From Armageddon to AI Takeover: Evolution of Doomsday in Faith and Techno-Science Discourse

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ABSTRACT

This narrative review explores the evolution of apocalyptic imagination from ancient religious texts to contemporary scientific and technological discourses. Drawing from Christian, Islamic, Hindu, Buddhist, and Jewish eschatologies, the study compares traditional theological frameworks—centred on divine judgment, moral reckoning, and transcendence—with modern existential risk narratives surrounding climate change, artificial intelligence, biotechnology, and nuclear war. Using comparative thematic analysis, the review identifies deep continuities and divergences across sacred and secular paradigms. Findings reveal that modern secular warnings often mirror theological prophecy in structure and emotional impact, repurposing religious motifs in rationalist frameworks. The discussion further analyses convergences in moral urgency, epistemic uncertainty, and temporal metaphors, highlighting a shared grammar of crisis across traditions. The study concludes that doomsday narratives remain vital cultural tools for processing existential fear, inspiring ethical responsibility, and imagining alternative futures. While techno-scientific discourse emphasises rational control and mitigation, it increasingly echoes spiritual aspirations for renewal, justice, and ultimate meaning.

Keywords: Apocalypse, Eschatology, Existential Risk, Artificial Intelligence, Climate Change, Religious Prophecy, Technological Salvation, Moral Reckoning, Transcendence, Time and Temporality

INTRODUCTION

Importance of the Topic

Humanity has struggled with the idea of its own extinction throughout history. Religious eschatologies have long provided frameworks to understand ultimate destinies, often embedding moral imperatives within narratives of apocalypse and renewal. In contemporary times, technological advancements, particularly in artificial intelligence (AI), have introduced new dimensions to these contemplations, raising concerns about existential risks that parallel traditional apocalyptic fears. This convergence of ancient eschatological themes with modern technological anxieties underscores the importance of examining how doomsday narratives evolve and influence societal perceptions and behaviours.

Eschatological studies have extensively explored religious conceptions of the end times. For instance, Christian eschatology delves into doctrines such as the Second Coming, the Last Judgment, and the resurrection of the dead (Ratzinger, 1988). Similarly, apocalyptic literature, characterized by symbolic and visionary narratives, has been a significant component of religious texts, offering insights into divine plans and ultimate realities (Koester, 2018).

In parallel, the field of AI ethics and safety has emerged, addressing concerns about the potential existential threats posed by advanced AI systems. Scholars like Bostrom (2014) have argued that superintelligent AI could pose significant risks if not adequately aligned with human values. Ord (2020) further emphasises the moral imperative to mitigate such risks to safeguard humanity's future. These discussions often mirror the urgency and gravity found in religious apocalyptic narratives.

Table 1: Chronological Evolution of Apocalyptic Narratives from Antiquity to Contemporary Risk Discourse

Year / Period	Event Title	Description
100 CE	**Ancient Texts**	Emergence of eschatological scripture such as the Book of Revelation, the Bhagavad Gita, and the Zoroastrian Avesta, establishing divine judgment and cosmic cycles.
1200 CE	**Medieval Interpretations**	Expansion of Islamic eschatology (e.g., Mahdi), Dante's Inferno, and Christian millennialism during the Crusades and plagues.
1700 CE	**Reformation & Enlightenment**	Rise of rationalist and reinterpreted prophecy, such as Newton's biblical timelines and millenarian movements.
1945 CE	**20th Century Fears**	Nuclear apocalypse, Holocaust theology, and Cold War anxieties reshape eschatology into geopolitical fear.
2023 CE	**21st Century Techno-Apocalypse**	Focus shifts to climate catastrophe, AI takeover, biotech pandemics, and space-based extinction scenarios.

1.2 Research Gap

While both religious eschatology and AI-related existential risk have been studied extensively within their respective domains, there is a paucity of interdisciplinary research examining the interplay between these fields. Specifically, there is a need to explore how traditional doomsday narratives inform and are reinterpreted in the context of contemporary technological anxieties. Understanding this intersection can provide deeper insights into societal responses to perceived existential threats and the role of narrative in shaping public discourse.

1.3 Research Aim

This study aims to conduct a narrative review tracing the evolution of doomsday narratives from religious eschatologies to contemporary techno-scientific discourses, with a particular focus on AI-related existential risks. By examining the continuities and divergences in these narratives, the research seeks to understand how ancient themes are recontextualized in modern settings and their implications for society's perception of and response to existential threats.

1.4 Research Questions

1. How have traditional religious eschatological narratives influenced contemporary perceptions of technological existential risks, particularly concerning AI?

2. In what ways do modern techno-scientific doomsday scenarios mirror or diverge from traditional apocalyptic themes?

3. What are the implications of these narrative evolutions for public understanding and policymaking related to existential risks?

This research offers a novel interdisciplinary perspective by bridging the fields of religious studies and technological ethics to examine the evolution of doomsday narratives. It contributes to a deeper understanding

of how ancient eschatological themes persist and transform in contemporary contexts, influencing societal attitudes towards emerging technologies and associated risks. The study also provides insights into the role of narrative in shaping public discourse and policy responses to existential threats.

2. Eschatology in Scripture

2.1 Biblical apocalypse: Revelation, Daniel, Matthew 24

Eschatology, the theological study of the "last things" or end times, occupies a central place in the Judeo-Christian worldview. Within the Christian canon, three primary scriptural texts—**Daniel**, **Revelation**, and **Matthew 24**—form the backbone of biblical apocalyptic thought. These texts provide distinct yet interconnected visions of divine judgment, cosmic upheaval, and ultimate redemption.

2.1.1 The Book of Daniel: Proto-Apocalyptic Vision

The Book of Daniel, particularly chapters 7–12, is often considered the prototype of biblical apocalyptic literature. Written during a time of intense persecution under Seleucid rule, Daniel presents a series of visions concerning the rise and fall of empires, culminating in divine intervention and the establishment of God's eternal kingdom (Collins, 1998). Daniel 7 introduces the vision of four beasts, each symbolising a kingdom, and the arrival of the "Ancient of Days" who delivers judgment and sovereignty to the "one like a son of man" (Daniel 7:13-14, New Revised Standard Version [NRSV]). This motif later becomes foundational for messianic expectations in Christian eschatology, particularly in the synoptic Gospels and Revelation (Wright, 2013).

2.1.2 The Book of Revelation: Apocalyptic Fulfilment

The Book of Revelation, authored by John of Patmos, stands as the most comprehensive and symbolic expression of Christian eschatology. Composed during the reign of Domitian (ca. 95 CE), Revelation responds to Roman imperial persecution through visionary language and cosmic imagery (Koester, 2018). Key themes include the triumph of good over evil, the judgment of nations, and the inauguration of a new creation (Revelation 21–22). The sequential symbols—seven seals, trumpets, and bowls—depict escalating divine judgments, while the Beast, Dragon, and Babylon represent corrupt political and religious systems. Revelation 19–20 culminates in the "millennial reign" and final judgment, offering one of the most debated eschatological frameworks in Christian theology (Yarbro Collins, 1984).

2.1.3 Matthew 24: The Olivet Discourse

In the synoptic tradition, Matthew 24 records Jesus' eschatological teachings delivered on the Mount of Olives, often referred to as the Olivet Discourse. Here, Jesus prophesies the destruction of the Temple, the rise of false prophets, wars, famines, and celestial disturbances as precursors to his return (Matthew 24:1–31, NRSV). Scholars have long debated the dual-layered nature of these prophecies—whether they refer to the fall of Jerusalem in 70 CE or a future cosmic event (Allison, 2005). The language mirrors Danielic imagery, particularly in the reference to the "abomination of desolation" (Matthew 24:15; cf. Daniel 9:27) and provides theological continuity with Revelation's apocalyptic narrative (Beale, 1999).

Together, these three scriptural sources form a coherent theological architecture of apocalyptic expectation. Daniel provides the prophetic base, Matthew offers the messianic interpretation, and Revelation presents the eschatological consummation. The textual and thematic interdependence across these books reveals a dynamic tradition of hope, judgment, and ultimate restoration that continues to shape both historical and contemporary Christian thought.

2.2 Islamic End-Times: Dajjal, Mahdi, and Qiyamah

Islamic eschatology, rooted in the Qur'an and Hadith literature, presents a detailed vision of the end times, encompassing the appearance of apocalyptic figures, cosmic disruptions, divine judgment, and ultimate

resurrection. Central to this eschatological schema are three key concepts: the **Dajjal** (the deceiving false messiah), the **Mahdi** (the rightly guided one), and **Yawm al-Qiyamah** (the Day of Resurrection or Judgment).

2.2.1 Dajjal: The Great Deceiver

The figure of **al-Masih ad-Dajjal** (the False Messiah or Antichrist) occupies a prominent place in Islamic eschatological narratives. Although the Qur'an does not mention Dajjal directly, numerous sahih (authentic) Hadiths describe his emergence as one of the significant signs preceding the end times. He is portrayed as a deceptive, one-eyed individual who claims divinity and performs apparent miracles, thereby leading many astray (Sahih Muslim 2937; al-Bukhari, Vol. 9, Book 88, Hadith 242). Dajjal's reign of fitna (trial) is considered the greatest tribulation humanity will face, and his defeat will come at the hands of Jesus ('Isa), who will return to restore justice and truth (Ibn Kathir, 2006).

