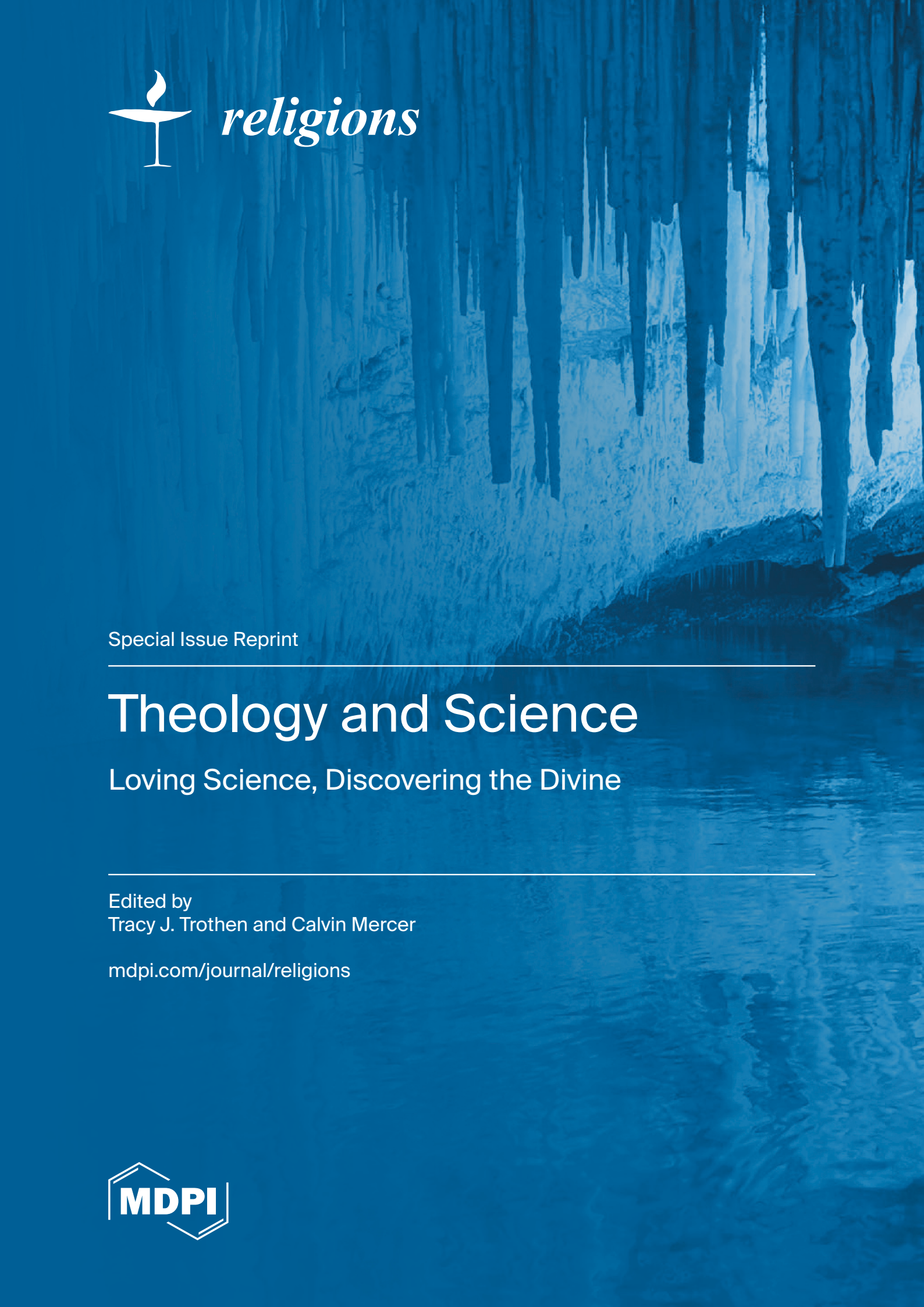

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Special Issue Reprint

Theology and Science

Loving Science, Discovering the Divine

Edited by
Tracy J. Trothen and Calvin Mercer

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Guest Editors

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Tracy J. Trothen is an interdisciplinary professor of ethics at Queen's University, jointly appointed to the School of Religion and the School of Rehabilitation Therapy. Trothen is the author or editor of numerous articles, chapters, and books including *Understanding Religion and Artificial Intelligence: Meaning-Making in the Digital Age* (co-authored with Randall Reed), and the award-winning *Religion and the Technological Future: An Introduction to Biohacking, AI, and Transhumanism* (co-authored with Calvin Mercer).She co-chairs the American Academy of Religion's (AAR) Artificial Intelligence Unit and is a Fellow of the International Society for Science and Religion (ISSR).

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Preface

This Special Issue grew out of a simple conviction of the co-editors, that love for science and technology need not stand in unhealthy, oppositional tension with the search for the divine. Careful attention to scientific discovery and technological innovation can open up fresh pathways for theological reflection, and, in turn, theological traditions can offer critical and constructive guidance for how science and technology are imagined, developed, and utilized. Under the theme "Theology and Science: Loving Science, Discovering the Divine," the essays in this collection explore those pathways across a range of religious traditions, scientific disciplines, and ethical questions.

This collection of articles reflects the complexity of the theme of this issue. Love does not mean unequivocally endorsing all scientific conclusions or proposals. Love does mean digging deeply into the promise and perils of science. And the divine is not always discovered through engagement with science. Yet critical engagement with science can help us to discover the possible goods that science can at times yield.

Early essays frame the conversation conceptually and historically. A reflection on Alister McGrath's engagement with the natural sciences and a study of shifting theological metaphors—from salvation, to evolution, to therapy—set the stage for examining how scientific ideas reshape religious imagination. Historical work on the theological origins of the modern biomedical project and on hospitality and healing in the Ospedale di Santa Maria della Scala situate the theology and science dialogue within Christian practices and visions of medicine, mercy, and the relief of suffering.

The next few essays turn to AI and related technologies as a crucible for contemporary theology. The contributions on AI probe how machine intelligence reshapes pastoral practice, moral reasoning, theological anthropology, and eschatological hope in Christian ministry, scientific wonder and awe, apocalyptic imaginaries, East Asian religious and philosophical traditions, Buddhist reflections on consciousness, and the use of AI in Shi'i ijtihad.

Essays on psychedelics, mysticism, and Christian spirituality examine how emerging scientific research intersects with biblical interpretation, ecclesial discernment, and the quest for transformative encounters with the divine. The final essay is a constructive vision that links ecology, justice, and Christian hope.

Written by seasoned scholars and new voices, these essays model diverse approaches in which scientific and technological developments are engaged as serious partners in the work of thinking about God, the world, and the future of humanity. Our hope is that this reprint will serve scholars, students, and practitioners as a resource for continued exploration of how loving science might, in many different ways, contribute to discovering more about the divine, and how rich theological traditions might, in turn, inform more humane, responsible, and hopeful approaches to scientific and technological development.

Tracy J. Trothen and Calvin Mercer
Guest Editors

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Article

Reflecting on Alister McGrath's *Love for Science* and *Discovery of God*: Learnings for Non-Christian Theists

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Abstract

Oxford's Alister McGrath undoubtedly reflects a paradigm of meaningful intersection in the scholarship of science and religion, especially Christian theology. McGrath's life journey from loving science to discovering God in Christianity is particularly intriguing because his convictions were not supernatural but intellectual, rooted in multiple conscientious inquiries culminating in his conclusion that through Christianity, humanity and creation can be better understood. A recurring quote in McGrath's writings comes from C.S Lewis: "I believe in Christianity as I believe that the sun has risen not only because I see it, but because by it I see everything else". How do spiritual eclipses influence religious belief? What might non-Christian theistic religion like African traditional perspectives glean from a uniquely Christian outlook? This paper, leveraging McGrath's unique journey as a bridge between religion and science, unravels intelligible parallels between two different religious perspectives and learnings that non-Christian theists can glean from exclusively Christian scholarship.

Keywords: Alister McGrath; African religious thoughts; Christian theology; science; religion

1. Introduction

The immense contributions of Oxford University's Emeritus Professor Alister E. McGrath toward a constructive engagement between science and religion, especially Christian theology, cannot be overstated. McGrath's intellectual and spiritual journey, marked by a transition from a passionate love for science to a profound discovery of God, stands out for its divergence from traditional metanarratives that often frame religious conviction in terms of religious and supernatural encounters. His path carves out a unique position for him as a bridge between the domains of science and religion, having deeply engaged with both.

The primary aim of this article is to address a significant gap in the academic study of science and religion, namely, the under-exploration of the personal and individual experiences of prominent scholars within the field. With only a few exceptions, the religious journeys of such figures, and how these journeys and experiences inform their scholarship, remain largely unexamined. To address this, this essay employs a descriptive methodology underpinned by a critical evaluation of Alister McGrath's life and intellectual development. This exploration not only highlights vital questions but also uncovers lessons with broader implications for how we understand the interface between science and religion, especially on an individual and personal level.

According to John Evans (2011), the relationship between science and religion at the personal level can be epistemological and, at the same time, moral, with the latter

encompassing individual interests, values, and convictions. Empirical studies frequently underscore sources of tension between these two domains, arising from intellectual dissonances as well as clashes over the authority to influence public morality (Evans 2011, p. 713). While moral concerns inch closer to the realm of personal experience, the individual narratives of scholars, especially those who shape public and academic discourses, are often overlooked.

Supporting this perspective, Ecklund and Park (2009) conducted a seminal study on the relationship between science and religion amongst academic scientists at the personal level. Their work offers preliminary insights into the role of religious practices and instances where individuals were likely to accept the conflict paradigm if they were raised in a home where religion was not important (Ecklund and Park 2009, p. 276). Their findings further demonstrate that a scientist's religious or non-religious identity does not necessarily predict their views on science–religion compatibility. A non-religious scientist might view the two domains as harmonious, while a devoutly religious scientist might perceive them to be in conflict, leading to inner tension and strategies such as compartmentalization to manage the dissonance (Ecklund and Park 2009, p. 280).

These findings point to a deeper need for a closer examination of the intellectual, personal, and social struggles of influential scholars in the field, particularly those who journey from a scientific worldview toward a religious one (or vice versa). Arguably, McGrath's journey serves as a rich case study. His transition from atheism to Christian faith, informed by a rigorous scientific background, provides an opportunity to explore the nuanced and often complex ways in which personal biography intersects with academic inquiry. Through his life and work, McGrath challenges the dichotomy between science and religion, offering instead a model of integration that is both intellectually robust and personally resonant. Understanding these personal narratives can illuminate the paradigms that shape such individuals' academic work and offer insights into how these personal experiences can influence public and scholarly perceptions of the science–religion relationship.

2. Introducing McGrath—A Brief Bio

Alister Edgar McGrath was born in January 1953 in Belfast, Northern Ireland. It is imperative to note that 1950s Northern Ireland witnessed tensions between the Catholics and the Protestants, which bubbled over into full-blown riots from time to time (Berkley Center for Religion, Peace, and World Affairs 2013). He began his education at the Methodist College, Belfast, majoring in pure and applied mathematics, physics, and chemistry before he got a scholarship to study chemistry at Oxford University in October 1971, graduating with first-class honors in June 1975. He then began his doctorate in molecular biophysics under the supervision of Prof Sir George Radda in September 1975. Between 1971 and 1975, McGrath started on a journey from loving (and being exceptionally gifted in) science to a curiosity for and discovery of God. Amidst many conversations and multiple conscientious inquiries, February of 1974 marked a remarkable moment when he found a traveling companion in C.S Lewis. His engagement with some of Lewis' writings and delineations of Christianity sparked curious interest in him, provoking him to reconsider his earlier conclusions about Christianity and inspiring a yearning to study theology in depth. The opportunity to journey into theology presented itself in 1976, and McGrath grabbed it with both hands! By 1978, McGrath had bagged a first-class honors in theology and enrolled for training to be ordained as a minister of the Church of England by 1980 (McGrath 2019).

In terms of his career, McGrath crafted a path that synergized his academic interests with his ministerial calling. He was Oxford's Professor of Historical Theology from 1999 to 2008. He then moved to King's College London as Professor of Theology, Ministry, and Education, before returning to Oxford as Idreos Professor in 2014. From 2015 to 2018,

He served as Gresham Professor of Divinity, which is the oldest and most distinguished chair of public theological engagement in Britain and was established in 1597. He retired in September 2022 having accepted Oxford University's Andreas Idreos professorship of Science and Religion and the Directorship of the Ian Ramsey Center for Science and Religion in April 2014.[1] McGrath's scholarship has been celebrated both within and outside academia, having written "32 monographs, 9 academic textbooks, and at least 21 other theological books for wider readership, from laypeople to clergy", with reflections on the appeal of his scholarship both to academics and general society (Sollereder 2022, p. 110).

3. From McGrath's Love for Science...

Without equivocation, Alister E. McGrath embodies the unique intersection of Christian theology and the sciences—both as an individual and as a scholar. Arguably, McGrath began his intellectual journey more as a skeptic than a committed atheist. From the outset, he maintained a firm belief that the existence and knowledge of God could not be grounded in empirically proven facts—facts understood as "objective truths that could be proved to be right, resting on unshakeable experimental evidence" (McGrath 2020, p. 158). At that time, religion and religious belief did not appear rational to him. They were uncertain, unprovable by scientific standards, and thus unworthy of serious intellectual attention. McGrath gravitated toward the empirical rigor of science, which offered him a sense of intellectual clarity and certainty.

For a time, he found intellectual respite in the sciences, which engaged and celebrated empiricism. He believed that as long as a belief in God could not be factually proven, it should be discarded: "science proved its ideas, whereas religion merely asserted them. Science entailed atheism and destroyed the illusions on which religion was based" (McGrath 2019, p. 432). His conclusions at that time were also influenced by the socio-political situation of Northern Ireland because he was born and partly raised at a time when religion and religious affiliation were on the front burner of the social, political, and economic life of Northern Ireland, constituting a conflict that eventually abated through the Belfast Agreement of 1998 (commonly known as the Good Friday Agreement) that put an end to major hostilities (Berkley Center for Religion, Peace, and World Affairs 2013). In essence, his belief system was largely informed by experiences of religious violence and instability, thus substantiating his convictions that religion and religious belief were more of a vice than a virtue.

In this context, McGrath's skepticism progressed to atheism. His worldview became one where the certainty offered by science eclipsed the perceived irrationality of religion. As John Evans noted in an article titled "Epistemological and Moral Conflict Between Religion and Science", there is a remarkable distinction between non-religiou person and an atheistn most cases, they do not represent the same thing (Evans 2011, p. 711). For McGrath, the intellectual seduction of certainty made atheism appealing; thus, he gradually moved from being non-religious to being an atheist. Like many who struggle with uncertainty, he sought the stability of empirical knowledge and found fulfillment in the perceived finality of scientific explanation. This drive toward certainty is a common human trait, an insatiable desire to know, understand, and master one's environment, and this is the bedrock of *scientia*.

Yet even within the scientific tradition, the promise of complete certainty remains elusive. Bertrand Russell, in his remarkable treatise "The Scientific Outlook", appraising human knowledge and power, especially when derived through science, underscores the limitations of human knowledge, stressing that despite how astonishing it is that humans know so much, it is still more astonishing that so little knowledge can give us so much power, especially in terms of changing and manipulating humanity (Russell [1919] 1931,

p. 73ff). Russell's writing often accentuates how knowledge, innovation, and discovery are often held in high esteem and perceived with great zest within the sciences, with little or no recourse to their inherently transient nature and ability to obscure human vision from higher-order wisdom and knowledge.

Similarly, Karl Popper and other philosophers of science have long argued against the notion that science is the ultimate or only path to truth, emphasizing the provisional nature of scientific theories (Popper 1959). The reality remains that any curious scientist who has spent many years in the scientific community will usually become aware of, in different waves and with different intensities, the fleeting nature of scientific knowledge. McGrath eventually began to wrestle with this transience. He remarked that "If scientific theories that once commanded widespread support had now been displaced by superior alternatives, who could predict what would happen to these new theories in the future?... Might they not be transient staging posts, rather than final resting places?" (McGrath 2019, p. 433). For McGrath, such reflections raised a deeper question: where lies the anchor that holds true from era to era and time to time? This question propelled him beyond the confines of scientific inquiry toward broader existential considerations.

McGrath attempted to expand the frontiers of his knowledge, exploring Marxism and other ideologies that seemed to provide succor; however, his quest came to a point of encountering their limitations too. Eventually, he reached what he described as "standing on the threshold of a new way of thinking and living" (McGrath 2020, p. 56). Being an intellectually curious individual, who would methodically engage with the facts and insights derived from ideologies and intellectual ideas, he finally embarked on a rigorous and open-minded investigation into the claims of Christianity; "I had stepped into a new strange realm and felt the compulsion to explore its territory. . ." (McGrath 2020, p. 59).

4. . . .to McGrath's Discovery of God

McGrath's intellectual inquiry led him to discover that Christian theology, far from being antithetical to intellectual rigor, offered a profound and coherent vision of reality—one that could accommodate both the insights of science and the mysteries of faith. His journey to Christianity was intellectual, guided by multiple conscientious inquiries into the depth of the Christian faith. McGrath's discovery of God and embrace of Christianity were more intellectual than experiential (although there are aspects of his enlightenment that captured his reflections on nature as pointing towards a Divine essence).

At this juncture, it is imperative to consider whether the intellectual provability and rationality of the Christian faith take away from the supernatural-cum-spiritual dimensions of religious conversion, of which many have written and claimed to be the basis of genuine religious conversion. Several examples readily come to mind, both in the Medieval era and contemporary times. Martin Luther's dedication and commitment to Christianity came after a religious experience where he was miraculously saved from lightning. Rudolf Otto canvasses the notion of the numinous and the three phases of "Mysterium Tremendum et Fascinans" as the paradigm of a pathway to discovering the Divine (Otto 1923). John Hick, who is an apologist for supernatural experiences, argues extensively that religious belief can only be predicated on religious experience. The term 'religious experience' encompasses various nuances associated with spiritual, mystical, and supernatural encounters. In his two volumes on religious experience, Hick argues for the primacy of religious experience as a foundational basis for religion and as a common thread that unifies most religions of the world (Hick 2010, p. 29). John Hick explains religious experiences in two forms. The first is the lower form, i.e., the everyday sense in terms of the "religious, or numinous, or mystical experiences of ordinary people", and the second is the higher form, that is, intense

experiences recorded as "peak experiences' and an "altered state of consciousness" (Hick 2010, p. 39).

William James is another notable proponent of the notion of religious experience serving as a signifier of religious experience. For James, religious experiences have four characteristics. The first characteristic is ineffability, which in and of itself immediately indicates that it defies expression. The second is noetic quality: although they are like states of feeling, mystical states seem to those who experience them to be states of knowledge. The third is transiency: Mystical states cannot be sustained for a long time. When they fade, their quality is often imperfectly reproduced in memory. Lastly, there is passivity: when the characteristic sort of consciousness has set in, the mystic feels as if their own will were in suspension and, sometimes, as if they were grasped and held by a superior power (James 1902, pp. 281–83). Religious experiences are often captured in religious feelings, which often preempt the presence of the Divine as an "ontological imagination" within which "unpicturable beings are realized, and realized with an intensity almost like that of a hallucination" (James [1902] 2004, p. 61). Empirical evidence and testimonies of conversion from atheism to Christianity are often replete with supernatural encounters-cum-experiences, which are spiritual, transcendental, and emotive in nature, with corresponding physical reactions and responses; however, McGrath's experience shows that encounters codified in religious experiences are not the only bridges between unbelief and belief.

McGrath's transcendental experience was intellectually derived and a product of intellectual curiosity, which is often the hallmark of many scientists. McGrath explains that his epiphany began when he read about publications that questioned the "reliability and limits of scientific knowledge" upon which he had rested his intellectual hopes and convictions, which had previously fueled his lack of interest in religion or religious discourses (McGrath 2019, p. 433). His conversion from atheism through science and on to religion through an intellectual experience is atypical of mainstream religious conversion experiences, but it has, without doubt, proved to be a formidable ground for the (re)construction of a new identity.

To further solidify the veracity of his conversion experience through intellectual activities, he repeatedly mentions his intellectual encounters with the works of C.S. Lewis. For McGrath, C.S Lewis was a "traveling companion" whose writings helped him "grasp the conceptual capaciousness of Christianity" (McGrath 2020, p. 147). A recurrent quote he uses, one of the intellectual and interpretative reference frames for Alister McGrath in comprehending the depth and richness of the Christian faith, is from C.S Lewis: "I believe in Christianity as I believe that the sun has risen not only because I see it, but because by it I see everything else" (Lewis 2002, p. 21).

If one pauses to reflect on the grand narrative and depth of wisdom underlying the Christian message of salvation—from the very beginning of creation to the coming of Christ—what emerges is an intricate tapestry woven with twists, turns, and prophecies and their eventual fulfillment. The coherence across millennia, culminating in the birth, death, and resurrection of Jesus Christ, presents what is arguably an unfathomable mystery. Yet, while these events may appear to be beyond comprehension, their significance and implications for humanity must, as McGrath often emphasizes, be revealed, not merely asserted, in ways that are intelligible, believable, and personally relatable to those for whom this redemptive work has been completed.

Much like the discovery of a priceless gem, McGrath approached the Christian faith with the excitement and curiosity of a scientist encountering something both beautiful and true. Drawing on his background in the natural sciences, he leveraged this intellectual framework to deepen and articulate his Christian convictions. He found in Christianity a structure of thought that resonated with the empirical and explanatory strength valued in scientific inquiry: "Like a good scientific theory, it (Christianity) offered an intellectual

framework that made sense of his observation of the world" (McGrath 2020, p. 147). To many, the coherence and profundity of Christian theology may initially appear as a mystery too extraordinary to be true. Yet, McGrath sees it not as a blind leap into irrationality but as the unveiling of a reality that, once perceived, brings light to everything else. In this way, Christian truth functions—borrowing from C.S. Lewis's famous analogy—like the sun, through which everything else becomes revealed.

5. An Eclipse of the Sun—A Bump on the Journey to the Divine?

If the capaciousness of the Christian faith is, as McGrath and others suggest, analogous to the illuminating power of the sun—shedding light on all aspects of reality—then one might reasonably ask the following question: what happens, metaphorically, in the case of an eclipse? Can the 'sun' of Christianity experience eclipses that obscures humanity's vision of reality? This metaphor of an eclipse becomes especially potent when considering the problem of evil and suffering, one of the most persistent challenges many people encounter in their journeys to the discovery of the Divine. In a 1999 publication titled "Suffering Belief: Evil and the Anglo-American Defense of Theism", Andrea Weisenberger conducted a systematic evaluation of the kinds of evil that most strongl question belief in God and concluded that there is "scant basis for continued belief in an all-perfect God", calling for "compelling reason" to abandon religious beliefs (Weisberger 1999). The consideration of an eclipse in this context is imperative as one of the factors that constitute a bump (or stop) on the journey of many. There are several references and accounts of how grief, suffering, the existence of evil, and many other daunting life experiences contribute to the difficulty many atheists and agnostics experience in seeing the existence of a Sovereign Being, especially the God of the Christian faith, as intellectually gratifying or realistic (Tooley 2021).

The Oxford English Dictionary defines an eclipse as "an interception or obscuration of the light of the sun, moon, or other luminous body, by the intervention of some other body, either between it and the eye (observer), or between the luminous body and that which is illuminated by it" (Oxford English Dictionary Online 2022). According to the laws of physics, when solar eclipses occur, some regions (within the penumbra) are in partial darkness, while some other regions (within the umbra) are in total darkness, hidden from the light of the sun (Golub and Pasachoff 2014). The image of a solar eclipse serves as a potent metaphor for the uncertainties, distortions, and inhibitions that darken human perception of reality—whether natural or supernatural. Eclipses, whether celestial or existential, mark moments when clarity is obscured and light is temporarily hidden. In a scientific sense, an eclipse occurs due to the precise geometric alignment of the sun, moon, and earth, but from the perspective of the Christian faith, a person's faith and belief are most often threatened when things are out of alignment. How does the Christian faith make sense of such states? Are these moments of darkness a call for deeper faith? There is no unequivocal answer to these musings.

Even the best Christian theologians experience contemplations and momentary doubts when faced with deep pain and suffering. McGrath notes that although Lewis is widely known for his depth in the Christian-faith life, he also had his share of life sufferings; "his life was complex, difficult, and occasionally tragic. His mother died of cancer before he was ten years old" (McGrath 2014). The death of Joy Davidman, the wife of C.S Lewis, took a hard toll on his faith and can be likened to an eclipse. His book *A Grief Observed* (Lewis 1961) details how his mental and emotional contemplations during his moments of grief were reflective of an experientially dark moment, especially when evaluated vis-a-vis his earlier book *The Problem of Pain* (Lewis 1940), as is often carried out. The American Writer Chad Walsh, who was also friends with C.S. Lewis, notes that while Lewis' *The Problem of*

Pain sought to "provide the theory behind the pain in the world, A Grief Observed was the reality of the theory" (Walsh 1979, p. 238).

The 2022 Boyle lecture on Science and Religion presented by Prof Christopher Southgate on "God and a World of Natural Evil: Theology and Science in Hard Conversation" touched on experiences of suffering and distress (including the example of the effects of the COVID-19 pandemic) vis-a-vis the existence of God, "as a hard pill to swallow, given our desire to always have intelligible answers and explanations for every aspect of life" (Southgate 2022). Southgate referred to a podcast produced by Bio logos in 2020 featuring a conversation between Scientist Francis Collins—the former head of the US. National Institute of Health, who was once an atheist but is now a Christian author—and N.T Wright, the famous New Testament theologian, about COVID-19 (BioLogos Interview 2020). The debate was an attempt to make sense of the suffering heralded by COVID-19 despite people's belief in a perfectly good God. Wright held that there is a dark power that opposes and distorts God's perfectly good creation, while Collins held that bad and good are inextricable realities of creation—a similitude of Niels Gregersen's 'package deal,' where the world is "presented as a net of interconnected pain and existential joy" (Dańczak 2012, p. 160).

