



Research Article

Between ancestors and algorithms: ritual responsibility as a culturally sensitive framework for responsible innovation in DeathTech

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ABSTRACT

This article examines the ethical, cultural, and political implications of DeathTech—digital afterlife technologies such as memorial platforms, chatbots of the deceased, voice clones and AI-generated avatars—arguing that existing frameworks of Responsible Research and Innovation (RRI) are insufficient when applied to symbolically charged domains such as death and mourning. While current debates often focus on fairness, accountability, privacy and transparency, these procedural tools overlook the ritual, communal and intercultural dimensions through which societies generate meaning around death. Drawing on philosophical analysis, comparative ethics, anthropological literature and empirical fieldwork conducted in Benin, the article introduces the concept of ritual responsibility. This notion captures the ethical obligation to respect and sustain the symbolic boundaries and collective practices that regulate mourning, remembrance and the transition from the status of the deceased to that of an ancestor.

Beninese Vodun traditions provide a particularly illuminating case study because they articulate death not as an individual event but as a socially mediated transformation enacted through structured rituals, collective responsibility and the mediation of ritual specialists. These practices reveal the limits of universalised governance models and show how mourning can become ethically and psychosocially fragile when severed from communal frameworks. By bringing these insights into dialogue with current digital afterlife technologies, including griefbots, memorialisation platforms and postmortem avatars, the article proposes a ritual-sensitive reconfiguration of RRI.

The article reinterprets anticipation, reflexivity, inclusion and responsiveness through ritual responsibility and translates this reconstruction into practical governance and design recommendations, including grief impact assessments, collective consent, culturally meaningful temporal limits, interpretability for bereaved users, and accountability metrics oriented toward dignity, community cohesion and symbolic non-harm. It argues that digital afterlife technologies must be designed and regulated not only as technical artefacts but as moral infrastructures capable of reshaping values, relations and collective memory.

1. Introduction

The emergence of DeathTech and, more broadly, of the Digital Afterlife Industry (DAI) is reshaping contemporary understandings of death, mourning and remembrance. A growing ecosystem of bereavement-support applications, digital memorial archives, commemorative chatbots, voice clones and immersive avatars purports

to preserve memory and extend forms of posthumous presence (Walter, 2015; Öhman & Floridi, 2017; Hallam & Hockey, 2020; Puzio, 2023; Hollanek & Nowaczyk-Basińska, 2024). Although their attraction rests on promises of continuity, affective solace and the mitigation of grief, these technologies raise far-reaching ethical concerns. Scholars have highlighted the risks of commodifying mourning, exacerbating the vulnerability of bereaved users, weakening posthumous privacy, and

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altering culturally embedded meanings of death (Bollmer, 2018; Bassett, 2022; Lindemann, 2022).

Current debates are predominantly articulated through the lexicon of AI ethics—fairness, accountability, privacy and transparency (Jobin et al., 2019; Mittelstadt, 2019). While indispensable, these principles remain insufficient when technologies intervene in domains where vulnerability is existential and meaning is constituted through collective rituals. Death is not merely a biological termination but a symbolic transition mediated by culturally codified social practices that structure mourning, remembrance and the continuing place of the dead within the community (Mbiti, 1990; Silverman et al., 2021; Forte, 2022).

This article is guided by two research questions. First, what ethical blind spots emerge when conventional RRI frameworks are applied to digital afterlife technologies? Second, how can an intercultural reconstruction of mourning practices—grounded in Beninese Vodun traditions—reorient RRI toward a more culturally sensitive governance of DeathTech? The central objective is therefore not merely to add cultural “context” to an existing framework, but to show that technologies of posthumous presence require a deeper conception of responsibility attentive to ritual mediation, communal belonging and symbolic thresholds.

Methodologically, the article adopts an approach of intercultural normative reconstruction. By this we mean a procedure that combines normative analysis with comparative cultural interpretation: it identifies the implicit assumptions embedded in technological and regulatory imaginaries; places these assumptions in dialogue with alternative moral grammars of death and mourning; and reconstructs RRI in light of the normative insights that emerge from this comparison (Benhabib, 1992). The approach is not ethnographic description alone, nor a simple application of universal principles to a local case. It is a critical movement between situated practices and normative concepts, aimed at testing the adequacy of responsibility frameworks in culturally plural domains.