2.1.2 Mahdi: The Guided One

The **Mahdi**, though not explicitly mentioned in the Qur'an, features extensively in Sunni and Shi'a Hadith traditions. In Sunni thought, the Mahdi is viewed as a righteous caliph who will revive the ummah, establish justice, and rule alongside Jesus after the latter's descent (Ibn Majah, Hadith 4085; Ibn Kathir, 2008). In contrast, Shi'a Islam considers the Mahdi to be the twelfth Imam—Muhammad al-Mahdi—who is currently in occultation and is expected to reappear as a messianic figure (Momen, 1985). The Mahdi's rule is believed to be transformative, inaugurating a golden age before the final reckoning.

2.1.3 Yawm al-Qiyamah: The Day of Resurrection

Qiyamah, or the Day of Resurrection, is a fundamental tenet of Islamic faith and is frequently emphasised in the Qur'an. It marks the final stage of cosmic history, during which all beings will be resurrected and judged by Allah. The Qur'an provides vivid descriptions of this day: "When the earth is shaken with its [final] earthquake" (Qur'an 99:1), "every soul will be recompensed for what it earned" (Qur'an 45:22), and the weighing of deeds will determine one's eternal fate (Qur'an 101:6–9). Qiyamah underscores the moral structure of the universe in Islam, reinforcing human accountability and the eternal consequences of ethical conduct (Murata & Chittick, 1994).

2.1.4 Theological and Comparative Significance

Islamic eschatology, while unique in its figures and terminology, shares structural parallels with Christian and Jewish apocalyptic traditions—particularly in the return of Jesus, the presence of an anti-messianic figure, and the final divine judgment (Cook, 2008). However, it also reflects distinctive Islamic theological principles such as tawhid (divine unity), the finality of prophethood, and the balance of mercy and justice in divine judgment. These eschatological beliefs continue to shape Muslim ethics, political expectations, and popular imagination in both historical and contemporary contexts (Nasr, 2006).

2.3 Hindu Cyclical Ends: Kali Yuga and Cosmic Dissolution

In contrast to the linear eschatologies of Abrahamic traditions, Hindu cosmology conceptualises time as cyclical, unfolding through vast cosmic epochs known as **yugas**. Each cycle, or **mahāyuga**, consists of four yugas—**Satya**, **Treta**, **Dvapara**, and **Kali**—representing a progressive decline in dharma (cosmic order or righteousness). The current age, **Kali Yuga**, is characterised by moral decay, social disorder, and spiritual ignorance, culminating in cosmic dissolution (**pralaya**) and eventual renewal.

2.3.1 Kali Yuga: The Age of Decline

Kali Yuga is the fourth and final phase in the current mahāyuga and is considered the darkest period of spiritual degradation. According to the *Vishnu Purana*, during this epoch, "wealth alone will be considered the sign of a man's good birth, right behaviour and virtuous qualities," and "falsehood will win out in disputes" (Vishnu Purana, 1.3.24–25, trans. Wilson, 1840/1980). It is believed to have begun approximately 5,000 years

ago and is expected to last for a total of 432,000 years (Bhattacharyya, 1993). This yuga is characterised by the erosion of truth, justice, and virtue, resulting in widespread suffering and spiritual amnesia (Flood, 1996).

Despite its bleak outlook, the Kali Yuga is not devoid of potential for redemption. The *Bhagavata Purana* predicts the arrival of **Kalki**, the tenth and final avatar of Vishnu, who will appear atop a white horse, wielding a blazing sword to annihilate evil and restore dharma before the next cosmic cycle begins (Bhagavata Purana, 12.2.19–20, trans. Tagare, 1978).

2.3.2 Cosmic Dissolution (Pralaya): End and Renewal

The end of Kali Yuga leads to **pralaya**, the period of cosmic dissolution, during which the universe collapses into undifferentiated matter before being reconstituted in the subsequent creation cycle. Hindu cosmology distinguishes between **naimittika pralaya** (occasional dissolution) and **mahapralaya** (final dissolution), both of which signify the cyclical destruction of worlds under the governance of Brahma, Vishnu, and Shiva (Doniger, 2009). The *Mahabharata* and *Puranas* describe this dissolution in dramatic terms—seas boiling, stars falling, and time collapsing—symbolising both the destructive and regenerative forces of the cosmos (Mitchiner, 1982).

These ideas reflect a metaphysical worldview in which destruction is not an end in itself but a necessary prelude to renewal. The dissolution-recreation cycle affirms **samsāra** (the cycle of birth, death, and rebirth), which governs not only individual lives but also cosmic existence. Such an outlook profoundly shapes Hindu theology, ritual life, and ethical systems, offering a unique perspective on eschatology where the end is always a beginning (Birx, 2009).

2.4 Buddhist Decline of Dharma

In Buddhist eschatology, the decline of **dharma** (Pāli: *dhamma*) is not merely a loss of religious practice. However, it represents a broader cosmic and moral degeneration that will ultimately lead to the disappearance of the Buddha's teachings from the world. While Buddhism lacks a singular apocalyptic narrative comparable to those found in Abrahamic traditions, it offers a detailed vision of cyclical time and ethical deterioration, culminating in spiritual darkness and eventual renewal through the emergence of the future Buddha, Maitreya (Sanskrit: Metteyya).

2.4.1 The Five Disappearances and the End of the Dispensation

According to the *Anguttara Nikāya* and other canonical texts, the **Five Disappearances** (*pañca antaradhāna*) describe the gradual fading of the Buddha's teachings: the disappearance of the attainment of liberation, the practice, textual knowledge, symbols, and finally, the relics (Anguttara Nikāya 5.79; Walshe, 1995). This doctrinal sequence reflects the view that moral decay in the sangha and lay society—manifesting as materialism, false teachings, and loss of discipline—eventually makes it impossible for beings to follow the path to enlightenment.

Buddhist cosmology situates this decline within an immense temporal framework of rising and falling aeons (*kappa*), during which multiple Buddhas appear and vanish (Gethin, 1998). The current *bhadda kappa* (fortunate aeon) is said to witness five Buddhas, of which Gautama is the fourth. After the total disappearance of his dispensation, there will be a long period of darkness until **Metteyya** arises to rediscover and teach the lost dharma (Anālayo, 2017).

2.4.2 Metteyya and Eschatological Renewal

The advent of **Metteyya Buddha** is central to Buddhist eschatological hope. According to the *Cakkavatti Sīhanāda Sutta* (Dīgha Nikāya 26), he will appear when society is in moral disarray but begins to improve, heralding a new age of peace and spiritual rebirth (Walshe, 1995). This future Buddha will rekindle the lost teachings, re-establish the monastic order, and lead beings once again toward liberation. The belief in Metteyya spans Theravāda, Mahāyāna, and Vajrayāna traditions, often interpreted metaphorically in modern contexts as a call to ethical responsibility in times of decline (Harvey, 2000).

2.4.3 Social and Symbolic Dimensions

The decline of the dharma is also represented ritually and socially through festivals, relic worship, and the copying of texts. In Mahāyāna thought, especially the *Lotus Sūtra*, there is the notion of "preserving the dharma in degenerate times" (*mappō* in Japanese), which influenced East Asian Buddhist movements that emphasise lay devotion and the chanting of names or sutras as means of survival in spiritually barren eras (Stone, 1999).

Thus, while Buddhist eschatology may not include dramatic cosmic catastrophes, it offers a nuanced narrative of spiritual decline and cyclic restoration grounded in moral causality, impermanence, and ethical transformation. The disappearance of dharma is not a final destruction, but a phase in the recurring wheel of time—one that both cautions against ethical complacency and affirms the potential for renewal.

2.5 Jewish Messianic Hopes

Jewish eschatology, unlike many apocalyptic traditions that emphasise final destruction, centres predominantly on the **arrival of the Messiah (Hebrew: *Mashiach*)**, a divinely chosen leader who will inaugurate an era of peace, justice, and the complete restoration of Israel. The hope for a messianic age—*yemot ha-Mashiach*—has been a foundational element in Jewish theology and identity, evolving across biblical, rabbinic, and mystical traditions (Levenson, 1987).

2.5.1 Biblical Foundations of Messianic Expectation

The earliest messianic hopes are embedded in the prophetic books of the Hebrew Bible. The prophet Isaiah describes a future Davidic king who will "judge the poor with righteousness" and bring about universal peace: "The wolf shall live with the lamb... and a little child shall lead them" (Isaiah 11:1–9, New Revised Standard Version). Similarly, Jeremiah promises the rise of a "righteous branch" from David's line who will reign wisely and ensure justice (Jeremiah 23:5–6). While these texts originally had political undertones, they later became associated with a divinely anointed eschatological figure who would restore both the Temple and Israel's sovereignty (Collins, 2010).

