



Article Digital Séance: Fabricated Encounters with the Dead

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Abstract: Digital afterlife is becoming increasingly possible due to advancements in VR, deepfake, and AI technologies. The use of computational photography for mourning and commemoration has been re-integrated into practices of remembrance, farewell, continuity, and disengagement. Two case studies, the Shoah Foundation's *Dimensions in Testimony* and the TV production *Meeting You*, are analyzed to explore these new possibilities. We show how photography's new affordances enable interaction while maintaining its essence as a representation of reality and argue that this sociotechnological transformation habituates contemporary practices of mourning and commemoration, adjusting images to serve the individual needs and interests of the bereaved and the community.

Keywords: digital immortality; photography; mourning; commemoration; death; AI

1. Introduction

Scholars studying death and society have explored the concept of digital immortality and its accompanying challenges. Although the physical realization of immortality is yet to come, manifestations of digital afterlife are already growing. The advancement of VR, deepfake, and AI technologies have made it possible to interact with representations of deceased individuals as hyper-realistic avatars. While these technologies do not guarantee immortality, they do allow some kind of posthumous interactions. As social interactions increasingly move online and VR becomes more ubiquitous, people can interact with photographs of the deceased, creating new memories and knowledge. Consequently, questions are raised about digital afterlife as well as about death as an endpoint.

Drawing on the notion of postmortal society and its affiliation with digital culture, this article examines the use of photography for mourning and commemoration. We discuss how computational photography enables posthumous interactions that were previously impossible. The analyzed case studies include two projects: (1) the Shoah Foundation's *New Dimensions in Testimony* (NDT) project, which allows interactions with holograms of Holocaust survivors, and (2) a South Korean TV production titled *Meeting You* (MY), which digitally reconstructs deceased individuals for one final encounter with their loved ones. The article compares and analyzes these cases, reflecting on temporality, indexicality, and interactivity to explore new possibilities for mourning and commemoration. These endeavors signal the reintegration of photography into practices of remembrance, farewell, continuity, and disengagement.

The article examines the relationship between death, mourning, commemoration, and photography. It begins with the postmortal era at the turn of the century, when death is no longer perceived as an endpoint. Instead, something new happens after death regarding interactions between the living and the dead (Kasket 2012; Refslund-Christensen and Sandvik 2015). We introduce this shift and reflect on its interrelation to photography. The article then explores how postmortem photography was used for mourning and commemoration and how it celebrated the new technology for capturing memories of the deceased. It moves to the re-appropriation of "everyday" photography (Chalfen 1987) for mourning (Stylianou-Lambert and Widmaier 2023). During the mid to late 20th century,



Citation: Altaratz, Doron, and Tal Morse. 2023. Digital Séance: Fabricated Encounters with the Dead. *Social Sciences* 12: 635. https:// doi.org/10.3390/socsci12110635

Academic Editors: Johanna Sumiala and Dorthe Refslund Christensen

Received: 31 August 2023 Revised: 7 November 2023 Accepted: 9 November 2023 Published: 16 November 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). to draw on Barthes (2000) and Sontag (2001), photography allowed re-living the past and reflecting on the lives of those who had passed away. Photo albums serve as keepsakes for memories and commemorations. Today, advanced photographic technologies can create fictional or virtual realities where photographic representations of the deceased can reappear and interact with the living. Next, we introduce the two case studies and examine their characteristics and affordances. We argue that photography's new affordances enable new means of interaction, yet alongside the fascination with innovation, photography's indexical component maintains photography's essence as a representation of reality. This socio-technological transformation, in which means of representation respond to users, habituates contemporary practices of mourning and commemoration, and defies common attitudes that associate death with finality. Bereaved individuals, as well as bereaved communities, are able to realign along the blurring lines of life and death.

