CHALLENGING THE PROVENANCE OF KNOWLEDGE AND THE AUTHENTICITY OF MUSEUM DOCUMENTATION IN VIRTUAL SPACE

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Abstract. Museum documentation fulfils its purpose through the presentation of collection objects, serving as an outstandingly rich source of information for the scientists, scholars and wide public. Enhancement of modern presentation forms with elements of virtual/augmented reality also expands our ability to communicate the museality to its recipient. On the other side, we are also facing the risk of information distortion and the occurrence of various misinterpretations. This paper tries to sum up the experience acquired during the transformation of a real museum exhibition into its virtual imprint. Case of Sereď Holocaust Museum (Slovakia) provided the vivid background for critical reflection on the virtual exhibition emergence. There are still many stories to be told and many views on them - allowing for various interpretations using the different (or even the same) objects documented in museum collections and archives. Presentation in digital world no more relies on the techniques used many decenia ago, but the structure of human perception and understanding remains anchored in the ancient biological past. The key point of museum documentation and presentation is their ability to recount on strong narratives without embezzling the raw facts, which are quickly withering away from our shared historical memory. After all, manipulation of facts and the creation of an alternative reality have already led (and can lead again) to the phenomena the Sereď Holocaust Museum is devoted to.

Keywords: museum documentation, museum presentation, virtual exhibition, virtual reality

1 Introduction

From the very beginning of mankind, people used to collect objects because of their perceived interestingness and remarkability. By identifying and recognizing the value of the object as an information carrier about the context from which it comes, we are reaching the field of modern museology. The central point of museum theory nowadays is the term museality – property of the object determined or even made by the human subject (Laszlo 1997). The information attached to the object forms its value for the museum and is essential for communicating the museality in the secondary (museological) context (Maroević 1993). This relation between the object and the information can have different forms: basic metric data of the object itself, the history of the object in its primary context as documented by the traces of its use, curatorial documentation in the collection catalogue etc.

Virtuality, with its ability to create completely new worlds, transgress cultural norms and ignore natural laws, makes a big opportunity for the presentation of cultural heritage. The power to recreate and communicate the museality in virtual space is accompanied with the need to maintain and/or re-establish the credibility of facts during this process. Because, as Maroević points out, "by interpreting this [= cultural and scientific] information, museology opens up new worlds of meaning in which even ideological manipulation is not excluded." (Maroević 1995).

2 Communicating the museality

While safeguarding intangible cultural heritage is about the transferring of knowledge, skills and meaning ('Safeguarding without Freezing - Intangible Heritage - Culture Sector - UNESCO' n.d.), communication of tangible artefacts allows for enhancement of the museum presentation with the rational as well as the extra-rational aspects connected to the value of the "real thing" for an individual (cf. Trant 2010). Thanks to the individually and culturally determined nature of this value, the object itself – and its digital representation ("surrogate" as described by Shatford 1984) to an even greater extent – acquires, transforms and loses its meaning in different cultural environments. Value transformation of an object on the way from primary to the secondary context had been humorously depicted in the South African comedy movie *Gods Must Be Crazy*

where an empty bottle of Coke undergoes its iconic transmutation from the object of mass consumption to the "gift of the Gods" sent to the Xi tribe. Humorous and from a museological point of view very instructive nature of the plot lies in the absence of any accompanying documentation to the newly acquired bottle, which literally "fell from the sky", and Xi people had to re-create the new entirely artificial and inorganic (thus erroneous) context for its interpretation. Archaeologists are facing this problem steadily while interpreting their field findings. We can only guess how large part of copious "cultic objects" found during the archaeological field research had some prosaic use in the past… which we are simply unable to identify from the point of view of our cultural environment.

3 Specifics of museum communication in the virtual space

In the case of the virtuality, the primary context from which the object is removed during his musealization and the secondary context that characterizes his life as a collection object, are supplemented with the next stage - the existence of a surrogate object (objects) in the virtual space. Thanks to the digital nature of such surrogates, a virtually unlimited replicability brings new challenges to the light (Zlodi 2004). Ensuring the authenticity and integrity of digital objects should be as important as their preservation and accessibility. Nevertheless, the lack of attention is still attributed to it in many cases and the museums consider it rather secondary (Bradley 2005).