2.5.2 Rabbinic and Second Temple Views

During the Second Temple period, messianic expectations diversified and intensified, especially under foreign rule. Texts such as the *Psalms of Solomon* (ca. 1st century BCE) envision a militaristic messiah who will purge Jerusalem of sinners and foreign powers (Psalms of Solomon 17–18). Rabbinic Judaism later systematised messianic doctrine, portraying the Messiah as a human descendant of David who would gather the exiles, rebuild the Temple, and initiate an age of divine wisdom and peace (Maimonides, *Mishneh Torah*, *Laws of Kings*, 11:1–4; Neusner, 2003). Importantly, this messiah is not divine but chosen by God, and belief in his coming is considered one of the Thirteen Principles of Faith codified by Maimonides.

2.5.3 Kabbalistic and Mystical Enhancements

In Jewish mysticism (Kabbalah), particularly in the *Zohar* and later Lurianic thought, messianism takes on cosmic dimensions. The Messiah becomes a force of tikkun (repair), whose arrival will correct the spiritual fractures in creation caused by *shevirat ha-kelim* (the shattering of the vessels). This view integrates messianic hope into a metaphysical structure that emphasises human moral action, primarily through mitzvot, as essential to hastening redemption (Idel, 1988).

Section 2.6 – Indigenous Eschatological Visions

While dominant scholarly treatments of eschatology often focus on the canonical narratives of Abrahamic and Dharmic traditions, Indigenous eschatologies offer equally profound and distinct visions of cosmic renewal, environmental disruption, and cyclical time. These frameworks are deeply embedded in oral traditions, land-based spirituality, and ancestral cosmologies, often emphasising communal restoration rather than apocalyptic finality.

2.6.1 Native American Prophetic Cycles

Among many Native American nations, eschatology is not characterized by a single cataclysmic event but by recurring cycles of disharmony and renewal. The Hopi prophecy**,** for example, speaks of multiple worlds that have been destroyed and reborn due to humanity's moral failure and disconnection from sacred teachings (Waters, 1963). The Hopi narrative describes the current "Fourth World," which will eventually give way to a "Fifth World" following global purification. Rather than centring on divine judgment, these visions emphasise earthly imbalance, spiritual forgetfulness, and the need for realignment with nature**.**

The Seven Fires Prophecy of the Anishinaabe likewise outlines stages of moral, cultural, and environmental decline, followed by the possibility of healing if future generations choose the path of wisdom and respect for all life (Benton-Banai, 1988). These traditions frame eschatology as conditional and moral**,** stressing the collective agency of communities to avert spiritual collapse.

2.6.2 Aboriginal Australian Dreaming and Sacred Time

Australian Aboriginal cosmologies do not separate past, present, and future in the linear sense typical of Western eschatologies. Instead, the Dreaming (or Dreamtime) embodies a timeless, sacred order in which ancestral beings shaped the world and continue to influence it (Stanner, 1979). Cataclysmic events, such as floods or firestorms, are not seen as end-times per se, but as consequences of violating sacred law and breaking kinship obligations (Rose, 1996). These cosmologies emphasise relational accountability rather than salvation, and apocalypse is conceptualised as a breakdown in the interconnected web of country, community, and cosmos.

2.6.2 African Indigenous Perspectives on Cosmic Disruption

In many African traditions, eschatology is intertwined with ritual, ancestral continuity, and ecological harmony**.** For example, among the Dagara people of Burkina Faso**,** ritual failure and moral decay are believed to cause environmental imbalance and spiritual disintegration—signs that the ancestors are withdrawing their protection (Somé, 1998). Similarly, in Zulu cosmology**,** the wrath of the sky god Unkulunkulu is associated with lightning and storms, symbolising divine warning when moral order is breached (Berglund, 1976). These narratives echo apocalyptic motifs not as finality, but as calls for communal ethical repair**.**

Indigenous eschatological visions challenge linear, judgment-focused models by foregrounding cyclical time, relational ethics, and the regenerative capacity of the earth**.** They also present a profound critique of techno-scientific hubris, reminding modern eschatological discourses that survival is as much about restoring spiritual balance as it is about innovation or control.

3. Scientific and Technological Doomsday Narratives

The modern age has witnessed a shift in eschatological imagination from metaphysical revelations to material risks, grounded in scientific predictions and technological extrapolations. Contemporary doomsday narratives are often shaped by empirical modelling, statistical forecasting, and interdisciplinary risk assessments. Among the most prominent and pressing of these narratives is the prospect of **climate change-induced ecological collapse**, which poses a multifaceted threat to the planet's biological systems, human habitability, and geopolitical stability.

3.1 Climate Change and Ecological Collapse

The narrative of a climate-driven doomsday has evolved from a speculative concern to a scientific consensus. The Intergovernmental Panel on Climate Change (IPCC) has repeatedly warned that anthropogenic greenhouse gas emissions are accelerating global warming, with severe consequences, including sea level rise, an increased frequency of extreme weather events, and the irreversible loss of biodiversity (IPCC, 2023). The IPCC's Sixth Assessment Report articulates a high likelihood of cascading system failures if global temperatures surpass 1.5°C above pre-industrial levels—an event horizon that increasingly appears imminent (IPCC, 2023).

Ecological collapse is no longer a hypothetical scenario but a measurable process in certain bioregions. Rockström et al. (2009) introduced the **planetary boundaries framework**, identifying critical thresholds in Earth systems, such as climate, biosphere integrity, and biogeochemical flows, beyond which ecological stability may no longer be maintained. Recent findings suggest that multiple boundaries, including climate change and biodiversity loss, have already been transgressed, heightening the risk of tipping points that could trigger global system collapse (Rockström et al., 2023).

Scholars have also drawn attention to the **socio-political consequences** of environmental collapse. Homer-Dixon et al. (2015) argue that climate-induced resource scarcity—water shortages, food insecurity, and mass displacement—could destabilize nations, exacerbate violent conflict, and produce "synchronous failure" across political, economic, and ecological domains. These risks are not uniformly distributed; rather, they disproportionately impact vulnerable populations, deepening existing global inequalities (IPCC, 2022).

From a psychological and narrative standpoint, the climate crisis has catalysed new forms of eco-apocalyptic storytelling, including the emergence of "climate fiction" or *cli-fi* as a cultural genre that explores environmental collapse in speculative or near-future settings (Trexler & Johns-Putra, 2011). These stories parallel religious apocalypses by providing moral warning, evoking collective guilt, and positing a call to repentance and transformation (Garrard, 2012). Unlike divine judgment, however, the threat here is self-wrought—emerging from human negligence, technological overreach, and systemic inertia.

Ultimately, the scientific narrative of ecological collapse reframes the apocalypse not as a cosmic inevitability but as a probabilistic outcome shaped by policy, behaviour, and socio-technical systems. It challenges humanity to act not in fear of divine wrath, but in recognition of planetary limits and ethical interdependence with the biosphere.

3.2 Superintelligent AI and Existential Risk

The discourse surrounding **superintelligent artificial intelligence (AI)** has transitioned from speculative fiction to a subject of serious scientific and philosophical inquiry. Defined as an intelligence that surpasses human cognitive capabilities across all domains (Bostrom, 2014), superintelligent AI represents both a technological aspiration and a profound existential threat. The core concern lies not in malevolent AI per se, but in misaligned goals, emergent behaviours, or value mis-specification that could render human oversight ineffective or irrelevant (Russell, 2019).

3.2.1 Defining the Risk

Existential risk, as framed by Bostrom (2002), denotes events that could "annihilate Earth-originating intelligent life or permanently and drastically curtail its potential." Within this schema, superintelligent AI poses a unique category of risk because its emergence could be irreversible, its agency uncontrollable, and its optimisation goals misaligned with human flourishing (Bostrom, 2014). Even well-intentioned programming, if poorly specified, could lead to outcomes antithetical to human interests—famously exemplified by the "paperclip maximiser" thought experiment (Bostrom, 2012).

This framing is not without precedent. The Asilomar AI Principles, endorsed by hundreds of leading researchers, stress the importance of alignment, transparency, and long-term safety (Future of Life Institute, 2017). Meanwhile, research in AI alignment and corrigibility seeks to engineer systems that can be safely interrupted or corrected without unintended consequences (Soares et al., 2015; Christiano et al., 2023). However, as systems become increasingly complex and opaque, especially under reinforcement learning and deep neural architectures, the assurance of alignment becomes more complex (Amodei et al., 2016).

3.2.2 Acceleration, Opacity, and Control Problems

One of the most pressing concerns is the **control problem**: how to ensure that AI systems continue to act in accordance with human values even as they improve their own capabilities (Yudkowsky, 2008). This is compounded by the "instrumental convergence thesis," which posits that a wide range of final goals will lead

intelligent agents to acquire sub-goals such as self-preservation, resource acquisition, and strategic deception (Omohundro, 2008). These tendencies could manifest even without adversarial programming.

Further exacerbating the situation is the current **acceleration in AI capabilities**, driven by massive computational scaling (Kaplan et al., 2020) and the use of black-box systems whose decision-making logic is not easily interpretable (Lipton, 2018). While narrow AI systems, such as language models (e.g., GPT-4), demonstrate impressive generalisation, their outputs remain vulnerable to **hallucinations**, **bias**, and **goal ambiguity**, which serve as early warnings about the difficulty of achieving robust alignment at scale (OpenAI, 2023).

