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AI Definitions in Flux: Authenticity and Holocaust Testimony in Focus

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Abstract

The museum, as an institution, has a long-standing tradition of presenting the public with seemingly authentic and evidence-based narratives. Recent surveys indicate that museums are widely regarded as highly trustworthy across various countries. However, as museum practices increasingly intersect with marginalised and contested politics, this trust can no longer be assumed.

This article offers an in-depth process study of the development of the Swedish Holocaust Museum, with a particular focus on the role of Artificial Intelligence (AI) in its *Dimensions in Testimony* (DiT) project. DiT features video recordings of Holocaust survivors, each of whom has been filmed responding to approximately 1,000 questions. Visitors engage with these testimonies in real time, through AI-driven natural language processing. The analysis draws on a review of documentation and communications, as well as observations and interviews with museum professionals and visitors. It is guided by the conceptual distinction and operationalisation of relational and essential authenticity, and situated within the broader context of the affective turn in museums. A critical dialogue with contemporary scholarship explores the implications of AI technologies for authenticity and trust in the museum sector.

The study identifies a notable shift over time in how the term 'AI' is used and understood, accompanied by emerging ethical concerns. Developing a shared institutional language around new technologies has proven challenging. In just a few years, AI has moved from being framed as an exciting innovation in exhibition design to a more cautiously referenced, and sometimes avoided concept. This evolution presents significant challenges to the accurate representation of historical evidence, the authenticity of survivor testimonies, and the ethical integrity of the narratives conveyed. While visitors generally express trust in the DiT narratives, persistent concerns remain regarding the role of AI in shaping evidence-based content and the ethics of digitally mediated representation.

Keywords: Artificial Intelligence, Museums; Digital technologies; Affective Museum; Authenticity; Trust.

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Introduction

The application of Artificial Intelligence (AI) in museums raises significant questions regarding authenticity and public trust. The uncertain trajectory of AI's development and its current utilisation for diverse and sometimes conflicting purposes necessitates a critical examination of the culturally mediated nature of authenticity and the ethical considerations surrounding AI implementation. In an era of growing societal polarisation, museums remain among the few enduring "institutions of the social campfire" (Grotz & Rahemipour 2024: 4). Yet, the advent of photography and film also inflamed debates at the time (Benjamin 2015), indicating that the adoption of a new technology raising concerns in the sector is nothing new. In fact, one could argue that museums have consistently embraced new technologies to enhance visitor experiences, each change raising ethical questions related to authenticity (Liepe 2018, Bäckström 2016). It is perhaps, then, the ever-increasing pace of technological adoption under the digital shift that presents most concern. The rapid rise of AI, in particular the public conception around generative AI, raises an essential question: what challenges and opportunities does the introduction of AI bring to museums in terms of trust and authenticity? Furthermore, what ethical approaches are required by museum professionals when engaging AI curatorially?

This article situates the inquiry within the context of museums' application of AI and its implications for authenticity and trust in general audiences. The empirical foundation derives from the newly established Swedish Holocaust Museum, focusing specifically on its AI-assisted immersive and interactive installation, *Dimensions in Testimony* (hereafter DiT). DiT is a USC Shoah Foundation initiative that comprises a collection of video interviews with Holocaust survivors, each of whom has been recorded answering over 1,000 questions about their experiences, memories, and perspectives (Traum et al. 2015). The installation is designed for an immersive experience, presented on life-sized screens with an intimacy as if it was a face-to-face encounter with a survivor of genocide. The installation is also interactive in the sense that visitors can pose questions and receive responses in real-time, through the integration of AI natural language processing. Although DiT has been extensively described and evaluated in previous research (Bosell & Rowland 2023, Papier 2024, Stylianou-Lambert, Bounia & Heraclidou 2022, Traum et al. 2015), there remains a significant gap in the critical examination of how museum-based AI applications impact authenticity and trust. Given the proliferation of antisemitic persecution denying, minimising, and distorting the Holocaust, maintaining trust becomes an ethical imperative.

The study involves an in-depth process analysis of the Swedish Holocaust Museum's development in terms of involvement of new technologies in its public exhibitions, focusing on the process of developing and communicating the AI

usage within DiT from 2019, when the National Historical Museums were tasked with creating an AI-powered installation on Holocaust testimony, through the establishment of the Swedish Holocaust Museum in 2021 and onwards. Sources include a review of internal documentation, and visitor perspectives, drawn from observations from test sessions conducted with students providing feedback on DiT. Observational fieldwork with visitors, and additional interviews with museum professionals involved in the DiT production, gathered through interviews and correspondence, are also included.

The structure of the article begins with a conceptual section that introduces the key theoretical frameworks, focusing particularly on authenticity and trust, vis-à-vis the shifting notions of heritage. This is followed by an integrated presentation and analysis of the empirical case, including a process study of the Swedish Holocaust Museum and an in-depth inquiry into the AI-based exhibition DiT, focusing on the conceptualisation of AI and its effect on perceived authenticity. Finally, a discussion reflecting on the broader institutional and ethical implications for museums concludes the paper.