2. Postmortal Society and Symbolic/Digital Immortality

In *Postmortal Society*, Michael Hviid Jacobsen argues that "The quest for immortality has captured the human imagination for millennia" (Jacobsen 2017, p. 6). The endeavor to overcome death has occupied humans for centuries. However, while immortality is biologically still impossible, it seems that symbolic, digital immortality, or at least digital afterlife, is gradually materializing and becoming a valid option. Accordingly, as Jacobsen proposes, we enter the age of postmortalism. Unlike immortality, which suggests that one never dies, postmortalism does not reject the idea of mortality, but it suggests that "there is something after mortality, something that succeeds death and that death is therefore no longer the last sentence" (Jacobsen 2017, p. 9).

According to Walter (2017, p. 91), the most popular afterlife belief of the 20th century is that of soul reunion: "this sees humans as comprising body and soul. The body will die, at which point the immortal soul proceeds to heaven where it is united with pre-deceased loved ones". In other words, the soul never dies. It always resides somewhere. The notion of postmortalism, however, is not confined or contingent upon a belief in the afterlife and the soul's immortality. Rather than accepting the idea of postmortem spiritual existence, postmortalism assumes a continuation from life to after death, a perception of death as a moment of transition and not an end. In other words, while death is the end of life, it is not necessarily the end of the relationships between the living and the dead (Refslund-Christensen and Sandvik 2015). This corresponds with the notion of "continuing bonds", which acknowledges that coping with death and processing loss sometimes requires the continuation of the relationships between the bereaved and the dead (Klass and Steffen 2018; Rubin et al. 2018).

Studies show that digital technologies have proven useful for that purpose (Kasket 2012). While people do not necessarily believe in an afterlife, they accept the possibility of continuing their relationships with the dead (Morse 2023). Alongside commemoration websites and memorialized profiles, people use online platforms to continue their relationships with the dead, and, namely, continue their dialogues with the dead. Thus, online platforms fulfill the possibility of keeping open and active communication channels with the dead, whether these are voicemails on cell phones, instant messaging services, and other communication means (Bassett 2022; O'Connor and Kasket 2022; Segerstad et al. 2022). For this matter, digital technologies are not perceived as the fulfillment of an afterlife, but they do facilitate posthumous bonds.

Current posthumous communication transpires on existing social network services (SNS), but these are one-sided conversations; the dead cannot and never reply. The digital afterlife industry (DAI)'s vision is two-way communication between the living and dead (Bassett 2022). Arguably, emerging posthumous communication technologies are spectacular, and this corresponds with the idea of the spectacular death (Jacobsen 2020). These technologies are spectacular firstly in the sense that they draw on visual technologies that cater to spectators. Secondly, they often showcase "state-of-the art" innovation, which positions the public not only as a community of mourners but also as observers of advanced technological innovation. Two-way posthumous communication technologies, like those based on ghost bots and AI-operating avatars, invite the continuous presence of the dead in the daily life of the living. This corresponds with Walter's argument about pervasive death: "Pervasive mobile social media enable social interaction any place, any time—not only between mourners but also with the dead." (Walter 2017, p. 110). Walter suggests that the pervasive dead is more ordinary than spectacular, but it seems as if the way these emerging technologies are presented is geared toward a spectacular, extraordinary experience.

3. Photography and Practices of Mourning

3.1. Traditional (Still) Photography for Therapeutic Purposes

Throughout history, photography has often been linked with images of death and mortality. (Barthes 2000; Sontag 2001; Stylianou-Lambert and Widmaier 2023; Weiner 2018). During the early days of photography, deceased bodies were often used as subjects due to their inability to move during the lengthy exposure time, resulting in clear and sharp images. Postmortem photography emerged during the Victorian era as a way to commemorate the deceased. According to Ruby (1995, p. 7), postmortem photography appealed to bereaved families because it provided a way to remember their loved ones: "It would seem that photographs afford those in the business of adjusting to the loss of someone they cared for a chance to both remember and accept that which is final" (see also Gunning 2003; Troyer 2007). Ruby suggests that photographs can aid mourners in achieving closure and continuation of memories. Photographs facilitate the acceptance of loss and allow farewells while preserving and sharing the deceased's memories. Ruby further argues that postmortem photographs have helped to reconcile the contradiction between these two opposing vectors: "Pictures of death are inescapable reminders of the loss, while memorial images of a life that is no more help us to symbolically keep the dead alive" (Ruby 1995, p. 174).