Despite its depth, Christianity, in word and deed, does not claim to have an all-encompassing answer to every question or a perfect explanation for every human experience, and it is highly doubtful that the sciences, despite their many ground-breaking innovations, also possess such capabilities. Generally, how humanity handles uncertainties and ambiguities, which form an integral part of the complex nature of being, has always been a significant part of our understanding of human nature. Many have experiences of finding hope and meaning in religion during turbulent times, while many also lose their faith in those same experiences. The eventual destination is largely dependent on the choices made or unmade, much like what is inferred in Bethany Sollereder's impressive book *Why is there suffering* (Sollereder 2021).

Faith (not skepticism), especially the Christian faith, presents a "big picture" that helps humanity grapple with and appreciate the complexities of life. McGrath provides respite and makes sense of the Christian faith as a lens through which a person can develop a relatable framework for comprehending and holding together the fragmented and fragile pieces that make up human reality. McGrath argues that despite the tremendous explanatory power of the sciences, there remain aspects of reality, particularly those concerning human existence, meaning, and suffering, that may never be fully known or explained. In response to this inherent uncertainty, McGrath maintains that the Christian faith offers something the sciences cannot: the spiritual resources of faith and hope, which enable humanity to "come to terms with uncertainty without being overwhelmed by it" (McGrath 2020, p. 139). At this stage in his intellectual and spiritual journey, McGrath came to a decisive conclusion: Christianity alone provides a coherence unmatched by any other worldview or religious system. It does not eliminate uncertainty, but it offers a framework that makes uncertainty livable. Christianity, he argues, offers "an enhanced capacity to live within that world and cope with its uncertainty and complexity, as well as our own frailty and failings" (McGrath 2020, p. 207).

6. Learnings for Non-Christian Theists

How can non-Christian theists who are interested in the interactions between religion, science, and the quest for ultimate answers benefit from a uniquely Christian approach? An example of a non-Christian theistic view used in this context is African religious thought, which is largely derived from African traditional cultures and Indigenous religious belief systems specific to Africa and its diasporic communities (Aderibigbe and Medine 2015). It

is important to note that African traditional religious belief systems are often marginalized, especially in the scholarly contexts of science and religion. However, a proper understanding of African traditional religious thought unveils its distinctive lens for understanding its worldview, especially as it heavily intersects with religion and science, although much of its belief systems and paradigms have been misconstrued and misrepresented in history. Interestingly, the rudiments of science from an African worldview and in the day-to-day religious practices of the African peoples are almost inseparable. Barry Hallen and Kwasi Wiredu, in their discussion of science and African culture, assert that "metaphysically and epistemologically, African culture is very hospitable to scientific inquiry" (Hallen and Wiredu 2013).

Robin Horton, a British anthropologist and philosopher known for his comparative work on African religious thought and Western science, argues that African belief systems have often been misunderstood or misrepresented due to two major limitations. First, many of those—particularly Western scholars—who have attempted to study African religions lacked a deep familiarity with the theoretical foundations of their own intellectual traditions. As Horton observes, "certain aspects of [their own] thinking are the counterparts of those very features of traditional thought which they have tended to find most puzzling" (Horton 1967, p. 50). Second, even when such scholars are conversant with their own theoretical traditions, they often fail to identify equivalent structures within African systems, having been "blinded by a difference of idiom" (Horton 1967, p. 50). This observation is valuable when placed alongside Alister McGrath's theological method. Unlike those who approach religious systems superficially, McGrath demonstrates a profound awareness of his own intellectual and cultural heritage. McGrath deploys multiple thorough inquiries into Christianity and Christian belief, which led him to the discovery of God. The paradigm of a comprehensive and codified inquiry can be very beneficial to African religious thought for any persons interested in its 'theology'.

The choice of African religious thought in this paper was largely predicated on global statistics and trends that show the expanding imprints of Christianity in Africa today on the one hand and some fundamental parallels between African religious thought and Christianity, in many subtle ways, on the other. The 2021 research on global Christianity by the Gordon-Cornwell Theological Seminary reveals that there are more Christians in Africa than in any other continent (Zurlo et al. 2021, p. 18).

In the recently released data from the Pew-Templeton Global Religious Futures Project, it is stated that by 2060, more than four in ten of the world's Christians are projected to live in sub-Saharan Africa, while fewer than a quarter will live in Europe and North America combined (Pew-Templeton Global Religious Futures Project 2022). The trends revealed by Pew Research show that as of 2010, about 63% of people in sub-Sahara Africa were Christians, with Christianity projected to remain the region's largest religious group, growing from 517 million in 2010 to more than 1.1 billion by 2050 (Pew Research Center 2015). Because African religious thought and practices often have a 'live and let live' approach, Christianity and other foreign religions thrive on the continent and are sometimes integrated into existing indigenous religious practices. As noted by Aderibigbe, the characteristics of "tolerance, accommodation, a desire for peaceful coexistence, the recognition of truth in other religions" and other peaceful dispositions are abundant in African traditional religious practices (Aderibigbe 2000, p. 331).

In terms of religious thought, there are notable parallels between African cosmology and Christianity, particularly in their shared belief in a Supreme Being. However, African religious traditions have often been critiqued for lacking the comprehensive theological and exegetical frameworks characteristic of the Christian worldview. In global theological discourse, African religious thought is frequently marginalized or dismissed as unintelligible,

largely because it lacks a codified theology and appears, at first glance, to lack structured doctrines parallel to those of other major world religions. Yet, this perception is not always accurate. Scholars of African philosophy such as Thaddeus Metz and Motsamai Molefe have drawn attention to essential features of African religious thought that align it closely with monotheistic traditions. These include a belief in a Supreme Being and a conception of the divine that bears resemblance to that found in other theistic religions. Metz and Molefe argue that African religious systems merit recognition and interpretation according to the same "standard interpretation" applied to Judeo-Christian and Islamic traditions (Metz and Molefe 2021, p. 393). As Robin Horton observed, "one salient feature of Christian proselytization in many African cultures has surely been the identification of the Christian God with African ideas of the Supreme being" (Horton 1971, p. 100). This alignment facilitated the presentation of Christianity as the ultimate and true path to knowing and relating to God, a narrative that resonated deeply with many African communities and contributed to the effectiveness of Christian missionary efforts.

Another significant feature that aligns African religious thought with Christianity is the often minimal—and sometimes even nonexistent—distinction between the natural and the supernatural realms. J.S. Mbiti, a renowned scholar of African traditional religion (ATR) and an ordained Anglican priest, famously observed in his "*African Religion and Philosophy*" that for the average African, "no line of distinction [is] drawn between the spiritual and the natural" (Mbiti 1970, p. 5). While this perspective may challenge mainstream scientific paradigms, it opens the possibility for a distinctly African form of Natural Theology. Such a theology would be grounded in religious experiences and encounters with the supernatural through the natural elements, resonating with insights found in the works of philosophers and theologians like John Hick, William James, and Rudolf Otto. Moreover, aspects of Mircea Eliade's scholarship on the sacred and the profane further illuminate this connection, suggesting rich avenues for future research and exposition of the African religious understanding of Natural Theology.

The need for dialogue and partnership between leading voices and religious leaders from Christianity and African traditional religious beliefs cannot be overemphasized, as both perspectives can benefit greatly from such partnership and connections. With established scholarship on Natural Theology, Christianity can provide insights into the development of a Natural Theology based on African traditional belief systems while further exploring and expanding its religious beliefs related to the supernatural based on experiences and practices from African traditional perspectives.

Lastly, it is important to recognize that Africa is far from the monolithic entity it is often portrayed to be in scholarly and popular discourse. The continent encompasses a rich and complex tapestry of religious beliefs, practices, interpretations, and understandings that vary significantly across cultures, regions, and nations—much like the diverse denominational expressions found within global Christianity today. In recent years, debates among scholars of African religion have intensified around whether to pluralize the term African Traditional Religion by adding an 's'—rendering it 'African Traditional Religions'—to acknowledge and emphasize this inherent diversity. Sahin Osman (2024) offers a valuable synthesis of these ongoing discussions, presenting arguments from both sides of the debate. While some scholars advocate for the adoption of the plural form to better reflect the distinct traditions across African communities, others oppose the change, drawing parallels with Christianity, which retains a singular term despite its many denominational variations.

7. Conclusions

Based on the foregoing discussion, it may seem unconventional to trace a line from Alister McGrath—a Christian theologian and scientist whose personal journey moves from

a deep love for science to a profound discovery of the divine—to African religious thought. Yet, this trajectory is not only insightful but also instructive. African Traditional Religions, as a prominent example of non-Christian religious systems, can glean significant insights from McGrath's intellectual and spiritual journey. A teleological reflection on McGrath's path from the natural sciences to Christian theology reveals his conviction that Christianity offers a comprehensive, coherent vision of reality, what he calls a "big picture", that makes sense of human existence while also embracing its inherent uncertainties. At the same time, Christian theology, for McGrath, equips believers with intellectual and spiritual tools for understanding how "theology makes a difference to the way we imagine and inhabit our world, and cope with its challenges and concerns" (McGrath 2022, p. 267).

In a similar vein, African traditional religious thought would benefit from a more systematic aggregation of its inherently integrated perspectives into a capacious theological framework. As Metz and Molefe have argued, aspects of African "ontology, epistemology, and axiology" must be taken more seriously, particularly in scholarly and comparative theological contexts (Metz and Molefe 2021, p. 394). While African religions should be appreciated and respected on their own terms, they stand to gain from the development of a cohesive body of work that clearly outlines their beliefs, practices, values, and conceptual depth. Given that much of African religious knowledge has historically been transmitted through oral traditions and folk practices, scholars invested in its preservation and propagation are increasingly advocating for the documentation and codification of these systems in order to facilitate the formation of a distinct African theology that does not compromise its authenticity or cultural origin.

Despite the philosophical and theological parallels between Christianity and African religious thought, it is important to acknowledge that the depth, coherence, and doctrinal development within the Christian tradition, particularly its theological frames, remain more robustly articulated than in African traditional religious systems. The esoteric nature of African religious knowledge often contrasts with the wide accessibility of theological resources in Christianity, which are available for both lay inquiry and scholarly engagement. Nevertheless, non-Christian theists can benefit from engaging with the Christian perspective to identify resonances and areas of conceptual alignment. Such engagement promotes a more congenial intellectual exchange across traditions, encouraging mutual respect, deeper understanding, and shared enrichment.

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Notes

[1] Professor Alister McGrath profile page, Faculty of Theology and Religion, University of Oxford. https://www.theology.ox.ac.uk/people/professor-alister-mcgrath (accessed on 13 January 2025).

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Article

From Salvation to Evolution to Therapy: Metaphors, Conceptual Blending and New Theologies

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Abstract

New theologies developed in tandem with evolutionary biology during the nineteenth century, which have been called metaphysical evolutionisms and evolutionary theologies. A subset of these theologies analyzed here were developed by thinkers who accepted biological science but rejected both biblical creationism and materialist science. Tools from the cognitive science of religion, including conceptual metaphor theory (CMT) and blending theory, also known as conceptual integration theory (CIT), can help to explain the development of these systems and their transformation between the nineteenth and the twentieth centuries. The analysis focuses on several stable and popular blends of ideas, which have continued with some alteration into the twenty-first century. The three blends evaluated here are Progressive Soul Evolution, Salvation is Evolution, and Evolution is Therapy. Major contributors to these blends are the Theosophist and theologian Helena P. Blavatsky and psychologist Frederic W. H. Myers, both influenced by the spiritualist movement, particularly the ideas of the spiritualist and biologist Alfred Russel Wallace. The influence of these blends can be seen in the twentieth-century "Aquarian Frontier," a group of 145 thinkers and organizations identified in 1975 by counterculture historian Theodore Roszak. Part of the appeal of these blends may be seen in their use of metaphors, including the Great Chain of Being and A Purposeful Life is a Journey. The application of the polysemic term *evolution* in a sense that does much of the theological work of *salvation* in Christianity can in part be explained by applying the principles of blending theory, including the vital relation "achieve a human scale," as well as compressions of time and identity. These blends have been successful because they meet the needs of a population who are friendly towards science but disenchanted with traditional religions. The blends provide a satisfying new theology that extends beyond death for a subset of adherents, particularly in the New Age and spiritual but not religious (SBNR) movements, who combine the agency of self-directed "evolution" with the religious concepts of grace and transcendence.

Keywords: conceptual metaphor theory; blending theory; conceptual integration theory; cognitive science of religion; new theologies; evolution; spiritualism; Theosophy; Helena Blavatsky; Frederic W. H. Myers; New Age; human potential movement; spiritual but not religious

1. Introduction

In 1975, Theodore Roszak, historian of the 1960s and 1970s counterculture movement, identified an Aquarian Frontier, a group of 145 disparate movements and thinkers developing new theologies he called "metaphysical evolutionism." These theologies centered

around the idea that humans are "unfinished animals summoned to unfold astonishing possibilities" (Roszak 1975, p. 5). Unlike creationists and Christian fundamentalists, these thinkers embraced Darwin, but believed that evolution required people to actively pursue social, cultural, and "spiritual" transformation during life. Some of them used evolution as an active verb, with the command "Evolve!" replacing "Be Saved." The Frontier did not begin in the twentieth century; much of it drew from nineteenth-century systems, including the spiritualist and Theosophical movements. Although Roszak's study of these groups is not well known, it provides a sampling of evolutionary theologies that had developed in the preceding century in response to Darwin.

Evolutionary theologies, which attempt to accommodate biological science, are less well-known than those that attack it. While most people are familiar with the disputes over evolution and the conflict model of the relationship between religion and science, they are less aware of the accomodationist theologies, which emerged both inside and outside of organized religion. They were developed by people who accepted biological science but believed in the need for a spiritual life on earth and the possibility it could continue after death.

Darwin had acknowledged the important role that cultural productions like religion play in natural selection (D. S. Wilson 2010). Between the 1840s and 1880s, liberal Christians, spiritualists, and Theosophists united around the embrace of science and empirical methods. But they also rejected materialism, which was a topic of contention in both science and religion (Heimann 1972; Raia 2019). Among the systems that attempted to harmonize natural selection with religious thought are Anglican natural theology and spiritualism, which came in Christian and non-Christian varieties. Scientists also participated in the development of these theologies, including the prominent biologist Alfred Russel Wallace.

In the twenty-first century, the groups and thinkers along Roszak's Aquarian Frontier, supplemented by new arrivals, continue to develop new belief systems. Although beyond the scope of this paper, some who continued to elaborate evolutionary theologies include holistic doctor Deepak Chopra and futurist Barbara Marx Hubbard. Both are among those who in 2008 published a "Call to Conscious Evolution" (Beck et al. 2009). They envision the transformation of society in a more healthful and equitable direction, primarily through social and environmental change. They also emphasize the role of "mind–body–spirit" in health and healing and the need for a "shift in our shared field of consciousness" (Beck et al. 2009; Beckwith et al. 2008).

Although they accept biological evolution, some of the Call's framers are also open to ideas that many scientists would find religious—life after death, divine presence or purpose, and the possibility of help from more advanced life forms (which may include traditional religious figures but also aliens and wise former humans). The Call's signers include both religious and scientific figures. Those attracted to the religious and supernatural are generally critical of orthodox religious systems. They generally avoid speculation about the origins of life or its ultimate purpose and focus instead on personal development during life and after death, yet they are also open to outside help. Their concept of evolution does much of the work that salvation performs in religious systems.

I call these belief systems "evolutionary theologies," though many who adhere to them deny belief in God or a Creator. Like mystical and indigenous spiritualities, these systems emphasize divine immanence, or the presence of God or spirit in this world, rather than a distant, transcendent deity. They advocate personal transformation and the use of therapeutic techniques during the present life, although they may also believe in an afterlife. They largely dispense with a vengeful God, or eternal damnation, two ideas that were already clashing with common sensibilities in the more liberal Christian denominations of the eighteenth and early nineteenth centuries.

Evolutionary theologies emerged in predominantly Christian societies but today also incorporate Asian religious concepts like karma and reincarnation. They have continued to develop in Hindu and Buddhist contexts (Nanda 2011; Heehs 2020). I write in greater detail elsewhere about this development (Prophet 2018a, forthcoming). In this article, I explore ways in which the cognitive science of religion can explain the growth and transformation of evolutionary theologies among the New Age and spiritual but not religious (SBNR) movements.

New Age religion is a diverse collection of sensibilities that coalesced during the twentieth century. Though its precise definition is contested, it remains useful as an analytic category (Kemp 2004). The presence of evolution in New Age religion has been noted, for example, by Wouter Hanegraaff, who identifies evolution as an essential aspect of New Age thought. He views the New Age as "secularized esotericism," reinterpreting "esoteric tenets from secularized perspectives," of which evolution is a "fundamental component" (Hanegraaff 1998, p. 520).[1] However, evolutionism in the New Age is not uniform. As Hanegraaff notes, "although New Agers share a belief in 'evolution,' they have different ideas about what it is, how it works and where it is going" (Hanegraaff 1998, p. 515).

SBNR is a subset of those who claim to be non-religious, the so-called religious "nones," who make up about 28 percent of the population (Smith et al. 2024). About half of the "nones," according to a 2023 Pew poll, also claim to be spiritual, hence the SBNR label. Religious nones often adhere to some type of religious belief, and 69 percent believe in God or a higher power (Smith et al. 2024). There is overlap between the SBNR and New Age movements.

Linda Mercadante has identified a number of stable values in SBNR populations, including a common invocation of evolution, which she calls "a creative switch on Darwinian theory, because it is not humans who are evolving as much as God." These individuals see themselves as representing a type of "post-Christian spirituality" that avoids exclusive truth claims (Mercadante 2014). Her subjects combined elements of the human potential movement with "a Western expectation of progress and a nod toward evolutionary theory" (Mercadante 2014, p. 108). The idea of God (or the Creator) evolving along with creation is a Hermetic concept related to the belief systems evaluated below.

1.1. Cognitive Science of Religion and Blending Theory

The cognitive science of religion is an interdisciplinary field that develops biological and cultural explanations for the persistence and transformation of religious ideas (see Clements 2016; Richardson 2024). Conceptual metaphor theory (CMT) makes its contribution by incorporating techniques from linguistics to identify ideas that recur cross-culturally such that they are proposed to be "a fundamental scheme of thought serving many cognitive and social/ideological functions," as described by Raymond Gibbs. CMT holds that "significant parts of abstract thinking [such as religious ideas] are partly motivated by metaphorical mappings between diverse knowledge domains" (Gibbs 2009, p. 15).

Two metaphors in particular are useful for explaining evolutionary theologies. LIFE IS A JOURNEY is a common metaphor often used to express religious ideas. (In the literature on metaphor theory, the names of metaphors are commonly displayed in small capital letters.) Another important metaphor found in evolutionary theologies is the GREAT CHAIN OF BEING, which is not only a metaphor but also a complex philosophical concept that has influenced both biological science and religion. The idea that living beings are organized in some kind of hierarchy has been discussed in Western philosophy since Aristotle's scale of nature. Similar ideas about the superiority of humans to non-human animals are also found in non-Western cultures. Although biological science began to erode the

philosophical foundations of the great chain in the nineteenth century, it remains useful to people thinking of themselves in relationship to both divine powers and the natural world (see Lovejoy 1964; D. J. Wilson 1987; Lakoff and Turner 1989).

Blending theory arose from CMT and focuses on the development of new ideas, often called "blends." Gilles Fauconnier and Mark Turner offer a set of principles for developing successful blends, which they argue explain why some ideas catch on (Fauconnier and Turner 2002; Turner 2014). Blends are believed to operate at unconscious levels to structure new experiences. As Mark Turner explains, "blending operates almost entirely below the horizon of consciousness" (Turner 2014, p. 18). Nevertheless, blending is a crucial part of modern cognition and, as explained by Glen Hayes, "shapes how people live and think" (Hayes 2016, p. 167). Blending theory has been fruitfully applied to the development of religious ideas, and provides new scope for understanding theological development (Hayes 2016). Unlike CMT, which looks for recurring structures, blending theory explains change and new developments. It is also known as conceptual integration theory (CIT). Although CMT and CIT have been expanded and critiqued since they were introduced, they continue to form a basis for analysis (see, for example, Charteris-Black 2004; Bache 2005; Gibbs 2009; Kövecses 2020). Lucas Keefer and Adam Fetterman summarize recent research on the role of metaphor and analogy in the development of God concepts (Keefer and Fetterman 2022).

I apply CMT and CIT to develop my argument that evolutionary theologies have been adopted because they make sense to a growing subset of people, which can be explained both by their adherence to the principles of CIT, and also by the fact that they meet social and cultural needs. Evolutionary theologies arose at a time when many educated people had become skeptical of religious truth claims and believed humans had more control over their destiny than world religions allowed. They explained the religious miracles of the past using scientific language and pointed to the phenomena of spiritualism, mesmerism, and hypnosis as non-religious and "scientific" explanations for the miracles of history. They developed a new and active lexicon of spiritual "evolution," which combines scriptural with biological metaphors.

1.2. Historical Methodology

Evolutionary theologies represent a new type of relationship between religion and science, which goes beyond the standard conflict, independence, and dialog typology. Rather, they can be seen as an attempt to integrate science with religion along the model proposed by Barbour (2000). They seek to expand the scope for human agency while accepting the limits of knowledge. They arise out of the spiritist/spiritualist milieu of the late nineteenth century, which proposed, in the words of historian David Hess, "an empirically grounded basis for religious experience and faith" (Hess 1993, p. 19; see also Ferguson 2012).

My analysis compares two historical periods: the twentieth-century "Aquarian Frontier" identified by Roszak, and the nineteenth-century theologies of the Russian Theosophist Helena Blavatsky (1831–1891) and British psychologist Frederic W. H. Myers (1843–1901). Blavatsky's system of "soul evolution" envisioned a vast series of progressive reincarnations that ratcheted each individual up a karmic ladder (Blavatsky 1993; Sinnett 2008; Godwin 2011). Myers argued that humans have a duty to pursue their own evolutionary development through the arts and creative practices, which would improve life on earth and lead to a better afterlife. Both systems incorporate Hermetic principles, which portray humans as working together with divine forces and powers. While Blavatsky is better known today, Myers's system was simpler and it spread widely without his name

attached. His ideas about the secondary self, art, and therapy were taken up, for example, in Jungian psychology.

My analysis sets aside the question of whether the claims of religions are true, and instead focuses on the question of theological change, which ideas took hold, and how they developed into new blends that seem commonplace in particular subcultures. I will first explore the historical development of Blavatsky and Myers's systems before analyzing them and their later echoes in the Aquarian Frontier.

The New Age and SBNR movements and the Aquarian Frontier are not identical, but they do overlap. The Aquarian Frontier captures a moment in time during the 1970s, while the other two movements are amorphous and rapidly changing. The spiritualist and Theosophical movements of the nineteenth century influenced contemporary theologies via textual transmission and groups that have persisted to the present. Catherine Albanese has studied these currents, which contribute to what she calls American metaphysical religion, made up of "fluid and egalitarian" networks that are under-studied because they "appear especially temporary, self-erasing, self-transforming" (Albanese 2007, p. 8). The fact that these networks are less studied than evangelical movements and denominational institutions does not make them less important or influential.

2. How Evolutionary Theologies Developed over Time

The evolutionary theologies that I evaluate coalesce around the idea that "Evolution" depends on the practice of spiritual discipline and/or the development or presentation of psychic and healing powers; furthermore, that people who demonstrate such powers are templates for future human transformation into advanced or divine beings.

Evolutionary theologies engage with biological science, and it is interesting to note that since Darwin published *On the Origin of Species by Means of Natural Selection* in 1859, biology itself has gone through several phases with regard to the possibility that conscious human effort and activity can influence the course of evolution. Darwin was skeptical that humans could pass along acquired characteristics (a concept that is known as Lamarckism). However, he also believed that there was an interaction between habit and instinct and speculated that humans might recover lost "vestigial" animal talents, such as the ability to move the ears (Darwin 2006b, p. 789). Darwin struggled to explain the cause of variation in animals and humans, which left more room for human effort.[2]

Darwin's evolutionism was open-ended and avoided the question of the origins of life. His main goal was to demonstrate that species were not fixed. Darwin wrote that he could see "no limit to the amount of change, to the beauty and infinite complexity of the co-adaptations" of nature (Darwin 2006a, p. 519). Improvement could be identified in natural selection, as "corporeal and mental endowments will tend to progress towards perfection" (Darwin 2006a, p. 760). In spite of the pessimistic Malthusian direction his ideas could be taken ("survival of the fittest"), there were ways in which Darwinism could be conscripted into an optimistic program of human perfection, particularly when seen through the lens of Herbert Spencer, a polymath who promoted ideas of cultural evolution (Spencer 1857). Evolutionary theologians took up some of Darwin's ideas and ignored the rest.

Wallace, who independently developed a theory of evolution by natural selection and was the catalyst for Darwin to publish his own theory, gave shape to new theologies. He proposed in 1864 that the human mind could continue to develop after death, a "progression of the fittest" (Wallace 2018, p. 43). He was updating the use of evolutionary language to describe transformation of mind on earth and after death, a usage that has continued alongside the biological parlance.

During the late nineteenth century, when spiritualism and Theosophy were developing, Darwinism faced many challenges from the scientific community, and there were a variety of theories explaining the transformation of species (Bowler 1984, 2001). In spite of his skepticism of Lamarckism, Darwin did leave open a role for social influences on biological evolution. He allowed that both the "conditions of life", i.e., climate and geography, but also culture and human actions could influence the evolution of species, especially since he was unable to identify the cause of variation (Bowler 1984; Richards 1992). The gene-oriented neo-Darwinism of the twentieth century brought the focus solely to heredity and ignored what Darwin had called the "conditions of life." However, today the rise of epigenetics has once again opened up the possibility that human activity interacts with genes, and that experiences and habits can be transmitted to one's descendants (Jablonka and Lamb 2005, 2010; Cregan-Reid 2018).

Today, as before Darwin, evolution signifies different things to different people. When those on the Aquarian Frontier spoke of evolution, they sometimes meant the social or cultural evolution of groups, or the personal transformation of individuals during life. Some of the key takeaways from nineteenth-century evolutionary biology that were attractive to evolutionary theologians were that evolution offers an improved life for the group gradually in the future, and further, that individuals who undertake self-improvement can contribute to the progress of the group. But for many evolutionary theologians, spiritual evolution is also something that accrues to individuals after death, an idea that is outside the scope of biological evolution. They are seldom conscious of the fact that they use the term in a way that mirrors the concept of religious salvation. Why has this usage taken hold? Perhaps for this population, spiritual "evolution" is appealing as a more self-directed process that avoids unwanted elements of Christian theology. (Note that some evolutionary theologies incorporate a mystical version of Christianity.)

