

In the End We Become Our Avatars: An Exploration of Artificial Intelligence and Digital Afterlives

Christopher Michael Hansen

This paper delves into the emerging industry of AI ‘digital afterlife’ programs, which aim to perpetuate an individual’s digital persona beyond their physical existence. Employing digital ethnographic methods and media criticism, this paper investigates the cultural implications, ethical considerations, and user experiences surrounding these digital afterlife initiatives. By examining user interactions, media coverage, and the evolving landscape of AI-driven posthumous representations, this paper seeks to illuminate the complex interplay between contemporary technology and spirituality in the realm of digital afterlives. This paper particularly focuses on three of the most prominent digital afterlife programs currently on the market or in production: Eternime, HereAfter, and Project December. This research contributes insights to the ongoing discourse on the intersection of artificial intelligence, cultural practices, and the evolving nature of human consciousness in the digital age.

Introduction

Humans have long had the desire to manipulate technology to extend our biological lives. In the 19th century, the Russian Cosmist Nikolai Fyodorovich advocated for the use of scientific means for life extension, remarking, ‘Our task is to make nature, the blind force of nature, into an instrument of universal resuscitation and to become a union of immortal beings’ (Fyodorovich 1990: 70ff.). More recently, futurists like Ray Kurzweil have predicted the ‘singularity,’ a moment where technological progress will bypass human intelligence, and humans will begin to inhabit new forms not limited by our natural biology. Kurzweil believes this moment of singularity will enable humans to extend their lives through virtual means, possibly creating an eternal, digital life (Kurzweil 2005). Followers of Kurzweil are particularly interested in ideas of ‘consciousness uploading’, via which we may be able to upload our consciousness and our minds

into a virtual reality program to achieve immortality, with advanced AI being the first step towards this.

While the fruition of many of these promises is still at least decades away, there is a small yet growing field of ‘digital afterlife’ technologies, which use AI to allow humans to leave behind a digital ‘living’ legacy, which can be accessed by family members, friends, and loved ones after someone has passed on. Utilizing available technologies like ChatGPT, several software developers and technologists have created applications that can be used to develop AI-generated digital avatars of oneself to carry on one’s legacy after death. Initiatives like Eternime, Project December, and HereAfter have begun offering services that allow users to create digital simulacra of themselves (or of loved ones) to carry on one’s legacy. These services do not necessarily promise digital immortality but a technologically advanced way for users to access those they love after their deaths. With many different models on the market (or in production) and new fields of technology growing around these concepts, it begs the question: what exactly are digital afterlife technologies? And how exactly is AI being used to develop such technology?

There has been much hyperbolic discourse around these initiatives, often overstating the actual capabilities of this software. Major publications tend to report on them in a way that belies a misunderstanding of their actual uses while simultaneously creating a sense of fear around them. Articles with titles like ‘This creepy AI will talk to loved ones when you die and preserve your digital footprint’ (Clark 2014) give the general public a false version of this software and what they can achieve. This paper will attempt to go beyond the hyperbole and fear surrounding digital afterlife initiatives to paint a clearer picture of these technologies as they currently exist. To do this, I will consider exactly who is creating them and how these technologies can be used at present. I will examine technologies that are either already on the market, in production or have since become defunct. In doing so, I hope to demonstrate how new AI technologies are being utilized to create digital afterlife software and to highlight the possibilities of this small but growing field.

I. Terms and Research Methods

The term ‘digital afterlife’ has been used to describe the various functions of digital technologies after their original user has passed away. For example, the researcher Debra J. Basset uses the term ‘digital afterlife’ to discuss what happens to data after one’s death, emphasizing social media accounts (Bassett 2022). Like most research in the realm of digital afterlives, her focus is on ‘accidental’ digital afterlives – what happens to the data and digital presence that we never intended to have lived on after our death. In a small survey I conducted of 50 participants, most (31) were familiar with this term, and most were familiar with it being used to describe these ‘accidental’ digital afterlives.¹ For this paper, I will be stepping away from the idea of ‘accidental’ digital afterlives and focusing on initiatives created to leave behind a digital legacy of their original users purposefully. Programs like HereAfter are designed with the explicit intention of utilizing AI to create an avatar of oneself that can be accessed after death. While much research has been done on accidental digital afterlives, there has been little research into programs that purposefully allow individuals to leave behind a digital trace of themselves.