In the course of the 20th century, death was pushed away from the everyday experience, and postmortem photography gradually disappeared (Gorer 1965). The discourse about photography of death and mourning focused on the re-surfacing of photographs of the dead from the time in which they were alive, and the extent to which these encouraged reflection on the finality of life. Philosophers of photography, like Roland Barthes (2000) and Susan Sontag (2001), have interwoven (im)mortality and photography, claiming that "every photograph stands for a moment in time that is irretrievable and that the act of photographing is an attempt to immortalize the subjects and ensure that they are never forgotten" (Weiner 2018, p. 4). This line of thought emphasizes the indexical characteristic inherent to photography: the photograph serves as evidence of how things were. Looking back at old photographs allows us to re-live the photographed moment and to remember the dead. Images of the dead from the time they were alive were represented in wakes and memorial services. Inasmuch as photographs serve the immortalization of the dead, the printed photograph, as a material object, captures and "freezes" time while also showing the passage of time through physical markers on the photograph, such as fading, yellowing, fractures, and sketches. This makes it both a memorial of past events and a reminder of the continuation of time.

Digital technologies, social media, and mobile phone cameras create a shift in mourning practices (Stylianou-Lambert and Widmaier 2023). One common digital mourning practice is the memorialization of Facebook profiles of people who died. These digital memorials, which present numerous accounts of deceased photographs, "nurture ongoing relationships with the dead for years to come" (Stylianou-Lambert and Widmaier 2023, p. 5). Unlike printed photographs, which respond to environmental impacts and disintegrate over time, digital photographs do not deteriorate and fade, and once uploaded to SNS, they can resurface either due to users reposting them or them automatic being reposted by the platforms. These new practices encourage the continuation of engagement between the living and the dead. Barthes (2000) contended that looking at albums and contemplating death are confined to the solitary of the observer. Differently put, engaging with the dead via their photographs was perceived as intimate and practiced in private or semi-private spaces. While past imagery of the dead related to personal practices of grief (Stylianou-Lambert and Widmaier 2023), "digital technologies and networks can potentially bring back death to the everyday" (p. 8), turning acts of grief into a more collective practice. The two cases we shall explore later manifest this transition to public engagement with photographic representations of the dead, suggesting a shift in grief and mourning practices from the private realm to the public.

3.2. The Computational Turn and Rise of Interactive Photography

Barthes (2000) claims that photographs are thus pure evidence that authenticates what has been. In this way, they always remind us of death. However, computational photography enables us to change images and invites us to create new experiences with the dead in ways that presumably undo their death. The recent era of digital photography, marked by an increasing dependence on computational technology, has not only revolutionized the ways in which photos are created and shared but has also enabled users to actively engage with smartphone cameras through interfaces that become "aware" of and respond to the camera's physical orientation and motion (Altaratz and Frosh 2021). The physical awareness of photographic interfaces has also allowed viewers to engage in new types of spatial-temporal experiences with photographic images. Some interactive photography instances include virtual tours based on 360 imagery (such as Google Street View), Structure from Motion (three-dimensional models based on a photogrammetric process), or other custom-made applications of virtual reality (VR) and augmented reality (AR), like holograms. These unique forms of interaction empower users to reenact the past. Additionally, users' interaction with the visual content creates a unique temporal continuum between the past, manifested through the moment of the captured event, and the continuous temporality of the present, experienced in real time by the users who interact with the visual content.

3.3. Modifications in Photographic Practices of Mourning and Commemoration

With the emergence of new technologies, hybrid mourning practices offer both challenges and opportunities for people to disengage while preserving and sharing memories of their loved ones. These technologies defy the indexical characteristic of photography by manipulating images and creating new representations that utilize the advances of computational photography to continue our bonds with the dead.