3.1 Computer Aided Cataloguing

First attempts to use computers for museum cataloguing date back to the second half of the 1960s (Ellin 1969). The aid of computers had been appraised as the significant help with bulk number of objects waiting to be catalogized and thus made available for effective museum work. After a natural start, the museums gradually began to focus not only on the cataloguing part of the documentation (data input), but with the improvement of the imaging methods of computer technology and its democratization, it grew greedy to make the data accessible to the public. Anyway, data presentation techniques (data output) were still largely based on the direct use of primary collection data and their simplification for the needs of a wider audience. As a result, there was practically no contradiction between information entered, stored and presented at the output of the information system.

Adaptation of the information to the recipient had the character of generalization and simplification. A limited set of information was unmurmuringly understood as a tax for the availability of a large amount of data. Wide public accepted this "taxation" because the presentation in the virtual world has been viewed as an addition and not as more or less perfect substitution to the presentation in museum.

3.2 Museum as an information utility

Ubiquity of information and communication technologies from 80’s increases the user expectations in museums and galleries as well as in other areas of computer deployment. Truly personal computers, mobile and wearable devices allow users to routinely use technologies known just few years ago only from sci-fi movies. Museums, slightly hesitant at first, started jumping the bandwagon after the beginning of the new century so that they do not lose their social credibility.

Both the phrase “knowledge is power” and sarcastic academic saying “publish or perish” go in the A-L-M field too and any cultural institution that does not share the information managed by her in the virtual space too is showing her effectively dead. The role of the museum (archive, library ...) as a simple thesaurus of unique collection objects is henceforth overridden by the function of an institution securing the cultural information for the community, providing frameworks for their interpretation and ensuring the ongoing update of the secondary context for preserved musealities. Paradigmatic shift from "collection-driven museum" to "audience-driven museum" (Hooper-Greenhill 1995) continues to this day.

Regarding the data origin and their authenticity, therefore, at this stage, the greatest challenge was enabling the computer cataloguing systems to capture the origin of information attached to the object (most often by referring to external sources just like in the case of any scholarly text) and ensuring the permanent credibility of digital documentation (usually by setting access rights and, in the more advanced cases, by logging changes). As are the museums perfecting their tool and skill set, main technical obstacles are largely overcome

or at least identified, and attention is re-focused on methodological issues related to the selection of subjects for digitization and the adequacy of various presentation forms (Parry 2007).

3.3 Case of the Sereď Holocaust Memorial virtual exhibition

The Holocaust Memorial in small Slovak town Sereď had been established on the authentic site of the former work & concentration camp. The camp buildings, previously refurbished for the needs of Czechoslovak army after the WWII, had been consequently rebuilt under the supervision of Slovak national museum and inaugurated with the participation of the high state officials in 2016.

Due to nationalist tendencies in Slovakia and serious concerns about the purposeful distortion of history (temporarily separate "Slovak State" was one of the satellites of Hitler's Germany in 1939-1945 and actively participated in deportations of Jews from its territory), Slovak Ministry of Interior decided to support the project aimed at making this memorial accessible to pupils and students from remote areas likewise, in digital form. Czech based company MUSOFT.CZ won the tender and was commissioned to create virtual exhibition. After several months of preparation and programming, the history more than 70 years old speaks to visitors through the mouths of survivors and through collection objects in the virtual space too. The issue of extremism resonates in Slovakia for a long time and the need for the state to take an action to combat it is not only a social order, it is also part of the government's program statement (Janečková 2017). The necessity for the process analogous to German *Vergangenheitsverarbeitung*, "working through the past", comes to the fore in parallel.

Technology & implementation

To attain this sensitive issue, a complete 3D digitization of the newly created museum exhibition was chosen. This approach allowed for the re-creation of the unique *genius loci* and preservation of the memorial environment, which is *de facto* a combination of the primary and secondary context for the objects presented. Exact digital imprint of the exhibition can serve for future museological studies too.

Objects exhibited in the memorial had been thoroughly documented in the in-house collection management system (CMS) MUSEION and both the visual and textual data (so as the related metadata) captured in digital form.

Object/feature	Digitisation method	Preservation and presentation technology
museum artifacts	static photography	MUSEION
curatorial documentation	text	MUSEION
movie recordings	video	MUSEION
technical metadata	text	MUSEION
exhibition space (indoors + outdoors)	stitched 3D photography	immersive 3D reconstruction

Navigation through the resulting digital representation of museum exhibition is ensured in no less annoying way by simple mouse navigation and with preparation for the use of position sensors ("Wii-like") and three-dimensional reality display.