2.1. Influence of Hermeticism, Gnosticism, and Neoplatonism

Evolutionary theologians of the nineteenth century drew from many sources, including Christian scripture, but they were also deeply influenced by Hermetic, Neoplatonist, and Gnostic texts, all of which developed in the early centuries of the common era. These complex systems were popular in the ancient world, and became the topic of renewed interest in Europe after the Renaissance. Their influence was broad, including among our evolutionary thinkers.

Neoplatonism is a religious system created out of some of the theological speculations in Plato's dialogs, which became popular in the second-century CE. Neoplatonist teachers recommended various activities, ranging from philosophical contemplation to magic, to fulfill the goal of salvation, which was for the soul to return to the One source.

Hermeticism was named after the Greek god of wisdom. It blended ideas from Egyptian and Greek religion and provided expanded scope for human agency by teaching that humans could participate in creation and that the Creator actually *needed* humans in order to become self-aware. Hermeticism allowed people to begin thinking of themselves as embryonic gods (see Van den Broek and Hanegraaff 1998). Another important Hermetic idea is that gods were once human and that humans can become gods. Hermeticists also believed that Gods or demigods (former humans) work with the Creator to give mind ("nous") to humans.

After the Renaissance, as humans became more confident in their ability to dominate natural forces, the Hermetic template was stretched in new directions, including, by the nineteenth century, the incorporation of Hinduism and Buddhism. Hermeticism offers clues to the appeal of evolutionary theologies. Unlike orthodox Christianity, it allows us to think

of ourselves as more than helpless creatures. We become active participants in creation, joining intermediary figures such as demigods, angels, or perfected deceased humans.

Gnosticism is a complex movement that included Jews, Christians, and pagans. Some Gnostic texts claimed to present the true and secret teachings of Jesus. Gnostic texts were suppressed by the Church, but some began to resurface in the nineteenth century and influenced evolutionary theologians. They allowed greater scope for human divinization, or transformation into the divine image, than orthodox Christianity (see DeConick 2016).

Gnosticism, Neoplatonism, and Hermeticism all contained some degree of ritual and therapeutic practice. They also for the most part promoted celibacy, wisdom, and discipline as the requirements for salvation, or oneness with God or gods. The question of sex with respect to spiritual evolution became central to some of the debates over evolutionary theologies. The idea that only the celibate could evolve spiritually clashed with the more liberal values of the twentieth century and was later deemphasized in the most popular evolutionary theologies. However, the sense of increased agency available in the systems could be grafted onto the optimistic sentiments of the late nineteenth and early twentieth centuries.

2.2. Helena Blavatsky and the Development of the Theosophical Root Race System

In February 1876, Helena Blavatsky, the Theosophical Society's co-founder and its best-known member, wrote of a "double evolution" that entailed "spirit keeping pace with the evolution of matter" (Blavatsky 1960, vol. 1, pp. 212–13).[3] She praised the spiritualist–biologist Wallace, and used him to support her theories, which also drew upon the Romantic *Naturphilosophie* and other influences. She saw the soul or spirit evolving in tandem with the physical transformation of the human species.

At the time, Blavatsky's main audience was the spiritualist movement, which originated in the 1840s and included millions of members across the Americas and Europe (Lavoie 2012).[4] Although it is best known for its fascination with mediums, spiritualism also developed complicated new ideas about the afterlife, which contributed to the vision of a "modern heaven," in which people could continue to learn and improve themselves after death (McDannel and Lang 1988). Spiritualists generally accepted that there was a biological connection between humans and animals (see, for example, Davis 1852). Wallace also speculated that "higher intelligences," perhaps advanced former humans, had originally given humans the evolutionary boost of expanded brain capacity and other unique human mental qualities (Wallace 1875; Fichman 2004; Smith 2008).

Blavatsky's theology drew themes from spiritualism and other sources into new language by formally identifying evolution as a kind of self-directed salvation during life and after death. Theosophists saw mediumistic (psychic) talents as a marker of individuals occupying a more "advanced" phase of evolution, though they also warned of the spiritual risks that accompanied the pursuit of these talents. Blavatsky built upon earlier evolutionary theologies that also included conscious effort and striving as a component of salvation, as well as apprenticeship under wise adepts and teachers (Chajes 2019).

The meaning of spiritual evolution changes from Blavatsky's early to later work. In her first major work, *Isis Unveiled,* she portrays humans as beginning their evolutionary journey out of the "spiritual part of the ether," as "monads," which develop through different forms (Blavatsky 1960, vol. 1, p. 340).[5] The most developed form of Blavatsky's theology was written after she visited India and broadened the scope of her audience beyond the spiritualist movement. It was published in her 1888 *Secret Doctrine,* which describes a sequence of seven "root races," or bodily forms (not connected to human races) (see Prophet 2018b). It is a complex system, which also describes soul progress through reincarnation on seven continents (including the mythical Atlantis and Lemuria) and seven

planetary spheres over millions of years. In this analysis, I focus on a simplified root race system and the elements that relate to personal transformation. Table 1 summarizes the components of Blavatsky's system that are most relevant to my comparison.

Table 1. Relevant elements of Helena Blavatsky's root race system, 1888.

During evolutionary history, humans were endowed with mind by divine beings like Hermetic creator gods.
Humans are destined to incarnate in seven types of bodies, or "races," over millions of years, ranging from the ethereal to the material and back to ethereal.
Individuals "evolve" through personal effort as well as the cyclic force of the root races, which propel groups of souls through a system of progressive reincarnation.
People are assisted in their "evolution" by adepts and advanced former humans who guide people to develop their own special talents and powers.
In the past, humans possessed heightened senses (such as telepathy) that are today apparent in animals and "advanced" humans.
Future humans will once again have heightened senses and talents resembling those of adepts.

The system provides scope for human agency in that both individuals and groups may influence the course of their evolution. However, it also warns against the independent development of psychic powers, which made it difficult for some spiritualists to accept. Theosophists argued that psychic talents are dangerous and should only be developed under supervision with ascetic discipline. Some have criticized the system for incorporating elements of nineteenth-century scientific racism, but its primary focus is not on human races and it has been taken in liberating directions by non-whites (see Prophet 2024).

Another difficulty with understanding the root race system is its long time frames. It adapts deterministic elements from Hindu and Buddhist religion related to the concept of *kalpas* or vast cycles of time (Blavatsky 1993, vol. 1, pp. 641–42). In fact, the root race system is so difficult to understand that even Theosophists today argue about its meaning. The long time frame (especially the slow progression through planets other than Earth) has made it difficult for humans to find a place for personal striving. Nevertheless, the root race system is open-ended and, unlike the Neoplatonist system, does not include a fixed end or goal (Blavatsky 1993, vol. 1, p. 43). The system blended well with spiritualist notions of limitless human possibility and efforts to harmonize religion with a scientific spirit of inquiry, though it also contained ascetic, elitist, and deterministic elements that are beyond the scope of this study (see Prophet 2018a, 2018b, forthcoming).

2.3. Frederic W. H. Myers and Therapeutic Salvation

Myers was a Victorian poet and Cambridge-educated classicist who was influenced by spiritualism and Theosophy, but also deeply attached to Neoplatonism (see Lavoie 2015; Hamilton 2009). His evolutionary theology can be encapsulated in the sentence: "It used to be asked whether man was akin to the ape or to the angel. I reply that the very fact of his kinship with the ape is proof presumptive of his kinship with the angel" (Myers 1903, vol. 1, p. 242). However quaint this supposition may seem today, it shows Myers's attempt to demonstrate an evolutionary progression from animal to human to something greater than human, a clear invocation of the Great Chain of Being. Myers also drew on spiritualist ideas of salvation. Spiritualists believed that angels are simply wise former humans who have grown in knowledge after death. His statement meant that just as humans have been transformed from their primate ancestors, so they will continue to "progress" during life and after death.

Myers's mature system updated and expanded Neoplatonism, which taught that the soul's highest good is to return to a state of original perfection with the One source. Hermetic systems allow that the return to the One may not be identical to the emanation, since human life contributes to the completeness of God. Myers builds on Hermetic themes by resisting the determinism of either Christian or Neoplatonic salvation. I provide here a summary of his theology, which was less developed than Blavatsky's and presented only in a rudimentary sketch.[6] It incorporated elements of his psychological ideas with an afterlife.

Myers aligned himself with the more body-friendly and this-worldly elements of the systems he synthesized. Where Blavatsky preached asceticism and peril in the evolutionary path, he proposed a joyful life on Earth followed by unending progress and creativity after death. He glorified human love and the erotic as a creative force that ranges from "primitive instinct" to a transformative divine mediating power. Rather than seeking to suppress or overcome instinct and emotion, he invited them into his spectrum. "Love and religion are thus *continuous*. . .. Love is the energy of integration which makes a Cosmos of the Sum of Things."[7]

Myers's evolutionary theology lacks the certainty of the Theosophical ratcheting from matter to spirit by way of the root races. He did not claim to know the future of humanity. Egil Asprem includes Myers's approach under the umbrella of an "open-ended naturalism" (Asprem 2014, p. 302). Myers identified "spiritual evolution" as "our destiny, in this and other worlds;—an evolution gradual with many gradations, and rising to no assignable close" (Myers 1903, vol. 2, p. 281). He portrays telepathy as a talent that is both developed by advanced souls and recovered from previous evolutionary states, such as animal life.

Myers's system, as summarized in Table 2, contains several elements that are more congenial to twentieth-century sensibilities than the Theosophical one, in the sense that it resonated with a progressive and this-worldly faith. It was also more plausible in terms of its harmony with evolutionary biology. It did not, like Theosophy, engage in fantastic speculation about past and future ages or life on lost continents, other than to suggest talents deriving from a germ planted by higher intelligences. Myers was broadly influential in his day, and his thought about the subliminal consciousness and secondary self influenced Carl Jung as well as popular spiritual writers such as Evelyn Underhill and Richard Maurice Bucke, whose ideas echoed through the counterculture of the 1960s and 1970s, and persist in today's New Age and spiritual but not religious movements (Prophet forthcoming).

Table 2. The evolutionary system of Frederic W. H. Myers, c. 1901[8].

Humans developed from animals but may have received unique mental potential from higher intelligences, possibly formerly human souls.
Human evolution occurs both through natural selection and "self-development" through the recovery of past animal talents and latent potential.
The phenomena of mesmerism and hypnosis show the way to future human evolution as well as healing.
Each person has a "subliminal self" with therapeutic and evolutive capacity.
Humans have a duty to pursue psychic development along with healing, the arts, and philosophy.
Humans who display genius or psychic powers are templates for all.
Moral rectitude is important for salvation, but asceticism is not required, rather a pursuit of joy and ecstasy.
The subliminal self merges into a larger Self or "World Soul" after death.
Soul and ego survive death and continue to "evolve" in knowledge and power.

3. Applying Conceptual Metaphor Theory and Blending Theory to Evolutionary Theologies

A pronghorn antelope running across the North American plains "learned" to run faster when chased by predators, and today "remembers" the chase even though those predators have become extinct, so argues a 1998 book by John Byers entitled *American Pronghorn: Social Adaptations and the Ghosts of Predators Past*. Gilles Fauconnier and Mark Turner use Byers's theory as an example of how the imagination applies the principles of blending to alter "identity," which is termed a "vital relation" in blending theory (Fauconnier and Turner 2002, pp. 115–19). (They set aside the debate in evolutionary biology as to whether individuals can "remember" events that happened to their ancestors, and the role of social adaptation in culture). The example of the pronghorn chased by the ghost or memory of an extinct predator shows that even scientific minds engage in metaphorical thinking to explore the theory of evolution, as contemporary biologists find it useful to compress the identity of past and present individual members of a species.

Being able to think about evolution as salvation also requires the compression of identity—in this case the actions of multiple members of a group whose actions result in the successful propagation of a species over time are compressed and viewed as if the same individual had persisted for hundreds of thousands of years. The compression process is aided, of course, by the concept of a transmigrating or reincarnating soul.

Below is a review of the essential components of conceptual metaphor theory (CMT) and what Fauconnier and Turner call the constitutive and governing principles of blending, along with a discussion of the GREAT CHAIN OF BEING metaphor. The overview is followed by analysis of the components of the evolutionary systems examined in this article. Then we apply CIT, or blending theory, to three blends: Progressive Soul Evolution, Evolution is Therapy, and Salvation is Evolution.

3.1. Embodied Minds and Conceptual Integration

CMT arises from a tradition of embodied cognition going back to Aristotle and continuing through a range of thinkers including Maurice Merleau-Ponty, John Dewey, and Francisco Varela (see Lakoff and Johnson 1999; Robbins and Aydede 2009). Linguists and neuroscientists are continually refining and testing the basic assumptions of the theory, and have applied it to social and religious concepts. According to the theory, metaphors are not just literary or linguistic devices, but actually structure and constrain the way we perceive the world. They are not "arbitrary," argue Lakoff and Johnson, but "have a basis in our physical and cultural experience," even though they may vary from one culture to another (Lakoff and Johnson 1980, p. 14).

A conceptual metaphor is one in which we "systematically use inference patterns from one conceptual domain to reason about another conceptual domain." The use and meaning of metaphors depend upon the "nature of our bodies, our interactions in the physical environment, and our social and cultural practices" (Lakoff and Johnson 2003, p. 246). The focus on the body marks a break from earlier philosophical systems. Lakoff and Johnson argue that "we cannot, as some meditative traditions suggest, 'get beyond' our categories and have a purely uncategorized and unconceptualized experience" (Lakoff and Johnson 1999, p. 19).

Lakoff and Johnson focus on the idea of a "primary metaphor" that recurs cross-culturally and forms the basis of complex metaphors such as those encountered in religion. These primary metaphors are acquired "unconsciously through everyday experience" and then develop into "universal (or widespread) conventional conceptual metaphors" (Lakoff and Johnson 1999, p. 46) The way cultures think about religious doctrines such as creation and the afterlife, according to CMT, is fundamentally shaped first by our bodies and second

by our cultures. A set of primary conceptual metaphors has been identified and tested cross-culturally, such as MORE IS UP. These are elaborated into a family of metaphors associating good qualities with position, such as HAPPY IS UP. Primary metaphors are combined in more complex religious metaphors like HEAVEN and HELL. Spatial relations are central in research that deals with a vertical metaphor like the GREAT CHAIN OF BEING, which historically has been imagined in two ways: linking forms of life in order of complexity and indicating a vertical series of Earthly to heavenly beings. Those in a higher, or up, position are considered more advanced and closer to God.

Another important concept from cognitive science is the schema, which is a way of organizing information categories and their relationships. Our experience of life and the way we think about it (cognition) is influenced by the way our bodies process information about their location in space. It could be argued that elements of Plato's thought were structured by the unconscious experience of having a body. For example, in the *Timaeus*, Plato explains the order of things by drawing an analogy between the organization of the body and the cosmos. He associated the soul with the head because it is higher than the body (seat of the unruly passions), and hence closer to the Good (Zeyl 1997, p. 1248).

Such a metaphor seems quaint today. Complex metaphors are not static. They change in response to new social and technological developments and can allow words to develop polysemy ("systematically related meanings for a single word"). As Lakoff and Johnson point out, complex metaphors allow us "to reason about the target domain in a way that we otherwise would not" (Lakoff and Johnson 1999, p. 82). Polysemy permits us to preserve "in the target domain the inferential structure of the source domain" (Lakoff and Johnson 1999, p. 91). For example, the metaphor LOVE IS A JOURNEY was extended in the twentieth century to incorporate new inferences, such as "driving in the fast lane," which suggests a relationship is developing too quickly, a mapping that would have had no relevance in horse and buggy days (Lakoff and Johnson 1999, p. 67). When the term "evolution" was associated with natural selection in the nineteenth century, it opened the way for polysemic mappings in multiple areas of life.

3.2. Complex Metaphors at Work in Evolutionary Theologies

When people in certain subcultures describe self-improvement and personal transformation as evolution, they are engaging in polysemy. Metaphor theory has developed a refined approach to the subculture-specific application of metaphors. As Lakoff and Turner point out, there is nothing wrong with multiple mappings of metaphors if they are performing useful interpretive work. For example, the metaphors LIFE IS A JOURNEY and LIFE IS A PRECIOUS POSSESSION both have relevance.

A common schema relied on in evolutionary theologies is that of a path and the accompanying complex metaphor, A PURPOSEFUL LIFE IS A JOURNEY, which is rooted in the common linguistic Source–Path–Goal schema. Metaphors are more than just a poetic reframing of what "actually" happens in life. Rather, argue Lakoff and Johnson, they expand the "sensorimotor inferential capacity." Therefore, the metaphor "A PURPOSEFUL LIFE IS A JOURNEY lets us use our rich knowledge of journeys to derive rich inferences about purposeful lives" (Lakoff and Johnson 1999, p. 59).

Religious systems are often oriented around the solution to a problem, such as suffering or sin. "This problem-solution framework requires goal-based ways of thinking, which is one reason," argues Peter Richardson, "why the source-path-goal schema underpins so many different types of religious language" (Richardson 2024, p. 407). The notion that life is a journey on a path towards enlightenment is common in many of the esoteric systems that contributed to both Theosophy and spiritualism. They rely on an upward path requiring effort and self-transcendence, even more so than traditional Christian salvation.

The GREAT CHAIN OF BEING is evaluated by Lakoff and Turner as a complex metaphor found in many cultures, which consists of several basic metaphors. They argue that it persists in a "highly articulated version" that helps us to understand "ourselves, our world, and our language," though it has been abandoned in the philosophical history of ideas (Lakoff and Turner 1989, p. 167). They observe that "The GREAT CHAIN METAPHOR is a tool of great power and scope.. . . It allows us to comprehend general human character traits in terms of well-understood nonhuman attributes; and, conversely, it allows us to comprehend less well-understood aspects of the nature of animals and objects in terms of better-understood human characteristics" (Lakoff and Turner 1989, p. 172).

The metaphor also helps us understand the human in terms of the nonhuman, as did Myers when he placed the human between ape and angel. The GREAT CHAIN OF BEING metaphor is useful in understanding evolutionary theologies because it shows that it is natural for humans to use both similarities to and differences from animals to project their destiny into the future. Myers was hardly the first to have made such a comparison. In the eighteenth century, the English poet Alexander Pope suggested that "superior beings" inhabiting other globes would probably view a scientist like Isaac Newton as humans view apes (quoted in Lovejoy 1964, p. 193). The human link with the "inferior lives" of animals suggests an analogous tie with "superior lives." Such a metaphor does not have salience in some subcultures, such as eco-spiritualities, which have flattened the great chain to achieve greater parity with animal life. Nevertheless, the metaphor persists. My research is intended to evaluate the role of metaphor in the early development of evolutionary theologies. Another helpful tool is blending theory (CIT).

3.3. Blending Theory, also Known as Conceptual Integration Theory

Why do metaphors change over time? Blending theory, or CIT, offers insight into the process. The term *evolution* has been blended in all sorts of ways since 1859. Scientists have often found it useful to personify evolution in an attempt to help people better grasp a theory that is conceptually difficult, since it extends over extremely long periods of time and affects groups rather than individuals. The pronghorn chased by ghosts is just one of these types of blends.

Models of the afterlife are an interesting area of analysis for blending theory. General templates for heaven and hell have existed culturally for a long time. But by the nineteenth century, these templates were being altered by the modern heaven movement. According to blending theory, this transformation occurred in response to cultural developments through a process that Fauconnier and Turner call "running the blend," which means the selective combining of inputs from various mental spaces into a single unit and the simultaneous elaboration of the connections between the spaces. "Running" really means to "imaginatively" modify it. It may be run multiple times by different people until it reaches a point of "equilibrium," which they describe as "a place where the network is 'happy.'" They describe a "flash" of comprehension that often occurs when "running" a blend (Fauconnier and Turner 2002, p. 44).

When working with an existing template, as Fauconnier and Turner describe it, "the creative part comes in running the blend for the specific case. In cultural practices, the culture may already have run a blend to a great level of specificity for specific inputs" (Fauconnier and Turner 2002, p. 72). For thousands of years, the culturally specific blend of the Western heaven has included God, Jesus Christ, the savior, angels and saints in white robes, and the souls of dead people. But during the nineteenth century, the figure of Jesus was deemphasized from savior to teacher or elder brother, and departed loved ones played a greater role. Angels began to be imagined as dressed in modern clothes. Elements of the

Christian heaven were combined selectively with elements from the classroom input space, suggesting that education could continue in the afterlife.

The term "input space" will be used in the coming discussion of blending. It is derived from Fauconnier's theory of mental spaces, which are "relatively small mental models of particular situations that have been structured by the concepts in our conceptual systems" (Lakoff and Johnson 2003, p. 261). We can view common elements of life such as *family*, *dinner*, *school,* etc., as each making up a "mental space" that is "framed," or organized, in a specific cultural way. Spaces are constructed from cultural building blocks and conceptual domains. Information is selectively "mapped" from one or more input spaces into a new blended space that contains some elements of each input space. The mapping takes the form of an "integration network" that includes the optional generic space, one or more input spaces, and the blended space. Connections between the spaces can take place by analogy or the application of what are called "vital relations," expanded on below (Fauconnier 1994).

New spaces based on an existing blend must take cultural templates into account, but they do not have to replicate them. In fact, the new blend often clashes with the template in important ways. This is where cultural creativity comes in. A particular variation in the nineteenth-century modern heaven blended space considers Earth as a schoolroom, and death as a kind of graduation into higher forms of education. In this blended space, only selective parts of the education space have been added or "compressed" into the heaven space. For example, the university cap and gown are typically omitted from arrival in the heavenly classroom. But the notion of instructors and pupils moving toward higher "degrees" is applied. When a blend is at equilibrium, or "happy," it appears seamless and nobody notices the clashes or omission of certain elements.

3.4. Types of Networks

When we begin to consider religious and philosophical concepts, it is easy to see that multiple input spaces may contribute to a single blended space, and that some blends are more complex than others. In blending, a "network" incorporates the totality of the spaces being combined to create a new concept. Before we evaluate the specific input spaces engaged in forming the blends Progressive Soul Evolution, Evolution is Therapy, and Salvation is Evolution, let us first review the types of networks. There are four major types of networks: simplex, mirror, single-scope, and double-scope. We will be focusing on the double-scope network, which is most applicable to our current study. It combines "inputs with different (and often clashing) organizing frames as well as an organizing frame for the blend that includes parts of each of those frames and has emergent structure of its own" (Fauconnier and Turner 2002, p. 131). In a double-scope network, both frames contribute to the blend. As an example, Fauconnier and Turner cite the computer "desktop," which selectively draws elements from office work (file folder, trash can) and computer commands (save, delete).

Although of only passing relevance to this study, Fauconnier and Turner argue that it is the capacity to perform double-scope blending that "is characteristic of human beings but not other species and is indispensable across art, religion, reasoning, science, and other singular mental feats that are characteristic of human beings." It is also the "indispensable capacity needed for language" (Fauconnier and Turner 2002, pp. 180–81).

Double-scope blending, they argue, also plays a crucial role in category change by creating "more elaborate and richly connected networks of spaces" (Fauconnier and Turner 2002, p. 274). So when Wallace began first to argue that humans were endowed with "mind" by higher intelligences, and to equate soul progress after death (salvation) with evolution, and Blavatsky took up the narrative with proof texts from Hermetic divinization

narratives, they were creating a fertile network of "input spaces" and complex networks, which eventually became what is called a recursive blend, Evolution is Therapy.

"Recursion" happens when one blended space becomes an input to another network, which ultimately allows for more plausible forms of compression (Fauconnier and Turner 2002, p. 334). I argue that recursion takes place when Salvation is Evolution becomes an input space for Evolution is Therapy, which can then be called a "hyper-blend" (Turner 2014, p. 216).

Not all blends succeed, and in fact Fauconnier and Turner use a natural selection metaphor to describe the way successful blends are selected. Our minds are like a "bubble chamber" in which new blends constantly arise; only a few will be selected for in the culture and survive for a time (Fauconnier and Turner 2002, p. 321). Creative thinkers in every culture are the ones who construct and refine networks of thought. As Fauconnier and Turner remark, "Finding optimal networks has always been a highly valued skill, for which writers, poets, statesmen, teachers, scientists, and lawyers are highly regarded" (Fauconnier and Turner 2002, p. 384). And, we might add, theologians, who are less often recognized for their creativity, given that they usually claim that new interpretations are based in divinely inspired eternal truth.

Success in blending can be predicted, according to Fauconnier and Turner, by adherence to particular "constitutive and governing principles."[9] Of these principles, the first and foremost, or the "one overarching goal driving all of the principles", is "Achieve Human Scale." To achieve "a human scale blend," they write, "often requires imaginative transformations of elements and structure in an integration network" (Fauconnier and Turner 2002, p. 312). As we will see below, the unsuccessful elements of nineteenth-century blends were often those that did not achieve a human scale. Additional governing principles are as follows: compress what is diffuse; obtain global insight; strengthen vital relations (identity, uniqueness, etc., as discussed in the next section); and come up with a story. When applying the principles of blending to evolutionary theologies, we should consider that *evolution* developed dense polysemy at a time when values among different groups in Western culture were clashing. The ideas that succeeded, frequently, were those that told the best story and put the human at the center.

3.5. Vital Relations in Blending

A key to understanding blending and compression is a set of commonly engaged terms known as "vital relations", identified by Fauconnier and Turner. A partial list of these relations is as follows: Change, Identity, Time, Cause-Effect, Part-Whole, Representation, Role, Similarity, Intentionality, and Uniqueness (Fauconnier and Turner 2002, p. 101). For example, the vital relation "Identity" may allow us to link children with the adults they will become.

As an example of blending with vital relations, Fauconnier and Turner describe an illustration that shows a dinosaur evolving into a bird through five different stages. The mind tends to imagine that a single dinosaur itself is transformed into a bird, which can then catch a dragonfly. The illustration strings and compresses vital relations including Time, Space, Cause-Effect, Change, Part-Whole, and Intentionality simultaneously. (Fauconnier and Turner 2002, p. 101). Even though we know that many individuals participated in the process of evolution over millions of years, the image compression allows us to more efficiently think about the process. Interestingly enough, Fauconnier and Turner argue that popular understanding of evolution has lagged because the vast time frame of billions of years does not fit well into a human scale.