For instance, *My Heritage* has developed the *Deep Nostalgia* app, which enables users to upload still images of their ancestors. The software then generates a short, repetitive GIF of the deceased ancestors nodding, winking, and smiling. This tool uses deepfake technology to dissociate deceased ancestors from their death, based on the convention that death is associated with stillness and life with motion (Kopelman and Frosh 2023). Based on still images, these animations defy the indexical characteristic of still photography, as they portray the depicted people as they have never been captured. Additionally, they defy the mortality of the depicted ancestors since they not only appear in motion, but their motion also repeats itself endlessly. Unlike the intersection between photography and mortality discussed in a special issue of *Photographies* (Stylianou-Lambert and Widmaier 2023), this technology offers a new way to commemorate and remember the dead, a combination of embracing the past, as it appears in these old photographs, while creating new memories based on a fictional facial expressions that were never photographed or filmed.

Later, we will argue that computational photography's interactive interfaces add a non-linear, "open" narrative to documented events. They allow users, who are no longer passive viewers, to explore endless potential narratives. The ability to choose and control the visual narrative may provoke in the participants a sense of control over the events and redeem an uncontrollable past. Beside technological challenges, the rise of interactive posthumous communication technologies introduces new ethical challenges about the rights of the dead in the digital age, as well as posthumous privacy and publicity rights (Boothe 2022). Inasmuch as these are intriguing questions, they are beyond the scope of this article.

4. Methodology

Following the above exploration of changes in the interrelation between photography and death, in this article, we focus on the third historical phase of photography, which corresponds with the algorithmic turn (Uricchio 2011), in which the photograph not only displays an image but also encourages interaction with the observer. Thus, in this case study analysis, we analyze two case studies that feature new algorithmic affordances that invite and facilitate interaction with digital, visual representations and a sense of co-habituation in space. The two selected cases propose varying levels of activity vs. passivity: in one case, the people who interact with the virtual figure trigger the figure's responses, while in the other case, the virtual figure stimulates the user's actions. These are high-profile projects that have received both public and scholarly attention since they exhibit stateof-the-art, innovative, technologies of digital resurrection (Boothe 2022; Harrison 2023; Pinchevski 2019). The two case studies relate to changing levels of mourning and commemoration: one that serves the individualistic needs of a bereaved person, and another that constructs collective memory. For this matter, we analyze the two cases according to the following criteria: temporality, interactivity, and commemoration vs. mourning. These criteria capture the dimensions of engagement with the dead and its various functions, as we will elaborate in the analysis.

5. Analysis

5.1. Case Study 1: New Dimensions in Testimony (NDT)

5.1.1. Background

Pinchas Gutter is a Holocaust survivor who managed to survive six concentration camps. He was the first to partake in *New Dimensions in Testimony* (NDT), a project currently under development by The Shoah Foundation, which combines human–computer speech interaction capabilities with three-dimensional holographic imaging to create an immersive experience of a live conversation with Holocaust survivors long after they are gone. He was interviewed and filmed for many hours, telling his story, allowing the developers to generate a database of his story and re-create his image as a hologram. Speech recognition software responds to the verbal questions addressed to the hologram and retrieves the segment in the database pertaining to the question. This simulates a sense of conversation with the hologram of the survivor (New Dimensions in Testimony n.d.). At the time of writing this article, Gutter is alive, but the aim of the project is to leave an interactive testimony that will outlive the survivor, possibly forever.

5.1.2. Temporality

Through their stories, the survivor witness takes the visitor on a journey through time and space. As argued elsewhere, "the narrativization of the past is reenacted in the present, for future audiences" (Morse 2023; see also Pinchevski 2019). There are three, interlaced, temporal aspects in NDT: the first, and probably most straightforward, is the continued presence of the installation in the present. The audience interacts, in real time, with a hologram that simulates the survivor's presence in the room. The second temporal aspect is that of the time at which the video testimony was created (sometime in the past). This is probably less noticeable in the experience, designed to be covert to function as a transparent mediator between the present and the third temporal aspect, which is the survivor's history that transpired decades ago. The audience is encouraged to feel as if the encounter occurs here and now, even though the filming of the testimonies and the coding process have already been completed. The promise of this project is to create a reservoir of interactive testimonies that will allow for endless, unique experiences and non-linear narrations.