Figure 1. The Dimensions in Testimony exhibition with Tobias Rawet.
Photo: Daniel Gustafsson/SHM (CC BY)

Museums and Trust

Museums are recognised by citizens in many countries among the most trusted institutions. This trust can be linked with authenticity, given institutional trust relies on the perceived authenticity of the museum, its collection and evidence-based narratives, as a societal constant. However, the methodological rationale and gaps inviting and allowing speculation as a byproduct of the processes of digitality, have the potential to denude the trust the museum is built upon (Illsley 2021: 222). Consequently, the role of AI has the potential to exacerbate the matter further.

To examine perceived authenticity and AI, the context of trust must first be addressed. Trust in museums has been studied since the early twenty-first century (e.g., Chryssochoidis et al. 2009, Griffiths & King 2008, Museums Association 2013). A recent German survey found museums to be the most trusted public institutions, surpassing media, political bodies, and even researchers, with trust levels increasing alongside education and income (Grotz & Rahemipour 2024). This survey echoed findings by the American Alliance of Museums (AAM), which ranked museums in the U.S. just below friends and family in trustworthiness – well above scientists, NGOs, and government institutions (AAM 2021). Trust was higher among white respondents, while political views had minimal influence. Key reasons for trust included museums' fact-based nature, their display of authentic objects, and their research orientation. Despite this trust, only 35% viewed museums as neutral, though nearly half believed they should be. In Sweden, a SOM Institute survey found similarly high trust in museums. Interestingly, the highest trust levels came from those who rarely or never visited them – 86% reported high trust, compared to 36% of frequent visitors (SOM 2019).

While none of the cited surveys addressed the impact of museums' increasing use of AI, the AI Narratives project (Cave et al. 2018) explored how various groups discuss AI. It found low public awareness of AI technologies, despite familiarity with everyday applications. The study emphasised that context shapes public perceptions, with views on risks and benefits varying widely. It also warned that exaggerated hopes and fears, especially those tied to humanoid imagery, can undermine public confidence in AI.

There is, however, extensive research and debate on particularly the challenges and risks involved with AI technologies and applications in museums in reference to trust. Recent research has explored ethical issues surrounding the use of AI in museums particularly regarding data privacy, ownership of digital content, and the impact of algorithmic bias (Pansoni et al. 2023, Thiel 2023: 86-7). The use of AI to annotate digitised archives and collections has been criticised due to the risk of perpetuating stereotypes and outdated explanatory models (Villaespesa & Murphy 2021, Balbi & Calise 2023). A growing concern posed by AI is also biases perpetuated by inconsistencies in AI training (Siri 2024: 34). Studies have

also examined how AI technologies, such as deepfakes and synthetic media, raise concerns about the authenticity of museum narratives and visitor trust (Lagerkvist 2022). While AI can enhance visitor engagement (Plaisent et al. 2024), especially in terms of emotional impact (Stylianou 2022), it also raises critical questions about the authenticity of experiences and the ethical representation of subjects, particularly in sensitive contexts such as the Holocaust (Frosh 2018, Papier 2023).

Authenticities and AI in the Affective Museum

If authenticity is a pivotal concept in earning trust, then as a concept it warrants further exploration. In recent decades, museum discourse has begun to shift; now, alongside the enduring importance of evidential and material authenticity, there is growing emphasis on affective engagement, emotional resonance, and experiential learning. This development, often referred to as the *affective turn*, has influenced curatorial practice and visitor expectations alike.

When international cooperation and ethics for cultural heritage and museums emerged in the middle of the last century, authenticity was a consensus concept with the meaning of being true and original, in dichotomy with falsification, anachronism, and copy (Arrhenius 2012). Heritage discourse was grounded in the European context, developing from an understanding of heritage as a tangible phenomenon and exclusive selection that should function as witness to history and tradition. The ontology stipulated that cultural memory was embedded in the material heritage objects and required experts and scientific approaches to interpret. Authenticity, as an index of material essence, was instrumentalised as selection criteria and consequently the concept played a key role in upholding legitimacy of the selection of heritage (Smith 2006: 90). Intangible heritage therefore represents a challenge to the emphasis placed on the idea of material authenticity, and "the preservationist desire to freeze the moment of heritage and to conserve heritage as an unchanging monument to the past". For Smith, the authenticity of heritage lies ultimately in the meanings people construct for it in their daily lives (2006: 6).

The established meaning of authenticity has been instantiated, not least by regional and community traditions where heritage is not bound to material properties, nor divided between culture and nature, or unfamiliar to religion and belief. Criticism has led to the inclusion of both tangible and intangible expression within heritage discourse, and the expansion of authenticity to include situational and immaterial aspects such as location, setting, use, tradition, craftsmanship, spirit, and feeling (ICOMOS 1994; UNESCO 2003). Inclusive and exclusive lists are still maintained (Kirchenblatt-Gimblett 2004: 57), and the essence of traditions and spirit is still negotiated and sustained by expert judgement (Hafstein 2018), but "if nothing else", Smith argues, "the idea of intangible heritage forces a recognition

of the inherent dissonant nature of heritage because of the immediacy of its production and consumption" (Smith 2009: 5).

