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Original Article

Essence as Algorithm: Public Perceptions of AI-Powered Avatars of Real People

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Abstract - This paper investigates the intersection of generative AI, Large Language Models (LLM), and robotics. Exemplified by systems like ChatGPT and technological marvels such as Ameca the Robot, the combination of technologies will allow humans to transcend the limitations of death. Through digital necromancy, a practice encompassing the technological resurrection of deceased individuals, the ability to not only passively see recordings of loved ones but to interact with them is made possible, leading to ethical and psychological considerations. Therefore, examining these trends extends into the motives underlying engagement with both incorporeal and corporeal reproductions of individuals, with reasons ranging from memory conservation to the attainment of emotional closure. In order to further research in this area, results from a survey are presented, offering a detailed portrayal of prevailing societal perspectives on AI-powered avatars. These insights shed light on the multifaceted interplay between technology and human emotion, the market dynamics propelling this emerging field, and the anticipatory understanding necessary to confront future ethical and functional challenges. The research contributes significantly to the ongoing discourse on the role of AI in society, underscoring the necessity of a balanced approach to innovation and ethics in the domain of AI-driven human representation as integration into society becomes standardized.

Keywords - Digital necromancy, Generative AI, Large Language Models (LLM), Ethical considerations, Grieving process.

1. Introduction

The demarcation between life and death is undergoing a paradigm shift, challenged in novel ways by technological strides that have facilitated the emergence of digital doppelgangers and AI simulacra of both living and deceased individuals. A burgeoning field, intriguingly termed "digital necromancy," has ignited the intellectual curiosity of scholars and laypeople alike, transforming possibilities once confined to speculative fiction into tangible reality [1]. Within the context of the current research, digital necromancy refers to employing cutting-edge methodologies, encompassing Artificial Intelligence (AI) and robotics, to either resurrect or emulate the presence of deceased beings or facilitate interactions with digital embodiments of their characters [2]. This practice's complexity lies in synthesising multifarious data, ranging from online profiles and auditory records to visual images and assorted digital relics, thereby constructing virtual incarnations that extend the existence of individuals within a digital milieu.

This fusion of technological innovation with memorialization yields significant ramifications for human interaction with those who have passed on. It simultaneously unveils a new frontier of ethical contemplation, investigates the constraints of technology, and unveils perplexing quandaries that stimulate further reflection and debate. The profound intersection of technology and commemoration delineated here calls for an earnest examination, not only to understand the inherent possibilities but also to navigate the myriad considerations accompanying such a remarkable advancement in human interaction and representation.

The landscape of interaction with the deceased has been revolutionized by recent technological advancements, unveiling an extraordinary capacity to reconstruct and communicate with those who have passed on [3]. A manifestation of this innovation is the creation of Ameca, an AI-powered avatar designed to personify a distinct individual, as seen at Engineered Arts (https://www.engineeredarts.co.uk/robot/ameca/). Leveraging the capabilities of Large Language Models (LLM), such as GPT-3 and GPT-4, Ameca exhibits an aptitude for participating in dynamic dialogues, articulating diverse emotional states, and adapting to real-world occurrences. The facility with which Ameca mirrors facial expressions and furnishes sophisticated responses engenders an eerily lifelike semblance, thereby effacing the boundaries that differentiate the living from the deceased.

This avant-garde development serves as a beacon for the transformative potential of AI and robotics, inaugurating an unprecedented phase of remembrance and engagement with those who are no longer alive. Such innovative practices inevitably give rise to profound inquiries concerning the essence of identity, the nature of consciousness, and the ethical considerations bound up with the technological revival of the dead [4]. This burgeoning field's evolving dynamics underscore the importance of scholarly attention to the technological marvels and the intricate philosophical questions accompanying this groundbreaking intersection of technology, memory, and human identity.

The human yearning to memorialize and engage with those who have passed away has profound historical roots, with evidence traceable to the Neolithic period [5]. Contemporary technological evolution, however, has catapulted humanity into unparalleled proximity to fulfilling this age-old longing. No longer confined to fictional accounts, substantial progress within the domains of digital twins and AI clones has made possible interactive dialogues with video representations of celebrities and historical luminaries. An illustrative example is found in firms like StoryFile (https://storyfile.com/), which have spearheaded the development of conversational video AI, enabling user interactions with archived interviews of figures such as William Shatner. These virtual exchanges forge a bridge to bygone eras, where interrogative engagement elicits personalized responses, thereby effacing the divide between the living and those who have long departed. Such innovations exemplify the escalating fusion of AI, virtual reality, and human-machine collaboration, proffering a window into the prospective capabilities and ethical ramifications of digital existence beyond death.