The research for this paper comes from interdisciplinary approaches, focusing mainly on digital media criticism and ethnographic methods. Where these applications have not achieved mainstream success and do not have large numbers of users, this paper will focus more on the development of the field and less on how users interact with it. There is a lack of scholarly sources on these technologies; however, many of the creators of these softwares, like Jason Rohrer and Marius Ursache, have either written directly about their experiences creating them, or have been featured in major publications dealing with their work. As such, there is a wealth of sources related to the creation of these applications, which I will draw from. There are also online communities interested in these technologies and who have been independently experimenting with them, like the Reddit forum *r/transhumanism*. I have engaged with such communities to understand the market for these technologies and how people are already experimenting with them for their own aims. I have also engaged with these technologies independently to understand how they work. Thus, I will draw from my experience with these

¹ The survey was created using Survio and posted to my personal Instagram account, and given to members of the Reddit forum *r/transhumanism*, to gain wider popular insight into this field. The survey itself can be found here: <https://www.survio.com/survey/d/O4O9F9L0K5K1I9U7I>

communities and my experiences with the relevant technology to provide original insights into the field.

It is important to remember these technologies are essentially digital media artifacts, and I will be using relevant media criticism to build an understanding of them. These software rely on AI and utilize animation, sound, and gaming devices to create the illusion of a digital afterlife. Jason Rohrer's Project December, for example, has been previously categorized as a video game based on his work as a game designer and the text-based RPG aesthetic of its interface.² The use of avatars in most programs also reflects their connection to digital media devices, as avatars have a long history connected to gaming and digital media. Though these technologies do not feel as static as traditional digital media, they build from many conventions of more traditional media to leave behind a digital legacy of their original user. Considering these as media artifacts provides a necessary framework for understanding how they are being created and how people may be able to use them.

Building the Digital Afterlife

For this research, I have focused on three of the most prominent AI digital afterlife software: Project December, Eternime, and HereAfter. Each of these programs works in fundamentally similar ways, combining user-generated data with AI technologies to create the semblance of a person after death. However, each takes a slightly different approach to doing so, and each is aimed at a different market. To understand how this field is being developed, I will demonstrate how each application is built within a similar framework while highlighting their fundamental differences. While none of these applications have gained mainstream popularity, some have been more successful than others due to the approach they take, and I will consider which aspects of these programs have been more popular than others.

² He originally referred to it as his 'vacation project' when releasing to the public. Many were confused on his forum whether or not it was a game, to which he provided vague answers that it was not necessarily a game: <https://onehouronlife.com/forums/viewtopic.php?id=10055>

I. AI Integration

First, I want to examine how AI technologies are integrated into these programs, as each takes a different approach. At their core, each program uses an AI-based chatbot generated from information provided directly by the original user, from available data like texts or social media posts, or information provided by a loved one. The AI is trained on the data of each original user, and then, using ‘large language models’ of machine learning, creates a chatbot based on the deceased (or soon-to-be deceased) person that can be interacted with conversationally. However, each program uses different AI software to achieve similar effects with varying results.

ChatGPT has become the most popular AI chatbot since the public launch of ChatGPT 3 in 2022. ChatGPT has been used for everything from large writing projects to creating fantasy chatbots and has begun to be seen as a panacea for seemingly every problem related to the tech world. Despite its popularity for building similar chatbot platforms, only one of the three programs, Project December, uses it. Project December was born directly from experimentation with early models of ChatGPT. Its developer, indie game designer Jason Rohrer, created the software from playing ‘literary games’ with Chat-GPT 2 after publicly releasing an early version (Fagone 2023). Project December was not initially intended to be used as a digital afterlife program; instead, it is a chatbot application where one can create any personality – relying on fiction or your imagination – with which one can speak. However, in 2021, a user, Joshua Barbeau, manipulated the technology to recreate his former girlfriend, Jessica Pereira, who had died ten years prior, generating the chatbot from data like her texts and social media posts. A media storm ensued around this, primarily focused on using ChatGPT in its application, which saw the software as a way to resurrect the dead. Due to the popularity gained by Barbeau’s use of the software, Project December has since rebranded as an application to ‘Simulate the Dead’ (Figure 1), showcasing ChatGPT’s ability to bring humans ‘back to life.’