Research on affect in museums deviates from the concept of authenticity to focus instead on co-creation of experience and learning. Co-creation is determined either by active participation, or interacting with the environment, other visitors, and staff (Popoli & Dera 2021: 389). To achieve this, visitors must be able to develop and shape their own experiences via engagements. This is achieved not just in the staging of the experience but through full cognitive and emotional immersion (Jung et al. 2017: 142). The influence of the affective turn has led to a notable departure from exhibitions primarily structured around textual content, fostering instead a greater emphasis on non-verbal forms of communication (Champion & Foka 2020). Scholarly attention has addressed different concepts, such as affect and emotions (Boyd & Hughes 2020, Smith, Wetherell & Campbell 2018, Smith 2021), empathy (Campbell & Smith 2017), multisensory engagement (Levent & Pascual-Leone 2014), atmosphere (Dorrian 2014), presence (Bencard 2014), and immersive experience (Carrozzino & Bergamasco 2010, Champion & Foka 2020, Cummings & Bailenson 2016). In terms of digitality, it is perhaps then in the overall context where authenticity resides.

The oft-quoted ideas of Bruno Latour and Adam Lowe (2010) suggest that there is an *aura* that can be transcribed from original to reproduction, via the complexity and sophistication of the replica, but also through the context surrounding the original object. The museum itself, having decontextualised and re-assembled artefacts with diverse origins, conjures the aura from original object's essential authenticity and its staged relational authenticity. Digitality as a concept dictates that exhibits can access a mobility and broader reach than ever before, but has yet to fully displace the museum; the museum still 'feels' right in many cases, compared to, say, a tourist information centre (Illsley 2022: 226). As a step further along the process of digitalisation, AI blurs the lines further still between the technological sophistication that lends an *essential authenticity*, and a *relational authenticity* that is resonated through a museum's status as a trusted entity.

Relational Authenticity and Essential Authenticity

Authenticity is an ambiguous concept, yet still a touchstone for debates within museums and cultural heritage activities at large. The ambivalence of authenticity is enmeshed with the notion of heritage, as the concept is instrumental both as a criterion for selection, and a guiding principle for conservation measures (Jokilehto 2017, Folga-Januszewska 2020). As authenticity is semantically coupled with truth, there is a tendency to also equate authenticity with scientific purity and accuracy, lending it a *de facto* role in gatekeeping (Lixinski 2022: 1216). Now

a long-standing tradition of critical research on production and consumption of heritage (Smith 2006), the affective turn in museums (Lemmings & Brooks 2014) and the corroborating new technologies for immersive media to engage with audiences (Varutti 2023) have shifted the connotation of authenticity from a presumed essence embedded in physical materials or truthful statements to a relative and relational concept.

The mutable interconnections between AI, heritage, and authenticity are crucial points of departure when examining the meaning behind statements avowing that the testimonies presented in DiT seem authentic, or that the meeting itself felt authentic. Moreover, what authenticity is it that is being derived from the installation and should it even matter for the museum whether the encounter is perceived as authentic? If so, do all types of authenticity matter as much, and do they all have the potential to affect trust in museums positively or negatively? As a means of classifying authenticity in the context of immersive productions in museums, we have opted to use the terms *essential* and *relational authenticity*, after Grayson and Martinec's (2004) *indexical* and *iconic authenticity*, developed for consumption studies and grounded in semiotics.

Essential authenticity refers to the direct, physical qualities of museum objects, i.e., those considered the 'genuine articles' within the collection. This type of authenticity relies on accurate evidence-based facts, whether they be tangible or intangible heritage, with fact-checked narratives within testimonies. It could also include the museum building itself (Illsley 2022: 226). A filmed testimony of a Holocaust survivor is essentially authentic because it captures a specific person, speaking in a particular time and place. In this view, authenticity resides in the materiality or can be verified through technical means and measurements.

Relational authenticity, by contrast, is grounded in emotional resonance and places emphasis on subjective feeling. This type of authenticity can stay intact even if an object is a reconstruction or a setting is staged as a type of 'relational authenticity' between the object setting and the perceiver. The perceived trustworthiness of the museum as a societal institution is relational, since this relies on a feeling of trust and the elicitation of credibility on the part of the museum. The experience of speaking with a DiT digital surrogate generates a sense of relational authenticity, produced through presence, eye contact, and pauses, that is akin to interacting with a 'real' Holocaust survivor. A digital museum may also attain a relational authenticity, if it aligns with the museum's values and manages to evoke a sense of trust.

Together, these two categories of authenticity provide a useful framework for analysing how audiences perceive truth in immersive museum experiences.

The Swedish Holocaust Museum

Although authenticity and lasting trust are crucial to all museums, the need is amplified for Holocaust and genocide museums, due to the obligation to respect the memories of victims, survivors, and their relatives. According to curators at the new Holocaust museum, when visitors perceive that a museum is honouring victims' stories rather than sensationalising them, they are more likely to trust its narrative. Holocaust denial remains prevalent in certain contexts, with numerous instances showing how historical interpretations can be distorted or manipulated to further contemporary political agendas (Lipstadt 2016, Karlsson & Zander 2020). Establishing and maintaining trust is therefore of paramount importance for the museum. Museums preserve stories and objects for the future, transforming them from individual memories into 'cultural memories' and collective memories. The establishment of a museum makes it clear "that memories of the Holocaust should be regarded as part of Sweden's cultural heritage" (Swedish Government Official Reports 2020: 122-23).