Blends can bring different times and spaces and individuals together, and they can suggest causes. Intentionality is a vital relation often seen in religious thought. The

compression of spaces may allow correspondences to be built between one space and another; for example, a primate on earth is linked to an angel in heaven. This is what happened when ideas from the biological chain of being became superimposed upon religious ideas about the transformation of humans into divine beings. The notion that we may eventually turn into something as "advanced" from us as we are from animals is both seductive and powerful.

Another commonly used vital relation is Uniqueness, which is at work both in the dinosaur–bird and the pronghorn chased by an extinct cheetah. A single individual is chosen to uniquely represent an entire species over thousands of years. Fauconnier and Turner propose that reincarnation is another compression into uniqueness, in that it suggests that individuals living in different time periods are the same person, without any particular element to indicate connection between the individuals (Fauconnier and Turner 2002, p. 118). Of course, believers in reincarnation would argue that there is a spiritual connection and that the individual share memories and even a soul.

An example of blending that applies vital relations was performed by the apostle Paul, who compared the Christian seeking salvation with an athlete running a race. "Do you not know that in a race the runners all compete, but only one receives the prize? Run in such a way that you may win it" (1 Cor. 9:24, NRSV). The blend applies the vital relations of Cause-Effect, Intentionality, and Uniqueness. The two input frames here are salvation through Christ, which is an abstract concept, and a contest of human speed. Paul urges steadfastness and effort by advising people to approach salvation as if they are athletes trying to win a race. The frames clash in the sense that a race has only one winner, while in the journey to salvation, each person may imagine success. Nevertheless, the blend works. In spite of the clash, it has inspired countless Christians to stalwart effort. In a similar way, we will apply vital relations to shed light on the mapping of salvation to evolution.

4. Analysis: What Survived? Comparing Evolutionary Theologies from the 19th to the 21st Century

Before evaluating the specific blends found in evolutionary theologies, I will review the elements of the systems of Blavatsky and Myers to see which persisted prominently in Roszak's Aquarian Frontier, and what the governing principles of blending theory can explain about the success of certain blends over others.

4.1. The Aquarian Frontier and the Twentieth Century

Roszak's 1975 *Unfinished Animal* provides an updated twentieth-century synthesis of various evolutionary visions, which reveals the influence a century later of both Blavatsky and Myers. He presents his study as "a survey and critique of the current religious revival in Western society, particularly with respect to its ethical and political implications" (Roszak 1975, p. 3).

He evaluates 145 groups (including 5 influenced directly by Blavatsky) and identifies broad trends. His categories range from Eastern religions to "Eupsychian Therapies," which include Jungian, gestalt, and primal therapy. In other categories we find the Catholic paleontologist Pierre Teilhard de Chardin, the French Sufi René Guénon, the psychedelic pioneer Timothy Leary, and the Indian teacher Sri Aurobindo, as well as pioneers of the human potential movement.

The groups and thinkers along the Aquarian Frontier disagree(d) about a lot of things, most especially the question of an afterlife. One thing that unites them, however, is the agreement that mystical or extraordinary experience is important to life on Earth. Most also share a Hermetic sensibility and tend to use "evolution" to describe personal transformation.

Another unifying factor Roszak identifies is the therapeutic. For the thinkers he discusses, "The way forward is inevitably the way inward" (Roszak 1975, p. 239).

Table 3 presents my summary and paraphrasing of the basic components of Roszak's system, specifically as it relates to evolution. This list is a comparative tool to assist in our analysis. Although, admittedly, "Roszak's system" is an arbitrary endpoint, it does provide a rough identification of the components of the most popular evolutionary theologies of the latter part of the twentieth century.

Table 3. Roszak's 1975 typology of metaphysical evolution on the "Aquarian Frontier" as presented in *Unfinished Animal*.

1.	Humans can influence biological evolution through transforming culture and "consciousness" (p. 3).
2.	"'Evolution'. . .means a revealed and realized potentiality—a step that moves us closer to the destined completion of human nature" (p. 76).
3.	The problems of our time can be met by the convergence of "age-old spiritual disciplines" and "contemporary psychotherapy" (p. 4).
4.	Our task is "to discover the godlikeness in whose image we are said to have been cast" (5).
5.	Evolution includes developing "psycho-spiritual capacities" (p. 236).
6.	Exploration of psychic powers is "a crucial stage in the evolution of the human race" (p. 11).
7.	"The essential oneness of therapy and religion" (p. 239).
8.	Hidden meaning of sexuality and the erotic as an "approximation" of transcendence and divine oneness (p. 241).
9.	The emergence of "a planet-wide mutation of mind"; new ecological awareness as a "sign of the great transition" (p. 4).

My summary is at best a partial condensation of Roszak's themes, but it does provide a snapshot of the transformation of evolutionary theologies over a century. The Aquarian Frontier connects the nineteenth-century evolutionary theologies of Blavatsky and Myers with the previously mentioned, Deepak Chopra inspired, twenty-first century "Call to Conscious Evolution." The language has been updated to accommodate twentieth-century values, yet seven of the nine elements of Roszak's summary can be found in Blavatsky, Myers, or both. (Although Blavatsky and Myers are not the only sources of these ideas, they played a central role in creating the hyper-blend Evolution is Therapy.) Like Blavatsky and Myers, Roszak identifies deification and the pursuit of psychic powers as hallmarks of "evolution." The marked similarity between some components of Myers and Blavatsky is a tribute to the "happiness" and stability of their blends, which means that they seem realistic and meaningful.

If we look at the individual elements of Roszak's typology, we can see that of the nine points, the first two are common to Blavatsky and Myers. They can be seen as part of the network of religious responses to Darwin. The fourth point, the imitation of God and application of spiritual discipline, draws on Hermetic themes and is most closely related to Blavatsky's work but can also be found in Myers's idea of the secondary self as guide and teacher. The focus on mental discipline and training in the fifth through seventh points echoes the Theosophical tradition of adeptship, but also the psychological approach initiated by Myers.

The seventh point connects therapy with religion. According to my research, the historical origins of this narrative lie in the nineteenth century, where Blavatsky and Myers

made important contributions. Blavatsky drew together common themes from Romantic nature religion and spiritualism. Myers performed ground-breaking theological work describing therapy as a religious duty, and introduced the "secondary self" as evolutive, therapeutic, and salvific.

Two elements on Roszak's list not found in Blavatsky or Myers are the last two, ecological concerns and an overt emphasis on the erotic as a symbol of divine transcendence. These can both be explained as values that align with the hippie counterculture, with its free-wheeling attitudes towards sexuality. Though Myers did evoke the artistic eroticism of Plato, he did not explicitly identify sexuality as a gateway to transcendence. The overt connection of the erotic with evolutionary transcendence is a twentieth-century innovation, which also invokes Asian Tantric traditions. Jeffrey Kripal argues that the erotic was a hidden but essential ingredient in Myers's work (Kripal 2010, pp. 86–91). Blavatsky did not write about sex or the erotic in a positive way, and this accounts for the clash of her blend with counterculture attitudes.

Another difference is that the system identified by Roszak is more this-worldly than that of Blavatsky or Myers. It deemphasizes—though it allows for the possibility of—both an afterlife and reincarnation. Its open-ended conclusion does not elaborate on either heaven or life after death. Thus, evolutionary theologies of the twentieth century, while clearly bearing a stamp of Blavatsky, Myers, and spiritualism, are more progressive and this-worldly. The ideas that persisted in the mainstream of Roszak's Aquarian Frontier are those that follow the prime directive of blending theory, "achieve a human scale."

The second governing principle apparent in evaluating the shift from Blavatsky to the twentieth century is the need for a story. Blavatsky did in fact tell more than one (conflicting) story. Her myths of the root races did have an influence outside her immediate circle, but the most theologically punitive elements, which incorporated elements of sexual guilt that clashed with twentieth-century thought, had been minimized. To the extent that they perpetuated themselves into the wider culture, they were softened in ever-more-technologically-advanced visions of the "lost" continents of Atlantis and Lemuria. Roszak calls for Blavatsky's stories to be treated as a "mythical armature for supporting a godlike image of human nature," and laments her "unfortunate literalism" (Roszak 1975, p. 122). This is quite a put-down for a woman who hoped to provide an alternative to biblical literalism. Nevertheless, the way she brought humans into a cosmic story was influential in a general way. She helped people to tell a new story, one that was largely in harmony with contemporary developments in geology, but which also put humans at the center.

The themes that came to dominate maintain a general harmony with principles of blending, including "compress what is diffuse," "obtain global insight," and "strengthen vital relations." The connection of humans with lost talents from an animal or more primitive past, as originally framed by Blavatsky and Myers, offers a global insight that makes sense of connections between human and animal. Even though the individual may not be sure how his or her own life fits into the grand evolutionary scheme, the general notion that "evolution" can be achieved gradually in small steps by way of therapeutic techniques strengthens the vital relations of Uniqueness and Identity. An individual can imagine persisting through various "stages" of evolution and on into a transformed future state. This simplified story also resonates with the PURPOSEFUL LIFE IS A JOURNEY complex metaphor, which does not require a fixed endpoint, but merely motion along a path.

The Evolution as Therapy hyper-blend also opened the door to all kinds of ritual and therapeutic "technologies" or methods to be incorporated into a salvation scheme outside of organized religion. This is an idea that could only have taken root during the retreat of organized religion since it provides a rationale for practices that have been rejected by ecclesiastical authorities as magic and sorcery.

In the blend, advanced former humans sometimes take on the role of angels or Christ in Christian salvation. The notion of advanced beings providing guidance, whether former humans or extraterrestrials, has been promoted by some along the Aquarian Frontier as well as contemporary adherents of "conscious evolution" systems. In an era when many religious figures have become tainted by association with institutional religion, former humans seem more plausible guides. And yet traditional saints and divinities often do show up in personal transcendent experiences, as even a cursory read of the literature surrounding near-death experiences (NDEs) will attest. Blavatsky's incorporation of the Hermetic divinized human into evolutionary salvation systems remains a key component because it reinforces and affirms the most basic aspects of great chain continuity. It bridges the gap between humans and divine or angelic beings, and this probably accounts for its persistence.

Finally, Roszak's system strongly links evolution with therapy. Healing has of course been part of many religious systems. People go to religious practitioners to achieve relief from physical and mental ailments, and healing rituals abound across cultures. Yet evolutionary theologies incorporate the self as therapeutic practitioner in ways not seen in traditional religious settings. Roszak points out that Western religion abandoned the classical systems of physical culture. He includes *upaya*, a Sanskrit term that is used in Buddhism, to describe practices of transformation in his consensus list. Indeed, his "Aquarian Frontier" is characterized by a wide range of methodologies and techniques for approaching transformation by way of mental training and physical discipline. Some are attempting to restore Gnostic and Hellenistic rituals, which also incorporated a variety of therapeutic modalities (see DeConick 2016). The transformation of salvation into therapy by way of "evolution" has been so effective that most adherents do not stop to question it.

The seamless acceptance of a new concept demonstrates the success of blending, which can take the form of a revelation. Lakoff and Turner describe this type of sudden insight as the "power that metaphor has to reveal comprehensive hidden meanings to us, to allow us to find meanings beyond the surface, to interpret texts as wholes, and to make sense of patterns of events" (Lakoff and Turner 1989, p. 159). In the end, this power of metaphor can be used to help explain the persistence of evolutionary theologies, even though they are at odds with elements of evolutionary biology.

4.2. Network Analysis 1: Progressive Soul Evolution

Blavatsky's evolutionary system creatively combined ideas from ancient Hermeticism, spiritualism, and biology in a blend that appealed to many of the intelligentsia of her day, including Frederic Myers.[10] When the mapping is complete, what stands out in her system of progressive evolution of the soul, spirit, or monad (she was not consistent) is the following: the possibility that humans can recover lost vestigial and potential talents through steady effort and progress, and the idea that higher intelligences or advanced beings guide our transformation into godlike beings.

Figure 1 shows how Blavatsky performed theological transformation by three mappings (mapped terms are italicized below). First, she matched Wallace's *mind* with Darwin's *mental endowments* and the Hermetic *mind*, a philosophical concept known as *nous*. Of course, Blavatsky's *nous* is not the same as the Hermetic *nous*. She was simply putting her own stamp on the tradition. In the nineteenth century, debates were raging as to which aspect of the human formed a "higher" faculty. Nevertheless, there was enough categorical similarity between the three concepts of mind that a blend could be attempted. Though Blavatsky associated mind with *nous* and the embodied divine spirit, she also saw salvation as the abandonment of the intellect in favor of intuition. The clashes made the blend a trifle

"uneasy,", i.e., not "happy," in Fauconnier and Turner's parlance, which left it open to be rerun by other thinkers in succeeding decades.

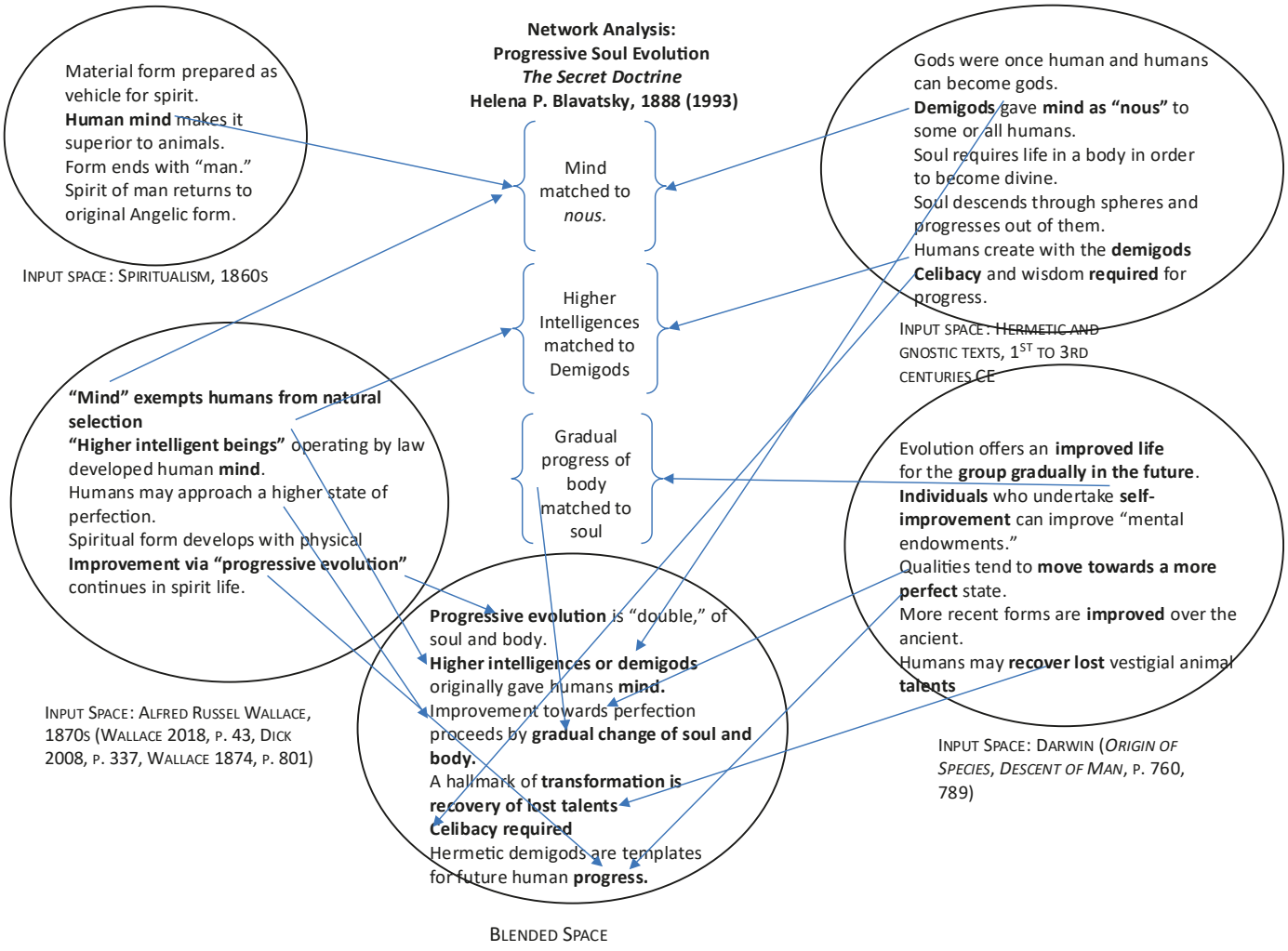

Figure 1. Network analysis of Progressive Soul Evolution (Blavatsky 1993; Wallace 2018, p. 43; Dick 2008, p. 337; Wallace 1874, p. 801).

A second Hermetic mapping performed by Blavatsky linked Wallace's *higher intelligences* with the Hermetic *demigods*, whom Blavatsky also associated with figures from other religions, such as the Hindu Pitris. These two mappings created a blend that feeds into later evolutionary theologies. Demigods, higher intelligences, and even extraterrestrials continue to play an important role in evolutionary theologies. One reason they persist is that they provide some of the comfort and security that a deity or savior offers, and the possibility of grace or aid when human effort fails. People who are put off by the idea of absolute dependence on a savior or God do retain elements of religious sensibilities, and may engage in prayer, ritual, and even divination (see Prophet forthcoming).

A third mapping connects ideas about *gradual improvement* from Darwin and biological evolution into a new complex blend of *progressive* soul *evolution*. This mapping succeeded and came to appear inevitable in later evolutionary theologies. Blavatsky's soul evolution and root race system were attractive, but also contained enough unresolved clashes, particularly around asceticism and elitism, that they continued to be modified by future generations to improve their appeal.

4.3. Network Analysis 2: Salvation Is Evolution

We have reviewed in this article a wide range of ideas that fed into the contemporary notion of evolution as a kind of destiny or duty that incorporates progressive and gradual self-improvement. Figure 2 looks for basic conceptual mappings from the domains of Christian salvation and nineteenth-century evolution. At work are a number of vital relations, including compressions of Time and Identity.

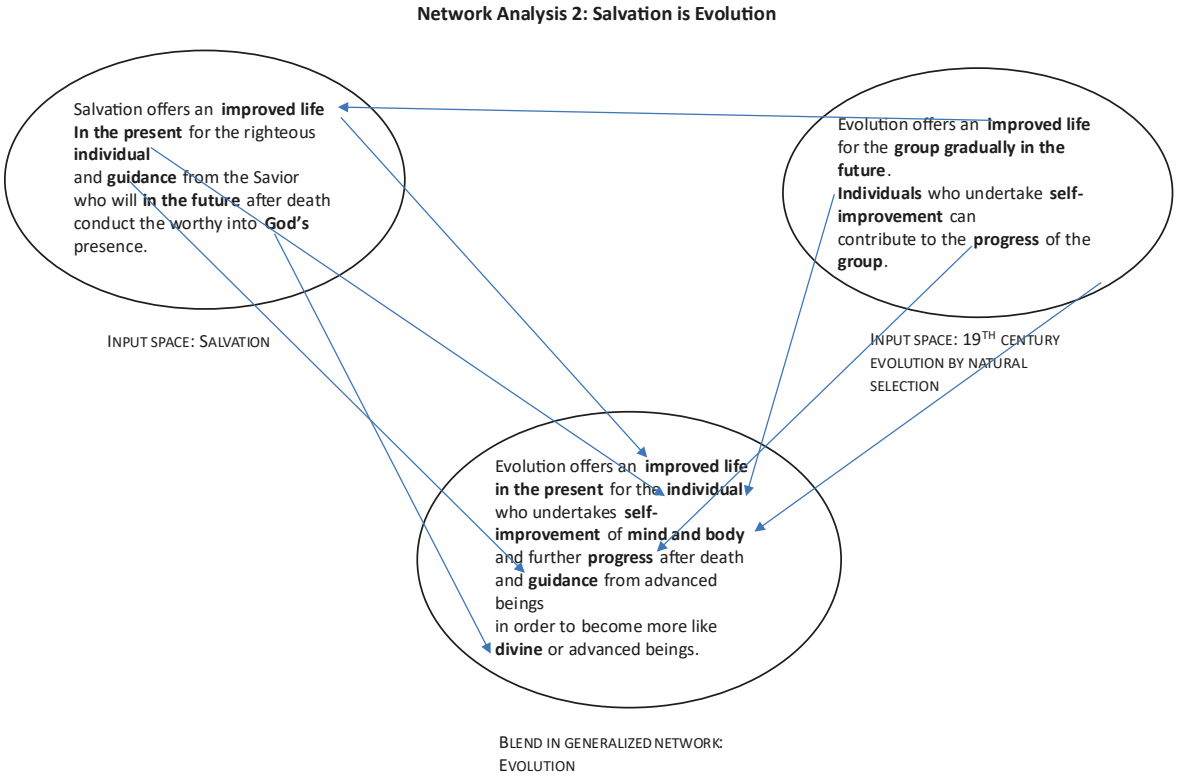

Figure 2. Network analysis of Salvation is Evolution.

The first obvious mapping is *improved life,* which appears in both domains. In Christianity, at least in most denominations, life in the present is supposed to improve somewhat for the saved, but the real promise is in the afterlife. With nineteenth-century evolution, the *improved life* offered is for the species, but there is also room for individual *self-improvement* to *gradually* affect outcomes for the group. This *gradual* improvement maps into the generalized blend.

The mapping of *self-improvement* is assisted by the accessibility of notions of individual *self-improvement* from Lamarck and Spencer which persisted in nineteenth-century evolution. Individual *self-improvement* maps therefore from both nineteenth-century evolution and salvation. Another contribution that evolution makes to the blend is the notion of *gradual progress,* which may not be present in the salvation domain. A gradual and progressive improvement of mind and body is continued after death in the Salvation is Evolution blend.

An obvious compression of vital relations is between the individual (in the salvation input space), and the group (in the nineteenth-century evolution input space). Group improvement over thousands of years is compressed into individual improvement. Lamarckian evolution is about passing traits on to one's children. Nevertheless, it remains useful to the Salvation is Evolution blend, when selectively mapped. Most evolutionary theologies are less about passing acquired characteristics to one's descendants than about achieving *personal improvement* and transcendence for the *individual* in present and future lives.

Thus, what happens to the group in nineteenth-century evolution and to the individual in salvation is compressed into the individual in the evolution blend. Time is also compressed. Even if soul improvement is seen as taking place over hundreds of lifetimes, the blend folds what happens to multiple individuals over vast time spans into the individual experience over either a single lifetime or multiple lives in a shorter time span.

A final mapping from input to blended space is *guidance* from the savior in salvation to *guidance* from advanced beings in evolution. In addition, the evolution blend accepts a partial mapping of divine presence from Christian salvation, but the soul does not merely enter God's presence but becomes more like divine or advanced beings. The evolution blend also contains elements of Hermetic and other divinization narratives, which are explored in Figure 3. However, Figure 2 shows the utility of the domain of biological evolution to enrich the more open-ended conceptions of salvation that were developing during the nineteenth century. One can see how and why the mapping came to seem automatic and even preferable to "salvation" in societies with active secularization during the twentieth century.

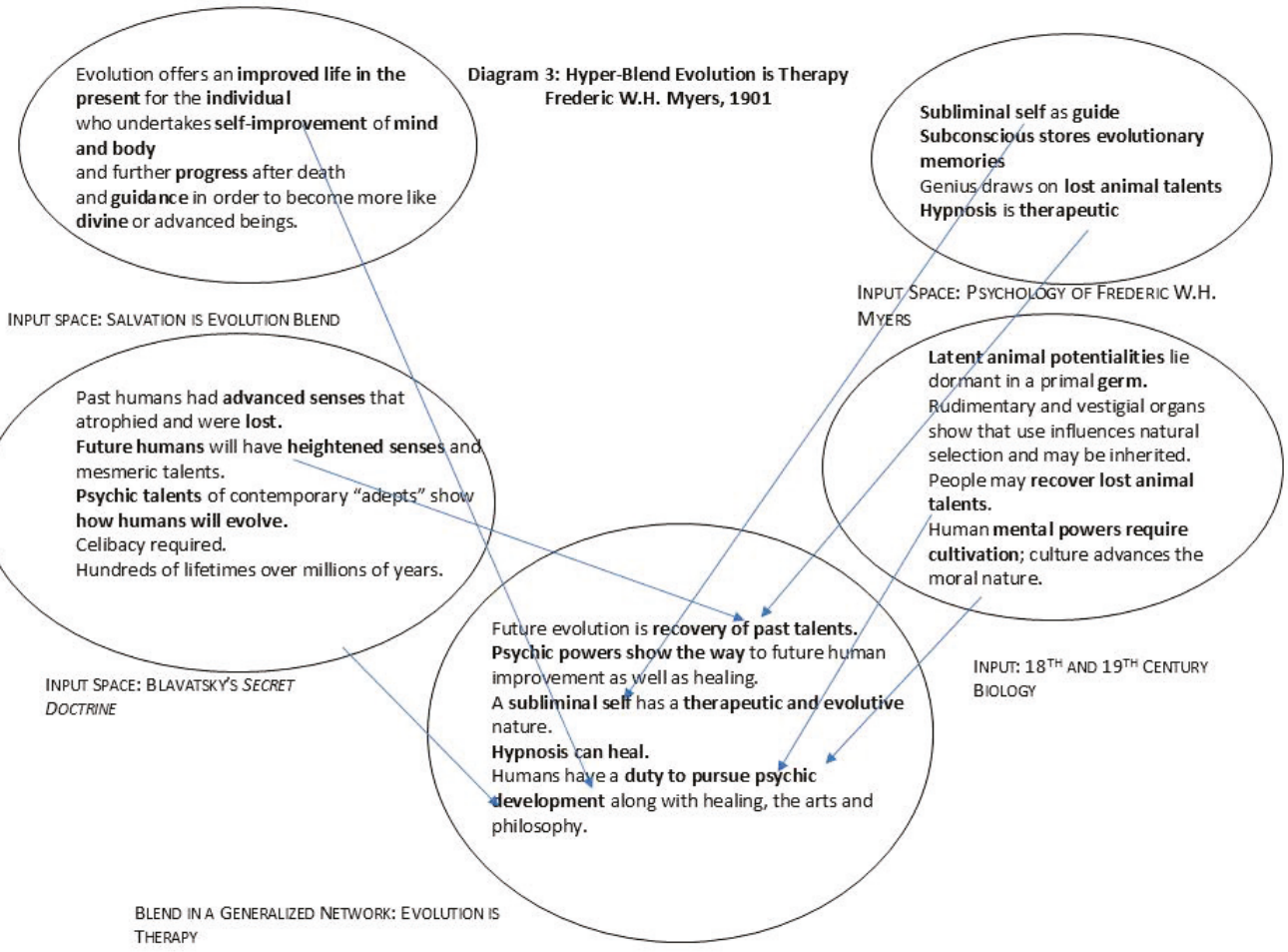

Figure 3. Evolution is Therapy (Myers 1909).