Simultaneously, the emergence of digital necromancy and the consequent capacity to reconstitute persons through their electronic traces prompt substantial ethical deliberation. Among the most pressing concerns in the field of digital reanimation is the potential for identity usurpation, where an individual's likeness is illicitly reconstructed without explicit and unequivocal consent. This risk highlights the critical ethical considerations that must be addressed in the utilization of personal data and digital likeness, ensuring that the rights and autonomy of individuals are respected and safeguarded [6]. With the rapid progression of technology, the fabrication of lifelike facsimiles through online profiles, voice messages, or photographic images increasingly obscures the demarcation between permissible use and exploitation [7]. This capability raises a vital question concerning the ownership and control of a digital persona and the authority to determine the manner of virtual representation. It emphasizes the need for clear guidelines and ethical considerations regarding using personal data and the depiction of virtual identity, ensuring respect for individual autonomy and consent in the digital realm. Exploring

these complex ethical landscapes necessitates rigorous scholarly inquiry and thoughtful deliberation, setting the stage for an ongoing dialogue that resonates at the intersection of technology, identity, and morality.

Furthermore, the implications of such technological advancements on human interconnectedness necessitate serious consideration. The growing capacity to create any chosen embodiment of an individual and to engineer corresponding behaviors and responses poses a risk to the authenticity of human communication. This development may lead to a distortion or undermining of genuine human interaction, raising ethical and philosophical concerns about the nature of reality and identity in a technologically mediated world. With the boundaries between authentic and artificial relationships becoming increasingly blurred, numerous challenges are likely to emerge in areas such as trust, emotional intimacy, and the fostering of genuine human connections. These complexities underscore the importance of careful consideration and responsible guidelines in developing and applying technologies that mediate human relationships, ensuring that they do not inadvertently diminish the quality and sincerity of interpersonal connections [8]. The potential exists for a fundamental transformation in the very substance of human relationships, a shift propelled by the capacity for any individual to craft a version of another according to personal desires and anticipations.

Equally significant are the implications of such technology on the process of grieving. The convergence of these innovative techniques provides the possibility of preserving the existence of a loved one indefinitely. This preservation extends from maintaining auditory traces to creating fully interactive digital replicas. Such technological advancements push the boundaries of memory and legacy, raising profound questions about authenticity, ethics, and the nature of human connection. Although such virtual resurrections may offer solace to some, they concurrently give rise to intricate inquiries concerning the nature of grief and the acceptance of mortal loss [9]. Persistent engagement with a digital effigy of a departed person might obstruct the organic evolution of grief, thereby stymieing the indispensable emotional reconciliation and adaptation to existence without the physical presence of the loved one. Lindemann [10] has identified such repercussions in investigating the phenomena termed ‘Deathbots’. This enduring technological tether to the deceased might impede the requisite processes of relinquishment and progression, yielding a complex mosaic of psychological and societal challenges. Examining these multifaceted aspects provides fertile ground for further academic exploration and contributes to an essential discourse at the intersection of technology, emotion, and human experience.

In the complex exploration of the ethical implications of digital resurrection, the academic inquiry must skillfully balance honoring memories associated with the deceased with preserving fundamental aspects of personal autonomy, consent, and the grieving process. The potential benefits and hazards of these technological advancements call for a detailed assessment in relation to the significant effects they might have on human relationships, individual identities, and emotional well-being. As both scholarly and practical investigations delve further into the realm of cybernetic reanimation, the pressing need arises to develop robust ethical frameworks. These frameworks must safeguard personal agency and privacy, protect the authenticity of human experience, and simultaneously harness the positive capabilities of these technologies to enhance understanding of historical and contemporary phenomena.

With the advent of novel generative technologies, AI clones, digital twins, and the capabilities to reconstruct deceased persons or simulate living personalities, new potential has emerged within the fields of AI and robotics. These technological advancements proffer fascinating opportunities for memorializing the departed, interacting with historical personages, and even sculpting the dynamics of human relationships. Yet these opportunities engender profound ethical quandaries related to consent, identity misappropriation, and the potential distortion of personal histories. Additionally, the influence exerted upon the grieving process and the enduring presence of a loved one in manifold digital incarnations instigates profound emotional and psychological contemplations. Through meticulously exploring these intricate themes, the present study attempts to elucidate the confluence of

technology, human experience, and the fabric of contemporary society. The principal focus is an incisive investigation into the public perception of AI-powered avatars of real individuals, a study poised to furnish invaluable insights into the future ramifications of digital necromancy, AI clones, and their consequent impacts on human existence.