Inaugurated in 2022, as part of the National Historical Museums, the Swedish Holocaust Museum is dedicated to preserving and communicating the memory of the Holocaust. The primary aim of the museum is to deepen public understanding of the historical events leading to the genocides perpetrated by Nazi Germany (Swedish Government Official Reports 2020: 102). A key aspect of the museum's mission is to illuminate the Nazi worldview and the society that the perpetrators sought to construct. Why certain groups were perceived as threats then, and why these attitudes continue to resurface in society, is paramount (Kvist Geverts 2020). The personal stories connected to the Holocaust and the materials donated to the collections also illustrate the deeply personal connection to the Holocaust, and, by extension, to Sweden (Swedish Government Official Reports 2020: 241). Therefore, the museum's role extends to demonstrating how the legacy of the Holocaust continues to affect contemporary society in its totality.

The preparatory work emphasised the need to base the museum on survivor testimonies (Dir. 2019: 36). To bring forward the stories of survivors, the government's investigation concluded that "the museum must establish its own collection of objects, documents, and various types of testimonies" (Swedish Government Official Reports 2020: 107). Another key element of the museum's "legitimacy, credibility, and expertise" (*ibid*. 2020: 124) is research, which should focus on how the Holocaust is connected to Sweden's history, despite not occurring on Swedish soil. The discourse is clear: the museum is the institution best positioned to gain public trust, inherently establishing trust through its collections and research.

In the new museum's official project plan, *Förstudie projekt: Sveriges museum om Förintelsen Tillfällig verksamhet* (shared via email, May 28, 2021), it is stated

that the new museum and its offerings ought to be "accessible to people regardless of where in the world they live or are located, as well as to people with different functional variations. Digital channels and platforms therefore become just as important as a physical location for the museum's programming and public offerings". The Swedish Holocaust Museum also initially launched as a purely digital museum in June 2022 with the opening of its website, museumforintelsen.se, which contained an interactive digital version of DiT and additional material around Swedish testimonies. The physical museum opened a year later, in a temporary museum building, until a permanent premises was to be established. While the implications of digitalisation were not explicitly explored, the preparatory work highlighted the importance of disseminating knowledge digitally through the museum's homepage (Swedish Government Official Reports 2020: 118). While the core offerings and collections remain central, a referral response pointed out that digitisation and AI could offer new opportunities for research and the development of novel forms of knowledge (*ibid* 2020: 221).

Dimensions in Testimony from the Museum's Perspective

Like many other heritage institutions, the museums within the National Historical Museums are increasingly exploring the use of AI, both in order to enrich digital collections with metadata for new research, and perhaps even more so for curatorial potential (Villaespesa et al. 2019). Prior to establishing the Swedish Holocaust Museum, the governmental institution produced, together with the organisation Jewish Culture in Sweden, the exhibition *Speaking Memories – The Last Witnesses of the Holocaust*, which partly merged into the new museum. This exhibition incorporated recordings of two Holocaust survivors, Pinchas Gutter and Eva Schloss, using the DiT technology developed by the University of Southern California (USC) Shoah Foundation. The technology relies on two key forms of artificial intelligence: natural language processing, which enables the system to interpret visitors' spoken questions, and machine learning, which matches these to a large database of pre-recorded answers provided by the survivors. After the *Speaking Memories* exhibition, the National Historical Museums received a government assignment to produce two Swedish-language interactive biographies with Holocaust survivors, using the same technology (Swedish Government Assignment 2020). Tobias Rawet and Elisabeth Citrom were the Holocaust survivors interviewed in Swedish in this format.

DiT's format of affective and inquiry-based pedagogy was outlined by the museum as superior to merely reading facts about the Holocaust, or as the teacher's manual from the museum in 2022 phrases it, "hopefully makes the

work more enjoyable and strengthens their [the students'] desire to learn more" (National Historical Museums 2022). The intent was to inspire students to learn about the Holocaust through "curiosity" (National Historical Museums, personal communication, 3 June 2022). A sense of relational authenticity was central to the pedagogy, with interaction fostering deeper learning through empathy. Yet, an overemphasis on relational authenticity in a museum context can be problematic, as illustrated in an internal email exchange from 2022. In the discussion, a producer and an educator discuss small talk within DiT interactions, suggesting that such small moments are valuable, to help students "gain an increased feeling of meeting a real person". In response, the other person remarks pointedly: "Perhaps it should be clarified that these are in fact real individuals, and not merely the impression of meeting someone real?" (*ibid.*).

In its early years, the promotion during the planning stages of the installation emphasised AI as a buzzword, leveraging its positive connotations as the exhibition was widely marketed as "creative AI installations", "AI experience", or just "AI installation" throughout 2021 (National Historical Museums 2021). At this stage, there was little or no internal critical discussion about the use of the term AI. Beyond the underlying AI infrastructure, the installation requires continuous human curation to ensure conversational coherence. There is also a human decision-making process on how to make these connections. Every question and answer is saved and then reviewed by the curator to guide future AI responses. The producers are also made aware of technical issues in the event of incoherent answers, and the conversational structure is constantly improved.