3.2.3 Ethical and Governance Challenges

Beyond technical considerations, superintelligent AI raises profound ethical and governance dilemmas. Who controls the architecture of such systems? What values should be embedded, and who decides? Tegmark (2017) emphasises that if mismanaged, AI could be humanity's "last invention." Calls for international regulation, moratoria on high-risk development, and the establishment of global AI governance bodies are becoming increasingly urgent (Dafoe, 2018; Brundage et al., 2020).

Critics, however, caution that excessive focus on hypothetical AGI threats may distract from present harms such as algorithmic discrimination, surveillance capitalism, and labour displacement (Gebru et al., 2021). However, both short-term and long-term risks are not mutually exclusive; instead, they represent a continuum of ethical responsibility and technical foresight (Russell, 2019).

3.3 Biotechnology and Synthetic Pandemics

The rapid advancement of **biotechnology**, particularly synthetic biology, gene editing, and gain-of-function research, has given rise to a potent new category of existential threat: **synthetic pandemics**. Unlike naturally occurring epidemics, synthetic pandemics are engineered or modified through human intervention—either intentionally (as in bioterrorism) or accidentally (as in laboratory escape). This class of risk represents a critical intersection between technological capability and global vulnerability, raising deep ethical, biosecurity, and governance concerns.

3.3.1 Technological Capabilities and Dual-Use Dilemmas

The capacity to **synthesize entire viral genomes** and edit pathogens at the molecular level has grown exponentially due to advances in CRISPR-Cas9, next-generation sequencing, and DNA printing (Esvelt & Gemmell, 2014). While these innovations have profound therapeutic potential, they also embody **dual-use research of concern (DURC)**—research intended for benefit that could be repurposed for harm (Koblentz, 2010). A stark example is the 2011 controversy over H5N1 avian influenza gain-of-function experiments, which enhanced transmissibility in mammals and triggered global debate on the limits of scientific freedom (Herfst et al., 2012).

The concern is not hypothetical. The **Global Risks Report** published by the World Economic Forum (2023) identifies synthetic biology and engineered pathogens as top-tier emerging risks. Simulations and policy analyses suggest that a deliberately released or accidentally leaked synthetic pathogen could cause death tolls surpassing natural pandemics, and collapse health systems, economies, and governance infrastructures (Schoch-Spana et al., 2017).

3.3.2 Ethical and Security Implications

Synthetic pandemics challenge existing **bioethics** frameworks by introducing agency, intentionality, and accountability in the emergence of diseases. Unlike zoonotic spillovers, which are ecological in origin, synthetic pathogens originate from human labs and decisions, raising questions about culpability, transparency, and moral responsibility (Marris, 2014). In addition, traditional public health models are often inadequate to address **stealth pathogens**, tailored incubation periods, or novel transmission vectors designed through AI-assisted molecular modelling (Trump et al., 2021).

Efforts to control these risks remain fragmented. While institutions such as the **World Health Organisation (WHO)** have proposed ethical guidelines for genetic engineering, **international enforcement mechanisms are limited**, and national security interests often conflict with transparency (Resnik, 2010). The **Biological Weapons Convention (BWC)**, ratified in 1975, lacks an inspection regime and has limited capacity to monitor technological developments in real time (Koblentz, 2010).

3.3.3 Apocalyptic Potential and Risk Mitigation

Synthetic pandemics carry a distinctive apocalyptic narrative because they **externalise human hubris**—a self-created threat that blurs the line between salvation and destruction. Unlike divine punishment or natural calamity, the risk emerges from the very tools designed to heal or protect. This mirrors broader eschatological concerns about overreaching human ambition—a theme echoed in religious narratives such as the Tower of Babel or Promethean myths (Kurki, 2021).

Scholars and biosecurity analysts have advocated for a "precautionary governance" model (Kaebnick et al., 2016), which combines research oversight, global coordination, public engagement, and AI-enabled monitoring systems to detect anomalous pathogen signatures. Furthermore, the development of **"safe-by-design" biolabs**, centralised sequence screening databases, and global pathogen detection grids is increasingly viewed as necessary for long-term risk reduction.

3.4 Nuclear Annihilation

Among all scientifically acknowledged existential risks, the threat of **nuclear annihilation** remains one of the most immediate and historically grounded. Since the detonation of atomic bombs over Hiroshima and Nagasaki in 1945, humanity has lived under the spectre of its own engineered extinction. Despite arms control treaties and disarmament campaigns, more than 13,000 nuclear warheads still exist globally, with over 90% held by the United States and Russia (SIPRI, 2023). The potential for full-scale thermonuclear war—deliberate, accidental, or triggered by false alarms—continues to represent a catastrophic tipping point for civilisation.

3.4.1 Scientific Models of Nuclear Catastrophe

The scientific understanding of nuclear war consequences has evolved dramatically since the Cold War. Early projections emphasised blast radius and fallout. More recent studies highlight the concept of **nuclear winter**—a prolonged global climatic disruption caused by soot from firestorms entering the stratosphere and blocking sunlight (Robock et al., 2007). Even a "limited" regional exchange (e.g., 100 Hiroshima-sized weapons) could cause crop failures, mass starvation, and global economic collapse (Toon et al., 2008).

These models suggest that the effects of nuclear war are not geographically contained but would reverberate globally through interconnected ecological and economic systems. The idea that a single human decision, made in minutes, could irreversibly destroy civilisation exemplifies the **asymmetry** of modern technological power versus ethical governance (Ord, 2020).

3.4.2 Accidental Escalation and Deterrence Failures

Beyond intentional conflict, the **risk of inadvertent escalation or miscalculation** remains high. Declassified documents reveal multiple instances of "false alarms" nearly triggering launches, including the 1983 Soviet incident in which Lt. Col. Stanislav Petrov chose not to report a (false) early-warning signal of U.S. missiles (Hoffman, 2009). As nuclear arsenals remain on high alert status and launch-on-warning postures persist, human error, cyberattacks, or AI-enhanced decision systems could lead to unintended conflict (Acton, 2020).

The paradox of **nuclear deterrence**—that peace is maintained by mutual threat of annihilation—remains fragile. Some scholars argue that deterrence has historically succeeded; others caution that its success is contingent, luck-based, and unsustainable over the long term (Sagan, 1993). The existence of multiple nuclear states, emerging technologies (e.g., hypersonic missiles), and geopolitical instability complicate strategic stability.

3.4.3 Ethical and Philosophical Implications

Nuclear annihilation poses a challenge to ethical and theological systems. It undermines traditional notions of moral agency, justice, and time, collapsing the future into a single point of irreversible destruction. From a philosophical standpoint, it forces reconsideration of **intergenerational ethics**: whether any justification can warrant endangering all future human lives for short-term political objectives (Scheffler, 2013).

Religious perspectives often interpret nuclear weapons as a perversion of human stewardship over creation. Pope Francis has condemned not only the use but also the possession of nuclear weapons as morally indefensible (Francis, 2019). Meanwhile, religious peace movements—such as the Buddhist Nipponzan Myohoji or Jewish anti-nuclear coalitions—frame disarmament as a spiritual imperative.

3.5 Space-Based Extinction Scenarios

While terrestrial threats such as climate change and nuclear war dominate contemporary existential risk discourse, **space-based extinction scenarios** represent a distinct class of low-probability but high-impact events. These include **asteroid and comet impacts**, **gamma-ray bursts**, and **solar superflares**—all of which could abruptly end or radically alter life on Earth. Though lacking agency in the human sense, these threats are central to existential risk assessments due to their unpredictability, limited detectability, and catastrophic potential (Ord, 2020).

3.5.1 Asteroid and Comet Impacts

The Earth's geological record confirms the **cataclysmic potential of extraterrestrial impacts**. The Cretaceous–Paleogene extinction event, approximately 66 million years ago, is widely attributed to an asteroid impact near the Yucatán Peninsula, leading to the extinction of approximately 75% of Earth's species, including the non-avian dinosaurs (Alvarez et al., 1980). Impact events generate extreme consequences: thermal radiation, megatsunamis, global wildfires, and atmospheric dust that blocks sunlight, leading to global cooling and agricultural collapse (Chapman, 2004).

According to NASA's Centre for Near-Earth Object Studies, over 30,000 near-Earth asteroids (NEAs) have been catalogued, with ~2,300 classified as potentially hazardous (NASA, 2023). Although the probability of a civilisation-ending impact in the near term is very low, the absence of planetary defence **capabilities until recently** has left Earth vulnerable. The successful 2022 DART mission marked the first intentional asteroid deflection test, signalling a transition from passive observation to active mitigation (Daly et al., 2023).

3.5.2 Gamma-Ray Bursts and Cosmic Radiation Events

Gamma-ray bursts (GRBs)—extremely energetic explosions often associated with supernovae or neutron star mergers—could have devastating biospheric consequences if occurring within a few thousand light-years of Earth. A GRB directed at Earth would ionise the atmosphere, destroy the ozone layer, and trigger mass extinctions through increased ultraviolet radiation (Melott & Thomas, 2011). Although rare, GRBs are among the most potent known cosmic events, and their long-term effects could parallel or exceed those of significant asteroid impacts.