2. Literature Review

Along with the rapid progression of technological innovation, scholars and practitioners alike have observed the ascendance of nascent tools and methodologies that have cultivated the ability to communicate with the deceased, a practice known colloquially as "digital necromancy". Within the domain of popular culture, numerous exemplars of this phenomenon are readily identifiable, particularly through the employment of holographic concerts and Computer Generated Imagery (CGI) characters. An example of this development was the holographic performance of the late rapper Tupac Shakur at the Coachella Valley Music and Arts Festival in 2012. Through a fusion of computer-generated imagery and projection technology, an ostensibly lifelike holographic simulacrum of Shakur materialized on stage, engendering a surreal and unprecedented experience [11]. Similarly, the sphere of cinematic entertainment has witnessed the utilization of CGI to resurrect deceased actors and facilitate the reenactment of their performances.

An illustrative example may be found in the film *Rogue One: A Star Wars Story* (2016), wherein the character Grand Moff Tarkin, originally portrayed by Peter Cushing, was digitally reconstituted for an appearance, notwithstanding the actor's passing in 1994 [12]. Although divergent in their specific application, these instances collectively underscore how posthumous interaction has suffused popular culture, engendering a subtle obfuscation of the demarcation between reality and fabrication. Such phenomena prompt scholars and society alike to grapple with complex inquiries regarding the ethical ramifications, societal acceptance, and prospective trajectories of recreating and engaging with deceased individuals through technological apparatuses.

The emergence of digital necromancy, characterized by the novel capacity to recreate and engage with deceased individuals via advancing technologies, manifests a multitude of ethical quandaries and privacy dilemmas. At the nexus of AI, robotics, and the synthesis of individuals' digital footprints, substantial obstacles emerge, most notably the arduous task of protecting privacy while simultaneously honoring the autonomy and dignity of the departed. These unprecedented capabilities give rise to profound ethical inquiries, encompassing concerns such as consent, the sanctity of privacy rights, and the prospective exploitation of personal information. Within the ensuing literature review, an examination will be undertaken of the variegated ethical contemplations attendant to these newfound abilities. The analysis will elucidate the concomitant ramifications for individual rights, relational dynamics, and the intricate processes of mourning and grief.

2.1. Ethical and Privacy Issues in Digital Necromancy

The ethical ramifications and privacy dilemmas have emerged as paramount considerations within the burgeoning field of posthumous AI emulation. The utilization of personal datasets, encompassing social media contributions, email correspondence, voice messages, and even biometric particulars, instigates a profound interrogation regarding the degree to which the privacy of individuals is maintained and revered [13]. The intricate endeavor of reconstructing a person's likeness and character necessitates an intimate exploration of their digital legacy, potentially unveiling information of a sensitive and confidential nature [14]. Such capabilities engender trepidation relating to the issues of consent, data integrity, and the conceivable unauthorized appropriation or mishandling of personal details.

The ethics surrounding the commercialization of deceased individuals' personas and identities represent a further intricate facet of digital resurrection. The proliferation of AI-facilitated duplicates or virtual

representations for economic advantage stimulates debate concerning exploitation, the preservation of dignity, and the honor bestowed upon the departed. When the digital reanimation of deceased individuals is employed for purposes encompassing entertainment, promotion, or other pecuniary interests, apprehensions arise regarding commodification and potential manipulation of their image without assent. The untimely demise of Kobe Bryant in 2020 accentuated the significance of comprehensive estate planning and posthumous branding, particularly for public figures such as athletes, thus illuminating queries pertaining to possession, safeguarding, and the enduring legacy that public figures might cultivate. This incident underscores the necessity for augmented scrutiny of brand cultivation and estate administration practices for such individuals [15]. Moreover, the monetization of deceased individuals invokes deliberations regarding the moral obligations of corporations and entities engaged in the fabrication and deployment of these digital surrogates, in addition to potential repercussions for the legacy and esteem of the departed [16].

In the domain of digital resuscitation after death, the privacy dilemmas and the moralities of commercialization stand as pivotal arenas necessitating scrupulous analysis. Adhering to the privacy rights of those no longer living, procuring endorsement from surviving family members, and guaranteeing the conscientious manipulation of personal data are imperative in preserving ethical norms. Similarly, the contemplation of the ethical repercussions of exploiting digital facsimiles of the deceased for mercantile objectives is vital to preclude exploitation and to maintain the dignity and remembrance of those who have passed. Through a concerted effort to address these ethical quandaries, the employment of these innovative technologies can aspire to cultivate responsible and moral practices that adeptly traverse the multifaceted confluence of technological innovation, personal privacy, and commercial enterprise.