The curated focal point is the survivors' memories and not historicity, which can prompt a standard response when a user's question falls out of scope, for instance: "That question you should ask a historian" or "Keep in mind that I am a Holocaust survivor and not a historian". Other standardised answers are "This question was not asked during the interview" or "That was an inappropriate question". The standardised answers may disrupt the immersivity in terms of relational authenticity, but they also elicit the methodology behind the installation and create a productive tension on a meta level to the synthetic conversation. A general conception of the DiT installation within the museum is that it is a complementary immersive element offering the visitors another means of understanding.

The concerns around interaction and interpretation became even more pronounced when the DiT installation was adapted for an online audience on the museum's digital platform. However, presenting the biographies online posed significant challenges, particularly in the loss of context and curatorial guidance. The sense of trust created from being situated within a museum environment, with accompanying nomenclature from museum educators, was absent in

the web-only experience. To address these limitations, the museum decided to append an introductory element. This feature involved the two individuals in the interviews, including behind-the-scenes photographs from the recording process. This approach aimed to elucidate the recordings' essential authenticity through transparency in the production process, the need for which emerged from the on-site exhibition testing phase, where visitors occasionally questioned whether the installation involved actors, computer-generated imagery, or even live video calls with the witnesses.

The online presentation also raises broader ethical questions that have come to define the use of AI and immersive technologies in memory institutions. Digital witnessing can involve interactive video testimonies or virtual reality experiences that allow audiences to engage with the past in new affective and immersive ways, enhancing curiosity and deeper learning, but hold a unique set of ethical considerations including obtaining informed consent from survivors or their families, ensuring accurate representation, and maintaining respect for their dignity throughout the process (Wong 2011). It is suggested that there is a scarcity of nuanced narratives, critical source analysis, and discussion on ethics in these novel formats, as well as an ongoing need for museums to respond to the tensions created by new technologies and audiences as AI evolves (Illsley et al. 2024, Aavaranta et al. 2024). When DiT is ethically concerned, the choice has been made for the annotation process to be done by humans, given the potential for AI to alter testimonies or create synthetic representations—raising concerns about authenticity and manipulation (Lagerkvist 2022).

These ethical concerns coincide with broader institutional uncertainties around authenticity, affect, and the role of new technologies and terminologies, often introduced without sufficient contextualisation, within museum storytelling. The conveyance of DiT's AI aspect implies a tension within the museum's role: on one hand, the traditional reliance on essentially authentic elements, while on the other, the increasing requirement for relationally authentic experiences that create an emotional response, an authenticity derived from the intangible and intuitive. These internal tensions became publicly visible when DiT was showcased at large-scale events, exposing varying interpretations and expectations among visitors.

A case in point occurred during the Gothenburg Book Fair in 2023, where the Swedish Holocaust Museum showcased DiT. Museum staff fielded questions from visitors, expressing doubts whether the content was generated footage, a composite of multiple witnesses, or even entirely synthetic. The interviewed communicators and museum educators attributed this heightened scepticism to the growing public awareness of the term AI and its 'sudden synonymy with fabricated content'. The concern was that ascribing the term 'AI-powered' to the testimonies

led members of the public to mistakenly believe that the video content itself was generated, rather than being authentic testimonies of real Holocaust survivors. The guidelines were again revised so that the term AI was no longer to be used in public communications, and the exhibition was to be consistently described as "an interactive survivor biography" (Hansén, personal email communication, May 7, 2024). While the term AI was not to be promoted, it could still appear in background materials that explained the technical foundations of the DiT project. AI became a concept to not overuse, if not completely avoid, mirroring earlier internal advice to avoid or at least contextualise words such as hologram while describing DiT (Hansén, personal email communication, Feb 18, 2021).

In response, the museum undertook a series of revisions in how DiT was described and contextualised. Coupled with the interviews with museum educators, a significant shift in language is revealed both in marketing communications and pedagogical guidance: "they are filmed testimonies" but "through AI technology, your questions are matched with their answers" (Interview Museum Educator SHM 2024). In the 'About the project' section on the museum's online version of the DiT experience (The Swedish Holocaust Museum n.d.), the reference to AI technology was embedded in a text that highlighted the (essential) authenticity of the testimonies as filmed interviews: "In the project, survivors around the world were documented through structured in-depth interviews filmed using advanced video technology". An additional guidance page for teachers posted an exercise in source criticism and discussed the word 'authenticity' as it pertained to the testimonies (Swedish Holocaust Museum n.d.2). When "AI" was used, it was done with more caution and specificity, e.g., "after the documentation, the questions and answers were edited and processed in a system based on AI technology. Using advanced speech recognition, the interactive systems were built over time with the help of semi-automated machine learning" (ibid.). The role of the 'human in the loop,' as well as the expertise and fact-checking by scholars, was highlighted as part of the production process. This addition was seen as an attempt not only to transparently display evidence and sources, but also to highlight the essential authenticity of the production.

All technical descriptors were gradually phased out in favour of simpler terminology, without prominent use of 'AI.' Both written descriptions and verbal introductions by museum educators and communications were revised, and DiT was consistently referred to as "interactive video installations", or more vaguely "a form of documentation", and more vaguely still, "installation" (The Swedish Holocaust Museum 2023). By 2024, references to AI in online nomenclature were minimal and embedded in source critical discussion around the production process, simply referring to "Dimensions in Testimony" (The Swedish Holocaust Museum 2024).