4.4. Network Analysis 3: Evolution Is Therapy

Contemporary evolutionary theologies incorporate a wide range of modalities for improving the body, mind, and spirit. Some include rituals, contemplation, and incantation borrowed or updated from traditional religious systems. Others apply time-honored methods of trance induction, enhanced with psychotherapeutic techniques and, in the twentieth century, with psychedelics.

Figure 3 evaluates the components of the blend Evolution is Therapy as it began to emerge in the nineteenth century. Input spaces include the Salvation is Evolution blend, Blavatsky's root race system, psychology, and nineteenth-century evolutionary biology, which also anticipated some recovery of lost animal talents. Though Blavatsky warned against developing these talents, they achieved their happiest blend in the work of Frederic W. H. Myers.

The cognitive science of religion and CMT have tended to focus on world religions, as well as God concepts. This study shows that attention can also be paid to syncretistic theologies that appeal to those who are disillusioned with organized religion.

The hyper-blend Evolution is Therapy contains elements of Salvation is Evolution together with material from the nineteenth-century psychology of Frederic W. H. Myers, who created a new blend promoting personal improvement, as well as selected elements from Blavatsky. Unlike Evolution is Salvation, it can be taken as a this-worldly practice, though Myers also thought that therapeutic evolution would continue after death. The blend requires compression of the vital relation of time and a mapping of identity from past human and animal forbears (who are seen as possessing heightened senses and psychic talents) to future humans.

Blavatsky first performed this mapping by linking past races with advanced senses to templates of future humans, and the psychic talents of contemporary adepts with a blueprint for future human development. However, Blavatsky warned that these talents should only be cultivated by a few worthy individuals. Myers enriched the blend by his own research into extraordinary human capacity, which includes artistic genius as well as the skills revealed under hypnosis. He connected the phenomena of hypnosis with healing, and postulated a subliminal self that was both therapeutic and promoted the "evolution" of the individual. Finally, he connected this evolution with a duty to pursue psychic development, the arts, and healing. He thus provided a template for the incorporation of therapeutic ritual into evolutionary religion, or religion as therapy for all, not only elites.

The metaphor spaces surrounding evolution that we have evaluated in this article could no doubt be mined further and more deeply for examples of conceptual blending. But this preliminary investigation has at least provided greater insight into the emergence of "evolution" as a form of secularized, therapeutic salvation.

5. Conclusions

This study shows that CMT and CIT can be fruitfully used to explain the nature and direction of theological change. By comparing the nineteenth-century evolutionary theologies of Blavatsky and Myers with the Aquarian Frontier of the 1970s identified by Roszak, we have engaged in a case study of the development of new theologies. We also briefly considered how these theologies have been extended into the twenty-first century through the thinkers engaged in a "Call to Conscious Evolution." These systems remain attractive to individuals who are part of the New Age and SBNR movements, but also to the non-religious. They offer greater agency than orthodox Christianity, but still leave room for grace and a type of salvation through connection with "higher intelligences" and advanced former humans. In order to better understand the development of these theologies, we applied CMT and blending theory, or CIT. We analyzed three blends, Progressive Soul Evolution, Salvation is Evolution, and Evolution is Therapy, which encapsulate the new coinage of these thinkers. These systems can be encapsulated by the idea that "evolution" depends on the practice of spiritual discipline and/or the development and presentation of psychic and healing powers, in addition to other activities to improve life on earth. These three blends incorporate the nineteenth-century evolutionary biology of Darwin and Wallace; Blavatsky's syncretistic root race system; Myers's psychology and research into

the phenomena of hypnosis; Wallace's spiritualism; and ancient Hermetic texts as well as gnostic rituals.

According to the principles of conceptual metaphor theory, primary metaphors underlie complex metaphors. We have seen how two complex metaphors—THE GREAT CHAIN OF BEING and A PURPOSEFUL LIFE IS A JOURNEY—were developed in a new direction by evolutionary theologies. The use of these metaphors can explain why these theologies seem reasonable and natural. For example, they allow us to imagine ourselves being transformed into future divine beings by analogy with our animal past.

Blending theory suggests why certain components of these theologies were more durable than others. The double-scope network of Progressive Soul Evolution as developed by Blavatsky was attractive but contained some elements of elitism, long time frames, and sexual guilt that were largely dropped as time went on and the blend was continually refined by later thinkers. One explanation for clashes in the blend has to do with its failure to maintain a human scale. The double-scope blend Evolution is Salvation mapped concepts from biology and theology into a new and seemingly secular type of personal transformation. The hyper-blend Salvation is Therapy proved to be the most "happy" and durable blend as it recurred along the Aquarian Frontier.

Although the analysis is interesting, it by necessity has had to ignore much historical work on the various transformations of Theosophy, psychology, and modern therapeutic salvation. There are clearly many other influences on the groups in the Aquarian Frontier and the signers of the "Call to Conscious Evolution." However, it would be interesting to see studies from other disciplines testing neurological correlates of the use of "evolution" as a type of therapeutic salvation, and comparing it with more traditional concepts of salvation. The present study has only begun to analyze the belief systems that persist outside of the major religions, and may provide a foundation for future work in these areas.

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Notes

1 Esotericism is a contested term, particularly its relationship to the "West." It often refers to sacred or hidden teachings on human transformation into divinity or acquisition of divine powers (see Hanegraaff 1998; Strube 2021; Von Stuckrad 2010).

2 See, for example, Darwin 2006a, p. 588; 2006b, p. 1247.

3 Cited in Lavoie, *The Theosophical Society: The History of a Spiritualist Movement*, p. 135. Note that Blavatsky is a controversial figure, and the subject of many biographies as well as scholarly works. As I have demonstrated, the best-known recent popular book about her, *Madame Blavatsky's Baboon* (Washington 1993), inaccurately presents her attitude towards science (Prophet 2018a, forthcoming). A basic academic treatment of her life and work can be found in Goodrick-Clarke (2004, 2010).

4 Jeffrey Lavoie has argued that Theosophy was, at least in its early years, a spiritualist movement, given that it was concerned with the phenomena of mediumship, and many of its earliest members were spiritualists (Lavoie 2012). However, Theosophists also incorporated what became known as occult ideas, including Hermeticism and magic. Joscelyn Godwin explores its multitude of influences (Godwin 1994). Blavatsky also issued polemics against spiritualism and, after the 1870s, the Theosophical Society became a global movement and spiritualists were no longer its primary audience. This dynamic is explored in Chajes 2019.

5 Blavatsky uses various terms to describe the individual, including monad, soul, and spirit. She eventually settles on a seven-part human, using Sanskrit terms. This terminology is beyond the scope of this article. For more, see Chajes 2019; Goodrick-Clarke 2010.

[6] For other academic treatments of his evolutionary system, see also Hamilton 2009, pp. 193–98; Kripal 2010, pp. 36–91; 2007. Kripal describes the import of Myers's work at the borderland between science and religion, particularly as it relates to the paranormal, literary creativity, and Platonic eroticism.

[7] Myers, Frederic W.H. cited in (Kripal 2010, p. 87) Emphasis in original.

[8] This list is distilled from an address given by Myers in 1899, called "Provisional Sketch of a Religious Synthesis" (Myers 1909).

[9] See Fauconnier and Turner 2002, pp. 345–46 for a summary of constitutive and governing principles.

[10] Although Blavatsky was critical of spiritualism, her earliest writings were directed towards the movement.

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Article

"Relief of Man's Estate": The Theological Origins of the Modern Biomedical Project

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Abstract: In recent years, medicine has been increasingly described as "Baconian", in reference to the scientific methodology laid out by Francis Bacon (1561–1626), who, in criticizing Aristotle's natural philosophy, called for cultivating useful knowledge in order to eradicate disease and extend human life by attenuating aging. Contemporary medicine is often described as "Baconian" insofar as it is devoted to the relief of suffering and the expansion of choice. These two features continue to exert pressure on medicine to expand understandings of both suffering and wellness. Recent attempts to reclassify human aging as a disease, for instance, bear witness to the Baconian impulse. In this article, I discuss and critique the religious origins of Bacon's call for a new kind of practical rationality in service of improving humanity, showing that they were deeply theological and considerably informed by events recorded in the biblical book of Genesis. I will also argue that the theological nature of Bacon's program, while theocentric in nature, suffers from inattention to Christology, which challenges Bacon's theology and the Baconian Project. Attending to Christological concerns modifies Bacon's approach to bioethics, which recognizes both the fallenness of creation and the power of medicine to address the human condition, especially human aging.

Keywords: Aristotle; Francis Bacon; Baconian science; longevity; Incarnation

1. Introduction

In recent years, medicine has been increasingly described as "Baconian", in reference to Francis Bacon (1561–1626), who, in criticizing Aristotle's natural philosophy, called for cultivating useful knowledge in order to eradicate disease and extend human life by slowing human aging. Indeed, contemporary medicine has been described as "Baconian" to the degree that it aims at relieving suffering and expanding choice. In this article, I will discuss the theology that animated Bacon's vision by examining Bacon's own writings, before offering a Christological critique, which might question contemporary attempts to attenuate human aging, while recognizing the power of medicine to alleviate suffering within Bacon's theological framework.

2. Bacon's New Program for Science

Modern thought, it has been said, began with a rejection of the Aristotelian perspective on the natural world and our understanding of it (Baillie 1951, p. 18). Francis Bacon (1561–1626) was one of the key critics of an Aristotelian natural philosophy that was devoted to cultivating a theoretical understanding (*theôria*) of nature culminating in wonder. Aristotle's contemplation had no end beyond contemplation itself, for it was rooted in the intellect—that highest element within the human creature that shares something of the divine—and was therefore pleasurable for its own sake (Aristotle 2000, 1177b, p. 195). For Aristotle, contemplation echoed the activities of the gods, and has been rightly described as a form of intellectual worship (Aristotle 2000, 1177a-b; Foster 1957, p. 34). Because he held that the cosmos was directed by a first principle—described as the unmoved mover of the cosmos or thought thinking itself—human contemplation paradigmatically consisted in

the systematic understanding of the cosmos (and nature) by referring to the cosmos's first principles and final causes (Aristotle 1984a, 1072b, line 20, p. 1695). Hence, when reflecting on the natural world and artifacts, Aristotle held that a complete understanding required identifying its multiple causes. Any explanation that did not include a thing's material, efficient, formal, and final causes was insufficient for the kind of pleasurable contemplation that was its own reward. To claim to fully explain a wooden bed, for instance, by referring only to its material cause, being made of wood, without also accounting for the particular arrangement and purpose of the bed, was an inadequate description. If being made of wood were the true nature of the bed, noted Aristotle, we might expect that planting the bed in the ground would eventually give rise to another bed (Aristotle 1984b, 193b, 7–12, p. 330).[1]

To have complete knowledge of something, however, Aristotle asserted that one must account for the four causes of any artifact or thing in nature: the material, formal, efficient, and final causes (Aristotle 1984b, 194b, 16–35, pp. 331–32). These identify, respectively, the (1) material of which something is made, (2) the essence of a thing—that which makes something what it is, and not something else, (3) the source of change (or motion) or coming to rest, and (4) the purpose, or *telos*, "that for the sake of which a thing is done" (Aristotle 1984b, 194b, 33, p. 332).[2] According to Aristotle, we do not know something fully until we grasp the "why", the primary cause of a thing. Thus, a statue, for instance, may be made of bronze (the material cause) and have been shaped by a sculptor (efficient cause). The final cause of walking, for instance, is one's health; it answers the question "Why is he walking about?" (Aristotle 1984b, 194b, 34, p. 332). But for Aristotle, the study of nature also required discerning the essence of things, that is, their formal causes. The virtuous individual searched out these causes, and in so doing cultivated *theôria*, culminating in wonder. In other words, natural philosophy was a self-consciously contemplative and speculative enterprise, which entertained no thought of intervening in nature's operations (Serjeantson 2017, p. 347; Velcurio 1588).

Francis Bacon (1561–1626) found Aristotle's natural philosophy intolerable and is often credited as an instrumental figure in the development of contemporary scientific method. Bacon was neither a scientist nor a philosopher, but a lawyer and a long-serving Member of Parliament who had intense interests in natural philosophy and knowledge as a whole. The astronomer and polymath Sir John Herschel (1792–1871) credited Bacon (and Galileo) with dispelling the darkness that had eclipsed the study of nature since Archimedes (287–212 BCE). Before Bacon, "natural philosophy . . . could hardly be said to exist" (Herschel 1831, p. 105). In particular, it was the "grand and fertile principle" of inductive inquiry, which was rightly credited to "our immortal countryman Bacon" (Herschel 1831, p. 114). Certainly, Bacon's call for the cultivation of inductive knowledge was at the same time a rejection of Aristotle's rational, deductive approach. Indeed, Bacon found Aristotle's natural philosophy to be "dogmatic and magisterial", and too detached from the conditions and maladies that affect everyday life. "The philosophy of Aristotle", charged Bacon, "has laid down the law on all points . . . so that nothing may remain that is not certain and decided: a practice which holds and is in use among his successors" (Bacon 1858b, 1.69, p. 69). Instead, Bacon argued for the cultivation of *useful*, inductive knowledge to serve the interests of humanity. This inductive approach to nature occupied the middle ground between experimental observation on the one hand and mere reason on the other. Bacon likened those of the former approach, the "men of experiment", to ants who collected raw material, but only to store it up. Those of the latter group, the rationalists or "men of dogma", however (followers of Aristotle), were like spiders "who make cobwebs out of their own substance" (Bacon 1858b, 1.95, p. 93). Better to learn from the bee, said Bacon, who gathers from flowers and transforms pollen into honey. The bee utilized both the experimental and the rational, offering a way forward: "Therefore, from a closer and purer league between these two faculties, the experimental and the rational, (such as has never yet been made) much may be hoped" (Bacon 1858b, 1.95, p. 93). Specifically, Bacon hoped

that his new method would enable human beings to exercise expansive dominion over nature, uncovering all operations, both great and small (Bacon 1857b, p. 222).

Contrary to Aristotle's method of natural philosophy, Bacon asserted that the cultivation of useful knowledge required seeking out only the material and efficient causes of things. The pursuit of formal and final causes, with their focus on essence and purpose, hindered diligent inquiry into material and efficient causality "to the great arrest and prejudice of further discovery" (Bacon 1857a, 2, p. 358). To conclude, for instance, that eyelids serve as a fence for one's eyes, or that the purpose of skin is to defend internal organs against the extremities of heat and cold, is to engage in "metaphysics" (Bacon 1857a, 2, p. 358). In other words, Bacon called for an inductive pursuit of physics unencumbered by metaphysical concerns. Indeed, "the inquisition of Final causes is barren, and like a virgin consecrated to God produces nothing" (Bacon 1858f, 3.5, p. 365). As long as final causes were present in natural philosophy, they would continue to muddy the waters and hinder the development of *useful* knowledge attainable through the study of material and efficient causes alone.

In this separation of the physical from the metaphysical, we find an expression of the "two books" doctrine, the book of nature and book of God. The former was the domain of practical science and the latter concerned things divine. With this new approach, Bacon believed the book of nature could be opened, enabling humanity to discover and improve upon the operations of the world, while the book of Holy Scripture—the Bible—rightly concerned the things of God (Bacon 1857b, pp. 218–24). Though separate, these domains were not at odds with one another. "There is no such enmity between God's word and his works" (Bacon 1857a, 2, p. 486). In fact, this separation benefited *both* fields of inquiry; the establishment of boundaries was necessary, as the books of nature and of God required methods unique to each domain. Just as the pursuit of formal and final causes in natural philosophy hindered the cultivation of useful knowledge, so too anyone trying to discern the nature or will of God by inquiring into sensible and material things "shall dangerously abuse himself" (Bacon 1857b, p. 218). While this new division between the physical and metaphysical might be described as one key development in the secularization of science, this was hardly the case for Bacon himself.

Indeed, as will become clear, Bacon's rationale for this new kind of science was grounded in his Christian faith. Though it might appear that Bacon's separation of metaphysics from physics concerned freeing up scientific inquiry from religious dogma, his primary target was the dogma of Aristotle. At the same time, however, there is little doubt that Bacon's scientific program was motivated by a theological view of the world and humanity's place in it (Willey 1949, p. 29; Briggs 1996, pp. 176–77). To cite a few examples, Bacon believed his era was witnessing the fulfillment of Daniel's Old Testament prophecy, that "many shall go to and fro, and knowledge shall be increased" (Dan 12:4). Bacon believed that by his time, the world had been thoroughly traversed by voyages of exploration (i.e., many going to and fro), concluding that "the advancement of the sciences, are destined by fate, that is, by Divine Providence, to meet in the same age" (Bacon 1858b, 1.93, p. 92). His description of abandoning the Aristotelian way in favor of a humble, questioning, inductive science is suffused with religious imagery. Aristotelian thought, with its dogmatic, moribund certainty, must be cast away as an "Idol" in favor of the new inductive way, "the understanding thoroughly freed and cleansed". Drawing on Jesus' words in Matthew 18:3, Bacon described the inductive way with salvific language. Admission to both the kingdoms of man and God demanded epistemic humility: "the entrance into the kingdom of man, founded on the sciences, being not much other than the entrance into the kingdom of heaven, where-into none may enter except as a little child" (Bacon 1858b, 1.68, p. 69). Finally, in the preface to *The Great Instauration*, Bacon himself prayed to the Father, Son, and Holy Ghost, that they might "vouchsafe through my hands to endow the human family with new mercies" (Bacon 1858c, p. 20).[3] Beyond these occasional references, however, Bacon's program was grounded in a theological history framed by the creation, fall, and the promised return of Christ. His arguments for a new scientific methodology

assumed that humanity's power and sovereignty must be *recovered*, as these were forfeited by Adam in the Garden of Eden. Bacon's call to use science to "relieve man's estate" was to regain paradise.

Bacon's Theological Milieu

Though Bacon's call for a new scientific methodology involved disentangling metaphysics from physics in investigating nature, he nevertheless situated science within a Christian framework, which provided a *telos* to guide inquiry. As will be shown, much hinges on Bacon's reading of Genesis and a theology that was at odds with that of Aristotle. As we consider Bacon's theological understanding and how it informed his new science, it will be useful to briefly consider the theological milieu that enabled Bacon to argue for a restoration of the power and sovereignty first enjoyed by Adam before the fall. Here, the Protestant Reformation impacted Bacon's thought in several ways. In particular, Bacon was working with a doctrine of God and God's relationship to the created order that differed from Aristotle's god (Baillie 1951).[4] Specifically, God's free decision to create and preserve a world entirely dependent on God's wisdom and will while simultaneously remaining utterly distinct from the world, opened up conceptual space for interpreting creation on its own terms. As T. F. Torrance (1913–2007) has noted, "God has kept the Godward side of nature hidden, that is, He has kept final causes or the ultimate law of nature 'within His own curtain,' [quoting Bacon] but whatever is not-God is laid open by God for man's investigation and comprehension" (Torrance 1969, p. 69; Bacon 1857b, p. 220). It was this separation of causes (the formal and final from the material and efficient) that motivated Bacon in "the pursuit of natural science as a religious duty" (Torrance 1965, p. 66). In addition, unlike older Greek deductive science that closely tied the divine with the natural, the Reformation emphasis on God's covenant with Adam also opened up space for humanity, as created in God's image (Gen 1:26–27; 9:6), to work with and on creation (Baillie 1951, pp. 26–29).

Another key Reformation development concerns the interpretation of Scripture. As will be shown, Bacon interpreted the Genesis creation accounts literally, reflecting Martin Luther's (1483–1546) insistence that the true sense of Scripture can be disclosed through its literal sense (Luther 1970, pp. 146, 241). Prior to the Reformation, the spiritual senses of Scripture—the allegorical, moral, and prophetic/future senses—were considered more important than the literal.[5] Natural objects in biblical stories were often treated as symbols (Harrison 1999, p. 97). For example, God's command to exercise dominion over the beasts in Genesis (1:26–28) was often internalized to stress exercising dominion and control over the unruly passions of the body. Jerome (347–420) could identify various beasts with the "irascible and concupiscible passions" (Jerome 1975, p. 11). In the West, Augustine (354–430) taught that the beasts signify the soul's affections, and that the body's unruly impulses are "animals" that can be trained to serve reason when restrained (Augustine 1991, 13.21, p. 291). As Peter Harrison (1999, p. 91) has observed, God's command to subdue and rule in Genesis 1 "was frequently interpreted by the church fathers to mean dominion over the rebellious beasts within", whether lust, or other fleshly appetites". But the Reformation privileged the literal interpretation of Scripture, allowing Bacon to interpret Adam's original state and fall literally. A literal reading of the Bible helped generate a natural or immanent reading of nature (Spencer 2023). Exercising dominion was no longer about *self*-control but the control of *things*. Hence, in the hands of the Protestant Reformers, "the biblical narratives of creation and Fall . . . cannot be read other than enjoining upon the human race the necessity of re-establishing its dominion over nature" (Harrison 1998, p. 208). This contextual background helps illuminate the theology behind Bacon's call for science to "relieve man's estate", which relied heavily on the opening chapters of Genesis.

3. The Theology behind Bacon's Arguments

3.1. Prelapsarian Adam as Proto-Scientist

At the core of Bacon's argument for a new kind of science to relieve suffering was the doctrine of the fall, namely, that Adam's sin (Genesis 3) had adversely affected both humanity and nature. The fall served as the backdrop to Bacon's program of restoring humanity, as much as was possible, to its original state, where Adam had a "reasonable soul" in innocence, freedom, and sovereignty (Bacon 1859a, p. 221). While the theme of human sovereignty over creation was hardly unique to Bacon, his interpretation of how this sovereignty was to be exercised was unique.

From the beginning, Bacon depicted Adam and Eve as investigators of nature's laws as established by God. Proverbs 25:2 figured prominently in his understanding of Genesis: "It is the glory of God to conceal a thing, but it is the glory of the King to find it out" (Bacon 1857b, p. 220). Prelapsarian Adam and Eve were portrayed as proto-scientists whose God-given (Gen 2:15) work consisted in contemplation. However, Bacon described this contemplation as seeking out the laws of nature through "exercise and experiment", not out of necessity or as an act of labor, but as a "matter of delight in the experiment" (Bacon 1857a, 1, p. 296). Specifically, Adam's power was visible in the acts of identifying and naming the animals (Gen 2:19–20), for to name something was to exercise power over it—not as a mystical incantation—but in identifying a creature's true function and use (Bacon 1858b, 2, p. 120; Bacon 1857b, p. 239). Adam's activity here is akin to Bacon's understanding of formal causes as investigating the essence of a thing (Matthews 2017, pp. 61–62). All of these activities would have been carried out with ease had the first couple continued to obey God. Creation was not yet the object of God's curse (Gen 3:14–19) and would have yielded up her secrets with very little effort without, however, any need to put such knowledge to practical use. But the nature and purpose of this work would change after Adam and Eve sinned against God.

3.2. The Fall and Knowledge

By transgressing God's explicit command not to partake of the fruit of the tree of knowledge of good and evil (Gen 2:16–17), incomprehensible as this decision was, Adam and Eve forfeited both their innocence and their dominion over nature. Though the fall disrupted human fellowship with God and with one another, Bacon was primarily interested in humanity's relationship with nature. While human understanding was now "depraved by custom and the common course of things", Bacon did not think the mind to be irreparably damaged by sin, but capable, with the correct method, of uncovering nature's workings.[6] The loss of dominion over nature had more to do with God's curse on nature than on the depravity of the mind or a loss of innocence. Rather, he interpreted God's curse as a partial revocation of nature's laws as originally established by God (Bacon 1859a, p. 221). Though humanity fell both from innocence and dominion over creation,

> Both of these losses however can even in this life be in some part repaired; the former by religion and faith, the latter by arts and sciences. For creation was not by the curse made altogether and for ever a rebel, but in virtue of that charter "In the sweat of thy face shalt thou eat bread [Gen 3:19]", it is now by various labours . . . at length and in some measure subdued to the supplying of man with bread; that it, to the uses of human life. (Bacon 1858b, 2.52, p. 248)

Bacon thus read God's denouncement as a *divine charter*. Though the fall occasioned this twofold loss of innocence and dominion, *both* could be partially recovered by religion and sciences, respectively.

3.3. The Great Recovery

Bacon set forth his vision for the renewal of creation in *The Great Instauration*—a term used in the Vulgate to describe both the rebuilding of the temple following Babylonian captivity (2 Kings 12:2) and Christ's activity of summing up all things in himself (Eph 1:10).[7] He believed that cultivating useful knowledge through inductive science would enable

humanity to return to the Garden of Eden, described as "a restitution and reinvesting (in great part) of man to the sovereignty and power . . . which he had in his first state of creation" (Bacon 1857b, p. 222). The Bible contained not only instructions for recapturing innocence, but also supplied the grounding and vision not simply to read nature but to also *interrogate* it, to "put the question to nature" (Tovey 1952, p. 573; Foster 1957, pp. 56, 58). This was not, contrary to some divines, a prideful or exploitative venture (Willey 1949).[8] In his *Valerius Terminus*, Bacon insisted that "*all knowledge is to be limited by religion, and to be referred to use and action*" (Bacon 1857b, p. 218). He explicitly rejected imposing any human ideal or template on nature. "God forbid", declared Bacon, "that we should give out a dream of our own imagination for a pattern of the world" (Bacon 1858c, pp. 32–33). For in relying on our own ideals, "we create worlds, we direct and domineer over nature, we will have it that all things *are* as in our folly we think they should be, not as seems fittest to the Divine wisdom" (Bacon 1858d, p. 132). Indeed, to reshape nature according to human desire would inevitably *distort* man's interpretation of nature and perpetuate the transgression of Adam and Eve (Bacon 1858d, p. 132).[9] The end to which this new inductive knowledge was to be put, as mentioned earlier, was human sovereignty, human power. But for Bacon, this power was to be directed by love.