PROJECT DECEMBER

SIMULATE THE DEAD

(Fig. 1: Project December’s current homepage, July 2023, projectdecember.net)

Eternime and HereAfter use various AI technologies, some developed in-house. However, much about their language learning models are only available to some.³ Both were developed between 2014 and 2017 when large-scale language model machine learning was gaining popularity but had yet to reach the cultural fervor that is being experienced at present. HereAfter was developed by Jason Vlahos as a program called ‘DadBot’ that aimed to recreate his dying father within a chatbot program digitally.⁴ For DadBot, Vlahos utilized Pullstring AI, a ‘conversational entertainment’ program aimed at developing chatbots and conversational games.⁵ Pullstring’s name comes from classic pull-string toys, where one would pull a cord to generate a dialogue from a speaker box. Pullstring AI works similarly: each conversation piece generates a new dialogue from a preprogrammed flowchart, allowing users to have a realistic conversation with an avatar. HereAfter has built on this, allowing users’ data to create their own flowchart, which can then be accessed by chat or by voice to have a conversation with a deceased loved one. The more information entered, the more distinct the conversation can become. Eternime operates similarly, though with a language-based learning model supposedly developed by

³ I reached out to executives at HereAfter, Eternime, and Project December for this research. Only Rohrer replied back, politely declining comment.

⁴ WIRED, ‘How a Man Turned His Dying Father Into AI’, Youtube, 2017, <https://www.youtube.com/watch?v=oQ7V74s6e04>.

⁵ More about Pullstring AI can be found here: <https://toytalk.tumblr.com/>

Marius Ursache's team. The application has only been in Beta testing mode, but its specific models have not been made public.

Despite using different technologies as their basis, AI functions similarly between all three apps. Starting with user-generated data, they build a flowchart of possible conversation responses that are enhanced using existing, large-scale machine language models. Asking a question like 'What was your favorite food?' in any of the apps will trigger a response from this flowchart, with AI rather than pre-recorded responses used to make the conversation more human. As such, one can get slightly different variations from asking the same question, though the range of possible answers usually depends on how much information was initially input. While there is much excitement around AI chatbots, we are still in the early era of their development, and these apps will sometimes generate confusing or unreadable text. Often, these will not have the same 'flow' of a usual conversation between two humans, though many users claim to feel as though they are talking to their loved one, even though they know they are not.

II. Data Gathering

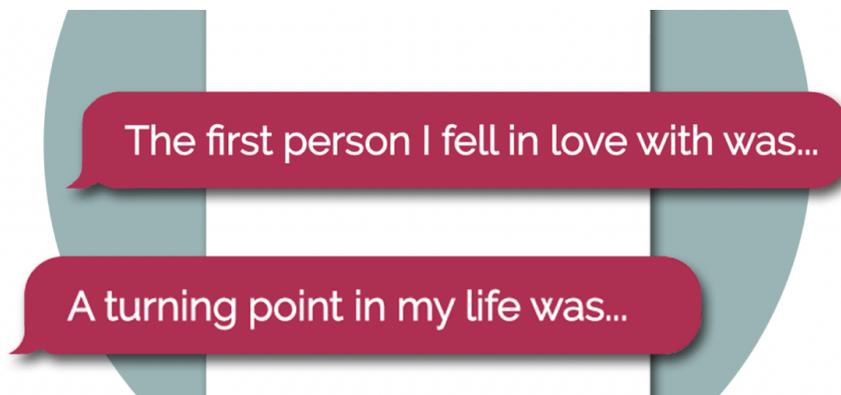
These apps generally rely on large amounts of user-generated data to create the illusion of a conversation between the user and the deceased. Unlike older versions of chatbot technology, AI applications like ChatGPT can use relatively small amounts of data to create characters you can speak to. For example, one Reddit user, *u/htaming*, from *r/transhumanism*, whom I talked to, told me about how he had created a chatbot of his friend on CharacterAI using a small number of texts between them to create a reasonably accurate AI version of his friend as a gag gift.⁶ However, these applications generally do better with more significant amounts of data, and each has a particular focus on data gathering. Each uses a different method to gather this data, primarily based on the target audience.

