas many cultural texts are not presented in the original (in the case of the audio guides, for instance, many of the texts were voiced by actors), they can seem highly authentic, because they are professionally made, so as to feel convincingly 'authentic'. Some participants felt 'tricked' by this; others noted they felt personally addressed by the voices, regardless of their authenticity. In her discussion of the Holocaust Museum as a transferential site for prosthetic memory, Landsberg describes a small glass room called 'Voices from Auschwitz' in which visitors listen to audio recordings of voices describing life in the camp (Landsberg 2004: 137). She argues that the authenticity of the experience primarily lies in the fact that as visitors we each create our own associations, and thus prosthetic memories. This seemed in our experiment to work as such for some visitors, but certainly not all. The authenticity (realness) of the testimonies to many formed a condition to engage affectively in the formation of prosthetic memory.

Both the standard and the alternative tour contain a range of voices – of curators, artists, and people represented in the artworks, or with similar migration experiences. Whereas the voices in the standard tour are more explicitly museal (an educator who introduces the work, sometimes interspersed with curatorial commentary), the alternative tour offered more personal stories from artists and those portrayed or referenced in the artworks. Although the stories were authentic, in several of these fragments actors were used to portray the artist (in the case of Gaisumov) or the represented migrants (in particular in the case of Van Bennekom). Arguably, the voices in

the corresponding standard tour fragments were therefore more authentic, in the sense that they really were the voices of the persons suggested. On the other hand, the alternative tour is on the whole more actively invested in the rhetorical production of authenticity.

The attempt to facilitate transference, through the use of this rhetorical authenticity in the alternative audio tour, is intended to add to and interact with the visitor's prosthetic memory. Of course, the visitor knows that this is not a real memory, but it could still allow one to relate to the historical experiences and the cultural memory that is represented by the artworks. So if one listens to Rémy Jungerman talking about his own migration experience in relation to his artwork, a transference can occur that allows for the production of prosthetic communicative memory. The alternative tour tries to support and enable that, by giving a voice to the people whose experiences are represented in the artwork, as in the case of Bertien van Manen's photo series of Turkish labourers in the Netherlands.

There were different perceptions among participants of the acceptability of offering a narrative that is not strictly authentic but helpful to the transference of prosthetic memory. For some participants, the fact that some of the audio recordings were not convincingly authentic in fact helped them avoid a sense of being misled. They picked up the fabricated nature of the audio accompanying Van Bennekom's photos of arriving immigrants. If you can hear that it is fake, some suggested, it is not a convincing addition, but from other responses it was clear that participants felt it was important that they did not feel 'tricked' into believing they were hearing the actual person portrayed in the photo. Thus, the imperfect performance of authenticity worked to show the seams between real and fabricated, but at the same time took away from the credibility of the joint performance of artwork and audio. In a similar manner, the addition of airport sounds to the tour both made the experience more suitable for the production of prosthetic memories in the visitors, as it engaged more senses, and recreated the experience of newly arriving immigrants at the airport in the 1970s, but it also 'gave away' that the audio in the alternative tour contained sounds added for effect.

These findings seem to confirm our ideas about the construction of prosthetic communicative memory. Apart from the relationship between object and audio guide, the authenticity of the audio also influences this process. Again, there appears to be a fine line between successfully creating the illusion that the participant is part of the production of communicative memory and the risk of having the participant perceive the audio guide as 'trying too hard' in creating this illusion. The range of responses, from being emotionally engaged to being frustrated with what one participant described as 'fake news', can again be explained by the audio guide balancing this thin line.

With the Gaisumov installation the issues were in a sense the same but more explicitly ethical, because the performance was more convincing and less recognizable as fabricated. The voice was of an actor who in accented English

recounted his experience of fleeing Chechnya (based on material written by Gaisumov himself) as a voice-over to the otherwise silent video installation. Background noises were incorporated in the audio to suggest the ongoing war. Although this presumably betrayed the inauthenticity of the audio, many respondents did feel tricked when they heard afterward that the voice had not really been Gaisumov's own. In the alternative tour fragment of the Van Bennekom photos, the less convincing construction helped visitors realize what was real and what was added. However, in the case of the Gaisumov audio clip, the heightened but strictly rhetorical authenticity was more problematic. Timing was important here: the fact that participants found out later that the Gaisumov audio did not contain the artist's voice, rather than during the performance, contributed to some participants' sense of having been deceived.

An audio guide offers an intense sensory experience that can, as discussed, complement, anchor, or distract from the artworks in an exhibition. In our study there is a difference between the aural experience offered by the alternative versus the standard tour, not just in terms of content or voice, but in the intensity of the experience. The standard tour was recorded in mono and the device is held to one ear. The alternative tour, on the other hand, was recorded in 3D – the sound appears to surround the listener and mimics real-live conversation – and participants heard it through two in-ear earphones. Thus, the experience of the audio in the alternative tour was perhaps more immersive, and therefore more conducive to engendering a sense of communicative memory and thus the construction of prosthetic memory. The fact that noise in the exhibition space is masked by the use of headphones adds to this intimate space in which the voice seems to speak directly to the visitor.