Beninese Vodun traditions are selected as the primary case study for three reasons. First, they offer a living and socially consequential example of death as a collective transition rather than as a merely private psychological event. Second, they articulate the relation between living and dead through ritual thresholds, temporal sequences, specialists, offerings and communal obligations, thereby making visible dimensions often absent from digital ethics. Third, they emerge from fieldwork and bioethical research on therapeutic pluralism in Benin, where illness, care and death are regulated through negotiations between biomedical, spiritual and communal orders (Author, 2017; Author, 2018a,b,c,d; Author et al., 2022). The case is not presented as representative of “Africa” as a whole; rather, it functions as a philosophically productive counterpoint to individualised and commercialised models of digital mourning.

The article proceeds as follows. Section 2 reviews RRI and the current debate on digital afterlife technologies, identifying the blind spots that motivate the proposed reconstruction. Section 3 clarifies the methodological approach and the rationale for the Vodun case study. Sections 4 and 5 analyse Vodun traditions and compare them with DeathTech, highlighting both affinities and tensions. Section 6 introduces ritual responsibility as a normative lens for reimagining RRI. Section 7 translates this lens into policy and design guidelines. Section 8 discusses cases and practices, including ritual mourning in Benin and governance debates in European policy contexts. The conclusion summarises the contribution, acknowledges limitations and identifies future research directions.

2. Context: RRI and the digital afterlife

The framework of Responsible Research and Innovation (RRI) has become a central reference point in European debates on the governance of emerging technologies. Structured around the four dimensions of anticipation, reflexivity, inclusion and responsiveness (Stilgoe et al.,

2013), RRI seeks to align innovation with societal needs and values. In fields such as artificial intelligence, biomedical engineering and digital health infrastructures, it has been mobilised to address equity, accountability, public trust and the embedding of values in technological systems (van de Poel, 2020).

When applied to DeathTech, however, conventional RRI approaches reveal significant blind spots. Anticipation is often confined to technical risks—privacy breaches, data misuse, cybersecurity or system failure—while neglecting the symbolic, social and ritual implications of extending digital presence (Cann, 2015). Reflexivity remains largely grounded in Western paradigms, presupposing individualised and psychologised models of mourning and overlooking traditions in which the care of the dead is a collective responsibility and ancestors remain active moral presences in community life (Mbiti, 1990; Forte, 2022). Inclusion often reduces to stakeholder consultation in high-income contexts, marginalising communities whose funeral practices are relational, extended and mediated by ritual specialists. Responsiveness is typically interpreted in procedural terms—audits, transparency reports or user feedback—without addressing the symbolic boundaries that govern mourning and remembrance.

This limitation is not unique to DeathTech. Smallman (2022) argues that AI ethics in healthcare has often focused on individual-level questions such as transparency, fairness, responsibility and privacy, while insufficiently addressing how AI systems reshape institutional and social arrangements across multiple scales. This multiscale argument is important for the present article because DeathTech also operates across scales: it affects individual grief, family relations, community memory, data governance, commercial markets and cultural imaginaries of death. The concept of ritual responsibility extends this multiscale perspective by insisting that the relevant “scales” are not only social and institutional but also symbolic and ritual.

Recent DeathTech literature strengthens this concern. Puzio (2023) shows that DeathTech may support grief, education and remembrance, but also demands active ethical design because digital continuation can make the deceased appear “too alive.” Hollanek and Nowaczyk-Basińska (2024) analyse griefbots, deadbots and postmortem avatars through the perspectives of data donors, data recipients and service interactants, drawing attention to consent, dignity, possible dependency and psychological harm. Spitale and Germani (2025) define “digital ghosts” as AI-mediated posthumous representations and propose ethical requirements such as premortem intent, mutual consent, transparent data use, restricted access and minimal behavioural agency. These contributions provide a crucial state of the art. Yet they only partially address the ritual and intercultural question: how should digital afterlife technologies be governed when memory of the dead belongs not only to individuals but also to families, communities and ritual orders?