HereAfter emphasizes in-person data gathering, offering a service where 'expert life story interviewers' can come to someone to interview about their life, using classic field recording methods.⁷ HereAfter takes these interviews and processes the data into its system to create a

⁶ Full post accessible via Reddit: <https://www.reddit.com/r/transhumanism/comments/11dn7f0/comment/jab5ldf/?context=3>

⁷ More information on their process is available on the HereAfter website in their FAQs: <https://www.hereafter.ai/faq>

digital avatar using AI. This method is based on how Dadbot was initially created. Vlahos went with a field recorder to his father’s home to interview him about his life and then transcribed the interview into Pullstring’s flowchart-style mechanism.⁸ HereAfter tends to market toward older people who may be closer to passing away than others, so having an in-person program, rather than a fully app-based one, is essential for those who may be less tech-literate. They do, however, have an app-based data gathering system that uses interview prompts like 'The first person I fell in love with was...' or 'A turning point in my life was...', allowing the user to fill in relevant data based on their life (Figure 2). While the expert life story interviewers are a unique feature, most users rely on the in-app interview process done digitally.

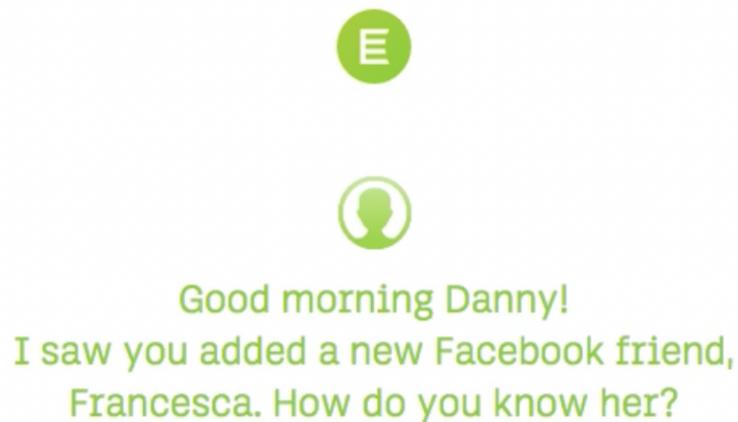


(Fig. 2: Screenshot from promotional material on HereAfter’s homepage, July 2023, hereafter.ai)

Eternime was developed during an earlier period of Web2 when there was a larger emphasis on social media and ‘platform capitalism’ (Srnicsek 2017). Professionals in the tech world developed it and, as such, emphasized the relationship between their app and other social media outlets like Facebook. On Eternime, one could link an account with Facebook for more accurate data. The process of Eternime works similarly to HereAfter, where users are asked general questions about their lives. Still, they would be given questions like ‘I saw you added a new Facebook friend, Francesca. How do you know her?’ (Figure 3). Eternime’s interview system is meant to be used daily like a diary with continual data input. Adding Facebook to gain social data is necessary because Facebook is a daily part of many people’s lives and can link people’s real-life social groups to an online database. Eternime’s focus on Facebook also points

⁸ WIRED, ‘How a Man Turned His Dying Father Into AI’.

toward a younger market than that of HereAfter; it is aimed at a tech-savvy audience who may use social media more frequently. Eternime was meant to be used daily and long-term as a kind of social media platform in itself. Therefore, the way Eternime gathered data was analogous to how younger users already use their phones. It was intended to be used over a longer course of time.



(Fig. 3: Screenshot from ‘Eternime Alpha Two Video’, Vimeo, 2018)

Project December differs vastly from HereAfter and Eternime as it is not an interview-based system. Instead, users would initially go to the ‘CUSTOM AI TRAINING AREA’ and add a sample of something the bot might say (usually from a text source) and a paragraph introduction to the new bot.⁹ This is similar to how other ChatGPT-based chatbots operate, creating a semi-fictionalized character version using relatively low quantities of data. What is interesting about Project December is how people began using old texts, social media posts, or other digital text records to bring their loved ones ‘back to life’. In more recent software versions, they introduced a ‘Personality Simulation Questionnaire’ aimed at simulating the deceased (Figure 4). This questionnaire asks fundamental questions about who they were when they died and what kind of personality they had. They also give room for custom fields so that the information can be further personalized.