5.1.3. Interactivity

Thanks to 3D photographic simulation technologies, the survivor's figure is projected as a hologram that appears as if the witness is present in the room. Using speech recognition technologies and a finite but vast and extensive reservoir of prerecorded answers to common, possible questions, the audience is encouraged to engage in a dialog with the holograms. Due to the three-dimensional nature of holograms, the participating audience engages in a highly realistic experience, one which is based not only on the textuality of the dialogue but also on the body language of the hologram. Since the hologram and its operating system are responsive to the interaction, each encounter between the audience and the representation of the survivor is unique. There is no linear narrative and sequence of occurrences. The audiences can engage with the holographic figure and partake in "authoring" the story being told in terms of the sequence of events.

Unlike scripted rituals that are administered by authorized figures or institutions, in which the narrative is pre-determined and the audience plays a passive role in the performance, in this project, the audience plays an active role in administering the encounter. The audience is the generator of the performance. The audience co-authors a personalized, tailor-made memoriam. In that respect, the encounter is non-ritualistic; notwithstanding, it functions as a collective memory mechanism.

5.1.4. Commemoration vs. Mourning

The project aims to create an easy-to-engage-with witnessing of a shared past manifested in individuals' testimonies. The aim of the project is to ensure that the stories of the survivors will never die. Instead of having a written or linear audio or video recording, the database allows non-linear interactivity, miming a live interaction with the survivors. The audience does not personally know the survivors, but it gets to know them through interaction with their holograms.

Frosh (2011) theorized such witnessing as *emblematic indexicality* of anonymous individuals:

"In their voices, faces and bodies individuals are depicted in all their astonishing deictic particularity, their singular indexicality in relation to a unique place and time; it is them, and no other, there, then. And yet these same individuals frequently stand for a broader reality, even encapsulating and embodying entire populations and events of immense scale—catastrophes, conflicts and celebrations—that are not themselves depicted." (Frosh 2011, p. 390)

Unlike other mediated testimonies, which are often closed and linear, this project enhances emblematic indexicality since it facilitates a one-of-a-kind encounter between a collective reservoir and a unique setting or audience. It is that survivor, who tells their (pre-recorded) story in a non-linear manner, for that particular audience, in response to its specific questions. As such, the encounter and interaction with the hologram dis-estranges the survivor, making them a familiar other, rather than a stranger. The audience gets to know the person and thus is invited not only to partake in a commemorative ritual of the Holocaust as a grand universal catastrophe but to become acquainted with the story of an individual person who delivers a testimony in a simulation of a first-hand story.

5.1.5. Summary

As demonstrated in this case study, affordances of new photographic technologies invite audiences not only to passively consume a testimony of collective past events, but also to engage with and interact with a personal story of a particular witness. The database and reservoir of pre-recorded footage are available for the audience to explore the personal history of witnesses and co-author countless narratives of a confined plot. These invitations for ongoing iterations suggest a continuation of the interaction and perpetuation of the individual story as well as collective remembrance.

5.2. Case Study 2—"Meeting You" (MY)

5.2.1. Background

Nayeon, a seven-year-old girl, died in 2016. Four years later, she was digitally resurrected by a South Korean TV channel, drawing on virtual reality (VR), DeepFake, and artificial intelligence (AI) technologies. The developers "cloned" Nayeon's image and voice, digitally reconstructed her playground, and employed AI technologies that allowed the animated figure to converse with Nayeon's mother in a highly immersed environment via a VR headset and haptic gloves (Park 2020).

5.2.2. Temporality

In *Meeting You*, we trace two temporal dimensions: the real time of the bereaved mother, capturing the time passed since the child's death, and the "frozen" time of the deceased child, whose figure was digitally reconstructed. The reconstruction process was based on the child's most recent images, creating an avatar that resembled the girl at the time of her death, rather than three years later when the TV episode was made. As time passed, the mother naturally evolved and entered a different phase of her life due to aging.