The phrase "knowledge is power" is an oft-cited, and not entirely inappropriate, description of Bacon's program; however, it fails to fully capture Bacon's thought (Bacon 1859b, p. 253).[10] The pursuit of useful knowledge, as we have seen, was to be guided by religion. Drawing again on the language of "charter", Bacon described this instauration as relieving the condition of humankind, ever-aware, however, of the seductive power of the very knowledge by which the human estate could be redeemed:

> But yet evermore it must be remembered that the least part of knowledge passed to man by this so large a charter from God must be subject to that use for which God has granted it; which is the benefit and relief of the state of society and man; for otherwise all manner of knowledge becometh malign and serpentine, and therefore as carrying the quality of the serpent's sting and malice it maketh the mind of man to swell; as the scripture saith excellently, *knowledge bloweth up, but charity buildeth up* [1 Cor 8:1]". (Bacon 1857b, pp. 221–22)

Echoing the Apostle Paul's encomium on love (1 Cor 13), Bacon rejected any notion of "both power and knowledge such as is not dedicated to goodness or love" (Bacon 1857b, p. 222). Such love was "goodness put in motion" (Bacon 1857b, p. 217). Notably, Bacon's vision of this instauratio was both expansive and exhaustive; the increase in practical knowledge would range from "a discovery of all operations and possibilities of operations from immortality (if it were possible) to the meanest mechanical practice" (Bacon 1857b, p. 222).[11] Once again, Bacon's call for a new kind of science was aimed at interrogating fallen nature in order to restore what was lost through sin. Insofar as it was an activity to be guided by love (charity) and humility in "relieving man's estate", his program had implications for the practice of medicine.

3.4. Bacon and Medicine

Bacon believed that his new inductive, experimental form of science could make significant progress against the conditions of fallen, bodily existence, which was marked by various diseases and maladies that shorten life. He argued that medicine was in desperate need of an infusion of useful knowledge, being a science "more professed than laboured, and yet more laboured than advanced" (Bacon 1858f, 4.2, p. 383). Indeed, it often did more harm than good, and failed in exercising any kind of sovereignty over the body. Those who did express confidence in medicine were of "a vain and flattering opinion" (Bacon 1857a, 2, p. 377). He railed against those who too readily pronounced a disease "incurable" and hoped to stir up eminent physicians to take up this work (Bacon 1858f, 4.2, p. 387). Bacon hoped that the expansion of practical knowledge would lead to cures for diseases previously thought to be incurable, bringing longer life in its wake.

But Bacon was not content with merely curing disease; he also called for an expansion of medicine to include inquiry into the human aging process itself in order to greatly extend life. Here, we find an early expression of concern over death by aging, which is increasingly considered a problem for modern medicine. Bacon was no less critical of physicians for their lack of interest in trying to understand the processes of human aging itself. "But the lengthening of the thread of life itself, and the postponement for a time of that death which gradually steals on by natural dissolution and the decay of age", asserted Bacon, "is a subject which no physician has handled in proportion to its dignity" (Bacon 1858f, 4.2, p. 383). Were physicians to devote themselves to slowing aging, they would see themselves as "instruments and dispensers of God's power and mercy in prolonging and renewing the life of man" (Bacon 1858a, p. 215). Though Bacon acknowledged God's sovereignty in determining the length of life and the promise of eternal life as God's gift, he saw no theological obstacle to pursuing longevity:

> For although we Christians ever aspire and pant after that land of promise, yet meanwhile it will be the mark of God's favour if in our pilgrimage through the wilderness of this world, these our shoes and garments (I mean our frail bodies) are as little worn out as possible. (Bacon 1858a, vol. 5, p. 215)

While Bacon's writings contributed little useful knowledge into the causes of aging, his *History of Life and Death* (1623) contained his apologetic for life-extension research with expansive inquisitiveness into potential influencing factors. Following the lead of the Church Fathers Augustine and Jerome, Bacon interpreted the genealogical accounts in Genesis literally (Bacon 1858a, pp. 243–44). His unfinished *New Atlantis* (1627) was an allegory brimming with Old Testament symbolism and eschatological imagery, where scientists were described with sacerdotal language (McKnight 2006). Some have claimed that Bacon was discreetly obsessed with the prolongation of life (Serjeantson 2017, p. 357). Even more tempered voices acknowledge Bacon's quest to slow aging was the first and highest objective of his new program (Rees 1996), remaining a consistent theme throughout his entire corpus (Gemelli 2012). Bacon situated his call for a new kind of science by drawing on his own Christian understanding of the world. By cultivating useful knowledge through the experimental, inductive interrogation of nature, he believed that we could regain that original power and sovereignty over nature enjoyed by Adam in the garden, with the near eradication of disease and significantly longer—if not indefinite—lifespans.

4. An Assessment

Before offering a critique of Bacon's arguments for slowing human aging, the tremendous advances in medicine that have followed from his method of scientific inquiry should be acknowledged. The inductive, experimental approach to science has led to several remarkable inroads to the mitigation of disease, leading to longer, healthier life. The scorn that might follow any declaration of disease as "incurable" is a testament to Bacon's persuasive power. At the same time, however, history has shown that Bacon's program to "relieve man's estate" has thrived without the particular theological moorings that grounded Bacon's own project. The twin tenets of expanding choice and eliminating suffering have proven amenable to several metanarratives. The "Baconian Project" often serves as a shorthand notation for Promethean efforts to eliminate all forms of suffering through technology, *especially* efforts to slow human aging (McKenny 1997, p. 2), and finds its most radical expression in transhumanism. And yet, it appears that Bacon's own call for slowing aging in hopes of recovering the antediluvian lifespans of the biblical patriarchs, which spanned centuries, is no less melioristic than that of transhumanist philosophy. Indeed, some have observed that Bacon's program challenged the divinely imposed boundary of death in ways that were more pagan than Christian (Serjeantson 2017).[12] Though Bacon acknowledged the promise of the resurrection of life to come, it appears that he perceived little tension between this life and the next.

At the same time, however, it is clear that Bacon's program was theologically grounded in his particular reading of the Bible. And while he framed his new science in the context

of the metanarrative of Scripture and interpreted the fall primarily as a loss of sovereignty, his description of regaining power—understood as "goodness put in motion"—fails to consider whether there are some kinds of suffering that should *not* be treated. Bacon's program is susceptible to the same criticism often leveled against the Baconian Project, namely, that it displaces moral convictions concerning suffering and death in favor of relieving suffering (McKenny 1997, p. 21). Bacon, in effect, lumps in aging with disease as a fair candidate for scientific intervention.[13] A related corollary concerns unspoken assumptions about viewing the body as primarily an object of manipulation through the cultivation and application of practical knowledge—even as Bacon asserted that the pursuit of this knowledge was to be guided by charity for God's glory.

Bacon's interpretation of aging as a problem for science made sense in his reading of Scripture. His concepts of power and sovereignty relied on the metanarrative disclosed in the Bible and the historical context that influenced its interpretation. This is not to say that there was something necessarily wrong with his particular interpretation of power as manipulating nature in order to relieve suffering. Bacon's insistence that we interrogate nature, or "put the question to nature" in order to re-establish power over creation, is not entirely inappropriate if nature is fallen. Moreover, he was sharply critical of humanity imposing its own ideals on to creation. And yet, as Bacon framed the religious purposes for his science, questions remain concerning the nature of human aging, embodiment, and whether aging should be slowed in the name of relieving suffering. At what point, for instance, does relieving the human condition transmogrify into relieving the condition of being human? Does Bacon's theology provide any insight here?

Beyond Bacon's literal interpretation of Genesis, part of the problem may lie with Bacon's appeal to the first Adam in making his case for the great instauration. Though his depiction of prelapsarian Adam as an experimenter may reflect our seemingly limitless desire to understand nature in order to remake it, a more Christological understanding of humanity, the fall, and redemption of creation entails a consideration of the *last* Adam, Jesus Christ (1 Cor 15:45), who came to remedy the sin and death brought into the world by the first Adam (Rom 5:12–21; 1 Cor 15:45–57). Moreover, as Christian theologians and ethicists have argued, the Chalcedonain confession that Jesus Christ is God in the flesh (Jn 1:14), fully human without ceasing to be divine, presents not only the clearest picture of God, but the sharpest portrait of what it means to be human. Karl Barth (1886–1968) forcefully asserted that "the ontological determination of humanity is grounded in the fact that the one man among all others is the man Jesus" (Barth 1960, p. 132). Jesus Christ is the "Archimedean point" from which true knowledge of humanity might be established (Barth 1956, p. 117). While there are certainly no direct or formulaic moves from Christ's humanity to ours, the Incarnation is God's affirmation of creatureliness, human limitedness, and embodiment (O'Donovan 1994). Critically, Christ's humanity speaks to the appropriateness of aging and finitude; such features of human existence are appropriate to our humanity.

This is not to say that there are no theological warrants to forestall aging. For the Christian Scriptures also bear witness to Jesus' life, his acceptance of suffering even as he relieved the suffering of others, by curing disease and even bringing the dead back to life (Mk 5:35–43; Lk 7:11–17; Jn 11:1–44). And yet, Jesus Christ, the last Adam, presents an example of power and sovereignty by submitting to God and the cross (Phil 2:5–11).[14] Reflections on the person of Jesus Christ may then identify limits to projects of redemption through technology, though once again there are no clear formulaic moves from Christ to the human condition. In addition, the Incarnation underwrites the nature of embodiment and the body's role in the formation of character, offering a corrective to the contemporary Baconian discourse of easing suffering and expanding choice under the assumption that all suffering is inimical to human flourishing.

How then might a consideration of Christology change Bacon's program, particularly his goal of greatly extending the human lifespan by slowing aging? The Incarnation would at least temper the degree of commitment to such a project and perhaps expectations concerning the appropriate length of life. Insofar as the Incarnation draws attention to the

nature of embodiment and practices that are faithful to both the *goodness* and fallenness of the human body, it challenges assumptions that the body is little more than an object for manipulation, that individuals are little more than "managers of their own biology" (Brock 2010, p. 334). There are few easy answers here as slowing aging is morally ambiguous within a Christian framework. The tension between this life and the next remains. In fact, it may be that an emphasis on Christology—the last Adam—only strengthens that tension, accentuating the ambiguity. Elsewhere, I have argued that Barth's Christology offers some insights to the nature of embodiment and time as it relates to slowing aging, which serve as a corrective to Bacon's theology, without, however, definitively resolving the issues (Daly 2021, chap. 5).

The modern scientific program that bears Bacon's name has often been used as a placeholder for Promethean expressions of the human will over and against nature. The twin tenets of expanding choices and the elimination of suffering are amenable to multiple metanarratives of the good life. For Bacon, the cultivation of useful knowledge to relieve human suffering was theologically grounded in the Christian metanarrative, though focused primarily on Genesis and the first Adam. While much good has come from the inductive science that Bacon called for, his arguments for slowing aging to extend life significantly were influenced by his focus on the first Adam to the exclusion of the second, Jesus Christ. The Incarnation, then, may serve as a counterbalance to more expansive attempts to extend the human lifespan by reminding Christians that aging is appropriate to the human condition, and that some forms of suffering may preclude attaining longer life. Finally, the Incarnation invites Christians to reconsider the teleological question, asking what human bodies are *for*, before considering how medicine might be enlisted in the service and health of the body.

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Notes

1 At best, Aristotle quipped, the bed might rot and eventually produce the shoot of a tree.

2 Aristotle's teleology did not seek out a doctrine of any overarching pattern in the universe, or necessarily seek after the purpose of objects outside themselves, that is, teleology was often internal to the object.

3 Briggs (1996, p. 176) observes that "Bacon's religious metaphors seem to be more than casual exploitations of the familiar religious vernacular".

4 Cf. Baillie (1951, p. 18): "The real reason why both Bacon and Descartes broke with the authority of Aristotle was a reason of faith rather than a reason of science. . . [T]hey found themselves working with a different conception of God and of His relation to the world".

5 According to John Cassian (360–435), the fourfold interpretation of scripture included (1) the literal, (2) allegorical, (3) moral or tropological, and (4) anagogical senses. The allegorical teaches us what to believe (faith), the moral what to do (love), and the anagogical where we are headed (hope). Cf. (Harrison 1998).

6 Bacon, however, did not espouse the doctrine now known as "total depravity". There are varying perspectives on the noetic effects of sin in the Christian tradition. Admittedly, the phrase "total depravity" is somewhat misleading.

7 As Charles Whitney (1989) has noted, the Latin instauratio was usually associated with the re-establishment of religious rites.

8 As Willey (1949, p. 31) observes, "At the very outset of *The Advancement of Learning* Bacon is confronted with the mediaeval conception of natural science as the forbidden knowledge. It is objected, he says, by divines, that 'knowledge puffeth up,' that it 'hath somewhat of the serpent,' that (in a word) it was the original cause of the Fall of man".

9 Against the general suspicion the cultivation of knowledge was akin to pride, Bacon responded that Eve's sin was indeed pride, but in "over-inquiring" about *moral* knowledge—knowledge of good and evil (Bacon 1858b, 2.52, p. 248).

10 Bacon was criticizing those who claim that God's (fore)knowledge outstrips God's power.

[11] At the same time, however, Bacon (1858d, p. 47) held that nature was still controlled by God's laws, and thus posed some limits to human power. Elsewhere, he asserted that nature cannot be commanded except by being obeyed (Bacon 1858c, p. 32). Bacon also likened nature to a musical instrument in need of careful tuning (Bacon 1858e, 11, p. 721).

[12] This assessment, however, is based solely on Bacon's pseudonymous *Valerius Terminus*.

[13] Bacon (1858b) did, however, criticize the pursuit of longevity as one's ultimate goal, including those who relied on specific diets to lengthen life.

[14] This *kenosis*, or "emptying" (Phil 2:7), does not mean that Jesus Christ set aside certain divine attributes, but rather speaks of emptying by addition—Christ taking on fallen human nature.

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Article

Hospes venit, Christus venit: Hospitality, Healing, and the *Opera Misericordiae* in the Ospedale di Santa Maria della Scala

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Abstract: For almost a thousand years (1090–1990), Santa Maria della Scala in Siena—arguably one of the oldest surviving hospitals in the world—opened its doors to pilgrims, travelers, the sick, the poor, and the *gittati* (children who were "cast off" and left on its steps). Making manifest the traditional adage of hospitality, all the guests who presented themselves there were to be welcomed as Christ himself. In this paper, I explore this broadening of the Church's vision of its healing ministry (that is, beyond care for the sick) alongside the increasing dedication of the laity to the *opera misericordiae* (the works of mercy) in the late and high Middle Ages with the Ospedale di Santa Maria della Scala in Siena as a case in point. I will make reference to the mid-fifteenth century fresco cycle in the *Pellegrinaio* of the hospital that bears witness to its celebrated functions and speaks to how and by whom these were carried out.

Keywords: hospitality; works of mercy; compassion; hospitals; Santa Maria della Scala

1. Introduction

The late Canadian historian Shirley Jackson Case argued that "in the ancient world it was almost universally believed that the function of religion was to heal disease, and it was in just this world that Christianity took its rise. It need not surprise us, therefore, to find that Christianity is from the start a healing religion" (Case 1923, p. 253).[1] In order to meet a certain demand in the Graeco-Roman world that understood "the only sure remedy for the ills to which flesh is heir" to be within the province of religion, Case claimed that, as the reach of nascent Christianity began to expand beyond the Jewish community, emphasis went from Jesus-as-master-teacher to Jesus-as-the-great-physician. The conviction was that Jesus was not simply one among many, but—in fact—*the* divine healer of his age (and of the ages to come) (Case 1923, pp. 254–55). Significant attention would be given to the healing narratives already central in the Gospels. In particular, by the third and fourth centuries, the ministry of healing itself would become an important mark of the Christian community, which sought to care for—and sometimes cure—in Jesus' name, those who were sick (Case 1923, pp. 254–55; Ferngren 1992).

Although it is true that this particular ministry fulfilled a sought-out function that, for some, signaled the credibility of the emerging Christian Church and confirmed the messiahship of its founder, the Christian character of healing as *philanthropy*—that is, as a love for humanity—was primarily rooted in the Church's theological anthropology and was largely inspired by the parable of the Good Samaritan as a model of care for all (Ferngren 1992, pp. 3, 13–14). Indeed, caring took precedence over curing and the practical expression of *agape* or *caritas*—"a self-giving love of one's fellow human beings which reflected the love of God as revealed in the death of Christ for the redemption of the world" (Ferngren 1992, pp. 3, 13)—did not wane when traditional medical interventions failed.

According to medical historians Gary Ferngren and Henry Sigerist, one of Christianity's hallmark contributions to healthcare was in the revolutionary way through which it approached the sick person (Christian or not) as one in a preferential position of sorts

(Ferngren 1992, pp. 13–14). As an example, Ferngren makes reference to a letter in which Dionysius—the bishop of Alexandria in the third century—reported on the difference between the pagans who, during a plague, abandoned their sick out of fear of contamination and the Christians who organized, on a community-wide basis, care for all (Christian and pagan alike) (Ferngren 1992, p. 14, note 75). Although this record undoubtedly discloses an "us" versus "them" dichotomy that seeks to champion the moral life of one community over another, it is true that the church's philanthropic activities were far-reaching and extended beyond those who were sick to include care for widows and orphans, visiting prisoners, and showing hospitality to pilgrims and travelers (Ferngren 1992, p. 14, note 78).[2] In this paper, I argue that this expanded vision of the Christian healing ministry was further reflected in the increasing dedication of the laity to the *opera misericordiae* (the works of mercy), especially in the high and late Middle Ages (Botana 2011, pp. 5–6), with the philanthropic outreach of Santa Maria della Scala as a case in point. In particular, I will make reference to the mid-fifteenth century fresco cycle by Domenico di Bartolo in the *Pellegrinaio* that bears witness to the hospital's celebrated functions and speaks to how and by whom these were carried out.

2. Hospitals and Hospitality

The Church's uniquely congregational and organized approach to care for the sick, and its preferential option for the poor in the first centuries, would lead to the creation of Christian hospitals, which were charitable institutions open to the public (Ferngren 2014, p. 205). The first of these—established by bishops, monastics, laymen, and laywomen (Fabiola in Rome, for instance)—provided care for the poor, especially those with terminal conditions, "who were prohibited from seeking admittance to the [healing] temples of Asclepius, since death within a temple precinct polluted the sacred space" (Ferngren 2014, p. 92).

In the Middle Ages, the Church continued to be committed to the care of the sick and the poor, and people sought healing services from the Church because of the prominent belief that "God healed sometimes through natural means and sometimes by religious means" (Ferngren 2014, pp. 96–97). Medicine and religious healing existed hand in hand, but the source of said healing was understood to be one and the same: God. In this spirit, the Roman senator Cassiodorus advised monastic caregivers to "learn, therefore, the properties of herbs and perform the compounding of drugs punctiliously; but do not place your hope in herbs and do not trust health to human counsels. For although the art of medicine is found to be established by the Lord, he who without doubt grants life to men makes them sound" (Ferngren 2014, pp. 98–99). Ultimately, as agents of God's healing, caregivers were to be assiduous, well trained, and competent.

Hospitals in the Middle Ages until the mid-nineteenth century remained "what they had been intended to be in the beginning, institutions for the indigent" (Ferngren 2014, p. 205). That is, they were not meant for those who could afford medical care (such persons often received services in their own homes) but were mostly for the poor who had chronic conditions and were primarily palliative in function, at least until about the eleventh century (Ferngren 2014, p. 105). Indeed, as Saint Benedict makes plain in his Rule, "our very awe of the rich guarantees them special respect" of a kind that is not known by the poor (Benedict 1981, chap. 53). Minimal care, including the provision of food and shelter, which the poor had limited access to, was curative for some (Ferngren 2014, pp. 105–6). Attention was given to the patient as more than just a collection of ailments but as a composite of body and soul. As such, psalmody and music also had restorative value and a role to play in the hospitals of the Latin West (Ferngren 2014, p. 106).

The shared etymology of "hospital" and "hospitality"—words that carry a similar, though oft forgotten, sense of sacred ministry—is not lost on the reader here. The Latin *hospes* can be translated as "friend" and "stranger" as well as "host" and "guest". Herein lies the famous Benedictine maxim of hospitality, *hospes venit, Christus venit*, which signals the host to receive the guest as if Christ himself had come knocking (Benedict 1981, chap. 53).

This mandate to welcome the other is found in multiple Biblical texts, including Paul's letter to the Hebrews, wherein he instructs the faithful to "not neglect to show hospitality to strangers, for by doing that some have entertained angels without knowing it" (Heb. 13.2; Gen. 18; Mt 25.35-46). A number of hospitals, such as the Hôtel Dieu in Paris, drew inspiration from this adage and made it their own (Ferngren 2014, p. 106).

3. Charity and the Works of Mercy

At the close of the Gospel of Matthew, immediately preceding the Passion, Jesus gives one final teaching. In it, he makes plain that caring for others in need, a living out of the commandment to love one's neighbor (Mt 22.39), is *the* criterion by which people will be judged at the end of time. Jesus specifically mentions feeding the hungry, giving drink to those who thirst, welcoming strangers, clothing the naked, caring for the sick, and visiting prisoners as the actions of the saved who will inherit eternal life (Mt 25.31-46). These six—to which was added the burying of the dead (derived from Tobit 1.16-22) by the end of the twelfth century (Botana 2011, p. 2)—would become known as the corporal works of mercy. This essence of faith, as it were, is echoed in the Letter of James, wherein the practice of charity is considered to be integral to the author's understanding of genuine religion: "religion that is pure and undefiled before God, the Father, is this: to care for orphans and widows in their distress, and to keep oneself unstained by the world" (1.27) (Viviano 1990, p. 669; Leahy 1990, pp. 911–12). Indeed, as art historian Federico Botana suggests, "in the Middle Ages, as today, charitable initiatives met real needs, but at the same time they were a matter of religion, and thus assisting the destitute was also a form of ritual" (Botana 2011, p. 1).

These acts of charity listed in the Gospel of Matthew were first formally and collectively called the *opera misericordiae*—the works of mercy—in the *Glossa Ordinaria*, which was the most extensively used edition of the Bible (with rich commentary) from the late Middle Ages up to the sixteenth century, even though the text was already established by 1140 (McDermott 2013, p. 424). It enjoyed wide distribution in European libraries and monasteries; Thomas Aquinas, Bonaventure, and Martin Luther, among others, made frequent use of the Gloss, which was recognized as "the foremost vehicle for medieval exegesis" (McDermott 2013, p. 424). The seven works of mercy found a prominent place in catechetical programs for the laity at least by the late thirteen century alongside the Creed, the Decalogue, the Great Commandment, the virtues and vices, and the sacraments to provide for a well-rounded knowledge base of Christian faith and practice (Duffy 1992, pp. 53–55). The emphasis here on the Christian moral tradition was, in part, linked to a new religious obligation, i.e., that of annual confession, which was put forward by the Fourth Lateran Council in 1215 (Duffy 1992, pp. 54–55). As a result, the works of mercy became a focal point for a proper examination of conscience that one was to undertake in preparation for the sacrament of penance, and so there was a proliferation of teaching and preaching on the works, especially by friars (Botana 2011, pp. 6–7). Botana reports that artistic representations of the works of mercy, which was an important way through which to teach the laity how to live charitably, blossomed in the Middle Ages, with imagery found in Italy, Catalonia, Basel, Slovakia, Transylvania, Norfolk, and Suffolk (Botana 2011, p. 8; Davis 2014, p. 943).

Thomas Aquinas, in his *Summa Theologiae*, proclaimed that "the sum total of the Christian religion consists in mercy, as regards external works" (2a2ae Q. 30, art. 4, resp. ad obj. 2). According to Aquinas, all human bodily needs can be reduced to the *opera misericordiae*, "for blindness and lameness are kinds of sickness, so that to lead the blind, and to support the lame, come to the same as visiting the sick. In like manner to assist a man against any distress that is due to an extrinsic cause comes to the same as the ransom of captives" (2a2ae Q. 32, art. 2, resp. ad obj. 2.). Healing, then, as a response to the suffering body in a condition of need, went beyond the call to care for the sick. In many ways, the healing ministry was intimately tied to the Church's philanthropy, to its love for the poor, and to its commitment to good deeds writ large. In Matthew's version of

the Beatitudes, for instance, the "poor", the "mourners", and the "hungry" refer to the same people, who—like the sick—ultimately belong to the one communion of those in need of God's salvation (Viviano 1990, p. 640). In other words, poverty, mourning, hunger, oppression, illness, and death are signs of humankind's shared and inherited condition of frailty that ought to evoke, as Jesus' aforementioned lesson on judgment makes plain, compassion for all those in need (*Catechism of the Catholic Church*, n. 2444; 2448). "Truly I tell you", he says after listing the saving actions (of feeding the hungry, welcoming the stranger, etc.), "just as you did it to one of the least of these my brothers, you did it to me" (Mt 25.40).

There is debate in Biblical scholarship as to whether the reference here to "my brothers" intended to limit the scope of concern to the Christian community alone. Interestingly, this same verse is repeated again in the text moments later (Mt 25.45), but the reference to "my brothers" is left out altogether. The late New Testament scholar Benedict Viviano is convinced that the reach of the mandate to care for others is best understood in the Gospel of Matthew in its broadest sense, seeing "any human being as the object of ethical duty" (Viviano 1990, p. 669). This is in line with theologian Mitchell Reddish's reading of Matthew as having clear hints of a "more inclusive spirit, 'good news' that applies to Jew and gentile alike" (Reddish 1997, p. 128). According to Reddish, restrictions of Christ's ministry to certain groups, which are mentioned in the Gospel, are thought by Matthew to be only temporary: "the post-resurrection task of the disciples includes proclamation to all people" (Reddish 1997, p. 128).