Within this context, the digital afterlife is not a marginal curiosity but a paradigmatic test for RRI. It exposes the tension between universalist governance frameworks and plural realities of mourning. Anticipation must account for symbolic and ritual impacts; reflexivity must interrogate cultural presuppositions; inclusion must incorporate intercultural and community-based co-design; and responsiveness must be reinterpreted as ritual responsibility. Only by reimagining RRI through these principles can DeathTech evolve into infrastructures of responsible memory rather than instruments of commodified grief.

3. Methodological approach: intercultural normative reconstruction

The method adopted here can be described as intercultural normative reconstruction. It has three steps. The first is diagnostic: the analysis identifies the assumptions embedded in dominant technological imaginaries of the digital afterlife, especially the view that mourning can be treated as an individual affective process supported by personalised digital tools. The second is comparative: these assumptions are placed in dialogue with a culturally distinct grammar of death, namely Beninese

Vodun practices in which mourning is communal, ritually mediated and temporally structured. The third is reconstructive: the insights gained from this comparison are used to reformulate RRI, not by rejecting anticipation, reflexivity, inclusion and responsiveness, but by deepening them through ritual responsibility.

This approach differs from a universalist application of ethics because it does not begin from the assumption that one governance framework can be exported unchanged across contexts. It also differs from cultural relativism because it does not treat local practices as immune from critique. Rather, it asks how situated practices can disclose morally relevant dimensions that a dominant framework has failed to see. In this sense, Vodun traditions are not used as an exotic illustration but as a critical lens. They reveal that the ethical object of DeathTech is not only data, consent or transparency, but also the fragile symbolic mediation through which the dead are separated, remembered and sometimes reintegrated as ancestors.

The choice of Beninese Vodun traditions is therefore theoretically justified by their capacity to illuminate what digital afterlife governance tends to obscure: the collective ownership of memory, the ritual management of temporal thresholds, the role of mediators, and the moral risk of improper relations with the dead. The fieldwork background on therapeutic pluralism in Benin further supports this choice by showing how biomedical, spiritual and social orders coexist in everyday practices of illness, care and death (Author, 2017; Author, 2018a-d; Author et al., 2022). The case does not claim exhaustiveness. Its function is heuristic and normative: it enables a reconstruction of RRI that is more sensitive to culturally plural forms of mourning.

4. Vodun traditions and ancestral dialogue

Among West African traditions, Vodun, with its cultural complexity (Zinzindohoué, 2016; Forte, 2010), offers a crucial lens through which to examine the ethical challenges posed by DeathTech. In Vodun cosmologies, death is not a rupture but a transformation: the deceased remain present as ancestors, continuing to influence and guide the living (Mbiti, 1990; Forte, 2022). Death is viewed as a journey of the soul toward the land of the dead and toward a transformed status within the moral life of the family and community. The spirits of deceased ancestors, including Egungun figures in related Yoruba and Beninese traditions, may become sources of wisdom, justice and protection through ritual mediation (Falen, 2020; Landry, 2022).

Rituals—funerary ceremonies, masks, offerings, sacrifices, divination and collective commemorations—structure mourning, provide symbolic closure and reaffirm communal bonds. Their function is not merely expressive but normative: they organise the passage from the status of the dead person as a potentially disruptive presence to the status of ancestor. The focus on ritual demonstrates the importance of interconnection between the living and the dead and of maintaining spiritual and social balance (Tourreil, 2019). Mourning is therefore a collective responsibility embedded within the symbolic and social order of the community.

These practices exemplify ritual responsibility. Mourning is mediated by ritual specialists, circumscribed by temporal and symbolic thresholds, and transformed into solidarity rather than isolation. Fieldwork on bioethics and therapeutic pluralism in Benin confirms the normative force of these practices: Vodun traditions are not residual or pre-modern systems, but living social orders that mediate vulnerability through ritual, solidarity and negotiation between visible and invisible worlds (Author, 2018a-d; Author, 2019). To ignore them is to risk reproducing ethical colonialism by reducing mourning to an individualised, decontextualised and commodified experience.

5. Parallels and tensions: DeathTech and Vodun

The comparison between Vodun traditions and DeathTech reveals both affinities and tensions. Both seek to preserve bonds with the dead.