The ethical contemplation surrounding AI-enabled reanimation of deceased individuals presents several complex issues, one of which is the paramount matter of consent. The artificial resurrection of a deceased person's likeness, voice, and personality via AI methodologies instigates debates surrounding whether explicit consent for such a reconstruction was procured during the person's lifetime. Equally significant is the consent, or lack thereof, from family members or legal proxies, which becomes central in ascertaining the legitimacy of recreating the deceased individual [17]. To retain a respectful adherence to the autonomy and personal preferences of the deceased, it is vital to recognize and uphold these wishes within the digital sphere.

Another ethical dilemma arises from the potential for inadvertent misrepresentation of the beliefs and perspectives of the deceased. The algorithms driving AI might fail to adequately discern the intricacies and subtleties of an individual's convictions and stances. As a result, the digitally revived persona might unintentionally manifest opinions or undertake actions incongruent with the true ethos of the deceased, leading to a distortion of the individual's legacy, conveying an erroneous impression of their authentic character, and violating their right to truthful portrayal [18]. Further complexity is introduced through the profound ramifications of AI-driven reanimation on the grieving process. The digital perpetuation or reconstruction of a deceased individual may obstruct the innate progression of bereavement and reconciliation, impairing the emotional recuperation and closure accompanying the acceptance of loss. Such interactions with a digital surrogate of a loved one might engender an illusory sense of companionship or dependence, thereby obstructing the individual's capacity to form new bonds and progress through the stages of grief [19].

Comprehending and conscientiously addressing the ethical intricacies associated with the AI-facilitated reanimation of deceased individuals is an imperative pursuit for establishing honorable and considerate practices within this field. Adherence to the principles of informed consent, the assurance of veracious representation, and cognizance of the potential impacts on the grieving process must stand at the forefront of considerations. Through earnest navigation of these ethical nuances, practitioners and researchers within the domain of AI reanimation can endeavor to harmonize technological innovation with a sense of empathy and moral

accountability. Such an approach may serve to foster a framework that honors the dignity and well-being of both the living and those who have passed, marking a responsible path forward in this compelling and ethically charged intersection of technology and human experience.

In the domain of digital necromancy, privacy considerations wield considerable influence, particularly with respect to the utilization of personal data. The artificial reconstruction of a deceased person's likeness, voice, and individuality necessitates a comprehensive collection of personal information. This extensive repository includes but is not limited to, archived digital footprints, social media posts, electronic mail, voicemail recordings, and photographic evidence. The aggregation and employment of this highly personal data provoke significant questions surrounding consent, proprietorship, and the potential for wrongful appropriation. Ensuring the privacy of individuals, transcending even their demise becomes integral to fostering trust, preserving personal boundaries, and maintaining ethical rectitude [20].

Furthermore, the digital revival of individuals who have passed away introduces a set of pressing concerns regarding potential identity theft. With the broad compilation of personal data requisite for meticulous recreation, a palpable risk emerges that such sensitive information might be commandeered for malevolent intents. This misuse ranges from fraudulent impersonation to more severe illicit acts, the consequences of which can reverberate profoundly among family, friends, and wider societal structures [21]. Thus, protecting the privacy and unique identity of those who have died ascends to a position of essentiality, acting as a bulwark against unauthorized access and attenuating the attendant risks accompanying identity theft.

The imperative to address these privacy considerations within the sphere of digital reincarnation should not be underestimated. This involves the crafting and stringent enforcement of rigorous privacy policies, the secure containment of data, and the meticulous adherence to informed consent protocols. Prioritizing these aspects of privacy, underpinned by robust security protocols, allows the discipline of digital necromancy to anchor itself in responsible and ethical practices. Such a stance ensures the protection of the integrity and dignity of both the deceased and those who survive them. The cultivation of trust through these measures positions digital necromancy as not merely a technological marvel but as a field profoundly attentive to the human condition, offering a way to engage with memories and legacies in a manner that is both innovative and conscientiously respectful of individual privacy and identity.

2.2. Technology in the Grieving Process

Grief is a deeply personal and complex experience, and the desire to reconnect with deceased loved ones is a natural response. However, the ethical implications arise when technology offers the means to recreate their presence artificially. The act of resurrecting the dead raises questions about the moral responsibility of individuals and the potential impact on their own emotional well-being. Does digital resurrection provide genuine closure or merely prolong the grieving process? Can the recreated versions truly capture the essence of the departed, or do they become mere simulations that may hinder the ability to let go and move forward?

There exists a rich body of scholarship on how technology is being leveraged for grief support and the grieving process. For instance, individualized grief support has been the focus of studies, such as Baglione et al. [22], who developed a study on mobile technologies that emphasized the importance of understanding individual needs for designing tools for personalized grieving. Similarly, Massimi [23] introduced a novel system called MyShrine to connect bereaved individuals, illustrating the value of technology in facilitating communal support. These works foreground the need for specialized technological interventions that cater to diverse grieving needs.