Dimensions in Testimony from a Visitor Perspective

The present study draws on documentation from several smaller studies conducted between 2020 and 2023, including forty semi-structured group interviews and observational notes from interactions with 406 participants who engaged with the DiT installation featuring Tobias Rawet and Elisabeth Citrom at the Swedish History Museum and Malmö Museums, respectively. The majority of participants were upper secondary school students, though some were younger pupils or adults in education programmes, typically accompanied by teachers. In addition, the material includes three days of covert observation of general audience interactions, with brief follow-up questions, as well as nine in-depth interviews with individual adult visitors. The study applied inductive thematic analysis to investigate how participants perceived and interpreted the installation, with a focus on affective engagement, authenticity, trust, as well as perceptions of the technological and testimonial sources. All participants had been informed about the AI component prior to interaction.

Many participants, particularly students, described the opportunity to ask their own questions as enhancing their engagement and deepening their emotional connection to the survivor. This interactivity was frequently characterised as affective rather than factual—for instance, some reported having 'learned about a feeling.' Such responses were interpreted as instances of relational authenticity, which emerged as a dominant theme across the material. Engagement was more often linked to the dynamics of the encounter than to the informational content of the testimonies. Respondents frequently described the survivors as 'honest' and 'real,' referring to body language such as smiles, pauses, and eye contact as contributing to a sense of presence. The narratives were described as 'organic,' 'touching,' and 'personal,' with posture and vocal tone evoking both empathy and trust in the testimony's essential authenticity. Longer responses of several minutes often intensified this emotional resonance, and some participants reportedly adjusted their behaviour to sustain the perceived authenticity of the interaction. Visitors and producers alike framed the installation as a supplement to, rather than a substitute for, more traditional displays of objects, texts, and images.

Relational authenticity often developed gradually. Visitors who interacted with the installation only briefly, asking one or two questions, were more likely to report low emotional involvement and to raise technical issues, particularly when using non-standard dialects, idioms, or slang. As the interaction progressed, many appeared to accommodate the system's limitations, often attributing miscommunication to their own speech. Several adult participants described a 'threshold' or social pressure to formulate questions in ways the system could interpret, including exaggerated articulation or rephrasing. These strategies may have served to maintain the illusion of dialogue but also reveal how social dynamics

within groups shaped the interaction. While technical pauses in the AI processing disrupted the flow of conversation, they also drew attention to the mediated nature of the encounter, sometimes reinforcing rather than undermining trust in the recorded testimony.

The in-depth interviews with adults provided additional insights into how visitors understood the nature and purpose of the installation. Almost all assumed the answers were based on the survivors' own memories. When asked about objectivity and historical accuracy, most indicated that these were not central concerns. As one participant explained, "It's a documentation of his experiences and life", while another noted, "It isn't scientific because it is a subjective narrative, and I don't think the purpose here is to try to be scientific". While some expressed a desire for greater historical context, these comments reflected a general prioritisation of relational over essential authenticity. The testimonies were received as intimate, affective narratives, offering insight into personal memory and experience rather than factual chronology.

Some participants did, however, seek more general historical knowledge, asking questions about timelines or extermination camps. Whereas most visitors were satisfied with an affective, relationally authentic experience, a smaller number preferred essential authenticity, requesting evidence-based orientation. In response to this variation, the Swedish Holocaust Museum has included in its project plans (2024–2025) the development of a "digital interactive timeline" to complement the personal testimonies. This addition is intended to preserve the immersive qualities of the DiT installation while integrating points of reference that support historical orientation and factual grounding.

Understandings of the role of AI in DiT varied widely. During the early years of the project (2021–2022), many visitors expressed uncertainty about the nature of the installation: was the person on screen real? Was the footage synthetic, animated, or live? A frequently asked questions document, distributed in collaboration with a museum in Dallas, addressed these misconceptions directly: "Is he real? Yes, this is a real video of a real person. He is not animated or edited in any way. He was filmed in really high definition, which is why his image is so clear. He is not on Skype and can't hear you; all of the answers you hear are pre-recorded" (USC Shoah Foundation 2021). Similar materials were later incorporated into the Swedish-language installation. Nonetheless, some visitors interpreted Tobias Rawet as a fully AI-generated character based on fictional memories, a composite of testimonies, or a live respondent.

By 2024, visitors generally demonstrated a clearer understanding of the installation's technical underpinnings, particularly when provided with an introductory explanation—something that was inconsistently offered in earlier years. Regardless of assumptions about the AI, most participants expressed trust

in the narratives. This trust appeared grounded both in their emotional connection to the survivor and in the perceived authority of the museum. One visitor stated: "I trust the DiT exhibit because it is the museum that is behind it".

Several interviewees noted that if the same content had been presented on a commercial or independent platform, they would have been more sceptical. As one participant reflected, "The purpose of museums is to spread history, culture, and perspectives for us to think about how it was and to take it with us into the future. I assume that, and then I am perhaps not so critical". Another remarked: "A museum that is supported by the state is something I will automatically trust, and [I] believe in what is presented here". These responses suggest that the museum institution itself plays a key role in facilitating trust in new and unfamiliar technologies, positioning DiT at the intersection of innovation, institutional authority, and affective learning.