Although healing and poverty, for instance, may appear to be disparate categories, Jesus' healing ministry often involved those who were thought to be poor and deprived in some significant way and, consequently, were considered social outcasts: the widow, the foreigner, the orphan, the afflicted (Lk 7.11-17; Mk 5.25-34; Lk 10.25-37; Lk 17.11-19; Mt 15.21-28). In the Gospels, Jesus is much less interested in the nature of the illness in question and in curing than he is in healing as a way to restore social and personal meaning (Labrecque 2015). This expansion of the scope of healing, beyond a mere tending to the physical ailments of the body, can also be seen in the descriptions of categories of poverty in late medieval and early modern Europe. Here, as John Henderson reports in his *Piety and Charity in Late Medieval Florence*, the category of "the poor", to which relief was directed, simultaneously included the elderly, the chronically ill, those who suddenly found themselves struggling to reach a level of minimum subsistence due to, say, an outbreak of epidemic disease, as well as those struggling in "the most potentially vulnerable phases of the life-cycle" (for example, the abandonment of children, the loss of employment, and the challenge of supporting a large family) (Henderson 1994, pp. 245–46). As the historian Charles de la Roncière made plain, the word "poor" was used rather generically by Florentines in the late-thirteenth and early-fourteenth centuries (Henderson 1994, p. 245).

Furthermore, the healing effects of these works were not limited to the intended recipients. As Adam J. Davis and Abigail Firey have discussed, the Church Fathers "popularized the notion that almsgiving had the capacity to erase sin and deliver the almsgiver from death, and this idea of redemptive almsgiving remained a central force underlying charity during the medieval period and beyond" (Davis 2014, p. 936; Firey 1998). Therefore, the practice of the *opera misericordiae* brought about mutual healing. Furthermore, the medievalist André Vauchez showed that charity, which was becoming a key feature of lay spirituality, was clearly linked to sanctity and that devotion to charitable acts became the mark of a "new category of saint" (Davis 2014, p. 942; Vauchez 1975, 1981).

This commitment to the works of mercy became increasingly important among the laity, particularly in the high and late Middle Ages (Botana 2011, pp. 5–6). A growing number of lay penitents joined confraternities devoted to the practice of the *opera misericordiae* and would go on to found establishments that broadened the healing ministry for the sick to include provisions for pilgrims, members of religious orders, and the destitute (Botana 2011, pp. 5–6; Henderson 1994); that is, while we traditionally identify seven corporal

works of mercy, the vision of what could be counted among these charitable works was extended to a variety of good deeds, such as caring for orphans and transporting the sick (Botana 2011, p. 11).

I turn now to the Ospedale di Santa Maria della Scala in Siena as an example of a place that brings all of this to the fore, integrating the works of mercy into a comprehensive understanding of the Christian imperative to heal.

4. The Founding of Santa Maria della Scala

Santa Maria della Scala in Siena—arguably one of the oldest surviving hospitals in the world—opened its doors to pilgrims, travelers, the sick, the poor, and the *gittati*[3] for almost a thousand years (1090–1990CE), embracing the traditional motto of hospitality described above. Called "Holy Mary of the Staircase", its entrance was purposely positioned in line with the steps that lead to the great doors of the Cathedral of Siena. One of the first examples in Europe of a xenodochium (Toti 2003, p. 9), Santa Maria della Scala was located along an ancient and important pilgrimage route, the Via Francigena, which ran from Canterbury to Rome and, thus, was a major road passing through England, France, Switzerland, and Italy. Sometimes used as a generic reference to a charitable institution, the word "xenodochium" was, technically, reserved for a place that received *xenoi* (strangers or foreigners), such as pilgrims, especially as guests (Dey 2008, p. 403). In the fourth century, the emperor Julius ordered the high priest of Galatia to establish xenodochia in every city to provide pagans in need with the same kinds of services that Christians were already offering to others—who would then subsequently go on to join the Church in numbers (Dey 2008, p. 403).

It has been argued that xenodochia did not outright disappear over time, but steadily evolved into "hospitalia", particularly by the high Middle Ages, as "places where the sick went to be cured, albeit often in the company of healthy beggars who continued to receive other sorts of assistance there" (Dey 2008, p. 410). This seems to have been the case with Santa Maria della Scala. According to legend, it was founded by a lay cobbler named Sorore in the ninth century (Toti 2003, p. 9; Hook 1979, p. 145). At first, he began lodging pilgrims who came through Siena on the way to Rome; then, he started mending their shoes; and, eventually, his scope of care extended to nursing those who were ill (Hook 1979, p. 145). He would go on to establish the order of hospital friars to assure that this ministry continued after his death (Hook 1979, p. 145). Therefore, what was once a xenodochium gradually transformed into a hospital as different services were added to the roster. Historians confirm that, in the eleventh and twelfth centuries, there was no clear demarcation in terms of Santa Maria della Scala's charitable functions as the need for food, shelter, clothing, and medical care was common to all who came to the hospital (Orlandini 2002, pp. 29–30). As the historian Alessandro Orlandini describes, "children, for example, lived together with the adults, and the sick were not sheltered in separate areas and did not receive particular treatments" (Orlandini 2002, p. 30). It was only by the thirteenth century that we see the emergence of specific and distinct jurisdictions regarding treatment and organization of the hospital's space (Orlandini 2002, p. 30).

Most historians point to the record of a deed of gift dated 1090 and attribute the foundation of Santa Maria della Scala to the cathedral canons: who were required to give part of their revenue to relief of the poor (Toti 2003, p. 9; Hook 1979, p. 146). After 1195, the running of the hospital passed from the hands of the cathedral to friars, called oblates, often laypersons who, without making a formal profession of solemn vows in a monastic community, nevertheless left behind their lives of comfort to serve others in the way of a particular Order (Toti 2003, p. 9). The friars, by that time, greatly outnumbered the clergy in carrying out the everyday functions of Santa Maria della Scala, and so they petitioned for ownership of the hospital (Orlandini 2002, p. 23).

The oblates living at Santa Maria della Scala wore habits, were prohibited from marrying, participated in communal prayer, had to avoid familiarity with patients, and promised "never to take action" to recover their donated possessions (Toti 2003, p. 42). Up

until the fifteenth century, they elected a rector who headed the establishment and who was required to donate all of his assets to the hospital (Toti 2003, p. 9). It was perhaps not peculiar, then, that most rectors came from some of the wealthiest noble families in Siena. This notably increased the patrimony of Santa Maria della Scala, along with a considerable number of bequests, alms, and land donations (the Commune canceled the taxes of those who donated real estate) (Orlandini 2002, p. 26) pouring into the hospital, making it an important—if not *the* most important—economic and agricultural center of Siena. In 1460, Pope Pius II issued a bull that lifted the rector's obligation to swear an oath to the canons of the cathedral, and reaffirmed the Commune, or municipality, of Siena's full right of election; this also made the rector a city officer and councilor (Toti 2003, p. 9). But even before then, as means to stop a rising conflict between clerics and the increasing number of lay caregivers—tensions that would ultimately never subside—over the administration of one of the wealthiest establishments in Siena, Pope Celestine III, in 1193, released a papal bull that removed the hospital from the cathedral's jurisdiction and made it an independent lay organization (Baron 1990, p. 1449).

5. The *Pellegrinaio* and the Works of Mercy

Many of the great Sienese artists (Simone Martini, Pietro and Ambrogio Lorenzetti, and Bartolomeo Bulgarini) were commissioned to beautify the hospital, making it also one of the most important artistic hubs in the area (Toti 2003, p. 11).[4] With the prestige and power of Santa Maria della Scala on the rise, two master painters, in particular, were invited to capture—with the budding Renaissance styles of the day—the life, history, and functions of the hospital. It is primarily the works of Lorenzo Vecchietta (1410–1480) and Domenico di Bartolo (c. 1400/1404–1445/1447) that adorn the *Pellegrinaio*, the ward specifically dedicated to pilgrims, travelers, and the ill (Toti 2003, p. 29).[5]

The rector, Giovanni Buzzichelli, who commissioned the artwork in the *Pellegrinaio*, was deeply devout but also attracted to the contributions of humanism. He first ordered the ceilings of the space to bear frescoes of a religious nature: saints and familiar figures from the Old Testament were painted there (Orlandini 2002, pp. 13–14). For the walls, the rector originally wanted to highlight the virtue of obedience to God and so chose the story of the biblical Tobias, but, as the work progressed, he had a change of heart and commanded instead that the walls underline the humanitarian activities of the hospital and the ultimate commitment to the common good that public institutes, such as said hospital, were called to pursue (Orlandini 2002, pp. 14–16).

Even though there was no explicit mandate to portray the *opera misericordiae* there, the hospital's major functions were unquestionably in line with them, and so the cycle of frescoes very much appeared to be a representation of the steadfast devotion of both the religious and laypersons to the works of mercy. For centuries, the two groups clashed over the administration of the hospital, but they nonetheless were joined in a common pledge to the disposable of society who, in a "throwaway" culture whose historical roots run deep, were often seen as replaceable, transient, or easily cast aside. In the end, Buzzichelli was of the mind that the decision to go with a depiction of what seemed to be the "secular" activities of everyday life at Santa Maria della Scala—in place of the biblical themes he had originally envisaged—was a fitting compromise given that Christian charity clearly remained front and center (Orlandini 2002, p. 16).

The first of the frescoes, by Lorenzo Vecchietta, called *Episodes from the Life of the Blessed Sorore* (ca. 1441), brings to the forefront the idea that the hospital was established by an inspired layperson and shows that the hospital was, from its inception, concerned about the marginalized. In the center of the painting, we see Sorore kneeling before the bishop and recounting his mother's prophetic dream in which she saw a ladder reaching up to the Heavens, where the Virgin Mary waited with arms outstretched to receive abandoned children eagerly climbing toward her (Toti 2003, p. 32). Elsewhere, we see the mythical founder being entrusted with his first foundling, or *gettatello*, as well as another child

tugging on the bishop's alb, while the bishop, in turn, offers a small sum to Sorore to take care of him.

This hallmark piece highlighted an important part of the hospital's charitable function. Indeed, the number of children left in the care of Santa Maria della Scala was not negligible; one record indicates that, in 1298, there were more than 300 boys and girls at the hospital (Baron 1990, p. 1449). These little ones were typically left at night in the hospital square or, from the fourteenth century, in a stone basin near the hospital's entrance, which was made for this purpose (Toti 2003, p. 32). Many bore some token of identification (sometimes notes explaining the reason for their abandonment) so that the parents did not lose hope in the possibility that they could be reunited if economic or social conditions allowed for it, although this did not happen all that frequently (Toti 2003, p. 32). Like the oblates and others who worked at the hospital, the *gettatelli* wore a uniform bearing the insignia of Santa Maria della Scala: a yellow ladder. They were sheltered, fed, educated, and received well-organized care. Girls were provided with dowries and learned weaving and domestic work, and boys were committed to learning trades, often of their choosing, and would go on to leave the hospital at about twenty years old or so with whatever earnings that were kept for them in a special account from work already done to that point and/or with a small sum, clothing, and certain furnishings provided by the hospital itself (Toti 2003, p. 32; Baron 1990, p. 1449).[6]

Other frescoes depict the *Almsgiving of the Bishop* (di Bartolo, 1442–1443), the *Investiture of a Rector* (Priamo della Quercia, 1442), and another marking the 1193 bill of Pope Celestine III *Conceding Privileges of Autonomy to the Hospital* (di Bartolo, 1442), which ostensibly settled discord between the cathedral and the friars over the governance of Santa Maria della Scala (Toti 2003, p. 37). There is yet another pair of frescoes, created in the second half of the sixteenth century, showing payment of the wet nurses of the *gettatelli* (Orlandini 2002, p. 16). Interestingly, the statutes of the hospital (sanctioned in the early 1300s) make some mention of needing to be on guard of the "strategic" mother who would leave her child on the hospital's doorstep only to arrange to be employed as a wet nurse for said child, therefore being paid to feed her own (Orlandini 2002, p. 38).

But the most well known (Toti 2003, p. 38; Botana 2011, pp. 133–4) of the frescoes is Domenico di Bartolo's *Care and Healing of the Sick* (1440–1441), which captures the busyness of the hospital in full function. If any serve as *the* promotional manifesto of the hospital, it is this one (Toti 2003, p. 38). The rector, the oblates, a surgeon, and the patient are front and center. To the left, an assistant carefully, and tenderly, helps a clearly distraught patient to lie down or sit up; the embrace between the two is particularly important (Baron 1990, p. 1450). In the background, two doctors consult each other over a urine sample in a glass matula; urinoscopy was a mainstay diagnostic practice in the Middle Ages (Bynum and Bynum 2016, p. 638). On the right, a rather corpulent monk (a not-so-subtle commentary by the painter perhaps) firmly encourages confession before the start of whatever physical healing activities are required (Toti 2003, p. 38). The statutes of the hospital describe that patients admitted to Santa Maria della Scala were first washed, their personal effects stored, were dressed, and then put to bed to wait for the physician (Toti 2003, p. 38). As the statutes of 1318 indicate, "in aid of the infirm [. . .] this Hospital must have at its expense two doctors, that is one physician and the other surgeon and one spezieri (pharmacist), who are friars of said Hospital [. . .] and if not they must have [. . .] appropriate salaries, so that they doctor gladly and graciously [. . .]" (Orlandini 2002, pp. 34–35). This was a truly innovative aspect of medical care at Santa Maria della Scala.

At the center of the painting, a young man with a leg wound is being washed by an attendant before the surgeon gets to work. The guest is almost naked; his body language gives us pause. His crossed arms are a recognizable gesture of *verecundia* (from the Latin *verecundus* for the "feeling of shame"), which Aquinas identified as a prerequisite for the virtue of temperance (2a2ae Q. 143, art. 1, resp.). Here, the *verecundus* person demonstrates a kind of "strategic fear" that gauges his standing relative to the other person and, accordingly, shapes his behavior in any given social interaction, all the while affirming the social bond

that exists between the self and other (Kaster 2005, p. 15). This is opposed to the "shameless" or "underserving" poor to whom I will refer later in the text.

Admittedly, this gesture may have been familiar to observers because of its place in liturgical practice (Wilberding 1989, p. 4). As art historian Erick Wilberding explains, the gesture of crossing one's arms over the chest can be seen in a number of depictions of the Annunciation in the fourteenth and fifteenth centuries, connoting Mary's humility and acquiescence to divine will upon learning from the archangel Gabriel that she would conceive and give birth to the Son of the Most High (Wilberding 1989, p. 4; Lk 1.26-38). This gesture—linked to the suffering of Jesus on the Cross—was included in the rubrics of the Mass (prior to the revisions of the Council of Trent in the sixteenth century) as an expression, shown after the consecration, of submission and a plea for grace (Wilberding 1989, pp. 1–3). In secular artistic renderings, the gesture was often meant to suggest shamefacedness or submission to another, but its theological references were not lost on those who knew the Mass (Wilberding 1989, p. 4).

Behind the wounded *verecundus* person stands another attendant with a blanket at the ready. On the surface, the painting reveals activity that was commonplace at the hospital. However, the biblical imagery associated with the act of washing here is unambiguous; in many ways, it is the ultimate rendering of Christian hospitality. While the patient's thigh is bleeding heavily, the action that is given primacy by the artist is not the binding of, or tending to, the wound (at least not primarily), but to the washing of the guest's feet.

Although the antiseptic benefits of washing the body were already known by the time Domenico di Bartolo created this piece (Botana 2011, p. 134), the action clearly recalls the central scene in John's account of the Last Supper (Jn 13.1-20), in which Jesus kneels, with a basin filled with water, to wash the feet of his disciples. As it is usually the master's servants—and not the master himself—who wash the feet of the guests, the image is meant to underscore the shared humility of the *verecundus* man being tended to and the caregiving friar. Jesus' call to serve, which is rooted foremost in love for the other, is being modeled in the relationship portrayed here (Reddish 1997, p. 206).

It is immediately after Jesus washes his disciples' feet that he delivers his new commandment, which encapsulates the whole of Christian moral theology: "Just as I have loved you, you also should love one another. By this everyone will know that you are my disciples, if you have love for one another" (Jn 13.34-35). Therefore, loving service becomes the foundation of Christian identity. Healing, then, as we see in the fresco, is more than technique and bandages, but is to start with the recognition of the image of God in the other: *hospes venit, Christus venit*.

In another fresco, di Bartolo brings to light the distribution of alms. This is mostly in the form of clothing and bread; full loaves are given to families and the fragments of bread leftover from hospital use are apportioned among the poor, mendicants, and pilgrims. To note, also, is a record of a double portion of alms that was to be allotted to pregnant women (Baron 1990, p. 1450). This depicts yet another important element of the charitable mission of the hospital. In the center of this painting, the nakedness of the main figure is an obvious emblem of need. He is being cloaked by a hospital attendant, a clear commitment to yet another of the corporal works of mercy.[7] Elsewhere, we see an oblate removing his hat in the presence of some esteemed figure (perhaps a benefactor or at least a potential one) and, beside the man being dressed, we see a group of people—the ill, the hungry, the widow, the child, and the poor—being served in various ways by the hospital staff. One can just make out that the bread that is being offered by a friar to a woman and child bears the insignia of the hospital, a peculiar means of branding or publicity (Orlandini 2002, p. 53).

The last of the large frescoes in the *Pellegrinaio* is di Bartolo's *Welcoming, Education and Matrimony of a Daughter of the Hospital* (1441–1442). Here, we see, again, hospitality in action, but this time the narrative is told from start to finish. In the center of the painting is the *pila*, or raised basin, which stood outside of Santa Maria della Scala for parents to leave their children in if they could no longer care for them. In the image, the rector has just removed a recently laid newborn from it (Orlandini 2002, p. 54). He entrusts the newborn

to wet nurses. On the left in the background, we can see the wet nurses taking care of the children, washing and rocking babies, baking cookies, and keeping the fire going. In the foreground, the children have been weaned and have now moved on to play, to formal education, and, as our eyes move across the fresco, eventually to marriage. It is meaningful that, I think, the artist painted the marriage scene right beside the *pila*. The daughter of the hospital, as she is called in order to revoke her former status as one who was "cast aside", is portrayed in refined dress. The rector, in very much a parental role, holds her dowry in one hand and supports her wrist with the other as the groom slips a ring onto her finger (Orlandini 2002, pp. 54–55). The narrative reveals that, while the young woman may have started out as a *getattella*, her time at the hospital brought her certain privilege and dignity.

The final scene of the frescoes in the cycle is di Bartolo's *Paupers' Supper* (1443–1444) or *Banquet of the Poor*, highlighting the dinners that were offered to the poor three times a week (Orlandini 2002, p. 55).

6. Conclusions

The art, the history, and the statutes of Santa Maria della Scala reveal that this was not a place that provided rudimentary services and accommodations. The "grooms and servants to serve the infirm and the poor", the statutes instruct, must "be the best and the most useful and the most merciful and benign, that can be had; in order that to the infirm of said Hospital be done and given the necessary services by the said grooms and servants in praise of God, and in honor of their house, and to the merit of those persons" (statute 1318, chap. XVII; Orlandini 2002, p. 31). As mentioned previously, the charitable activities of the hospital were also carried out by a number of affiliated confraternities—lay communities given to the Church's works of mercy—which gathered in the underground chambers of Santa Maria della Scala, namely those of Saint Catherine of the Night, Saint Mary Below the Vaults (both are reputedly still active), and St Jerome (Toti 2003, p. 45; Hook 1979; Henderson 1994).

Some chroniclers of the hospital have noted that, leading up to and by the sixteenth century, a social re-visioning of the poor was unraveling. The poor increasingly came to be thought of (not in one fell swoop to be sure) as dangerous social subjects in need of control if not outright ostracizing (Orlandini 2002, p. 61). Adam Davis describes the fourteenth and fifteenth centuries, marked by famine and plague, as having been a period of high mortality, warfare, and economic decline; accordingly, images of the poor were ever more negative, and there was growing suspicion about the "shameful", "false", or "undeserving" poor. As a result, charity became progressively more discriminate (Davis 2014, p. 938).[8] Santa Maria della Scala was not entirely immune to this. In the shadow of recurring financial crises and various changes in regulations, care for the poor gradually diminished afterward, but the hospital continued to dedicate its services to the ill and to abandoned children and to provide shelter for travelers over the next few centuries (Orlandini 2002, pp. 61–62). At the same time, and perhaps because of this shift, voices in the Church for the poor rose up. Saint Vincent de Paul (1581–1660), for instance, in his contact with the Sisters of Charity, famously said "Let us acknowledge before God that (the poor) are our lords and masters and that we are unworthy of rendering them our little services" (de Paul and Coste 2008, p. 349). Indeed, this echoes the philosophy of Santa Maria della Scala in its prime.

An ideal European model of caregiving over the course of its eventful thousand-year history (Baron 1990, pp. 1449–51), the xenodochium-turned-hospital embraced its mission of hospitality by expanding its healing ministry beyond the treatment of illness. Santa Maria della Scala's everyday functions, as Domenico di Bartolo captured with such beauty and realism, were deeply rooted, as we have seen, in the *opera misericordiae* that would come to assume an important place in the spirituality and practice of Christian laypersons everywhere. For this hospital, the Christian healing imperative came to mean caring not only for the sick, but also for the poor, the weary, the disenfranchised, the hungry, the naked, and the "cast aside".

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Notes

1 It goes without saying that healing diseases was not the only function of religion, although I am of the mind that its importance in the ancient world and beyond cannot be overstated.

2 In addition, see (Walter 2018; Boswell 1988) for examples of care that extended beyond those who were sick.

3 From the Italian *gettare*, meaning "the tossed out" or "the thrown away"; these were children who were left on the hospital's steps by parents unable to care for them. See also (Boswell 1988).

4 Judith Hook notes that, in the later Middle Ages, Santa Maria della Scala was a chief source of employment for artists. See (Hook 1979, p. 109).

5 For more about these artists, see (Christiansen et al. 1988).

6 See also (Boswell 1988) for a rich description of the abandonment of children in Western Europe from late Antiquity to the Renaissance.

7 Incidentally, the word "palliate" (as in *palliative* care) is drawn from the Latin *palliare*, which means "to cloak".

8 The literature regarding these changes in charitable giving and approaches to the poor is abundant and opinions vary. See also, for instance, (Carmichael 1986; Tierney 1959; Ruiz 2004; Henderson 1994).

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Article

Opportunities and Threats of Artificial Intelligence in Christian Ministry: An Interdisciplinary Approach Through the Lens of Scientific Exploration and Technology

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Abstract

Artificial intelligence (AI) applications are everywhere, including within churches and other faith communities. Churches are complex systems, and the incorporation of new people and things over the lifetime of these communities changes them. New technology, in general, and AI tools in specific are no exception. In Christian ministry, innovation is no stranger: witness how quickly churches adopted online worship during the COVID-19 pandemic. Given that AI is already present in the complex system of churches, care must be taken to assess the opportunities and threats associated with its intentional adoption before doing so. This report advocates for ministry to make use of an approach borrowed from scientific exploration for the evaluation of opportunities and threats and for managing the process of introducing and managing new elements into a complex system: systems engineering (SE) principles and processes. SE methodology enables scientific exploration in environments that are difficult to explore due to danger, cost or technological immaturity by rigorously managing the development, introduction and life cycle of technology that will be used in the complex system of exploration. Such an approach would be promising for increasing the safety of a technology that comes with some inherent danger, easing its integration into church operation, mission, formation and worship and in turn allowing ministry leaders agency in determining the future of their relationship with artificial intelligence.

Keywords: AI; ministry; Christianity; leadership; exploration; science; technology; systems; systems engineering; risk; opportunities; threats

1. Introduction

1.1. Innovation

It is not difficult to imagine God as the consummate innovator. The gift of adaptability to changing conditions has been a great blessing to humans, enabling us to survive various environmental threats and take advantage of opportunities that our adaptability afforded us. This gift goes beyond the adaptability of individual humans to the passing of heritable traits that provide advantages to future generations. That is evolution: changing over time to adapt to new conditions.

Institutions also evolve, including Christendom as a whole, various denominations, and individual church communities. I would argue that it is demonstration of God's steadfast love. For we live in a system that includes everything else on Earth, and as the environment changes over time, so do we, as people and as church. That God innovates is biblically supported: "Behold, I am doing a new thing! Now it springs up; do you not perceive it? I am making a way in the wilderness and streams in the wasteland," Isaiah

43:19 (ESV). We credit God with having made everything in the universe (Genesis 1). We are said to be made in the image of God (Genesis 1:27), and while we can debate whether that means in the visual image or the metaphorical image, the possibility cannot be ruled out that the image of God refers to an innovative nature.

Humans are innovative, so does our innovation differ from the innovation of God? The depth and breadth of the imagination of God is necessarily incomparable to have created everything we know of and certainly that which we cannot imagine, ex nihilo. We often constrain our imaginations by what we think is possible from the experience of what we already think we know. Other cultural and psycho-social constraints such as ego, arrogance, the fear of failure, reluctance to offend, etc., can also place limits on both our imagination and our willingness to innovate. We humans are sometimes resistant to an innovative idea, process or product because of an emotional attachment to a present or previous idea, process, or product that is familiar and comfortable. I have observed this to be true in business, science and even in church, where there is often an overlay of economic considerations that can be an impediment to change in the broad sense and innovation in a more specific sense.

I would argue that the lack of constraint on the innovativeness of God is qualitatively different to the innovativeness of humankind because of the various constraints through which we often filter our innovation. When God created everything as narrated in Genesis, it was all declared good, not perfect, hence a qualitative attenuation in our innovation relative to God's.

Not all change is innovative, but innovation is a category or subset of change. Innovation is a change that introduces novelty that adds value to an idea, process or product with a notable impact. When considering innovative change within the context of Christian ministry, it is important to evaluate the impact on the primary mission of ministry: to reconcile people to God.

Christian ministry is meant to be a lifelong process for all practitioners of that faith. It is a relational endeavor, and church leaders must rise to the challenge of constantly nurturing both individuals and church institutions with respect to not only spiritual matters but also more material concerns, including decisions about when to be innovative and when to stick with tradition. It can be a difficult balance because we must honor both tradition and innovation. Innovation is not necessarily oppositional to tradition; however, people are often uncomfortable with change in the general sense, and resistance to change can be voiced as reluctance to alter tradition when the resistance is actually a response to a fear of losing something familiar by embracing something new. That is why it is important not to push change gratuitously but rather to offer innovation with its attendant value and impact. This includes technical innovation in ministry.

Ministry presently makes use of technologies that would have baffled the early church: LED lighting, electronic musical instruments, sophisticated computer algorithms for church management, web conferencing for worship and Christian formation, and various social media platforms for communication. And now we have artificial intelligence.

The people and the infrastructure of church communities are affected when new technology is introduced in service to the community because the church is a complex system in which all the components have an impact on one another. Ministry leaders are responsible for managing the impact on the church, its members, and in the broader community in which they are located.