4 Common problems and pitfalls

The typology of errors and faults occurring in the virtual presentations can be based on various criteria. They can be seen from the perspective of intentionality and divided along the line between simple mistakes on one side and deliberately calculated manipulations on the other. Of course, this approach requires strictly individual assessment of every occurrence since the same effect can arise from both matters. Instead, the causal mechanism can be perfectly appropriate and helpful to identify few principal groups of deviations from the ideal state.

4.1 Human-computer interfacing problems

Computer software, as an environment for presentation of museality in virtual space, communicates with its user through physical hardware controls. Whatever controls are perfectly matched to ergonomic requirements, the problems with application control may still occur. These may be caused by effects on the HW & SW side of the presentation, as well as due to the the user's perception and motoric shortcomings.

Unnatural or unusual control modes

In a situation where it is impossible to rely on interaction practices known from the real world, it is desirable to reduce the threshold for interaction with the virtual presentation as much as possible. This can be done by reusing the practices that are (or may be) familiar to from similar environment visited previously. However, with the development of technology, these prerequisites are also accelerated. For example, older generations of visitors can be confused with modern motion sensor control, which is something completely new for them - in place of the expected cursor arrows or the touch screen.

Personal limitations (physical, mental and psychological disabilities)

Interpersonal variability of physical, mental and psychological factors determines the different ability to receive cultural information through digital presentations. It does not need to deal directly with disabilities. They may not even be the disabilities *sensu stricto*, but also relatively minor variations within the broader standards and consequences of the ontogenetic development of an individual during her/his life.

In terms of physical constraints, modern exhibition spaces and exhibitions themselves are designed with respect to the needs of the disabled. In most cases, the virtual form rather lowers the accessibility threshold than increasing it. Virtual presentations based on real exhibition space allow not only to access places prohibitive for disabled visitors, but a preliminary virtual tour can act also as a significant anxiety relief factor for those disadvantaged in the mental or psychological field (Liarokapis et al. 2004).

All improvements made to meet the needs of disabled must consider the truthfulness of documentation and provide additional comment in cases where it is necessary. Modifying the physical or virtual environments for such specific needs should be obvious and must not create an impression of originality.

4.2 Perceptual issues

Detachment of the virtuality from the real world emphasizes the autonomous nature of the digital artefacts presented here and allows for the spatialy and topologicaly unlimited presentation. Virtual worlds of the museum collections are created, where the boundary between the reality and the perception of this reality becomes very unclear (Maroević 2000). Even the previously unambiguous markers of virtuality (low screen resolution, cubic rendering, jerky movements ...) are gradually eliminated during technological development, which makes the observer’s deception a relatively easy matter. Greater realism induces the greater participant presence in immersive virtual environments and manifests itself at the basal physiological level of experiencing (inducibility of stress and emotions) (Slater et al. 2009).

Non-complex perception (overrepresentation of one or few senses)

Despite significant technological advances, information, communication and presentation technologies remain too unilaterally focused on the visual perception. The sound component finds its justification especially in specific cases (music, animal sounds), but mostly does not exist at all or only has the role of an acoustic background or side channel for the spoken word of the commentary. Other senses (smell, taste, touch) are only very difficult to affect with digital technology and thus constrainedly neglected.

In the case of Sereď Holocaust Memorial the spectator is confronted with an area which was adapted for a variety of uses several times, which has lost a considerable portion of the original visually perceptible content, not to mention the tactile and olfactory conditions that inmates were exposed to during their transport

and internment (cf. Weissman 2010). The important mission of the presentation therefore rests in the sensitive reconstruction of a substantially stressful environment in the form of an exhibition and its digital fingerprint. Thus, the implementation had to consider both the principle of proportionality and the emphasis on audio-visuality inherent in digital communication techniques.

Illusions

Mostly in the form of optical illusions they are familiar to the museum visitors and here and there even specialised exhibitions are dedicated to them. While the exploitation of illusions in such cases is welcome and illustrative, perceived distortion of the reality can be problematic and even dangerous in the case of presentations based on the fidelity and accuracy of the transmitted visual information.