In Vodun, however, this continuity is enacted collectively and regulated through rituals that allow for symbolic closure and protect individuals from excessive or destabilising mourning. In DeathTech, by contrast, continuity is often produced through algorithmic simulations—avatars, chatbots, voice clones and commemorative platforms—typically oriented toward individual users and commercial logics.

Concrete examples clarify the problem. Project December became widely known after Joshua Barbeau used it to simulate text conversations with his deceased fiancée; the system required choices about the duration and credit-based continuation of the chatbot, thereby making the simulated relation dependent on platform design and payment structures. HereAfter AI and StoryFile offer less generative but still interactive forms of legacy preservation through recorded memories, voices or conversational video interfaces. These systems differ technically, but they share a common ethical issue: they mediate posthumous presence through design choices that may shape how users interpret absence, continuity, closure and the status of the deceased.

This divergence is ethically and socially significant. Vodun demonstrates that mourning is collective, bounded and accountable to the community, whereas DeathTech risks privatising grief and eroding the symbolic safeguards that transform vulnerability into solidarity. The central issue is not whether digital tools should be rejected, but whether they can be designed so that they do not substitute algorithmic availability for ritual mediation.

Political debates on digital health and AI governance in European contexts have raised analogous concerns about the risks of exporting European-designed models without proper cultural adaptation (European Commission, 2023). These concerns are especially relevant when technologies are introduced into settings where concepts of personhood, death, care and memory differ from those presupposed by platform developers. Taken together, Vodun and DeathTech illuminate the stakes of responsible innovation: rituals sustain meaning and solidarity, whereas algorithmic mediation can commodify mourning when detached from communal responsibility.

6. Reimagining RRI through ritual responsibility

Responsible Research and Innovation has been widely promoted as a framework through which technological development may be aligned with societal values. Stilgoe et al. (2013) identify four key dimensions—anticipation, reflexivity, inclusion and responsiveness—intended to secure collective stewardship over innovation. Yet, when applied to digital afterlife technologies, these dimensions remain underdetermined. Death is not merely a domain of risk; it is a symbolic threshold structured by rituals that mediate mourning and sustain collective identity. For RRI to be adequate to DeathTech, it must therefore be rethought in terms of ritual responsibility.

Ritual responsibility refers to the ethical obligation for technologies to respect, support and not distort the symbolic and communal practices through which societies confront death. It is not an additional principle placed beside RRI, but a way of deepening its four dimensions. Rituals embody anticipation because they provide foresight, temporal boundaries and symbolic closure that prevent mourning from becoming overwhelming. They enact reflexivity because each ceremony reaffirms and interrogates what death means for the living. They foster inclusion because they gather families and communities into processes that ensure no bereaved person is left isolated. Finally, they constitute a model of responsiveness because ritual practices adapt to the circumstances of death, the status of the deceased and the needs of the community.

Drawing on Vodun traditions, in which mourning is collective, ritualised and accountable to the ancestors, the argument demonstrates that RRI must move beyond procedural adjustments. Ritual responsibility reveals the ethical depth of anticipation, reflexivity, inclusion and responsiveness, requalifying them as practices of symbolic and social meaning rather than merely administrative principles.

In this sense, governing DeathTech responsibly requires ensuring that digital afterlife technologies do not bypass rituals, privatise grief or commodify memory. Instead, they must remain accountable to the symbolic thresholds that communities recognise between life and death. Only by placing ritual responsibility at the heart of RRI can DeathTech develop not into an industry of commodified mourning but into an infrastructure of solidarity and memory.

7. Policy and design guidelines

If DeathTech is to be governed responsibly, ethical reflection must translate into concrete commitments. These commitments cannot be reduced to technical checklists or market-driven indicators. They must embody ritual responsibility: the recognition that digital afterlife technologies intervene in symbolic domains where shared meaning is at stake.