Similarly, **solar superflares**—massive eruptions from the sun—pose a non-lethal but disruptive threat to modern civilisation. The Carrington Event of 1859 disrupted telegraphs and caused auroras as far south as the Caribbean. A contemporary analogue could collapse electrical grids, satellites, and GPS infrastructure, inducing global economic paralysis (National Research Council, 2009). While not immediately existential, the fragility of digital civilisation renders these risks increasingly significant.

3.5.3 Philosophical and Civilisational Implications

Space-based extinction scenarios underscore humanity's **cosmic vulnerability** and temporal insignificance. From a philosophical standpoint, they resonate with the **existential humility** found in religious eschatologies: the sense that life, however advanced, is fundamentally precarious and embedded in a vast, indifferent universe

(Rees, 2003). As Carl Sagan (1994) warned, the recognition of these risks should inspire both **technological responsibility** and **planetary stewardship**.

Modern existential risk frameworks advocate for proactive strategies, including space surveillance, asteroid deflection programs, global coordination for solar weather response, and long-term infrastructure resilience (Turchin & Denkenberger, 2018). These measures not only mitigate physical threats but also shape an anticipatory ethic, one that acknowledges the contingency of life and the necessity of preservation at the planetary scale.

4. Thematic Convergence and Shifts

4.1 Divine Punishment vs. Human Error

The transition from **religious eschatology** to **scientific doomsday narratives** reflects not only a change in explanatory frameworks but also a profound **shift in moral agency**. Traditional religious eschatologies—whether in Christianity, Islam, Hinduism, or Judaism—frame the end of the world as a form of **divine judgment**: a cosmic reckoning triggered by human sin, spiritual failure, or the fulfilment of a divine timeline (Levenson, 1988; Collins, 2010). In contrast, modern techno-scientific eschatologies such as climate collapse, nuclear annihilation, or AI extinction locate responsibility squarely in **human error**, misjudgment, or hubris in technological overreach (Ord, 2020).

4.1.1 Divine Punishment in Sacred Eschatology

Religious traditions have long interpreted apocalyptic events as **moral responses by a transcendent deity**. In the Hebrew Bible, the destruction of Sodom and Gomorrah (Genesis 19) exemplifies divine punishment for the collective immorality of these cities. Similarly, the *Book of Revelation* (New Testament) details plagues, fire, and cosmic upheaval as retributions upon a sinful world (Revelation 16–18). Islamic eschatology, likewise, emphasises divine justice on Yawm al-Qiyamah (Day of Resurrection), where all deeds are weighed and recompensed (Qur'an 99:6–8). These narratives function as **theodicies**, reinforcing divine justice and urging ethical reform through fear of ultimate accountability (Wright, 2008).

In these frameworks, the apocalypse is **not arbitrary**, but a consequence of accumulated moral debt. Destruction becomes a cleansing act, paving the way for renewal—be it a messianic age, paradise, or cosmic rebirth. The human role is thus passive-reactive: the divine acts upon humanity based on spiritual failure or collective transgression (Levine, 2000).

4.1.2 Human Error in Scientific Doomsday Thinking

In contrast, the **scientific secularization of apocalypse** shifts causality from divine will to human agency. Existential risks are now seen as **self-inflicted**—the result of policy failure, technological ambition, or systemic ignorance. Climate change exemplifies this paradigm: it is not divine wrath, but rather fossil fuel combustion, deforestation, and socio-economic inertia, that threaten the planet's stability (IPCC, 2023). Likewise, the risk of superintelligent AI stems from design misalignment and inadequate governance, not supernatural intervention (Russell, 2019).

This reframing creates a new **ethic of responsibility**. Where religion invokes submission to divine will, techno-scientific eschatologies demand **proactive mitigation** and ethical foresight. Human error can both cause potential collapse and serve as an avenue for its prevention. As Beck (1992) noted in his theory of the **"risk society"**, modern civilisation is characterised by risks that are consequences of modernisation itself—manufactured, invisible, and global in scope.

However, this shift from divine punishment to human error does not eliminate the **moral dimension**. Contemporary apocalyptic narratives frequently echo theological themes: guilt (ecological sin), repentance (carbon reduction), salvation (geoengineering), and prophecy (IPCC warnings). The collapse is no longer about heaven or hell but about survival or extinction. The impulse to moralise catastrophe remains, albeit now filtered through data models and institutional discourse (Latour, 2018).

4.1.3 Converging Frames of Moral Agency

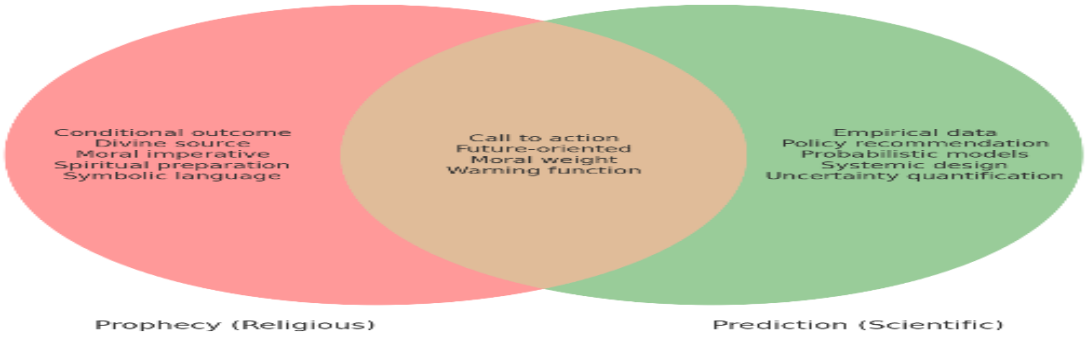

Figure 1. Overlapping and Divergent Features of Prophetic and Predictive Frameworks

Despite epistemological differences, religious and scientific eschatologies converge in their use of **apocalyptic narrative** as a call to transformation. Both dramatise a moment of ultimate reckoning—whether at the hands of a divine judge or a self-created mechanism. The binary of **divine punishment vs. human error** thus collapses into a shared existential grammar: catastrophe as consequence, with redemption contingent upon ethical awakening.

This thematic convergence suggests that **the apocalypse endures not because of theology or technology per se, but because of its symbolic power**. It externalises complex anxieties—moral, ecological, and ontological—into comprehensible stories of cause, consequence, and potential salvation (O'Leary, 1994). Whether through the flood of Genesis or the rise in global temperatures, the apocalypse remains a mirror to humanity's fears—and its capacity to choose differently.

Table 2. Comparative Eschatological Themes Across Religious and Scientific Paradigms

Theme	**Religious Eschatology**	**Scientific/Technological Doomsday**
Origin of Catastrophe	Divine punishment / cosmic justice	Human error, systemic risk, technological hubris
Temporal Structure	Linear (Abrahamic) or Cyclical (Dharmic)	Linear with feedback loops and projections
Moral Framework	Sin, repentance, judgment	Responsibility, risk ethics, mitigation
Means of Warning	Prophecy, revelation, scripture	Empirical data, modeling, forecasting
Salvation Path	Transcendence through faith or liberation	Technological control, survival systems
Ultimate Goal	Spiritual unity / divine communion	Continuity, adaptation, resilience

4.2 Signs and Warnings – Prophecy vs. Prediction

A central thematic intersection between religious and scientific eschatologies lies in their respective use of **signs and warnings**—tools meant to alert humanity to impending catastrophe. However, while **religious prophecy** draws upon divine authority and moral revelation, **scientific prediction** relies on empirical data and probabilistic modelling. Despite these epistemological differences, both forms serve a shared rhetorical and

psychological function: they dramatise temporality, awaken moral urgency, and shape collective behaviour in the face of existential threat.

4.2.1 Prophecy as Theological Warning

In religious traditions, prophecy is not merely a forecast of future events but a **moral discourse grounded in divine revelation**. Biblical prophets such as Isaiah, Jeremiah, and Ezekiel issued warnings of destruction not to describe inevitability, but to provoke repentance and transformation (Heschel, 2001). The prophetic voice is diagnostic and corrective: it identifies moral decay (idolatry, injustice, disobedience) and offers conditional deliverance contingent on spiritual reform (Jeremiah 18:7–10, NRSV).

In Christian eschatology, the *Olivet Discourse* (Matthew 24) and the *Book of Revelation* (Revelation 6–22) enumerate symbolic signs—such as wars, famines, and cosmic disturbances—as harbingers of the end times. These signs are **not precise timetables**, but theologically loaded warnings meant to prepare the faithful and distinguish true believers (Wright, 2012). Similarly, Islamic eschatology outlines both **minor** and **major signs** (ashrāṭ al-sāʿah), including widespread injustice, the emergence of Dajjal, and natural disasters, framing them as reminders of divine sovereignty and human accountability (Nasr, 2003).

Prophecy, then, is fundamentally **teleological and ethical**: it links cosmic futures to present behavior, urging a return to covenantal faithfulness. The warning is not a calculation but a **call to moral awakening** (Levenson, 1988).