An example of such optical illusions, although in a relatively harmless form, may be, for example, the fish eye effect created due to the short focal length of the lenses used for the image digitization in tight exhibition spaces. As a result, perspective lines are deformed into curves, especially in the marginal parts of the images. Because the human brain does not have the problem to reveal this illusion, there is no significant distortion of the spatial perception. Most adult visitors can count with the existence of perceptual illusions and are able to void their influence on the transmitted message. At least a partial twist of complex perception is in any case possible and may shift the interpretative framework in the wrong direction. "Pink glasses" or "light colors" are only a modest example of phrases describing the illusory shift of perception (and consequently an understanding) that would not be desirable - precisely in the case of the monument of one of the most tragic events of human history.

Media (photo, audio, video…) manipulation

The most pervasive phenomenon of this kind in contemporary media becomes so ubiquitous that we are partly accommodated to it and partly have resigned to question each suspicious media for improper manipulation. As there is no desire for any distortion of museality during the (digital) documentation process, we could be tempted to expect only raw digital media in our collection management systems. Of course, this cannot be far from true, because the proper media manipulation (in the form of retouch and digital enhancement) is not only able to grace the image to reality but it can also remove (or at least suppress) some unwanted artefacts arising from digital processing. Thus, the digital postprocessing done gingerly and with highest respect to the transmitted cultural information is in place.

4.3 Misinterpretations, fallacies

The museum object represents a complex source of information in which space, time and society play an equal share. The same combination of influences can be revealed for an exhibition as an event (Maroević 1995, 2000).

However, digitization, i.e. reducing the object to information about it, creates the danger of wiping out the difference between the object as the primary source of cultural information and contextualized secondary sources (Schweibenz 1998). While the collection catalogue is still able (at least theoretically and with the utmost curatorial effort) to keep track of the origin of each individual piece of digital documentation, the derived digital presentation can’t provide enough (virtual) space for the exhaustive presentation of the object in its entirety, as well as for the complete set of context data and documents in a variety of diverse formats. In this case, the problem is not sensory but rational, however its ultimate consequence is the same: deformation of the information during its transmission from the source to the target of the message (principle of the “telephone” or “Russian scandal” game).

Cherry picking, one-sided interpretation

Blocking or rejecting information that does not support the selected hypothesis is a known and common disinformation technique. Because it is practically always a conscious manipulative act requiring targeted intellectual effort, it can be assumed that the construction and presentation of museum documentation in cyberspace will not occur. Paradoxical pitfall in this case may be the accusation of manipulation from

manipulators themselves, against which it is necessary to argue not only with hard data but also with metadata justifying their inclusion in the documentation.

The approach of Sereď Holocaust Memorial to the presentation of the history of Slovak Jews in the Shoah period respects the Slovak cultural tradition, which is significantly closer to the humanistic narrative than the Zionist one (cf. Berman 1999) and especially strives to connect the Holocaust to Slovak history. Thus, the virtual exhibition presents the documents describing the history of those who fought against Nazism and anti-Semitism, as well as those who, to varying degrees, have just idly watched or even collaborated openly. To avoid questioning documented historical reality, only perfectly processed museum documentation (including accompanying metadata) has its place in the virtual exhibition.

Factual or paradigmatic reframing

Showing the problem from the completely different perspective can be both beneficial and deceitful. Many innovative approaches can arise from the paradigmatic reframing, but there is also relatively high probability of missing the target completely when using the improper frame for the message communicated.

Discovery of the mismatched archival metadata for one brief document allegedly related to J. F. Kennedy's withdrawal of US troops from Vietnam rewrote the sensitive part of American history because a thorough analysis has shown that the document relates to another historical situation (Stern 2000). A digital environment that erases spatial and temporal distances is even more susceptible to similar cases and requires active attention to avoid reframing.

More cases of subtle paradigmatic reframing had to be considered during the preparation of virtual presentation for Sereď Holocaust Memorial: the time elapsed from the end of camp operation isolates the today's visitor from more than seventy years old historic events in the same manner as the cultural and material gap between today's Slovak student (virtual visitor) and a Jewish internee in conditions of severe physical and psychological suffering. Because reframing increases the detachment from virtual reality in this case, all other additional detachment factors should be kept to a minimum, in order to achieve the most authentic experience in terms of the exhibition experience and the narrative displayed in virtuality.

Distraction

Alternation of highly valuable and weak parts throughout the presentation is an effective way of retaining attention, traditionally used in pedagogical practice. However, in the case of acknowledgement by the recipient of the information, an undesirable aversive reaction and the feeling of deception can occur.