The mother expressed discomfort and detachment due to a mismatch between her own aging and the non-aging avatar of her child. According to the mother's testimony, the child "was quite different from my Nayeon", and reporter Violet Kim construes that "this detachment has to do with the fact that the real Nayeon would have been 10 but was depicted as 7, the age at which she died" (Kim 2020). This gap between the elapsed time and the frozen time of the child's avatar creates dissonance; the age of the digitally cloned child does not match real time. However, the interaction does stir real emotions: the mother bursts into tears and experiences an emotional rollercoaster. Unlike the encounter with NDT's holocaust survivors, which is the audience's first meeting with the witnesses, in MY, the mother personally knows the "resurrected" person and remembers her deceased child. Once the VR figure diverts from the mother's memory, a sense of uncanniness emerges.

5.2.3. Interactivity

The VR headset, headphones, and gloves create a sense of physical presence. The mother wearing these wearables is made to feel as if she and her animated child occupy the same space. The mother virtually hugs, speaks to, and plays with her child's avatar in a three-dimensional environment in a sort of computational séance. Like in NDT, the MY interface allows users to interact with the virtual avatar, but unlike NDT, in MY, the mother's interaction with her child is confined to a pre-scripted narrative created by the producers. While Pinchas Gutter's hologram is passive and only responds to questions addressed to it, Nayeon's VR figure is proactive, as the avatar initiates and leads the interaction: the avatar addresses her mother and asks her questions. The avatar moves around the digital playground and chooses when to lead the encounter to an end. The mother has little or no control over the nature of the events and the "plot" of the encounter. She can only respond to the interactions initiated by the VR figure.

5.2.4. Commemoration vs. Mourning

In MY, the focus is on personal grief and the use of digital technologies to alleviate it. The technology does not serve any public interests. Unlike NDT, this production does not have commemorative aspirations and only tells the personal tragedy of a single family. Both the producers and the mother acknowledge that they are participating in this production in order to have a final encounter and closure between the mother and her deceased child. This encounter will be finite and will not result in any continuation of the relationship between the deceased child and her mother, at least not on that platform.

Despite the motivation to help one mother in processing the loss of her daughter, this production was broadcast for mass consumption. Arguably the purpose of such productions is to satisfy the voyeuristic desires of the audience to witness an emotional, potentially sensational encounter between a mother and her deceased child. It emotionally triggers the audience to peep into this intimate encounter. However, this interest is not driven by public curiosity but by the commercial interests of the production and TV channel.

5.2.5. Summary

The MY project, too, demonstrates the utilization of new photographic communication for new experiences for coping with loss and processing grief. The VR and AI technologies enable a highly immersive encounter between a human and digital representation that is responsive and even initiative. However, there are difficulties in facilitating closure between the bereaved and the deceased due to a gap between personal recollection and photographic possibilities. This gap is further complicated by conflicting temporal dimensions of the deceased and the bereaved. Currently, technological limitations confine representations to pre-planned possibilities. However, bereaved individuals can still have genuine emotional responses that address their needs and memories.

6. Discussion

Photography has long been used to document events; however, with advancements in computational technology, photography can now play an even more significant role in mourning and commemoration. The interactive nature of VR and holograms allows users to actively create new encounters and memories, shedding light on how we commemorate and cope with loss. The two case studies showcase the range of possibilities between mourning and commemoration, closure, and continuity.

Both case studies showcase interactive photography, breaking conventional photography's boundaries by involving the viewer in the scene. In both cases, photography is frameless, and the scene spills over from the subject to the observer's realm. The photographed dead protagonist is said to occupy the same space as the living spectator and responds to their voice and motion. As a result, the boundaries between the dead and the living collapse, and a sense of lingering experience defies the mortality and stillness of the dead. The continuation of the bond manifests itself. It is tangible and it takes place in a shared setting, beyond the minds of the bereaved.

In NDT, the survivor serves as a transient stranger. Audiences meet a survivor they do not know for the first time, and they can interact with their testimony as a form of emblematic indexicality. The interface uses a visual database and speech recognition to let the audience co-author the narrative and personalize its encounter with the survivor. Despite the technical fact that the database is finite, it enables endless plots. The endless iterations and eternal storage of the survivor testimonies allow for ongoing public access to personal experiences, ensuring the legacy of survivors is commemorated. The survivor's recorded testimonies outlive the survivor, and they will "live" long after their death, possibly for eternity.