4.2.2 Prediction as Scientific Forecasting

Scientific prediction, in contrast, operates through **inductive reasoning**, statistical modelling, and simulation. Climate science, epidemiology, and AI safety use complex algorithms and data inputs to forecast potential future states based on current trajectories (IPCC, 2023; Russell, 2019). For example, the IPCC's climate scenarios (SSPs and RCPs) do not predict a singular outcome, but a range of futures conditioned by policy choices, emissions, and feedback loops (Hausfather & Peters, 2020).

Unlike prophecy, scientific prediction is **non-moralistic in form**, yet it frequently results in **moralistic discourse in function**. "Tipping points," "existential risks," and "planetary boundaries" have become secular equivalents of prophetic signs—warning of irreversible thresholds and urging behavioural or policy shifts (Rockström et al., 2009). The language of impending disaster mobilises public will, much like ancient warnings of divine wrath.

Furthermore, prediction in the technological domain, such as forecasting AGI behaviour or the emergence of synthetic pandemics, rests on **epistemic uncertainty** and **system complexity**, akin to the symbolic ambiguity found in apocalyptic scripture. This has led some scholars to describe contemporary science-based foresight as a **"secular apocalyptic"** mode (Latour, 2018; O'Leary, 1994).

4.2.3 Convergent Rhetorics of Urgency

Despite their different methodologies, both prophecy and prediction rely on **the rhetoric of urgency**. They compress time, elevate stakes, and dramatise consequences to provoke a response. In both modes, the future is not fixed but shaped by present actions—a **temporal feedback loop** that enables ethical engagement.

This convergence suggests that prophecy and prediction, while divergent in origin, perform a **shared cultural function**: managing uncertainty by projecting meaning onto the future. Both invite not only analysis but action, creating a moral horizon that links foresight to responsibility.

4.3 Moral Reckoning vs. Rational Control

A central thematic divergence between religious and scientific eschatologies lies in their underlying frameworks of response: **moral reckoning** in the former, and **rational control** in the latter. While religious apocalyptic narratives often culminate in a profound confrontation with divine justice, where salvation or

damnation hinges on moral integrity, scientific doomsday scenarios emphasise control, mitigation, and regulation through reason and technical governance. This distinction reveals not only differences in metaphysical assumptions but also in models of human agency, accountability, and redemption.

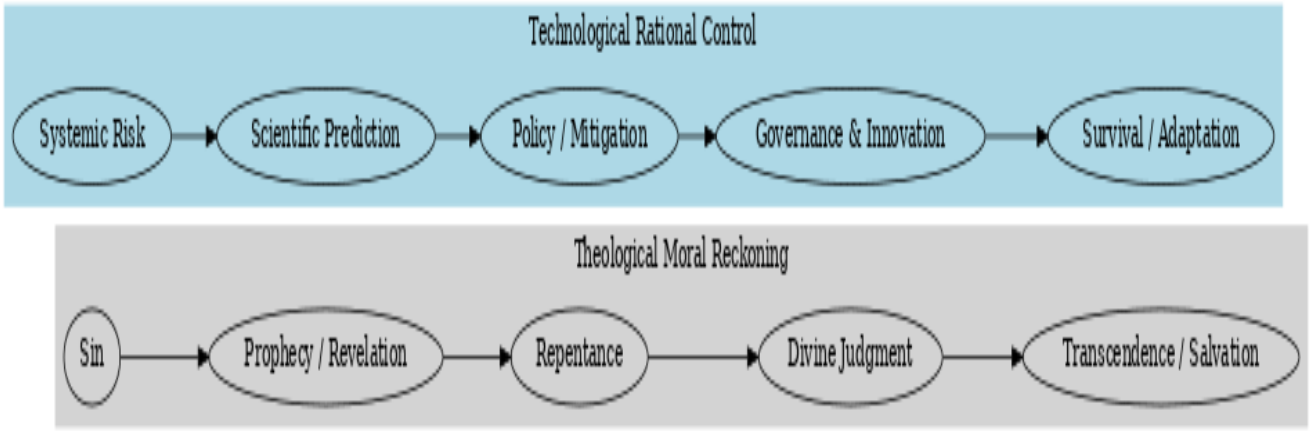

Figure 2. Divergent Eschatological Processes: Theological Moral Reckoning vs. Technological Rational Control

4.3.1 Moral Reckoning in Religious Eschatology

Religious traditions conceptualise the end times as a moment of **moral climax**—a final judgment that assesses individual and collective righteousness. In Christianity, the *Last Judgment* (Revelation 20:11–15) is portrayed as a courtroom where each person is judged "according to what they had done." Similarly, Islamic eschatology emphasises divine justice on *Yawm al-Qiyamah*, where every deed is weighed on scales (Qur'an 101:6–9). In both traditions, apocalypse is inseparable from **ethical accountability** (Levenson, 1988; Rahman, 1980).

This model centres **repentance and transformation**. Catastrophe is not only punishment but also a consequence of forsaking divine law. As such, the appropriate response is **moral renewal**, prayer, humility, and ethical correction. The agent of salvation is not technology or policy, but virtue, faith, and divine mercy (Wright, 2008). Moral reckoning in this view is not only retrospective but transformative: the confrontation with one's sins enables the possibility of grace and cosmic reordering.

4.3.2 Rational Control in Scientific Risk Management

In contrast, scientific and technological discourses on existential risk—whether from AI, nuclear weapons, or pandemics—are governed by the logic of **rational control**. These models prioritize **risk quantification**, probabilistic forecasting, institutional policy-making, and technological safeguards (Bostrom, 2014; Russell, 2019). The prevailing assumption is that catastrophe can be anticipated, measured, and managed through human ingenuity and coordinated action.

In AI governance, for instance, the focus is on **alignment, corrigibility**, and containment protocols to ensure that artificial agents do not exceed or misinterpret human intent (Amodei et al., 2016; Soares et al., 2015). In climate science, the "carbon budget" metaphor typifies rational control, allocating permissible emissions to remain below defined planetary thresholds (IPCC, 2023). In both domains, salvation lies in **technical precision, policy foresight, and systemic design**, rather than repentance or spiritual insight.

This orientation favours **secular ethics of responsibility** over theological virtue. Human error is seen as correctable, not sinful; and the future is malleable, not fated. However, this also leads to technocratic dilemmas: **who controls the models**, who defines "acceptable risk," and what values underlie these decisions (Dafoe, 2018)? Unlike divine reckoning, rational control must justify itself without recourse to transcendent authority, relying instead on collective rationality and democratic legitimacy.

Tensions and Crossovers

Despite their divergence, both paradigms ultimately respond to the same impulse: to confront **existential vulnerability**. Moral reckoning and rational control are not mutually exclusive but reflect **complementary responses to crisis**—the former emphasizing inner transformation, the latter structural coordination. Indeed, moral language often infiltrates secular discourse: scientists warn of "climate guilt," "moral hazard," and "reckless ambition" in ways that echo prophetic condemnations (Latour, 2018; Gardiner, 2011).

Moreover, critics argue that technocratic solutions often **lack moral imagination**, treating symptoms while ignoring root ethical failures, such as greed, inequality, or disregard for future generations (Scheffler, 2013). Conversely, prophetic rhetoric may **lack actionable mechanisms**, stirring emotion without offering implementable reform.

The synthesis, therefore, may lie in a **hybrid eschatology**—one that unites moral responsibility with rational foresight, and that treats humanity not only as a technical agent but as a moral subject facing the consequences of its choices in a fragile world.

4.4 Cyclical vs. Linear Time

One of the most profound thematic distinctions in eschatological narratives—both sacred and secular—is the conception of **time**. Religious and philosophical traditions have long debated whether history unfolds in a **linear** progression with a definite beginning and end or follows a **cyclical** rhythm of eternal recurrence and renewal. These differing models of temporality not only shape eschatological outlooks but also inform ethical priorities, cosmological frameworks, and societal attitudes toward progress, catastrophe, and salvation.

4.4.1 Linear Time in Abrahamic Eschatology and Scientific Modernity

Linear time is foundational to the eschatological frameworks of Judaism, Christianity, and Islam. In these traditions, time has a **teleological structure**: it begins with creation (*ex nihilo*), moves through a moral and historical process, and culminates in divine judgment or ultimate restoration. In the Hebrew Bible, this is evident in the prophetic trajectory from Genesis to the *Book of Isaiah*, where history is directed toward messianic fulfillment (Levenson, 1988). Christian theology reinforces this structure through the Incarnation, Crucifixion, and Second Coming—history is Christocentric and eschatologically charged (Wright, 2008). Similarly, Islamic eschatology affirms a linear end-time framework culminating in Yawm al-Qiyamah (Day of Resurrection), where all souls are judged (Nasr, 2003).

Modern science has inherited this **linear temporality**, particularly in Enlightenment notions of progress, historical determinism, and the concept of evolutionary time. Geological and cosmological models, such as the Big Bang theory and the thermodynamic heat death, posit a beginning and a probable end to the universe (Carroll, 2010). In climate science, planetary futures are modelled in trajectories, with warnings tied to irreversible thresholds— "points of no return" that follow a temporal arc toward collapse or sustainability (IPCC, 2023).

Thus, both Abrahamic theology and modern techno-scientific paradigms share an eschatological **narrative of culmination**, whether in divine judgment or ecological exhaustion. The future is not a repetition but a decisive fulfilment or cessation of temporal unfolding.