The events associated with the horrors of WW II are so powerful that they can attract attention in a way that could undermine the humanist and anti-extremist message of the virtual exhibition. Dark tourism is a phenomenon increasingly discussed in the literature (Miles 2002), and of course, it also appears in the digital world. To avoid the unwanted fascination for death, the virtual presentation of the Sereď memorial focused on the factual transmission of historical information and the evidence of the tragic fate of Slovak Jews, for which the Sereď facility was a transfer station on their way to extermination camps. Therefore, basic expression means are used, only slightly complementing the overall balanced composition of real museum presentation – entirely in the context of an attempt to encounter the extreme collective trauma in its mediated and imagined forms (Kaelber 2007). On the other hand, it is necessary to approach the construction of this "staged authenticity" in a balanced manner, so that the undesirable depersonalization and detachment from the suffering of others gets minimized and the use of this virtual exhibition does not strengthen the opposition of dark tourism against social cohesion among human beings (Korstanje 2014).

Audience mismatching

Adaptation of the way and content of the presentation to the age, cultural and educational structure of the target audience is one of the most difficult tasks in the museum work. For this purpose, the digital form offers powerful tools that allow for a realistic adaptation of visitor experience which were almost impossible in a real exhibition space. This can undergo (semi)automatically on the presentation server side, based on the basic set of demographic metadata about the visitor (geographic location, browser type, age, gender, customer and leisure

preferences ...). On one hand, it is possible to replace single unified presentation with a diverse set of personalized ones, but on the other the scope for technical errors is expanding and the severity of possible consequences increases this way.

An example from the real museum exposure could be the transparent vitrines in the floor, which force visitors to bend deeply or kneel to see exposed materials. In such an arrangement of the *Indisch Herinneringscentrum* in Arnhem, Netherlands, visitors were inadvertently re-enacting the humiliating worship of the flag of Imperial Japan, which were the internees and prisoners of war exposed to. While for most visitors this experience could have been eye-opening and facilitated closer contact with the cultural message, people with traumatic memories of this kind indeed complained to the museum that they were forced once again to bend down in front of the hated flag (Pattynama 2016). In case of the digital presentation of the Holocaust Memorial, it is easy to imagine analogous situations in which the reactions of different target groups (school pupils, adults, Shoah survivors) may be dramatically different. Therefore, the particular emphasis was put on the culturally correct presentation towards the online visitors from the group of Shoah survivors and their Jewish relatives.

Alternate reality mystifications

Mostly in case of presentations aimed to children, the fantastic narratives populated with elves, fairies and wizards are sometimes used. Although this approach can't be generally discouraged, it's use should remain reserved for specific audience and situations allowing for it. Unfortunately, overuse of these mysterious motives is a common practice in many Czech museums. As a result, the professional level of presentations and, in general, the work of museums in the eyes of the public are often lowered.

In the case of the virtual exposure of the Sereď Monument, this narrative approach had been used only in the mediated form of interviews with the survivors of the Shoah, projected as a dynamic part of virtual exposure (embedded video). In this case witnesses of historical events just share their story that adequately complements and expands the virtual exposure. They are not used as fictitious guides and their historicity can't be questioned so as (consequently) the authenticity of their testimony.

4 Conclusion

Virtual and augmented reality technologies can be used for various applications in museums. The positive effect on the motivation for education has been repeatedly demonstrated (cf. e.g. Di Serio, Ibáñez, and Kloos 2013), but due to its distinctions from traditional forms of museum communication, it requires increased attention in the course of all the implementation phases. Some of pitfalls identified during the creation of the Sereď Holocaust Memorial digital representation had been identified, classified and commented in this paper. With the expanding practice of creating digital representations of existing museum exhibitions and entire virtual worlds, the issue of authentic and undistorted museum communication is becoming increasingly prominent. A careful and cautious approach should not only be on the spot but should be also supported by both theoretical and practical museology.

Bibliography

Berman, Judith. 1999. "Australian Representations of the Holocaust: Jewish Holocaust Museums in Melbourne, Perth, and Sydney, 1984–1996." *Holocaust and Genocide Studies* 13 (2): 200–221.

Bradley, Rachael. 2005. "Digital Authenticity and Integrity: Digital Cultural Heritage Documents as Research Resources." *Portal: Libraries and the Academy* 5 (2): 165–75.