Conclusion

Audio guides have been an important tool in museum design for over a decade. Nowadays, the ubiquity of smartphones and near constant access to internet facilitates the use of audio guides, both inside curated spaces such as the museum, and outside, in non-curated spaces like urban landscapes. The intimate way in which the audio guide can address its user could make it suitable for the communication and construction of cultural memory. It has been our aim to explore this link and gain insight into the effect of different types of audio tracks on the audience.

Our hypothesis was that the alternative tour would better succeed in emotionally engaging participants and therefore constructing prosthetic memory. Although it is true that the alternative tour was evaluated better than the standard tour in terms of emotionally engaging, adding to the artwork and eliciting emotions and memories, it also seemed to overshadow the artworks more and was frequently criticised. Participants' responses were divided and a more nuanced picture emerged about the workings of the audio guides. In analysing the survey answers, we observed several effects of the guides, which sometimes

functioned well in engaging participants, but in other instances triggered resistance.

First of all, the relationship between the object and the audio guide seemed of importance. For some participants, a close connection between hypotext and paratext helped create an emotional link to the represented narrative, which in turn helped participants feel personally engaged in the cultural memory. For others, this link between object and audio interfered in the autonomy of the object and these participants preferred the 'old-fashioned' third-person narrator. More experimental tracks, with staged scenes and background sounds – trying to immerse visitors in the represented events – were therefore not quite as successful as expected. This could be partially explained by the novelty of this approach; based on prior experiences with audio guides, visitors are likely to expect 'neutral', factual information, provided by a narrator. Furthermore, collapsing the distance between audio guide and object could be counter-productive, as it robs the user of the possibility to create their own meaning.

Contrary to our expectations, hearing the artists themselves speak about their works was not met with general enthusiasm. For participants who responded positively, the authenticity of the voice (as representing the 'original' memory of the event) seemed to create a helpful illusion of communicative memory – a sense of being spoken to directly by the owner of the memory – which aided the construction of prosthetic memory. Others perceived the voice of the artist as authoritative, restricting the freedom of the audience to understand the works for themselves. These participants had a harder time emotionally connecting to the narrative and as a result the construction of prosthetic memory seemed to have been hindered rather than facilitated. This can be understood to stem from a need to create one's own prosthetic memory within a personal context.

A sense of authenticity of the audio tracks played an important role in their appreciation. Various participants expressed worry about the possibility of being 'tricked' by the audio guides, because an audio guide gives little opportunity to check the authenticity of stories or their narrators. Thus, a suggested closeness between the works and the speakers in the audio guides was often mistrusted or perceived as 'fake', whereas the closeness between the narrative and the listeners' own experience or memories was appreciated as strengthening a sense of authenticity. This closeness between visitor and narrative, achieved through the in-ear device as well as the use of 3D audio and background sounds, seems to be conducive, as Alison Landsberg argues, to the production of prosthetic memory in participants.

In short, audio fragments including the artist's voice divided opinion more strongly than those with curatorial voice-overs. While to some the voice of the artist was more emotive and allowed the listener to engage more with the represented memory, to others it felt restrictive and distanced them more than it drew them in. Furthermore, an understanding of the audio guide as epitext, rather than peritext, ensured that the audio guide did not interfere

with the space of the object. And finally, while ambient sounds and acted scenes were helpful in eliciting an emotional response from the audience, the (perceived) authenticity of audio fragments often outweighed the emotive power of these techniques.

During our user test, one of the visitors suggested an alternative approach to the design of audio guides, with which we would like to end our analysis. Currently, most audio guides are matched with specific works and tracks are meant to be played while simultaneously looking at the corresponding works. There is no need, however, to connect audio tracks and exhibited objects, and tracks could be made to stand on their own, intended to be played in-between works, or at the user's own leisure at any moment during a museum visit. The tracks could still provide background information about the general context of the exhibition, the themes running through it and the emotional perspectives at play, without interfering with the works. This way the distance between audio tracks and users could be optimized, to engage the user, while the distance between audio tracks and objects could be respected. Stepping away from traditional design might be just the impetus the medium of audio guides needs to move in a new direction.

Additional File

The additional file for this article can be found as follows:

- **Appendix.** Survey Form. DOI: <https://doi.org/10.5334/jcms.182.s1>

Acknowledgements

This work is part of the research programme *Creative Industry – KIEM* with project number 314-98-093, which is (partly) funded by the Netherlands Organisation for Scientific Research (NWO). We are grateful to Prof. Dr. Yra van Dijk and Prof. Dr. Anthonya Visser for their help in conceiving this project. We would also like to thank Prof. dr. Margriet Schavemaker, Margita van Vugt and the Stedelijk Museum Amsterdam for their support in executing the research.

Competing Interests

The authors have no competing interests to declare.

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How to cite this article: Bertens, L. and Polak, S. 2019. Using Museum Audio Guides in the Construction of Prosthetic Memory. *Journal of Conservation and Museum Studies*, 17(1): 6, pp.1–11. DOI: <http://doi.org/10.5334/jcms.182>

Submitted: 18 October 2018 **Accepted:** 16 May 2019 **Published:** 19 September 2019

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