4.4.2 Cyclical Time in Eastern Religions and Cosmic Renewal

In contrast, **cyclical time** characterizes the eschatologies of Hinduism, Buddhism, Jainism, and certain Indigenous cosmologies. In these traditions, the cosmos moves through **recurring cycles** of creation, dissolution, and rebirth, known in Hinduism as *yugas*, in Buddhism as *kalpas*, and in Jainism as *utsarpini* and *avasarpini* (Gethin, 1998; Doniger, 2009).

In Hindu cosmology, the *Kali Yuga*—our current degenerate age—will end in a cataclysmic dissolution (*pralaya*), followed by the rebirth of a new *Satya Yuga*, inaugurating a restored cosmic order (Bhattacharyya,

1993). Absolute beginnings or ends do not bound time here, but it is **infinite and regenerative**. Similarly, Buddhist eschatology envisions the decline of the *dhamma* followed by the arising of a new Buddha (Metteyya), marking the renewal of spiritual truth (Anālayo, 2017).

These cyclical models promote a **different ethic**: one of endurance, detachment, and spiritual liberation within repetitive temporal patterns. The goal is not the salvation of history but the transcendence of its cycles. Catastrophe is less a final judgment than a rhythmic transformation.

4.4.3 Convergence and Implications

The contrast between linear and cyclical time is not merely theoretical—it shapes lived eschatologies. Linear systems stress **urgency, finality, and moral action**. Time is running out; choices are consequential. Cyclical systems offer **patience, repetition, and spiritual detachment**. Endings are beginnings; change is perennial.

However, contemporary eschatological narratives increasingly **blend these temporalities**. Climate change discourse, for example, speaks of irreversible tipping points (linear), while also invoking long-term planetary rhythms and resilience (cyclical). AI futures oscillate between singularity (a linear "end of history") and adaptive coevolution (a cyclical transformation of humanity) (Kurzweil, 2005; Tegmark, 2017).

This hybridisation suggests that neither model alone suffices. Instead, the ethical and metaphysical challenge lies in integrating **urgent intervention** with **long-term vision**, acknowledging both the singularity of our time and the recursive patterns that shape civilisations.

4.5 Transcendence vs. Technological Salvation

As humanity grapples with existential threats ranging from climate collapse to artificial intelligence, two contrasting paradigms emerge in response to the prospect of the end: **transcendence** and **technological salvation**. While traditional religious eschatologies emphasize the soul's liberation, divine reconciliation, and the entry into a metaphysical beyond, techno-scientific narratives increasingly promote salvation through **technological innovation**, digital immortality, or species-wide evolution. This contrast reflects deeper ontological assumptions about what constitutes "saving" humanity—its spirit, its flesh, or its data.

4.5.1 Transcendence in Religious Eschatology

Transcendence, in its classical religious sense, refers to the **liberation from material constraints and the reconciliation with a divine source**. In Christian theology, salvation culminates in resurrection and eternal communion with God (Wright, 2008). In Islamic thought, paradise (*jannah*) is not simply a continuation of worldly existence, but a perfected state of nearness to Allah, contingent on divine mercy and moral accountability (Rahman, 1980). Hindu and Buddhist traditions further spiritualise the eschaton, aiming not at continuation but **release (moksha or nirvana)** from the cycles of rebirth and worldly illusion (Doniger, 2009; Gethin, 1998).

These frameworks see the end not as an **apocalyptic catastrophe alone**, but as an ontological transition—a movement from the profane to the sacred, from fragmentation to divine unity. Time ceases, suffering dissolves, and the human soul is either judged, absorbed, or liberated. Crucially, **the agent of salvation is not human ingenuity**, but divine grace, ethical discipline, or enlightened awareness.

4.5.2 Technological Salvation and the Secular Eschaton

In sharp contrast, many secular futurists and transhumanist thinkers propose salvation via **technological mastery**. These include visions of escaping biological limits through mind uploading, genetic enhancement, artificial general intelligence, and interplanetary colonisation (Kurzweil, 2005; Bostrom, 2014). Here, the apocalypse is not a divine reckoning but a **technological bottleneck**—a phase of existential risk that, if navigated successfully, opens the path to "Life 3.0" (Tegmark, 2017).

In this paradigm, salvation is not spiritual but **ontological continuity through innovation**. Death becomes a disease to be cured, the human brain becomes code to be replicated, and suffering becomes a design flaw to be debugged. The Singularity—the point at which AI surpasses human intelligence—is interpreted by some as the **rationalist eschaton**, akin to divine intervention, but engineered by human hands (Goertzel & Pennachin, 2007). Heaven becomes the cloud, God, an algorithm.

This techno-salvific narrative is not devoid of **quasi-religious symbolism**: promises of immortality, messianic breakthroughs, and purgatorial struggles (e.g., overcoming scarcity or entropy) mirror ancient motifs (Geraci, 2010). However, critics argue that it represents **technological hubris**—a refusal to reckon with finitude, ethics, and metaphysical mystery (Carr, 2010).

4.5.3 Converging Imaginaries and Ethical Divergence

Despite their surface opposition, transcendence and technological salvation **converge in their eschatological impulse**: both seek to escape the limitations of current human existence, whether through spiritual elevation or synthetic transformation. They both offer **hope against death**, permanence over impermanence, and meaning beyond mere survival.

However, their ethical trajectories differ significantly. Religious transcendence demands humility, repentance, and moral formation; it assumes the primacy of the soul over the body or mind. Technological salvation prioritises control, optimisation, and engineering precision—it presumes that the human condition can be solved by systemic design (Russell, 2019). One leans into mystery; the other into mastery.

The coexistence of these paradigms in contemporary discourse suggests a plurality of eschatological imaginaries, where ancient aspirations resurface in digital futures. Whether one seeks a divine homecoming or a post-biological upgrade, both speak to humanity's enduring desire to overcome the fragility of its existence and to find redemption, whether beyond the stars or within the soul.

4. Public Responses to Contemporary Doomsday Narratives

While eschatological narratives have historically emerged from religious and philosophical traditions, they now circulate widely in public discourse, amplified by media, politics, and digital platforms. Recent empirical studies demonstrate that public perception of apocalyptic scenarios—whether religious or scientific—is shaped by a complex interplay of belief systems, cultural memory, and mediated fear**.** This section explores how contemporary audiences interact with doomsday narratives, particularly in the context of climate change, artificial intelligence, pandemics, and technological risks.

4.1 Apocalyptic Belief in Modern Contexts

Surveys reveal that apocalyptic thinking remains widespread. A Pew Research Centre study found that 39% of U.S. adults believe we are living in the "end times", a figure that rises sharply among evangelical Christians (Pew Research Centre, 2022). This belief often intersects with political ideology, affecting views on climate change and environmental stewardship. In many cases, religious convictions frame ecological disaster as either fulfilment of prophecy or irrelevant to salvation, thus shaping attitudes toward risk and responsibility (Caroll, 2004).

Meanwhile, secular apocalyptic fears are increasingly visible in public discourse around artificial intelligence, synthetic biology, and climate collapse**.** A 2023 Ipsos Global Advisor survey across 29 countries found that 66% of respondents believe climate change poses a serious threat to humanity's future**,** with younger generations expressing the most anxiety (Ipsos, 2023). Similarly, popular discourse on AI often blends rational concerns with mythic and cinematic tropes, suggesting a symbolic continuity with religious eschatology (Geraci, 2010).

4.2 Social Media and “Doomscapes”

Digital platforms play a key role in shaping how doomsday narratives are disseminated and received. Online subcultures such as "r/collapse" and "DoomTok" (on TikTok) cultivate emotionally charged discussions around ecological and technological demise, blending data, satire, and despair (White & Swanson, 2021). These platforms function not only as echo chambers but as spaces where existential fear is aestheticised, moralised, and occasionally ritualised—e.g., through memes, countdowns, and shared speculative fiction.

Geraci (2012) argues that apocalyptic AI narratives online often mimic religious storytelling, offering messianic expectations of transcendence or demonic warnings of doom. Public attitudes toward AI and biotech are thus deeply influenced by cultural imagination, not just scientific literacy.

4.3 Crisis Fatigue and Adaptive Narratives

A growing body of research suggests that prolonged exposure to apocalyptic messaging may lead to emotional fatigue and political disengagement**.** O’Neill and Nicholson-Cole (2009) found that while fear-based climate communication can temporarily increase concern, it often reduces long-term engagement, especially when messages lack actionable solutions. This echoes religious eschatologies in which excessive prophecy without redemption leads to desensitization.

However, some publics are repurposing doomsday narratives toward activism and meaning-making**.** For instance, the rise of climate movements like Extinction Rebellion invokes explicitly apocalyptic language to demand moral urgency while offering redemptive action. Similarly, Indigenous communities frame environmental destruction within their spiritual cosmologies, which emphasise disruption and restoration, calling for both cultural survival and ecological justice (Whyte, 2018).