Di Serio, Ángela, María Blanca Ibáñez, and Carlos Delgado Kloos. 2013. "Impact of an Augmented Reality System on Students' Motivation for a Visual Art Course." *Computers & Education* 68 (October): 586–96.

Ellin, Everett. 1969. "Museums and the Computer: An Appraisal of New Potentials." *Computers and the Humanities* 4 (1): 25–30.

F. S. Miles, William. 2002. “Auschwitz: Museum Interpretation and Darker Tourism.” *Annals of Tourism Research - ANN TOURISM RES* 29 (October): 1175–78.

Hooper-Greenhill, Eilean. 1995. “Museums and Communication: An Introductory Essay.” In *Museum, Media, Message*, edited by Eilean Hooper-Greenhill, 1–12. London: Routledge.

Janečková, Žaneta. 2017. “Do tábora smrti v Seredi prenesie študentov aplikácia.” Pravda.sk. October 2, 2017. https://spravy.pravda.sk/domace/clanok/443565-do-tabora-smrti-v-seredi-prenesie-studentov-aplikacia/.

Kaelber, Lutz. 2007. “A Memorial as Virtual Traumascape: Darkest Tourism in 3D and Cyber-Space to the Gas Chambers of Auschwitz.” *-Review of Tourism Research* 5 (January).

Korstanje, Maximiliano. 2014. “Conceptual Discussion of Dark Tourism: Suffering, Egoism and the Depersonalization of Death.” In *Globalization of tourism, opportunities and challenges*. India: GOA University.

Laszlo, Želimir. 1997. “O poljima muzealne određenosti i neodređenosti.” *Informatica museologica* 27 (1–2): 72–73.

Liarokapis, Fotis, Stella Sylaiou, Anirban Basu, Nicholaos Mourkoussis, Martin White, and Paul F. Lister. 2004. “An Interactive Visualisation Interface for Virtual Museums.” In *VAST 2004: The 5th International Symposium on Virtual Reality, Archaeology and Intelligent Cultural Heritage*. 47–56.

Maroević, Ivo. 1993. *Uvod u muzeologiju*. Zagreb: Zavod za informacijske studije Odsjeka za informacijske znanosti, Filozofski fakultet Sveučilista u Zagrebu.

———. 1995. “The Museum Message: Between the Document and Information.” In *Museum, Media, Message*, edited by Eilean Hooper-Greenhill, 24–36. London: Routledge.

———. 2000. “Informacije i dokumentacija u muzejima.” *Informatica museologica* 31 (1–2): 13–15.

Parry, Ross. 2007. “Recoding the Museum: Digital Heritage and the Technologies of Change.” *Recoding the Museum: Digital Heritage and the Technologies of Change*, January. https://doi.org/10.4324/9780203347485

Pattynama, Pamela. 2016. *Uncertain Images: Museums and the Work of Photographs*. Edited by Elizabeth Edwards and Sigrid Lien. Routledge.

“Safeguarding without Freezing - Intangible Heritage - Culture Sector - UNESCO.” n.d. Accessed July 13, 2018. https://ich.unesco.org/en/safeguarding-00012.

Schweibenz, Werner. 1998. “Das virtuelle Museum - Überlegungen zu Begriff und Erscheinungsformen des Museums im Internet.” Museen und Neue Medien -- MuM -- Forum. 1998.

Shatford, Sara. 1984. “Describing a Picture: A Thousand Words Are Seldom Cost Effective.” *Cataloging & Classification Quarterly* 4 (4): 13–30.

Slater, M., P. Khanna, J. Mortensen, and I. Yu. 2009. “Visual Realism Enhances Realistic Response in an Immersive Virtual Environment.” *IEEE Computer Graphics and Applications* 29 (3): 76–84.

Stern, Sheldon M. 2000. “‘Evidence! Evidence! All You People Talk about Is Evidence!’” *OAH Magazine of History* 14 (2): 62–63.

Trant, Jennifer. 2010. “When All You’ve Got Is ‘The Real Thing’: Museums and Authenticity in the Networked World.” In *Museums in a Digital Age*, edited by Ross Parry. Routledge.

Weissman, Gary. 2010. “Simone Gigliotti. The Train Journey: Transit, Captivity, and Witnessing in the Holocaust.” *The American Historical Review* 115 (4): 1111–12.

Zlodi, Goran. 2004. “Muzejska vizualna dokumentacija u digitalnom obliku.” *Muzeologija*, no. 40 (October): 9–105.