Some empirical research has also examined specific instances of technology-mediated grief. For example, the impact of media technology on the daily lives of grief was studied by Mihailidou et al. [24], while Beaunoyer et al.

[25] mapped online support systems for grief and bereavement. These studies offer data-driven insights into the practical manifestations of digital grief support. A specialized focus on therapeutic interventions is evident in Wagner et al. [26], who explored Internet-based cognitive-behavioral therapy for complicated grief, identifying significant symptom improvements. These works signify the promising clinical applications of technology in grief therapy. The therapeutic use of virtual reality has also been explored in grief treatment, as seen in Botella et al. [27], where a virtual reality environment named EMMA's World was created to facilitate emotional processing. Moreover, Pizzoli et al. [28] provide a critical review of virtual reality in coping with mourning, including the depiction of a mother interacting with her deceased daughter's avatar. These studies highlight the potential of virtual environments in therapeutic contexts, facilitating complex emotional interactions.

Several studies have examined the digitization of grief through social media platforms [29-30]. They showcase how platforms like Facebook, Twitter, and Instagram serve as spaces for sharing feelings, connecting with others, and communal grieving. Pacauskas et al. [31] also emphasized the effectiveness of online support groups in coping with grief related to suicide loss. This cluster reveals the growing prominence of online spaces as mediums for public and private expressions of grief. Studies like those of Massimi and Baecker [32] and Moncur et al. [33] explored the human-centered design principles for technologies in the post-mortem interval and bereavement. They emphasize interpersonal communication, materiality, and ethical considerations in designing systems for the bereaved. Massimi's work on thanatosensitively designed technologies [23] further criticized the lack of acknowledgement of users' eventual death in modern technology design.

In synthesizing these themes, an intricate picture of the role played by technology in the grieving process unfolds. From personalized support systems and virtual reality interventions to social media's role as a communal grieving space, the diverse array of studies represents an evolving field that bridges technology, psychology, ethics, and design. At the same time, digital necromancy presents a conundrum, as it offers the possibility of maintaining a connection to deceased loved ones but also raises concerns about the healthy progression of the grieving process. While the technology may provide comfort and solace, it is essential to consider the long-term consequences and the potential for emotional stagnation or detachment from the natural healing process. Striking a balance between honoring the memories of the departed and allowing individuals to navigate the grieving process is paramount. Ethical discussions and guidelines should address the boundaries and responsible use of these experiences, ensuring that the emotional well-being of individuals is not compromised and that the technology does not hinder healthy coping mechanisms.

3. Methodology

This section outlines the methodology employed in this mixed-methods study, which aimed to identify and evaluate the current perceptions of AI-powered avatars of real people. The study also examined the general perceptions of AI, comfort with technology, experience of losing loved ones and applicability of AI avatars to assist in the grieving process. The sample consisted of 28 respondents- 26 from North America and 2 from Central America.

The sample recruitment for this study was conducted meticulously, focusing on a population that could contribute informed insights pertinent to the subject of inquiry. Participants were sourced from various locations, primarily through social media support groups specifically catering to individuals who had lost loved ones. These platforms were targeted intentionally, as they ensured that the population sample had the associated life experience to speak to the study with authenticity and understanding. Collaborating with administrators of these online groups, the research team distributed invitations to participate, clearly outlining the study's objectives and the expected involvement from the participants. This methodological approach not only facilitated the assembly of a relevant and engaged sample but also fostered an environment wherein participants were more likely to provide insightful and reflective responses grounded in their personal experiences with grief and technology.

3.1. Survey Instrument

The survey instrument employed in this study was designed to gather both qualitative and quantitative data. For the present research, the following series of questions were utilized to gauge participants' perspectives, awareness, and preferences concerning the use of AI-powered avatars, as well as the role of artificial intelligence in simulating real people, both living and deceased, and its potential incorporation into aspects of daily life, including grief experiences.

How aware are you that the technology exists that allows the simulation of real people, living or deceased, and that using AI and Large Language Models (LLM), these can be interacted with via conversation?
In general, how comfortable are you with technology?
Do you anticipate that AI-powered avatars of real people, living or deceased, would be something you would want in your life?
Have you personally experienced the loss of a loved one?
How do you believe using AI-powered avatars would impact the grieving process?
How do you think AI-powered avatars could be interwoven into the grief experience? (Select all that apply.)
Do you think AI-powered avatars could make personal experiences in general better or worse?
If AI-powered avatars were able to simulate touch (e.g., hugging, handholding), would this be something you would want to experience?
If given the ability, would you prefer to engage with an AI-powered avatar of a loved one/friend: (Select all that apply.)
What other aspects of AI-powered avatars do you believe would be important to you?
How likely would you be to purchase or use an AI-powered avatar of a loved one?
If you were to use an AI-powered avatar, what features would be most important to you? (Select all that apply.)
Which of the following levels of accuracy would you prefer for an AI-powered avatar of a loved one or friend, and do you think the avatar needs to be tailored to your specific relationship with that person?
How important is it for an AI-powered avatar of a loved one or friend to embody certain personality traits such as neutrality, love, engagement, and reassurance?
If affordable for you, how likely would you pay for an AI-powered avatar of a loved one/friend?