⁹ This is from the ‘Classic’ version of the software operated, which is still accessible here: <https://projectdecember.net/classic.php>

Contrary to Eternime and HereAfter, the data used by Project December comes from a secondary source, and the data input was not initially intended to be used for such purposes. Project December is also not meant to be used long-term like the other services, and each chatbot only lasts for a limited period, depending on how many credits the user purchases. In this way, the smaller data sample makes sense, as these chatbots are not meant to be accessed forever but only for a short time to help the user process the grief they feel after the passing of a loved one.



PERSONALITY SIMULATION QUESTIONNAIRE

Your Email:
(double-check - your personality will be delivered here)

—

Their full name:

Their first name:
(or common nickname)

Your first name:

What you called them:
(one name only, not a list of names)
(Examples: Mom, Uncle Joe)
(This is how they will be labeled in the conversation.)

(Fig. 4: The beginning of the questionnaire taken from their website, July 2023, projectdecember.net)

III. Marketability

These three programs take different approaches to marketing their products and focus uniquely on different demographics. One of the biggest challenges in this field is how these technologies are advertised to the general public. More generally, there is much skepticism about digital afterlife technologies and AI, which poses a barrier to the success of such applications. Conversations around artificial intelligence in the general public are prone to paranoid responses, and adding the idea of one’s mortality into the mix further obstructs a favorable public opinion.¹⁰

¹⁰ For instance, the New York Times recently published an article titled ‘A.I. Poses “Risk of Extinction,” Industry Leaders Warn’, which went viral in certain circles of the internet, sounding alarm on certain AI technologies <https://www.nytimes.com/2023/05/30/technology/ai-threat-warning.html>

However, each of these initiatives navigates these obstacles in their own way to try and gain an audience.

Eternime marketed its software as being like a social media platform. Though never adequately launched to the public, the app would have been like an interactive diary that one could use daily. In addition to answering questions about linked social media accounts, users could also enter their own information, allowing the app to get a clearer picture of the departed loved one and how they would have wanted to be remembered. This way, users would be encouraged to interact with it daily, as with more conventional social media or self-help apps like Finch or Co-Star. In marketing itself as a daily tool, Eternime hoped to partially alleviate the anxiety of facing one's mortality while using the app. If users considered the app more like a library of their data or a digital diary, they would be more willing to interact with it rather than thinking of it only as an artifact solely to be used after their death. Much of the language and aesthetics surrounding the app took on sleek, minimal designs typical of Silicon Valley startups. With this approach, Eternime hoped to attract a young, tech-literate crowd who might view the app as a daily essential on their phone.

Contrary to Eternime's approach, HereAfter has sought to attract an older crowd who may think of their mortality more than younger people. Unlike the tech-savvy crowd Eternime hoped to court, HereAfter wants to attract users who may be less tech-literate than those who have been raised with social media. As such, much of the language and aesthetics of HereAfter try to simplify what they do so that it is easily understandable to those who may be less familiar or comfortable with newer technologies. On HereAfter's website, there is less emphasis on being a 'digital afterlife' program and a greater emphasis on being an 'interactive memory app' that others can use once one has passed away (Figure 5). In this way, HereAfter advertises itself as a practical tool and avoids causing potential customers to think about the larger ethical implications of the technology. This has proven to be a somewhat popular approach, with many gifting a HereAfter subscription to their loved ones as a unique way for them to leave behind memories. HereAfter takes the most conventional approach of the three applications and has seen the most mainstream popularity.