From a governance perspective, this requires mechanisms capable of anticipating not only legal and technical risks but also cultural and ritual disruptions. Just as data-protection law has introduced impact assessments, one might envision grief impact assessments to evaluate how technologies may reshape mourning. Such assessments should ask whether the system risks prolonging dependency, confusing simulation with presence, exposing users to unwanted posthumous interaction, commercialising intimacy through engagement metrics, or disrupting culturally meaningful mourning periods. They would be meaningful only if guided by intercultural ethics committees comprising philosophers, anthropologists, bereavement experts, data-governance specialists and, where appropriate, ritual or community representatives.

Collective consent is particularly important. In practice, it should not mean an unworkable requirement that every person who knew the deceased must agree. Rather, it should be structured as a layered process. First, premortem consent from the data donor should be the default requirement for generative simulations, voice clones and postmortem avatars. Second, a legally or socially recognised steward—such as a designated family member, executor, or community representative—should authorise activation and define the purposes, audience and duration of use. Third, close relatives or affected community members should have objection and withdrawal mechanisms, especially when the digital representation alters the shared memory of the deceased. Fourth, access rights should be differentiated: a public memorial page, a family archive, and an interactive griefbot require different levels of consent, oversight and restriction.

Temporal limits should also be culturally meaningful. A responsible system might include default cooling-off periods before activation, scheduled pauses corresponding to mourning phases, or sunset clauses after which an avatar becomes inactive unless renewed through an explicit communal decision. In a Vodun-informed perspective, the point is not to translate ritual periods mechanically into software settings, but to recognise that mourning requires thresholds. A system that is always available, always responsive and always commercially optimised risks preventing the symbolic work of separation.

Concrete design features can operationalise these commitments. A griefbot should clearly disclose that it is a simulation at the start of each interaction and should avoid claims of sentience, spiritual authenticity or direct continuity with the deceased. A memorial platform could include communal ritual spaces where families upload prayers, songs, photographs, genealogies or stories according to culturally specific protocols. A postmortem avatar could be restricted to archival testimony rather than open-ended generative improvisation, thereby reducing misrepresentation. Symbolic anchoring might include culturally chosen images, dates, languages, silence periods, mourning colours, prohibitions on commercial advertising, or prompts that invite users to gather with others rather than interact alone.

User safeguards should be conceived not merely as protections against harm but also as opportunities for meaning. Default settings that limit repeated use, reminders to take breaks, referral links to

bereavement support, and emergency escalation for signs of distress can reduce dependency. At the same time, the system should support communal remembrance rather than substitute for it. The relevant question is not only whether the user understands how the model works, but whether the bereaved community can interpret what the technology is doing to the dead person's memory.

Finally, accountability requires rethinking evaluation metrics. The success of DeathTech should not be measured by engagement or retention rates but by its contribution to psychosocial well-being, community cohesion, dignity of the deceased and respect for ritual frameworks. Audits of “algorithmic ancestors” would test not only technical robustness but also whether the system continues to serve the ethical and cultural contexts in which death is experienced. (Figs. 1 and 2)

8. Cases and practice

The conceptual reconstruction of RRI gains clarity and force when confronted with concrete practices. Two domains—ritual mourning in Benin and policy debates on culturally sensitive health technology governance—illustrate how responsibility in DeathTech can be operationalised through ritual foresight, cultural critique, intercultural co-design and ritual accountability.

8.1. Ritual mourning in Benin

Ethnographic fieldwork and bioethical research in Benin have shown that mourning constitutes a collective transition structured by ritual specialists and symbolic thresholds (Author, 2017; Author, 2018a-d; Author et al., 2022). In Benin, mourning concerns everyone. It unfolds as a collective undertaking over several days, grounded in the conviction that death is not a total annihilation but a transformation that must be carefully managed through social rituals and spiritual practices (Falen, 2020; Landry, 2022). The management of the dead is crucial for the health and tranquillity of the living. Each cause of death may correspond to a precise ritual cycle; age and status likewise determine the appropriate ritual actions. The body is treated with care, but many rituals are directed toward the *yê*, or soul. Proper management of the corpse and mourning rites serves to pacify the deceased and protect the living (Tourreil, 2019).