The survey instrument was constructed to yield a multifaceted understanding of the respondents' perspectives and experiences concerning AI and its capability to simulate real living and deceased people. Within the context of the present study, the validity of the survey was corroborated through previously validated literature, emphasizing both the moral implications and the technological feasibility of creating AI-powered avatars. The literature review furnished an analysis of the ethical considerations, societal impacts, and potential applications in the context of grief and human interaction. Utilizing this information, the survey questions were formulated to encompass these complex dimensions, thereby affording a robust comprehension of the factors influencing the acceptance, utilization, and perception of AI-powered avatars. Respondents were contacted through various channels to ensure a diverse demographic representation. By probing into a wide array of subjects, such as personal comfort with technology, anticipated usage, ethical considerations, and potential features, the study aspired to construct a comprehensive understanding of the myriad elements that contribute to the perception and potential incorporation of AI-driven avatars in personal and societal contexts.

4. Results

4.1. Demographics

A nuanced understanding of the participant profile emerges when examining demographic information. The data reflect varied characteristics across age, gender identity, ethnicity, marital status, parental status, and educational levels. With regard to age distribution among the 28 participants, the age groups were categorized

into six segments. Most respondents (35.71%) fell into the 35-44 years age group, followed by 21.43% in the 45-54 years age bracket. The age groups of 25-34 and 55-64 years were evenly distributed, comprising 14.29% each, while the youngest (18-24 years) and oldest (65 or older) categories constituted 10.71% and 3.57%, respectively.

The gender identity of the respondents indicated a predominance of female participants, constituting 67.86%, whereas male respondents comprised 25%. Non-binary or third-gender participants were present at 3.57%, and an equivalent percentage preferred not to disclose their gender identity. Ethnicity presented a clear predominance of White/Caucasian respondents at 89.29%, with 10.71% identifying as Hispanic or LatinX. Among the remaining respondents, 3.57% identified as Black or African-American, while 7.14% identified as mixed race, specifically mixed Black and White. No respondents identified as Asian, American Indian or Alaskan Native, or Native Hawaiian or Pacific Islander.

Marital and parental status presented a diverse range of categories. A majority (53.57%) were married or in a domestic partnership, while 25% were single and never married. Divorced participants made up 14.29%, with the remaining 7.14% preferring not to disclose their marital status. Among the participants, 57.14% reported having children, 39.29% did not have children, and 3.57% chose not to disclose this information. Finally, the educational levels of the respondents were primarily concentrated at higher levels of attainment. Bachelor's degrees were held by 42.86%, followed by Master's degrees at 32.14%, and Doctoral degrees at 14.29%. Vocational or technical degrees were held by 7.14%, while only 3.57% reported a high school education or lower.

4.2. Technological Awareness and Attitude

The participants' attitudes and awareness regarding Artificial Intelligence (AI) technologies emerged as multifaceted and reflective of a broad spectrum of viewpoints and knowledge levels. These areas were investigated through three questions focusing on general attitudes towards AI technologies, awareness of specific AI applications, and technological comfort levels.

Firstly, examining the general attitude towards AI technologies revealed a diversified spread across five categories. A combined 32.14% expressed negative attitudes, comprising 14.29% as extremely negative and 17.86% as somewhat negative. Neutral attitudes were held by 32.14% of participants, whereas the positive spectrum included 28.57% who were somewhat positive and 7.14% who were extremely positive. Thus, while there was no predominant trend towards either extreme, the largest proportion remained neutral, indicating neither approval nor disapproval of AI technologies.

Secondly, awareness regarding technologies enabling real people's simulation through AI and Large Language Models (LLM) varied across levels. A small minority (7.14%) reported being not aware at all, while 25% were slightly aware. The largest proportion, 28.57%, were moderately aware, followed by 14.29% who were very aware and 25% who were extremely aware. These responses suggest a gradual increase in awareness across the categories, with a notable portion possessing significant awareness of such technologies.