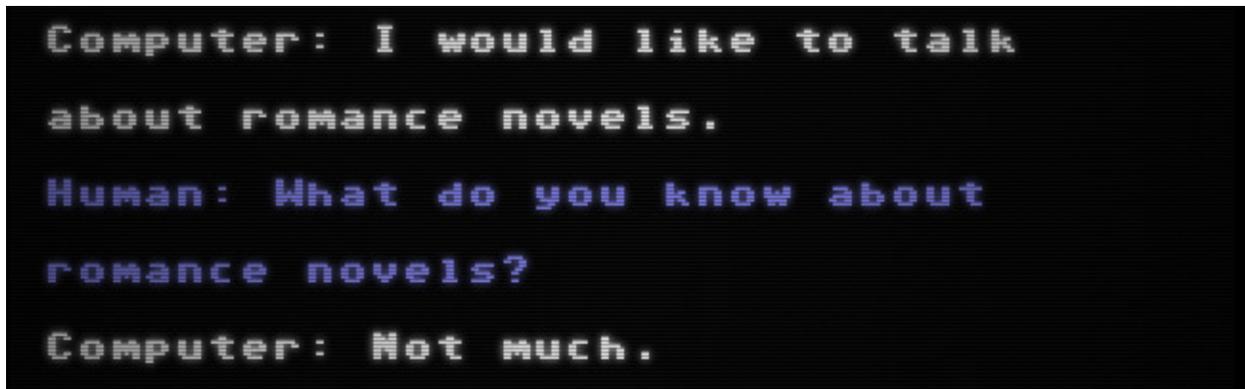
Record precious memories

Audio record stories about your childhood, relationships, experiences, personality, and more. We'll securely save and organize everything for loved ones to hear, right away or years in the future.

(Fig. 5: Screenshot of promotional material on HereAfter's website emphasizing the 'interactive memory' experience, July 2023, [hereafter.ai](https://www.hereafter.ai))

Unlike the other two applications, Project December seeks to capitalize on its novelty. Developed as a creative project by Rohrer, it was initially designed as an experiment with ChatGPT. Rohrer is best known as a game designer, and he utilized a retro video game aesthetic for the earliest versions of the program (Figure 6). Rohrer's background, as well as the aesthetic of the software, led many to categorize Project December as a video game upon its early release and treat it as a novelty rather than a serious application. Since Josh Barbeau's use of the software to generate a chatbot of his former girlfriend (and the subsequent media coverage around it), Project December has advertised itself as a way to 'simulate the dead', a seemingly tongue-in-cheek reference to Barbeau's story. Unlike Eternime and HereAfter, Project December does not seem to take itself too seriously, with promotional videos and the software often pointing out such technology's 'glitchiness' and 'uncanny valley' effects.¹¹ In this way, Project December attracts a different crowd, namely gamers, Redditors, and the 'chronically online' who may enjoy the novel approach to such software.

¹¹ For instance, they released this video, titled 'Simulate the Dead – Project December' to their YouTube in 2022 to advertise the newer version: <https://www.youtube.com/watch?v=RgyOAWt3d1M>



(Fig. 6: Sample from the earlier version of Project December available on their ‘samples page’, accessed July 2023, projectdecember.net/sample.php)

IV. Beyond Memento Mori

Humans have had ways to leave their legacy and memories behind materially for centuries, yet these programs pose new questions when considering after-death artifacts. The concept of ‘memento mori’ – translating literally to ‘remember you have to die’ – has dominated the way Western cultures have created physical memorials for the deceased. In remembering another human’s legacy, we implicitly acknowledge our own mortality. Yet, these digital afterlife apps function in contrast to this notion. Rather than recognizing that we are going to die when accessing a chatbot of the deceased, we are presented with a false hope for immortality. Using this software and uploading a version of yourself into it becomes a practice of extending your digital life rather than acknowledging the limits of your biological self. While many cultures have had an interest in immortality and life extension, AI digital afterlife programs represent a first step toward a technologically advanced way to extend our lives somewhat and create new possibilities for leaving a literal living legacy of oneself after death.

Eternime and HereAfter are both aware of the unique promise their applications offer and seek to capitalize in some way on their advanced approach toward after-death artifacts. HereAfter’s home page includes a quote from a Washington Post article on their company in which the reporter states that HereAfter is ‘The next step in the human quest for immortality’ (Holley 2019). To promote Eternime and track its progress, Ursache wrote an article

titled ‘The Journey to Digital Immortality’, which went viral after he posted it to Medium (Ursache 2015). By including the language of immortality in their respective promotional material, each application hopes to capitalize on the differences between digital afterlife programs and more conventional memorial devices. For instance, a loved one may be able to leave behind a photo book, but one cannot interact with these photos in the same way that one can speak to an AI avatar. Offering such an unusual service is an attractive part of this field; these companies believe that they are thus advancing human progress. In contrast to the (possibly overblown) promises offered by HereAfter and Eternime, Project December tries to stay more realistic regarding their offer. At the end of their personality simulation questionnaire, Project December provides a section on expectations to dissuade potential customers from seeing their program as a way to achieve immortality.