The first and second funerals act upon different components of the deceased to separate them from the living and send them to the land of the dead. Yet this process does not end in disappearance. The dead must transition from the status of defunct to that of ancestor: from a buried body within the household to a name and presence integrated into the sanctuary of the founding ancestor, thereby participating in community life during marriage choices, the selection of a newborn's protective ancestor, first-fruits festivals and other occasions. It is this passage—extended through time and space—that ritual action, particularly that of the *tanyinon*, the priestess of the ancestors, must accomplish (Jamous, 1994).

Compared with DeathTech, these practices illuminate what is lost when mourning becomes personalised through algorithms. A chatbot may simulate the voice of the deceased, but without ritual mediation it risks generating dependency, ambiguity and isolation. The comparison does not imply that digital mediation is inherently illegitimate. Rather, it shows that continuity with the dead requires limits, mediators and communal interpretation. The Beninese case thus demonstrates that responsibility in technologies of death is inseparable from ritual and communal life. It juxtaposes inspired speech—divination through ritual processes—and reconstructed speech—voice cloning or chatbot simulation—as two ways of “bringing back the dead” that are grounded in different regimes of truth, authority and practice.

8.2. Policy debates and intercultural governance

Policy discussions on digital health and AI for African contexts have

Domain	RRI dimension	Ritual-responsible translation	Example design or governance feature
Governance	Anticipation	Assess symbolic, social and ritual disruption, not only privacy or security risk.	Grief impact assessment; intercultural ethics review; risk questions on dependency, commodification and unwanted posthumous interaction.
Design	Reflexivity	Make cultural assumptions visible and negotiable.	Clear simulation disclosure; culturally specific memorial settings; options for silence periods, restricted access and non-commercial modes.
Consent and participation	Inclusion	Move beyond the isolated user toward families, stewards and affected communities.	Premortem donor consent; family/community stewardship; objection and withdrawal rights; differentiated access levels.
Accountability	Responsiveness	Evaluate whether the system supports mourning, dignity and symbolic boundaries.	Sunset clauses; distress safeguards; audits oriented toward well-being, community cohesion and ritual non-harm.

Fig. 1. Ritual responsibility translated into governance and design commitments.

Original RRI principle	Gap in conventional DeathTech governance	Policy/HealthTech governance concern	Insight from Beninese mourning rituals	Reimagined RRI through ritual responsibility
Anticipation	Focus on privacy, cybersecurity and data misuse; limited attention to symbolic harm and prolonged dependency.	Technologies may be exported without anticipating cultural disruption or unequal infrastructures.	Rituals anticipate disruption by structuring mourning through temporal phases, specialist mediation and symbolic closure.	Ritual foresight: assess symbolic, psychosocial and communal impacts before deployment.
Reflexivity	Western, individualised and psychologised assumptions about grief remain implicit.	Governance may treat European or Global North health models as universal.	Death is interpreted through a plural moral order linking body, soul, family, ancestors and community.	Cultural critique: make assumptions about death, personhood and mourning explicit and contestable.
Inclusion	Stakeholder engagement often centres users, firms and regulators, excluding families, ritual specialists and communities.	Participation risks remaining rhetorical unless structurally embedded.	Mourning is a collective responsibility involving kinship networks, priests/priestesses, elders and community members.	Intercultural co-design: include bereaved communities and culturally relevant mediators in design and review.
Responsiveness	Audits and transparency reports may not address violations of ritual boundaries or communal memory.	Adaptive governance is needed when technologies enter contexts with different symbolic orders.	Rituals adapt to cause of death, age, status and community needs; improper rites can disturb the living-dead relation.	Ritual accountability: enable suspension, withdrawal, temporal limits, culturally appropriate modification and non-commercial memorial modes.

Fig. 2. RRI gaps and ritual-responsible reconstruction for DeathTech.

increasingly raised the need for cultural adaptation and context-sensitive governance. The HealthTech Summit held in Brussels in March 2023 provides one relevant institutional reference point because it brought together debates on digital health, innovation, investment and international cooperation (European Commission, 2023). While such forums do not by themselves guarantee intercultural justice, they show that the governance of health technologies cannot be separated from questions of context, infrastructure, trust and social meaning.