Lastly, comfort with technology was assessed both generally and with respect to AI-powered avatars. In the general comfort assessment, a clear majority of 74.07% responded with 'No', signifying discomfort, while 18.52% answered 'Maybe', and a minimal proportion of 7.41% responded with 'Yes'. These results indicate a prevalent discomfort or reluctance towards engaging with AI-powered avatars of real people.

4.3. Perceptions of the Role of AI-Powered Avatars in the Grieving Process

The role of AI-powered avatars in the grieving process emerged as a salient theme, highlighting diverse perspectives among the respondents. While technology has seen a rise in various facets of human life, the

application of AI-powered avatars in the context of grief and loss is a complex subject. The data elicited opinions on the personal experience of loss, the perceived impact of AI on the grieving process, potential ways AI-powered avatars could be interwoven into grief experiences, and general beliefs about AI's impact on personal experiences.

First, a significant proportion of participants (92.59%) had personally experienced the loss of a loved one. This provided a contextual backdrop to the following questions, underlining the personal relevance of the subject to many respondents. When examining beliefs about how AI-powered avatars would impact the grieving process, responses were varied: 48.15% believed the impact would be negative, 33.33% were unsure, 11.11% anticipated a positive impact, and a small minority (7.41%) remained neutral. These findings suggest a prevailing concern about the negative implications of such technologies on the grieving process. One respondent's comments encapsulated these mixed feelings, stating: "I chose all of these options because I can envision, to an extent, the use of AI in the grief experience, but I do not personally believe in relying on AI for such a thing."

On the question of how AI-powered avatars could be interwoven into the grief experience, responses revealed a range of potential roles: as a virtual companion for support (19.57%), a tool for revisiting memories (19.57%), a means of closure (26.09%), or not applicable (23.91%). The responses under the 'Other' category were illuminating; one respondent noted the potential dual nature of AI in this context: "They could both be used as a tool for revisiting memories but also a tool for re-inflicting trauma, to feel the pain associated with the loss again." When inquired if AI-powered avatars could make personal experiences better or worse, the majority (48.15%) perceived that they would make experiences worse, while 14.81% believed in improvement, and 37.04% remained unsure.

4.4. Preferences on Types of Interactions with AI Avatars

Exploring preferences concerning interactions with AI-powered avatars unveils an intricate web of attitudes and expectations within the surveyed population. These attitudes extend to various domains, such as simulated tactile experiences, visual and auditory representations, and the embodiment of personality traits. Through a detailed analysis, the ensuing narrative aims to present the key findings concerning these preferences, which help understand the complex nature of human-AI interactions.

First and foremost, the respondents' inclination towards the simulation of touch by AI avatars is of particular interest. A majority of the surveyed individuals (81.48%) expressed their disapproval of experiencing simulated touch, such as hugging or handholding, by AI-powered avatars, as opposed to a minor proportion (7.41%) who showed a positive inclination. This finding underscores a general reluctance to blur the boundary between human physicality and virtual AI representation. This view asserts that touch simulation might lead to a disingenuous or artificial experience, affecting the authenticity of human connections.

The second facet of preferences pertains to the modes of engagement with AI-powered avatars of a loved one or friend. The survey reveals a pronounced preference for not engaging with such avatars (66.67%), followed by interest in a realistic 3D digital representation (16.67%). The concern for realism and authenticity, particularly for those who prefer a 3D digital representation, aligns with the need for a tangible connection. Yet, the overall reluctance illustrates an underlying skepticism or discomfort in accepting AI avatars as substitutes or representations of human beings. One respondent encapsulates this sentiment aptly: "Personally, I would not want an AI avatar to emulate humans in appearance or emotional responsiveness." Lastly, the importance of embodying specific personality traits in AI avatars emerges as a pivotal concern. A significant portion of the respondents deemed it extremely important for the avatar to reflect the person's personality and traits as closely as possible (47.37%), while some considered it moderately important (36.84%). Such emphasis on accurate personality simulation draws attention to the intricate nature of human identity and relationships, which AI avatars might struggle to capture faithfully.

Lastly, the exploration of preferences concerning AI-powered avatars concluded with a question about the readiness of individuals to pay for such an avatar of a loved one or friend deserves attention. As per the survey data, a considerable majority (85.19%) indicated that they are not likely to pay for an AI-powered avatar, even if affordable, with a minuscule fraction expressing that they are very likely (3.70%) to do so. These findings delineate a distinct aversion toward commercial investment in technology that seeks to replicate or represent human connections.

5. Discussion

Certainly, it is imperative to acknowledge the limitations inherent in this study, particularly in relation to the sample size. The research was conducted with a relatively small cohort of participants, carefully selected to match the specific criteria of the investigation. While the sample's specialized nature enriched the depth and relevance of the findings, the constrained size simultaneously limits the extent to which these conclusions may be generalized to broader populations.