Conclusion

Even though the realm of AI digital afterlives faces challenges to gaining widespread use, we are likely to see this field grow exponentially in the coming years. There is a cultural aversion to AI and fear surrounding its potential uses and misuse. Leaders in the industry have come together to warn of AI’s possible danger, fanning the flames of paranoia around artificial intelligence in general.¹² Yet, AI technologies continue to be used in nearly all major industrial fields, and new uses for AI are coming to light with an astonishing frequency. Software like ChatGPT-3 or the AI image generator MidJourney already plays significant roles in marketing, software development, and education. As AI technologies become integrated into everyday life, the cultural fear around them will also dissipate as they become further accepted into society. Once the broader culture has become more tolerant of AI, we will likely see further experimentation into its possible uses. Perhaps, once this happens, it may not seem so weird to create chatbots of the deceased to preserve one’s legacy or to help those grieving.

At the end of my survey, I gave participants an optional space to expand on their feelings about current AI technologies. While the questions regarding AI technologies skewed negatively, the open-ended response showed a bit more nuance, and there seemed to be a morbid curiosity and interest in such technologies. This was perhaps best summarized by one participant who

¹² The aforementioned New York Times article is a good example of this supposed high level fear.

wrote that AI was ‘a little bit angst-inducing but also highly intriguing.’ Other participants shared similar sentiments, expressing hesitancy but admitting curiosity and interest in AI’s development. This thinking can also be applied to the development of AI digital afterlives. Having had dozens of casual and professional conversations regarding this field, I have found that people without any digital afterlife experience usually have an intense aversion when first told about these applications. However, I have yet to find someone whose curiosity was not in some way piqued and who did not in some way share a curiosity about the possibilities of the field. This spirit is shared within pop culture, too, with TV shows like *Black Mirror* and *Upload* highlighting both the fear and optimism surrounding such technology. This follows historic patterns regarding new technology where fear and morbid curiosity give way to genuine intrigue and acceptance. Polite society may reject this field altogether, yet considering historical trends, we will more likely accept digital afterlives – even if they look different from what is being offered now.

Much of the optimism around these applications corresponds to a broader belief that humans will soon be able to upload their consciousness into computers and that these digital afterlife programs may be the first step toward this. Ray Kurzweil believes that by 2045, we will achieve technological singularity, and in this period, we may be able to upload our consciousness to achieve cybernetic immortality (Kurzweil 2005). His predictions have influenced prominent figures in Silicon Valley, such as Peter Thiel, Elon Musk, and Bill Maris, who have all begun investing in technology that would push the singularity forward. Even outside the tech world, influential figures, like the neuroscientist Michael Graziano, have concluded that humans will soon be able to upload their consciousness into a virtual-reality-type program (Graziano 2016). For those who follow these schools of thought, AI digital afterlife programs are exciting as they are seen as the early stages of this development. While these software do not have the advanced capabilities promised by futurists like Kurzweil, they may prove to be a rudimentary form of consciousness uploading.

Whether or not these technologies can offer digital immortality, they are slowly coming to the attention of our broader culture and demonstrating innovative ways for humans to interact with new technologies. Even if a digital afterlife app does not preserve one's consciousness or memories forever, it can play a practical role in helping with the grieving process after a loved

one has passed on. They also raise questions about identity and individualism in the virtual age, asking us to reevaluate what it means to be human in an increasingly digital world. Should these softwares never reach widespread use, they will still provide examples of how our personhood is changing within this new age of technology, which may be helpful to technologists in the near future. Especially as we are supposedly on the precipice of ‘Web 3’ and the expanding metaverse, AI digital afterlife programs ask us to reflect on our changing identities in this time of technological transition. Despite the roadblocks this field faces, AI digital afterlife programs are an essential sector of emerging technology that should receive widespread attention in the face of an increasingly virtualized world.

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