Authenticity Matters—A Productive Tension

What, then, was and is at stake in the case of DiT? To what extent did it matter whether the Swedish Holocaust Museum effectively communicated what was meant by AI, or how artificial intelligence was employed within the production? Is it significant whether Elisabeth and Tobias, as presented in DiT, are perceived as real people sharing their lived experiences or as fabricated figures generated based on compilations of Holocaust testimony?

Though a contested and complex concept, authenticity remains central to both heritage discourse and visitor perceptions. Traditionally associated with truth and accuracy, the concept of authenticity within the museum sector has privileged scientific purity and material evidence as criteria for legitimacy (essential authenticity). Recent shifts in museum practice, such as the affective turn (Varutti 2023) and the rapid rise of immersive digital technologies, have broadened this understanding. Authenticity is no longer seen merely as something embedded within artefacts, but also as something subjective, relational, and felt in the encounter as something that is emotionally resonant and experientially credible (relational authenticity). Even reconstructions or virtual representations can thus be felt as authentic and therefore trustworthy. In the affective museum, authenticity resides in the dynamic relationship between the visitor's subjective and affective experience, the framework or setting provided, and the museum as a credible institution. Against this backdrop, the use and communication of AI within the DiT exhibition takes on ethical and interpretive significance that extends beyond being a technical footnote.

In our case study, questions around how AI is defined and communicated become central—not just as superficial matters of terminology, but as issues of

ethical transparency and institutional accountability. The potential confusion over whether Elisabeth and Tobias are real individuals or AI-generated digital constructs directly engages the tension between essential authenticity, anchored in evidentially verifiable sources, and relational authenticity, which depends on emotional resonance, affect, and the feeling of verisimilitude. If visitors confuse algorithmically mediated testimony from real people to be 'AI generated,' the contract between the museum and its audience is strained. Such cases may engender affect, but without clarity and transparency, it risks undermining the trust that allows museums to function as authoritative spaces of learning, and is thus consequential. The stakes are not just about technological choice, but about the conditions under which authenticity is perceived and trust is created and maintained. Misunderstanding the nature of the medium in new technologies, including but not exclusively AI, can erode both the power of the testimony and the trust in the institution that presents it. This concern is amplified by ongoing changes in how museums define their role in contemporary society.

The museum's purpose is constantly negotiated, with many institutions and professionals taking a stronger stance on current social issues, sensitive and contested heritage, democratic values, and rights-based approaches. Jette Sandahl, former director of the Museum of World Culture in Gothenburg, advocates for museums to be "democratising, inclusive and polyphonic spaces for critical dialogue about the pasts and the futures" (Lehmannová 2020: 3). In this transforming role, trust remains a foundational element of museum legitimacy, built through both factual grounding and affective resonance. Trust, according to surveys and research, is primarily established through fact-based, research-oriented communication, and the real objects in the museum's collection, that is, in essential authenticity. Trust in museums is firmly tied to their traditional activities and their role in study and education based on collections as evidence. Alongside this, the affective turn has seen museums turn to more emotionally emphasised practices, where relational authenticity is pushed to the foreground in curating exhibitions and other experiences for general audiences, such as in the digital experience DiT where the visitor is introduced to Holocaust studies through affective means in the 'genuine meeting' with a Holocaust survivor. An affective museum is centred around immersive and interactive experiences that invoke aura and emotional impact. That said, this prioritisation of affective engagement raises pertinent questions about how museums balance emotional experience with evidential clarity.

Does it potentially undermine the museum as an institution if experiences come to be understood solely as subjective stagings, in which evidence-based facts are secondary or conflated with more artistic interpretations? Both aspects can and ought to coexist, but a clear distinction between them is necessary. Museum visitors

need to know that the testimonies of Tobias Rawet and Elisabeth Citrom are indeed testimonies and not AI-generated composites, not only on an ethical level in respect of their lived experiences, but to enable visitors to discern how different types of information should be understood and evaluated. Visitor feedback supports the idea that trust can be preserved when authenticity, both relational and essential, is effectively and transparently communicated.

The process study involving review of museum documents as well as interviews and observations indicates that ethical considerations must be constantly revised and actively discussed. The material suggests that public expectations regarding AI are evolving, but that technology is not the primary factor in building or disrupting trust. AI is a broad concept, and it is essential for museums to clarify the function of AI in their work and under what conditions it is applied. The research corroborates findings from other studies indicating that museums, as institutions, enjoy a high level of trust, and that their exhibitions are largely trusted in and of themselves. Trust is not necessarily contingent on objectivity. Conversations with Holocaust survivors, grounded in subjective memories and personal narratives, can evoke strong affective responses and a heightened sense of relational authenticity, the feeling of 'having met Tobias,' while still maintaining a sense of institutional credibility. Technical imperfections in the DiT experience do not appear to significantly detract from this perception, particularly in interactions that elicit longer responses. This suggests that institutional framing through museum staff, the museum setting, and context plays a vital role in supporting trust, even in technologically mediated experiences.

Whether this tolerance stems from the museum's existing trust capital is a question warranting further investigation. At least, the broader museum context where the DiT is often experienced includes curators and museum educators who help to reinforce relational trust. Their presence, together with the physical museum setting and proximate essentially authentic objects, reinforces the visitor's overall sense of authenticity in the encounter. Yet even immersive and affective experiences like DiT must be anchored in a framework of evidential integrity. If visitors cannot discern whether an experience is AI-generated, as suggested by our case study observations and interviews, this ambiguity may have long-term implications, not only for DiT, but for the museum's broader role as a trusted site for authentic objects and testimony. If authenticity is regarded as a value in itself, and within the heritage sector, then its preservation is essential, as it forms the foundation upon which institutional trust is built.