For DeathTech, the lesson is sharper. A griefbot or memorial platform exported into a culturally plural setting does not merely introduce

a new service; it intervenes in practices through which communities organise relations between the living and the dead. Ritual foresight would therefore require developers and regulators to ask, before deployment, which mourning practices might be displaced, which authorities might be bypassed, and whose memory of the deceased would be privileged. Cultural critique would require questioning the assumption that continuous interaction is always beneficial. Intercultural co-design would require the participation not only of users but also of families, elders, community representatives, religious or ritual specialists and bereavement professionals where appropriate. Ritual

accountability would require mechanisms for suspension, withdrawal and modification when a technology violates symbolic boundaries.

8.3. Lessons for responsible innovation

Taken together, these cases demonstrate that the four dimensions of RRI, once reimagined, are not abstract ideals but lived practices. Beninese mourning rituals illustrate how communities anticipate, reflect, include and respond to death; policy debates illustrate both the promise and the difficulty of institutionalising these same dimensions within global technology governance.

Praxis thus grounds theory: responsibility in DeathTech is realised through practices that anticipate symbolic disruptions, interrogate cultural assumptions, co-design trans-traditional forms of remembrance and respect communal rituals. It is through these concrete enactments that responsible innovation takes shape—not as procedural compliance, but as the ethical governance of technologies that operate at the threshold between life and death.

9. Conclusion

The rise of DeathTech and the broader digital afterlife industry confronts societies with the question of responsibility when technologies intervene in the most vulnerable and symbolically charged dimensions of human life. Although these systems promise continuity and comfort, they also risk commodifying grief, weakening posthumous dignity and displacing the communal rituals that have long structured remembrance.

This article has argued that existing frameworks of Responsible Research and Innovation remain inadequate unless reimagined through the lens of cultural plurality and ritual practices. Drawing on Beninese Vodun traditions and intercultural bioethics, it has shown that the canonical dimensions of RRI—anticipation, reflexivity, inclusion and responsiveness—already find expression in the communal ethics of death. Their ethical depth becomes visible when reconceptualised as ritual foresight, cultural critique, intercultural co-design and ritual accountability.

The proposed ritual-sensitive approach has a broad but carefully delimited scope. It is relevant to technologies that simulate, preserve or mediate posthumous presence, including memorial platforms, griefbots, voice clones, conversational video systems and postmortem avatars. It does not prescribe one universal ritual model for all contexts. Rather, it provides a governance orientation: DeathTech should be designed so that it can recognise symbolic thresholds, support communal interpretation, prevent exploitative forms of attachment and remain accountable to culturally plural practices of mourning.

The study has limitations. First, the Beninese Vodun case is not representative of all African traditions, nor of all ritual approaches to death. It functions as a normative and heuristic counterpoint, not as an exhaustive cultural map. Second, the article is primarily conceptual and reconstructive; it does not include user studies with bereaved persons interacting with specific DeathTech systems. Third, the field is developing rapidly, and commercial platforms may change their affordances, policies and business models. Fourth, the translation of ritual responsibility into legal or technical standards requires further interdisciplinary work.

Future research should therefore proceed in four directions. It should conduct comparative studies of mourning and DeathTech across multiple cultural and religious contexts; develop empirical research with bereaved users, families, designers and ritual communities; test grief impact assessments and collective-consent protocols in concrete design settings; and explore regulatory pathways for posthumous data governance, dignity and symbolic non-harm. In conclusion, DeathTech should not be regarded merely as a public service or consumer product, but as a moral infrastructure. Responsible governance requires integrating ritual responsibility at every level—from governance and design to user

protection and evaluation. Only in this way can digital afterlife technologies serve remembrance without commodifying grief, cultivating instead communal bonds and the dignity of the dead.

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Alessia Maccaro: Writing – review & editing, Writing – original draft, Formal analysis, Conceptualization. **Camilla Audia:** Writing – review & editing, Supervision, Funding acquisition, Data curation. **Atsou Afaniyzo:** Writing – original draft, Methodology, Investigation, Data curation. **Gothier Daheou:** Writing – original draft, Methodology, Investigation. **Esther Cadja Dodo:** Writing – original draft, Methodology, Investigation, Formal analysis. **Eugenio Zito:** Writing – review & editing, Writing – original draft, Supervision.

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