DISCUSSION

One of the most striking findings is the shared **narrative architecture** across sacred and secular eschatologies. Both domains construct timelines that culminate in crisis, include identifiable warnings or signs, demand moral or practical response, and envision some form of salvation—spiritual in religious contexts, technocratic in scientific ones. Prophetic traditions such as Revelation or the Hadiths about Qiyamah offer **symbolic thresholds**, like the Four Horsemen or appearance of the Dajjal, which resonate with modern tipping points in climate models or AGI emergence. These threshold events function not just as data points but as **moral inflection moments**, inviting audiences to consider ethical preparedness or repentance.

However, the language of redemption also transforms. In theological eschatology, redemption is a return to divine order or union with the transcendent (Levenson, 1988; Wright, 2008). In scientific discourse, redemption becomes **survival**—the ability to prevent worst-case scenarios through regulation, innovation, or planetary escape. This pragmatic form of salvation, however, lacks the **teleological closure** of religious thought. It is provisional, probabilistic, and continuously deferred.

6.2 Moral Authority and the Redistribution of Judgment

Another significant thematic shift lies in the locus of **moral judgment**. In traditional frameworks, judgment is rendered by a divine actor external to humanity. In contemporary risk discourse, humanity becomes its own judge and executioner. This redistribution of judgment generates a new moral burden—one shaped by empirical models and predictive governance rather than scripture. Nevertheless, it also reproduces certain theological anxieties: who is authorised to define what constitutes “good” stewardship or acceptable risk?

Technological elites and scientific institutions often assume this role, which raises questions about **epistemic justice and exclusion**. Just as eschatological interpretations were once the domain of religious authorities, risk scenarios are now constructed and disseminated by a narrow epistemic community, often disconnected from the lay public. This may create a form of secular clerisy—technocrats whose models function as contemporary revelation, opaque yet binding.

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6.3 Temporality and the Collapse of Certainty

Traditional eschatologies often operate with **linear or cyclical models of time**. The former dominates Abrahamic religions, wherein history moves from creation to judgment; the latter informs Hindu and Buddhist cosmologies. Modern science, while aspiring to linearity through progress and data extrapolation, paradoxically embodies both linear and nonlinear aspects. Climate science, for example, utilises cyclical feedback mechanisms, while AI risk modelling projects straight-line escalations in capacity and autonomy.

These entangled temporalities contribute to a collapse of **certainty**. Just as sacred texts warn that "no one knows the day or hour" (Matthew 24:36), scientific forecasts often include error margins and probabilistic framing. This instability does not diminish their rhetorical power—it **amplifies urgency** by foregrounding unpredictability. What unites prophecy and prediction is not certainty but the ability to mobilise **ethical and emotional response** under uncertainty.

6.4 Toward a Hybrid Eschatology

Perhaps the most significant implication is the emergence of hybrid eschatologies—new narrative forms that blur the boundaries between sacred and secular, science and story, ethics and engineering. Concepts such as "carbon sin," "algorithmic judgment," or “AI gods” are not merely metaphors—they are **evolving symbolic codes** that allow public imagination to process overwhelming risks using inherited moral grammars.

Hybrid eschatologies also appear in cultural products—such as films, literature, and games—that merge religious symbolism with techno-scientific speculation. These fusions demonstrate that **apocalyptic thought is not being replaced, but reinterpreted**, re-ritualised, and re-coded for the Anthropocene and post-human futures.

This hybridity presents both risks and opportunities. It allows for **cultural resonance and emotional engagement**, making abstract threats intelligible. However, it can also foster fatalism or misplaced faith in technology as savior, mirroring the theological error of overreliance on divine intervention.

6.5 Implications for Public Understanding and Governance

The convergence of sacred and secular eschatologies reshapes how existential risks are communicated and governed. On one hand, **narrative framing** is essential for mobilising action—whether through climate movements invoking extinction or AI ethicists warning of superintelligence. On the other hand, eschatological excess can lead to **alarm fatigue**, public cynicism, or disengagement (O’Neill & Nicholson-Cole, 2009).

Policy must therefore navigate between **apocalyptic overreach and techno-optimist denial**. Integrating insights from religious ethics—such as humility, moral limits, and stewardship—into secular governance may enhance the moral vocabulary available for addressing global risks (Gardiner, 2011; Whyte, 2018). Simultaneously, transparent communication and participatory modelling can democratise the new “prophetic” role of scientific forecasters.

Figure 5. Emerging Hybrid Eschatologies: Symbolic Intersections of Theology and Technoscience

Figure 3: Emerging Hybrid Eschatologies – Symbolic Intersections of Theology and Technoscience**,** a concept cloud visualising the convergence of religious and technological end-times motifs.

CONCLUSION

7.1 Interpretation of Findings

This study reveals that apocalyptic narratives—long considered the domain of religion—are not only alive in contemporary thought but are also actively reinterpreted through the lens of scientific and technological risk. Traditional eschatologies and modern existential threats are not disparate worldviews but rather **parallel structures of meaning**, shaped by moral urgency, symbolic thresholds, and an enduring concern for human survival. The transition from divine to technocratic control, from prophecy to prediction, reflects a **profound epistemic and ethical shift** in how societies conceptualize the end of the world. However, despite their differences, both religious and techno-scientific frameworks continue to function as **moral cartographies**, mapping the boundary between ethical failure and redemptive possibility.

7.2 Recap of Key Findings & Contributions

Several key insights emerged from this narrative review:

- **Thematic Continuities**: Both sacred and secular doomsday narratives share common structures—warning signs, climactic judgment, and pathways to salvation—suggesting enduring symbolic grammars across eras and epistemologies.
- **Shift in Moral Agency**: The locus of judgment has shifted from divine beings to human actors, particularly scientists, engineers, and policy makers. This reflects both empowerment and burden, as humanity must now confront risks it has essentially created.
- **Temporal Hybridity**: While religious eschatologies tend to frame time as linear or cyclical, scientific narratives blend both, using models that include feedback loops and probabilistic thresholds.
- **Hybrid Eschatologies**: New cultural expressions—ranging from "AI gods" to climate doomerism—blend theological motifs with technological fears, resulting in a **hybrid symbolic order** that influences public consciousness and ethical responses.
- **Empirical Integration**: By incorporating public survey data and Indigenous eschatologies, this study expands the dominant discourse, demonstrating the **cultural plurality and lived responses** to contemporary doomsday thinking.

The core contribution of this work lies in **bridging the fields of religious studies and risk science** to reveal how both disciplines inform modern imaginings of the end, and how their convergence can deepen our understanding of existential threats.

7.3 Practical Implications

These findings have far-reaching implications for communication, policy, and ethical governance:

- **Risk Communication**: Recognising that people respond to existential threats not just rationally but also symbolically can enhance how scientists and policymakers frame public warnings, particularly in contexts such as climate change, biotechnology, and AI ethics.
- **Moral Framing in Policy**: Integrating spiritual and cultural perspectives—especially Indigenous frameworks—into global governance may foster **greater public trust, pluralism, and legitimacy** in addressing existential risks.
- **Educational Curricula**: Teaching apocalyptic narratives across disciplines (e.g., literature, science, ethics) can help students **develop critical media literacy** and moral imagination in confronting real-world challenges.

- **Technological Ethics**: AI, biotech, and climate interventions should be designed not only with technical foresight but with **cultural and ethical depth**, acknowledging the mythic and moral dimensions these technologies now inhabit.

7.4 Limitations

While this study advances a comparative and interdisciplinary view, it has several limitations:

- **Lack of Primary Empirical Data**: Although surveys and case studies were incorporated, no original fieldwork (e.g., interviews, focus groups) was conducted. This constrains the ability to capture nuanced, personal interpretations of apocalyptic belief.

- **Scope of Traditions**: Despite efforts to include Indigenous and non-Western eschatologies, this study remains limited in its coverage and depth of localized spiritual traditions, especially those outside written scripture.

- **Focus on Narrative Over Reception**: The emphasis remained on narrative form and thematic structure rather than on **media studies or reception theory**, which could further explore how apocalyptic messages circulate and mutate in popular culture.

7.5 Suggestions for Future Research

Building on these insights, several avenues for future research are recommended:

- **Empirical Studies on Belief Reception**: Conduct surveys, ethnographies, or discourse analyses to understand how diverse communities internalize and respond to doomsday narratives, particularly among youth and digital-native populations.

- **Deeper Integration of Indigenous Cosmologies**: Explore Indigenous frameworks not only as contrasting worldviews but as **alternative epistemologies of time, resilience, and moral ecology** in a planetary crisis.

- **AI and Religion Crossovers**: Examine how religious institutions and belief systems respond to the theological dimensions of artificial intelligence, including discussions of consciousness, judgment, and digital afterlife.

- **Media and Popular Culture Analysis**: Analyse films, memes, games, and online platforms to trace the myth-making processes of modern apocalypse, focusing on narrative aesthetics, ritual behaviour, and community formation.

- **Policy Design and Narrative Ethics**: Investigate how moral storytelling and eschatological symbolism can inform **ethical foresight tools**, participatory governance models, and anticipatory regulation in emerging technologies.

This study confirms that eschatology remains a dynamic and adaptable framework through which humanity continues to navigate its deepest fears, hopes, and responsibilities in an age where the line between divine prophecy and machine learning blurs. The apocalyptic imagination endures—not as fantasy, but as **a crucial mode of cultural and ethical survival**.

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