Ethical and Affective Curatorship in an AI-mediated Future

Looking forward, the museum's evolving engagement with AI reveals shifting strategies and a growing need for transparency. In 2019 through 2021, the National Historical Museums communicated around DiT with the frequent use of the term AI, and was only alerted to this being perceived as equated to 'AI generated' after asking visitors in late 2022. The exhibition began to be communicated without using the term, yet contextualising how AI was used in background information about the project, both in the museum and in the digital exhibition format. DiT manages to bridge both relational and essential authenticity, making it possible to create engaging affective learning experiences within the affective museum framework. Yet, if the AI usage is unclear, due to lack of clear communication on the part of the museum, AI systems might become problematic, not the least on an ethical level, in the long run.

The question remains: can AI bridge or further extend the gap between the museum's discretionary concerns of collecting, conserving, researching, and exhibiting, and its public engagement in education, study, and enjoyment? As AI is becoming increasingly mainstreamed, it becomes pertinent to integrate it into the broader understanding of source criticism. Certain AI applications are becoming more widely known, and scepticism is emerging regarding the particular functions of AI and its training data. Museums that use AI are also serving as agents in public education on critical thinking. Within this evolving landscape, DiT provides a compelling example of how museum communication and pedagogical strategies around AI have adapted over time.

What AI systems will ultimately offer museums remains to be seen. However, it is likely that AI will not only mediate information but also foster new collaborative processes and co-creation in the core activities of collecting, conserving, researching, and curating exhibitions in order to continue to engage new audiences. As 'AI' has changed from an unknown concept for a general audience, to a word thrown around in daily language with a wide range of definitions, museums must clearly communicate what kind of AI is used, how it is applied, and what degree of human oversight is involved. DiT serves as a useful example here, where the museum altered its wording around AI, from highlighting it as an exciting buzzword to create interest and invite audiences to engage with Holocaust testimony, to letting it stand back and be contextualised in transparent explanations on how a production was made, and instead inviting audiences through more traditional seeming museum pedagogical entry points such as 'inquiry,' 'interaction,' and 'dialogue.' The digital format also allows for greater accessibility: at least in theory, 'anyone with an internet connection' can interact with the resource. Also, the platform can serve both a primary school student and a Holocaust scholar within the same system, something traditional museum texts cannot easily achieve.

Despite this pedagogical and accessibility potential, when audiences become unaware of how particular digital experiences function, unsure whether a testimony is video footage, a real-time conversation, or a generated compilation, or even what constitutes a 'real' interaction, this ambiguity may erode confidence in the museum's reliability as a purveyor of truth, particularly in digital-only formats where the curator or educator is not currently present. A final major ethical concern surrounding AI usage in exhibitions and its impact on trust in museums is the systemic bias embedded in current AI technologies. Most AI language models currently underperform in understanding dialects, non-standard speech, and minority languages. This is a limitation that disproportionately affects these non-dominant groups and, if left unaddressed, can unintentionally reinforce majority perspectives and systematically exclude other more marginalised voices.

To conclude, the study shows that the success of AI-mediated installations like DiT depends less on the flawless sophistication of the technology itself and more on institutional framing, transparency, as well as pedagogical and curatorial strategies. Visitors' trust was sustained when they were guided to feel emotionally engaged, but this was grounded in the assumption that these were authentic, filmed testimonies. Miscommunication about the role of AI in the installation risked undermining this trust, as seen in reactions at the 2023 Gothenburg Book Fair, where visitors speculated whether the installation featured deepfake-like composites or simply dismissed them as inauthentic and therefore uninteresting. However, when the museum revised its communication to further clarify that the footage was real and AI was used in the process to match questions with pre-recorded responses, supported by background information on the production process, visitors went on to express confidence in both the content and the institution.

These findings suggest that museums can, and should, navigate both essential and relational authenticity in their digital offerings. Doing so effectively requires a commitment to clarity, ethical transparency, and the acknowledgment of emotional engagement as a legitimate part of learning. In the case of the Swedish Holocaust Museum, trust was not eroded in using AI, but by the lack of clarity surrounding its use. As museums continue to adopt new technologies, they must consider not only what is technically possible, but what is communicable and experientially credible. The challenge is not only to innovate, but to ensure that innovation does not obscure the human stories at the heart of much museum work.

In the end, sustaining the museum's unique capacity to engender trust requires continuously embracing both the evidential and the experiential. Authenticity within a museum's digital offerings cannot rely on one of these alone; it must be grounded in both. So too must be the museums' approach to the use of AI technologies in order to retain affect, personal engagement, and trust among audiences, all the while remaining technically rigorous, emotionally attuned, and ethically transparent.

Declaration of AI Use

AI tools were used in a limited capacity during the preparation of this manuscript, with Claude 3.0 and ChatGPT 5.0 (closed versions) em-ployed solely for proofreading and language correction purposes. All outputs were reviewed and edited by the authors, who take full respon-sibility for the content of the published article.

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