In the MY project, a bereaved mother meets her deceased child, whom she knows and remembers, for one last encounter. The mother's interaction with her child is based on a digital dataset, reconstructed from the family's memories. The mother's role in the encounter is predetermined by a pre-scripted plot, leaving her unable to act as an independent agent. The digital setting manifests the idea of continuing bonds and postmortality in the sense that it does not consider the physical death of the child as an endpoint. Rather, it proposes another encounter that takes place after the child's death. In this regard, the MY production showcases how technology is employed to facilitate personal desire or the need to soothe the pain of mourning by continuing a bond with the deceased. Yet, inasmuch as the virtual meeting allows a farewell from the deceased child, it does not enable a continuous encounter beyond the studio's time and space. The production aimed to use computational photography to help the mother process the private loss of a child and alleviate her individual grief. The public interest in this project is mainly to satisfy voyeuristic needs and our fascination with advanced technologies. In this regard, an innovative representation of death serves as a commodity for public consumption. Death appears as a spectacle (Debord [1967] 2021; Jacobsen 2020).

The analysis suggests that photography now serves either open or closed experiences, with NDT relying on a "closed" witness representation as the footage is unchangeable; only the sequence is open for deliberation. The platform affords endless encounters and endless recombination of the narrative. On the other hand, in MY, the person interacting with the machine cannot control the narrative in which she serves as a passive protagonist, and the image is, by definition, a manipulated one, but the platform is designed to host a farewell and one last encounter.

In NDT, the production relies on the indexical element of photography to ground the authenticity and reliability of the testimony. The truth claim of photography serves as proof of the occurrence of historical events in order to preserve knowledge for future generations. In MY, on the other hand, the visual representation does not hold the claim to truth as conventional photography. While it draws on past photographs of the child, the visual image has been manipulated to accommodate the mother's personal recollection to allow her to create and preserve new memories of interaction that have occurred only in the virtual sphere of the studio.

7. Conclusions

Introducing computational technologies into mourning and commemoration practices requires rethinking the relationship between death and photography, specifically the link between photography and immortality. Photography now implies a vivid and regenerative connection between the living and the dead, rather than finality. The interactive features of these practices increase engagement and customize the experience for specific audiences. This collaborative practice enables non-linear interaction and new narratives but is limited by the database components. In these two case studies, we recognize the importance of the user in "authoring" the narrative composed by the settings.

Does the rise of computational photography herald the age of post-indexicality? In contrast to classic photography's visual realism, which allows viewers to see and partially relive past events of deceased individuals, new augmented technologies enable the absent dead to re-appear in a virtual setting of (non) presence (Harrison 2023). Viewers can experience imaginary, non-realistic events by (re)placing deceased individuals in new scenarios that never occurred in the past. These imagined futures add an innovative dimension of temporality to photorealistic imagery.

The two cases differ, however. NDT draws on the indexicality of the image. While the interface is fictional (the survivor is not physically present in the room), the project relies on the indexicality of photography to safeguard the authenticity of the person and their life story. The MY project manipulates the indexicality of photography: it requests us to suspend disbelief in resurrection and rely on the properties associated with photography to convey a multi-sensual experience. We know the image is unreal, but we must suspend this skepticism to revive what cannot be re-lived.

Nevertheless, both case studies demonstrate new utilizations of computational photography for mourning and commemoration, as they take advantage of the disappearance of the photographic frame as a means to dissolve the boundaries between the dead and the living. The representation of the dead in the space of the living fulfils the vision of postmortal society, where technology allows for new interactions to take place posthumously. Hence, death is dissociated from farewell, as these technologies maintain the interrelations between the living and the dead. These technological developments invite us to rethink the finality of life and whether digital afterlife is realized. **Author Contributions:** Conceptualization, D.A. and T.M.; methodology, D.A. and T.M.; writing—original draft preparation, D.A. and T.M.; writing—review and editing, D.A. and T.M. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable. No ethical approval was required. The research analyses publicly available materials and was not involving humans.

Informed Consent Statement: Not applicable. The research did not involve humans and not consent was required.

Conflicts of Interest: The authors declare no conflict of interest.

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