The specificity of recruiting from social media support groups focused on loss may also introduce biases tied to technological literacy and accessibility, potentially excluding certain demographics. Consequently, though the insights gained from this study provide valuable understanding and nuanced perspectives, the generalizations that can be drawn remain tentative. Future research with more diversified and extensive sampling might be necessary to validate and extend the conclusions reached in this investigation. The recognition of these limitations does not diminish the value of the present study but rather frames its contributions within a precise and bounded context.

The findings themselves reveal a multifaceted and nuanced picture, highlighting both opportunities and challenges in the domain of human-AI interaction. The data points to a prevalent hesitation toward the simulation of intimate human interactions, such as touch, by AI avatars. Most respondents expressed resistance to such simulations, emphasizing a preference for clear delineation between human and AI experiences. This reluctance can be understood through the framework of human authenticity and intimacy, values that might be compromised through artificial replication. Also, the preference for different types of interactions with AI-powered avatars delineates a selective engagement with technology. Most respondents rejected the notion of interacting with a realistic 3D digital representation or a fully fabricated digital twin, favoring non-visual or less sophisticated modes instead. Such preferences might be underpinned by concerns about the uncanny valley phenomenon, wherein highly realistic AI representations can elicit feelings of eeriness or discomfort [34].

A noteworthy observation from the survey is the marked disinterest in commercializing AI avatars of loved ones or friends. The overwhelming unwillingness to pay for such technology underscores a resistance to the commodification of personal relationships, aligning with sociological theories that warn against market intrusion into intimate human spheres [35]. At the same time, the survey findings also reveal a pronounced desire for accuracy in portraying a loved one's personality and behavior in an AI avatar. This emphasis on authenticity resonates with the literature on relational AI, where the faithfulness of representation plays a crucial role in user acceptance and satisfaction [36].

However, there are also some areas of ambiguity and contradiction. For instance, while some respondents stress the importance of realistic appearance and accurate personality simulation, others explicitly reject these aspects, emphasizing instead the importance of distinguishing between human and AI interaction. These inconsistencies may reflect a broader societal ambivalence towards AI, echoing ongoing debates in the fields of ethics, technology, and social sciences [37]. Therefore, the survey illuminates a complex interplay between acceptance, resistance, desire for authenticity, and concern over ethical boundaries. It offers a valuable snapshot

of contemporary attitudes towards AI avatars, a rapidly evolving field with profound implications for human interaction, social norms, and cultural values.

6. Conclusion

Digital necromancy unveils a riveting yet ethically intricate panorama, particularly within the realms of popular culture. The ethical contemplations, constraints, and potential applications of this technological advancement have been assiduously examined in the preceding text. The emergent capacity to recreate interactions with the deceased prompts considerable privacy apprehensions, specifically concerning personal data protection and the looming threat of identity misappropriation. The commercialization of such interactions and the requisite consent from both the deceased and familial stakeholders further complicate the ethical landscape. Moreover, the ramifications on the grieving process and the moral dimensions of utilizing AI to engender interactions with the deceased warrant scrupulous scrutiny.

While technological progress has facilitated remarkable accomplishments in the simulation of personalities and engagements with deceased individuals, the deployment of this technology must be approached with circumspection and subject to regulation. The extant limitations of technology, including challenges in faithfully mirroring individual personalities and experiences, potential cultural misrepresentation, and reliance on accessible data, must be candidly acknowledged. In the pathway ahead, continuous dialogue and reflection on the ethical ramifications of these post-mortem experiences stand as pivotal considerations. As this technology evolves, adopting a prudent and responsible stance is paramount, encompassing prioritization of consent, protection of privacy, and assurance of accurate portrayal. Addressing these ethical quandaries and nurturing a communal comprehension enables navigation through the multifaceted domain of digital essences, potentially harnessing them for constructive and meaningful applications. The intersection of burgeoning technologies heralds unexplored prospects for popular culture, historical reenactments, and the bridging of intergenerational divides.

Nevertheless, the urgency to proceed with a judicious mindset, striking a harmonious equilibrium between innovation and ethical considerations, cannot be overstated. In embracing these novel technological capabilities, a nuanced approach that addresses privacy concerns, respects the desires of the deceased and enriches cultural experiences must be maintained. Future trajectories in this field will inevitably be shaped by persistent discussions and ethical deliberations, serving as the cornerstone for this technology's responsible and significant utilization in forthcoming epochs.

Authors' Contributions

Conceptualization, J. Ratican; Methodology, C. Biri; Validation, J. Hutson; Investigation, J. Hutson; Writing – Original Draft Preparation, J. Hutson; Writing – Review & Editing, J. Hutson.; Visualization, J. Hutson.

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