Therefore, the adoption of new technologies must be carefully considered with respect to their attendant opportunities and threats, both to individuals and to the church. Artificial intelligence (AI) tools are an example of a rapidly evolving technology with profound implications that should be carefully evaluated with respect to its opportunities and threats.

AI tools are now present in everyone's smart phone and whether we intentionally seek the assistance of AI, it seeks our assistance as it gathers the user data that ultimately trains the tools. To innovate or not to innovate must always be weighed within the primary objective of Christian ministry: to serve God and to serve other people on God's behalf.

1.2. Artificial Intelligence

The development of Natural Language Processing (NLP) has facilitated the adoption of AI by practitioners beyond science and technical fields (Chowdhary and Chowdhary 2020) and the subsequent proliferation of Generative AI tools such as ChatGPT, Copilot, DeepSeek and the like have opened many opportunities for co-creative applications to ministry with the generation of text, images and music. The accessibility of NLP tools makes AI experimentation relatively easy for end users without a steep learning curve, and it is this easy accessibility that facilitates the adoption of AI, perhaps without a sufficient consideration of potential risks by the end user. Witness the proliferation of concerns about the effects of AI-driven social media on mental health, human relationships, politics, etc., e.g., Kalpidou et al. (2011); Pantic (2014); Lau et al. (2016); Bashir and Bhat (2017); Beyari (2023), etc.

The application of any new technology comes with both opportunities and threats[1], and these should be evaluated prior to adoption of the technology. One might argue that this is true for any technological development because there are often unintended consequences of its use. One example of the criticality of such a process is the vetting of pharmaceutical therapies before making them available clinically. New technologies are often repeatedly evaluated after adoption in this regard to increase safety, lower costs, or to increase the range of applications for which the technology might be useful. Artificial intelligence tools should also be evaluated in the same way for each context in which they might be used. Indeed, there is no lack of cautionary studies on the risks vs. benefits, or in starker terms, opportunities and threats, of AI in a variety of contexts including the disciplines of philosophy and religion. This article focuses on an approach to assessment of opportunities and threats associated with AI in the context of the study of and/or practice of Christian ministry, which unsurprisingly is well represented in the literature, e.g., Geraci (2008), Coghill (2023), Jambrek (2024), Tampubolon and Nadeak (2024), Satyavrata (2024), Temperman (2023). La Cruz and Mora (2024), Adigun and Afolaranmi (2024), Afunugo and Molokwu (2024), Song (2021), to name a few from a variety of Christian and cultural contexts. It is important to recognize that there are different levels of AI, artificial narrow intelligence (ANI), artificial general intelligence (AGI), and artificial super intelligence (ASI), and each is accompanied by different opportunities and threats. Jambrek (2024) offers a good summary of where these levels of AI are headed. The increasingly common generative AI tools are all examples of ANI, as are ANI tools that function in the background to perform repetitive tasks associated with things like e-commerce and internet search engines.

1.3. Context: A Key Element in the Adoption of New Technology

Because context can be determinative in the adoption of new technology (e.g., Baerenklau 2005; Nystrom et al. 2002; Lee et al. 2013; Ziefle et al. 2012), all of the factors that affect the adoption of AI software (and hardware) must be considered as contextual input for a system comprising AI tools, their authors, the science behind the development of the particular AI technology, the specific denomination of the Christian religion in which the AI tools may be used, the cultural context of the end user, and the context of this author as both ordained minister in the Anglican tradition and scientist. Those contextual elements and the experience of developing and vetting new technologies prompts this author to

leverage that experience and apply it to the evaluation of the opportunities and threats that new technology may pose to its adoption in the practice of ministry.

Leadership in ministry *is* an act of exploration of the human relationship with God, an archetype of the relationship that is the Holy Trinity, and the relationships between people. It is no less as exciting a "landscape" as the wilderness on Earth and beyond. Relationships between the elements of a complex system full of human beings and God cannot be understood with a single observation because the system is dynamic. This is one reason why both leadership training for ministers and congregational development make use of systems theory for understanding organizational health, managing change, etc.; however I could find no examples of churches going beyond systems theory to the use of systems engineering approaches for either an assessment of opportunities and threats associated with change such as the adoption of new technology or for increasing operational health by process management.

This report argues for the potential impact of applying systems engineering processes to the introduction of AI technologies in ministry contexts. Systems engineering is holistic and built upon the analysis of relationships; it scales as a process to systems of varying degrees of complexity; and it is applicable to social systems beyond technical and semi-technical systems.

This approach is taken in scientific exploration for developing and vetting new technologies with respect to their risks and benefits. What may be widely known in the scientific community cannot be assumed as commonly known amongst the variety of people engaged in Christian ministry; therefore, it is necessary to discuss the relationships between science, exploration, technology and systems behavior in such a way that the process of scientific exploration and the evaluation of risks associated with it can be made accessible and useful as an analogous approach to evaluating the opportunities and threats associated with the adoption of AI in Christian ministry.

2. Concepts for Scientific Exploration

2.1. Science and Exploration

Science and exploration are not the same. Both processes require observation, yet the scientific method requires the development of a hypothesis or model that can be tested by observation and experimentation. The goal is to support or refute the hypothesis with evidence, and key to scientific data is that the observations be quantitative. The 19th century British scientist Lord Kelvin is widely quoted as declaring that without measurement, an observation is not science[2]. Numerical measurement is central to the practice of science because of the perception that "numbers do not lie." This notion should be loosely held because the interpretation of data can be overlaid with bias, particularly in the way the data is presented. Science is not as absolute as we would like it to be because of this, and that is why the scientific community holds itself accountable with the independent verification of measurements.

Exploration has more latitude. It can be described as venturing into an unknown territory to learn about it. Exploration need not have a specific purpose such as prospecting for a resource, yet all living things from microbes to elephants explore their environment to learn about new opportunities and potential threats, and one might argue that the human urge or instinct to explore the spiritual environment may be similarly an instinct to learn about opportunities and threats.

Because the scientific method requires a testable hypothesis, it is, by definition, difficult to interpret data without bias if one is personally invested in the hypothetical premise. For this reason, the scientific community insists on independently reproducible results to embrace a new experimental finding. Exploration can also be biased by hope or the

possibility of reward, e.g., the discovery of something that holds value to the explorer or to someone else: the prestige of discovering a "first," economic gain, political advantage, etc. However, exploration without an agenda presents an opportunity to approach the unknown without the requirement to measure and test, which is more conducive to opportunistic discovery or interesting chance observations.

Note that opportunistic discovery is also to be found in the Bible. Consider the story of Moses and the burning bush (Exodus 3). Moses was tending a flock of sheep for his father-in-law when God appeared to him as fire in the midst of a bush. Had Moses not been curious enough to investigate how a bush could be burning and not consumed, his life might have proceeded quite differently. While the point of the story is the call of Moses to leadership, his curiosity led to the *opportunistic discovery* of something unexpected that changed his life. Such discoveries have often occurred in both exploration and science, but they occur more often when exploring without a hypothesis or expected outcome.

2.2. Technology

The definition of technology reveals much about attitude. A common thread in nearly all definitions is that technology is a practical application of knowledge. Science is a part of that because scientific principles are what enables the engineer to produce the technology. Where definitions vary and lead us to different conclusions about the utility of technology is in its use. The European Space Agency (ESA) defines technology as "'the practical application of knowledge so that something entirely new can be done, or so that something can be done in a completely new way.'"[3] This is a wonderfully aspirational view of technology. Britannica defines technology as "the application of human knowledge to the practical aims of human life—or, as it is sometimes phrased, to the change and manipulation of the human environment."[4] It could be understandable to be uncertain about technology from such a perspective. Questions must be asked: Is there a universal interpretation of the practical aims of human life? What exactly does the manipulation of the human environment mean for me or for the world? And where does this fit into the agenda of ministry to serve God and one another?

A deep dive into the philosophy of technology in a general sense is beyond the scope of this report; however, it is important to note that new technologies are often presented to potential adopters as timesaving measures that will make life "easier." Mechanical dishwashers and clothes washing machines, clothes drying machines, air-fryers, automobiles, remote controls for devices, etc., arguably save time for other things; however, artificial intelligence is more than timesaving in its ability to process large amounts of data swiftly and present the results in a language that accessible to the end-user. AI is a technology that should force all of us as end users to decide where to place a boundary between the personal agency used for critical thinking and the convenience of saving time. I have clergy colleagues who have asked generative AI tools to write homilies. Academic institutions have had to develop screening tools to discern whether or not student essays may have been authored by AI tools.

Just as science requires critical thinking, technology development does as well. And just as science can be inherently biased, so can the technology that results from that science. Technology is often regarded as a black box. It can be used without knowing how it works. This requires a certain level of trust, and depending upon the way the technology is presented, uncertainty with respect to trust can prevent the adoption of the technology. Trust levels in black-box technology are varied, and there are robust studies in that regard (Nickel 2012; Christensen and Lyons 2017; Von Eschenbach 2021; Schuetz et al. 2025).

The adoption of technology within the specific context of Christian ministry is subject to the same trust challenges as within other contexts with the additional challenges posed

by church culture. Change is often perceived as a threat to tradition, even though the Bible presents God is an innovator. However, some of this hesitation is justified. If we use generative AI to write homilies and formation materials, is there room for the Holy Spirit? Does the Spirit of Wisdom speak through the technology of humankind? The literature boasts tens of thousands of references specifically dealing with just that question, e.g., Hutson and McMaken (2025), Dorobantu (2024) and millions of references to theology and technology in a more general sense. This tells us that it is an important topic to address in an era where our technology has progressed to a milestone where the technology itself is becoming a source of innovation. Herzfeld (2022) reminds us, "Processes such as genetic engineering or nanotechnology not only modify existing objects but also create things that are entirely new."[5] This invites important questions, "Can technology be independently innovative?", and if so, "Do we want to give away our agency?" If we do cede agency to AI tools, would we not be guilty of abnegating our responsibilities inherent with Christian moral theology to God, to one another and to the planet? The importance of articulating a theology of technology may be secondary to the importance of pondering the theology of human agency and personal responsibility.

The 20th century sociologist/philosopher/theologian Jacques Ellul wrote extensively about the effects of what he called "technique" on human society and on Christian theology. Ellul notes in the frontmatter "Notes to the reader"[6] of his major work *The Technological Society* (1964) that *technique* refers to "the totality of methods rationally arrived at and having absolute efficiency (for a given stage of development) in every field of human activity." This is a sobering view of the potential breadth of impact of *technique* or what I would characterize as the "technosphere." *Every activity* would clearly include Christianity and other religious practices. I would bristle at the thought of making ministry more efficient as opposed to more effective. And while we cannot assume that those are oppositional end-members, the focus of ministry should always be on impact: the reconciliation of people to God and the care and feeding of souls with wisdom.

In later writings, Ellul (1989) said that the quest for efficiency through *technique* would force humans to adapt to it rather than the techno-system adapting to human social systems and that this would create a de-emphasis on the sacred.[7]

Ellul's line of thinking again prompts us to consider the urgency of the first-order question of how clearly we understand the theology of personal responsibility and agency. Tanner (1993) makes a compelling argument for the importance of the theological basis for human responsibility in making moral choices. To understand the impact of everything we bring to ministry is such a moral choice; in fact, more accurately, it is a moral mandate, lest we become an impediment to the purpose of Christian ministry.

The Bible clearly informs us of the personal responsibility God gave us for our taking care of one another and our environment, having given us dominion over every living thing. Given the long reach of technological innovation, especially with the tools of generative AI, it is imperative that we think carefully about its impact on much more than ministry, but upon all of humanity and the world we inhabit.

Within the specific context of my question, "If we use generative AI to write homilies and formation materials, is there room for the Holy Spirit?", I would argue that part of the purpose of crafting a sermon is to wrestle with the Word as Jacob wrestled all night with the angel to awaken changed by striving. Yes, it takes time to write a sermon or to prepare a formation class. But is not that preparation a place where striving with the Word through the inspiration of the Holy Spirit leaves the minister transformed?

I do not believe that the Holy Spirit works through technology but rather through the people who design and use it. There is room for the Holy Spirit to grant us wisdom as ministers of the Gospel as we make decisions about how to use technology in ministry,

and those decisions will be easier if we engage processes to help us evaluate the impact of adopting technologies such as AI in our praxis.

2.3. Systems

Science is what enables new technology. Technology enables the measurements that science requires, and it facilitates the exploration of unknown and sometimes inaccessible environments. Both science and exploration dictate the initial requirements that the new technology will be designed to meet. This trio of disciplines acts as an open system, and the constituents interact as a function of changes in environmental conditions.

Systems are broadly defined as a collection of constituents that exhibit a behavior or meaning that the individual constituents do not exhibit. This particular definition is derived from the International Council of Systems Engineering (INCOSE),[8] and even when defining specific types of systems, there is good agreement on the nature of a system. Clergy and chaplains of various faiths are exposed to the concept of systems through the study of family systems theory because it is a useful model for understanding faith communities, e.g., churches, as systems.

Family systems theory was developed from the work of Murray Bowen (Bowen 1966), who developed a therapeutic model for understanding mental illness in families beginning in the 1950s in the USA. Bowen's central thesis was that a family is a living system of relational dynamics that must be understood to understand the individuals who are part of the family. The theme of context presents itself once again as key to understanding dynamics, and dynamics are fundamental to understanding relationships between humans with each other, with the rest of creation, and with the divine.

Beyond the family system with which those who practice ministry may be familiar, we all have at least some acquaintance with ecosystems, information systems, chemical and/or physical systems, economic systems and larger social systems because we all live within these systems. The Church is no exception, and understanding the intersection of the various systems in which it resides will prepare the Church to assess its own impact upon the larger system of human society and in turn to recognize the impact of human society and its associated technology upon the Church.

AI has become a part of all these types of systems, gathering data which is fed into the AI "super system," and that data will provide both positive and negative feedback into the other systems in which we live. Intentionally or not, religious systems contribute data to the evolution of artificial intelligence software and hardware. Claiming our agency by researching the opportunities and threats associated with our incorporation into the AI "super system" would enable the Christian perspective to be heard in all of its diversity within the data systems that train AI to generate text, images and music that will be used by others to learn about what Christianity is. As Bostrom (2005) pointed out two decades ago, as technological developments lead to progress in transhumanist pursuits, "If and when we develop the capability to create some singular entity that could potentially destroy the human race, such as a superintelligent machine, then we could indeed regard it as a crime against humanity to proceed without a thorough risk analysis and the installation of adequate safety features." This sort of risk analysis is what systems engineering is designed to accomplish.

3. Systems Engineering

3.1. Basic Concepts and Resources

We have discussed the relationship between science, exploration and technology as a system from which knowledge emerges, and the process by which this happens is systems engineering (SE). SE is a process for designing, integrating and managing complex systems

from the articulation of what is required through the entire life cycle of the system or project. Given this definition, it could have been designed for the complex system that is a church. Perhaps this is the time to explore whether SE and church are a good fit for one another, particularly in the context of weighing the risks against the benefits of adopting new technologies into the church as a system.

SE began to evolve in the 1940s, largely as a function of the complexity of systems being developed by the U.S. military (Schlager 1956), and it is a process that is ideal for understanding the relationships between elements of a system as well as the flow of information through the various elements of a system, be they people, hardware or software. Consider the "swords into plowshares" irony, that something designed for military purposes could be a useful servant of Christian ministry.

An important characteristic of SE is that stakeholders are gathered early in the process of designing a complex project and they provide the input needed to develop functional requirements before the system is designed. Using an interdisciplinary approach to designing, building, testing and operating systems builds robustness into a complex system.

The core of systems engineering is the Systems Praxis Framework in which systems thinking is the bridge that links various systems science theories including culture and psychology (and I would also argue theology) with the practical application of systems in practice. This is what is meant as praxis—the practical application of theory[9]. Mapping out a Systems Praxis Framework for a church would be akin to translating theology into praxis for ministry.

There are several good resources for learning about systems engineering as a process, and they are freely available in accessible terms to non-engineers. The Systems Engineering Body of Knowledge (SEBoK)[10] is a WIKI-based repository of systems engineering knowledge with several academic partners. From their WIKI site (see Note 10), one may interact with the frequently updated WIKI guide or download a PDF of the guide to systems engineering knowledge for offline access.

An important advantage of using with the SEBoK WIKI is its description of various complex systems in which SE could be of value. One such application is the service system, in which a church community could easily be imagined (SEBoK Editorial Board 2024). The SEBoK describes a service system as "A dynamic configuration of resources (people, technology, organizations and shared information) that creates and delivers value between the provider and the customer through services" (IfM and IBM 2008).

The *NASA Systems Engineering Handbook* (Hirshorn et al. 2017) is also publicly available[11] and easily applicable beyond space exploration to develop and manage a complex system.

3.2. Why Systems Engineering?

And how is it relevant to ministry? From a theological perspective, in the trinitarian framework of Christianity the centrality of relationships is so important that God is the archetype of relationships. It therefore follows that the systems engineering approach of analyzing and tending to relationships throughout the lifecycle of a project or organization is entirely consistent with the importance of relationships in the Body of Christ on Earth and beyond that in the Kingdom of God.

From a practical perspective, SE is requirement-based, and the requirements are provided with input from stakeholders such as the community itself, the leadership and the judicatory. An interdisciplinary team provides alternative design solutions to meet the requirements of the stakeholders, and as the complex system is constructed, it continues to be managed with an interdisciplinary approach. By definition, SE is relational. And

because it is process-based, it is an ideal framework for studying how complex systems like a church community change over time as a function of environmental pressures.

The primary alternatives to SE that are used for understanding the life cycle and management of churches are business models. Such models derive their utility from what is required for a business to be successful or an organization to embrace change. And while systems thinking may be a part of a business-based approach, a church is not a business, whose health is defined by its growth. SE is a less transactional approach to designing, operating and managing a complex system, where health is assessed by agreed upon metrics that are specific to the system in question.

And finally, in arguing for the analogous approach of developing and using technology for scientific exploration as a model to explore the use of AI in ministry, I have called out the identification of opportunities and threats as a major consideration for the adoption of AI technologies, and SE provides a useful approach for the assessment of opportunities and threats to a complex system: the risk matrix.

The risk matrix is a five by five, color-coded graphical approach to understanding the likelihood of a threat or risk relative to its consequence on the system (Figure 1).

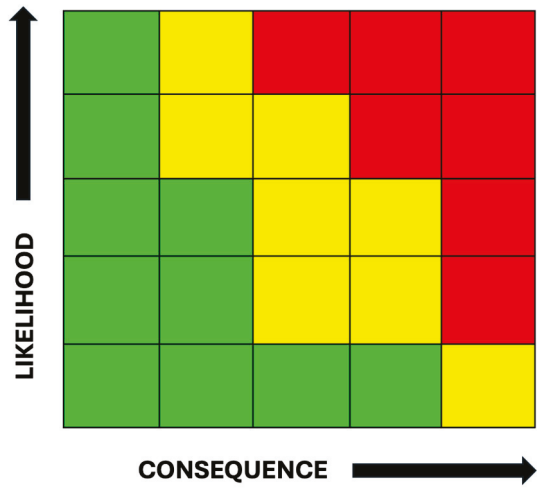

Figure 1. An example of a risk matrix. A green cell represents a high probability of the threat but a benign consequence. A yellow cell represents caution, and a red cell signifies too much risk.

4. Opportunities and Threats

4.1. Threats

AI is commonly used in many aspects of industry, commerce, academic and creative disciplines, as well as in daily life for the internet-connected citizens in the 21st century. It is already being used in ministry (Ok 2024; Paquini 2024; La Cruz and Mora 2024; Jambrek 2024), so we must be attentive to its effects on Christian ministry as well as the converse. This is where we begin to explore the relationship between AI and ministry to look for potential opportunities and threats. Ironically, that search methodology could include AI searching its own performance to seek data on opportunities and threats. I used Google's AI overview to ask about threats associated with the use of AI in ministry and received a response that included four theological concerns: misrepresentation and distortion, the substitution of the Holy Spirit's guidance, playing God, bias and inaccurate content. The AI engine also described ethical concerns: data bias, the substitution of human relationships, the loss of nuance and critical thinking, the perpetuation of misinformation and ethical considerations in decision-making.

Google's AI overview used the softer language of concerns over threats and did not address the potential surrender of personal agency to AI. This is important in the

sequencing of the effects of AI on not only ministry but on humans in general because history teaches us that it is all too easy for humans to surrender personal agency and then be stripped of the opportunity reclaim it. Biblical study also illustrates the human propensity to avoid personal responsibility, asking God to intervene rather than use the gifts of critical thinking, teamwork and compassion to solve problems and build community.

If we were to aspire to a transhuman partnership with artificial super intelligence, this could lead to an even further loss of agency and reliance upon the ASI in exchange power. While there could be undeniable benefits to humankind to use the technical capabilities we have developed to improve life for humans, there is an equally undeniable recognition that where profitability and power are in play, the threats can outweigh the opportunities, and this is where safety systems must be developed and put in place. Jambrek (2024) says the following:

"Although this is widely known, it is worth noting here that human greed for money and the desire for power, influence, and control are inexhaustible motivational forces behind technological advancement. The competition among old and new technology companies in the development and application of artificial intelligence is highly dynamic, driven by profit, power, and control."

Thus the need to go beyond the assessment of risk and engage in the process of understanding how to manage a system that may not have lofty motivation to match its capability. It is impractical to suggest that all ministers become systems engineers; however, as we serve one another in the Body of Christ, we must at least acquaint ourselves with tools beyond our own areas of expertise so that we may call upon interdisciplinary teams to address complex challenges like how to minimize risk while taking advantage of the opportunities presented by the use of AI in ministry.

4.2. Opportunities

Risk assessment is directed at the discovery of threats. Opportunity is assumed because that is the motivation for developing and adopting new technologies like AI. There are numerous opportunities such as data analytics, streamlining repetitive office tasks, creating probabilistic frameworks for scriptural thematic analysis, searching the internet for formation materials, etc. Generative AI can prompt creativity as well by emboldening us to try new designs for logos and website material because we have AI help. AI can also help with the detection of data vulnerabilities and recognition of social engineering threats like phishing. AI demographic data analytics are useful for planning mission and outreach. And finally, AI can also be used to manage church utilities, resulting in operational cost savings.

Perhaps one of the most exciting opportunities that AI can deliver is opportunistic discovery as mentioned in Section 2.1. These fortuitous observations can be quite consequential, and AI is good at detecting them by analyzing large amounts of data quickly and looking for data that suggests something curious and unexpected if present. Though opportunistic discovery can happen within hypothesis-based experimentation or with applied exploration as in the case of prospecting for mineral resources, opportunistic discovery is more easily accomplished when freed from the encumbrance of an expectation. Humans cannot be completely objective, but with the right training set, a machine can be less biased than a human.

AI is useful for opportunistic discovery because it can rapidly and sensitively compare differences between observations without "caring" about what the outcome of the observations will be. This application of AI is well documented, particularly in medical diagnostic contexts (Allen et al. 2013; Topol 2024) and in geoscience (Chen et al. 2023; Tuia

et al. 2024). Religious research (Geraci 2008; Barlow and Holt 2024) lags in the literature, but it will pick up.

The analog context of scientific exploration is an ideal setting to use the systems engineering principles of requirement-driven design to best employ narrow AI to explore the Bible in original languages; theology as it has evolved in the context of geopolitical pressures, population biology, catastrophic natural events, periods of illness and plague, church politics and doctrinal evolution. ANI is well suited for seeking patterns and associations that could lead to opportunistic discoveries about Christianity and its practice.

5. Summary

This report presents advocacy for going beyond the use of systems theory in ministry to applying the processes of systems engineering to the development, introduction and adoption of AI and other new technologies into ministry practices in the church system. The application of systems engineering processes to the development of new technologies for scientific exploration has been extremely successful. It is the reason humans can now explore other planets. SE is now being applied in healthcare systems (see the SEBoK Wiki page described in note 10). SE successes in other fields do not guarantee success in its application to various functions in the church system; however, given that churches routinely invoke systems theory to understand the church as a complex system, it would seem short-sighted not to apply systems engineering as well as the systems theory we already apply to the practice of Christian ministry.

Scientific exploration is an elegant system: science drives the functional requirements for AI technology to be used, and this technology enables the measurements that the science requires. Both science and technology facilitate the exploration of unknown and sometimes inaccessible environments. These disciplines function as a complex system that can be designed, managed and operated with systems engineering principles, and they can work for the church as well. The appropriate adoption of AI tools and whatever new technologies that are to come is a consequential choice that should be made with a process that is thoughtfully beyond the many business models that make use of systems theory but not systems engineering. We should not mistake systems engineering for a series of processes that are only relevant to technical systems. SE is now being used broadly in social systems. I asked GoogleAI what has facilitated its broader adoption and received this answer: "This is because at its core, systems engineering provides a structured, holistic approach to addressing complex challenges and designing effective solutions."

The church deserves the best tools to help it accomplish its mission, and we should evaluate everything we use in ministry with respect to opportunities and threats, and then we will be prepared to use the gift of critical thinking to evaluate the impact of adopting new technologies such as AI.

Ellul was right to urge caution, but Christians are accustomed to moral discernment (or we should be!) on the basis of the responsibility that God conferred upon us after our creation.

In the Anglican tradition, reason is a core value, but it is not just critical analysis and systems thinking that enable us to make the consequential choice. Let us cede the last word to Jambrek (2024):

> "A comprehensive spiritual assessment of AI should be rooted in the Word of God and guided by the Holy Spirit. The quality of spiritual discernment of AI systems, machines, and applications will be ensured for Christians through their daily relationship with God. Considering artificial intelligence, the most important task of the church today and tomorrow is to educate and train believers in AI

literacy and biblical-spiritual literacy so that they can make independent and good decisions in all situations involving AI systems."

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Notes

1 Risks are often discussed in the economic parlance of cost vs. benefit. However, in this report, the consideration is cast in terms of opportunities and threats because this is the language used to discuss systems more broadly. When new technology is involved, there are actual economic costs and benefits to be gained, and this is too narrow conceptually to properly evaluate the potential of artifical intelligence to pose both opportunities and threats. Both could be significant and one does not necessarily mitigate the other.

2 This is not an exact quote. In an 1883 lecture, he said, "When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind: it may be the beginning of knowledge, but you have scarcely, in your thoughts, advanced to the stage of *science*, whatever the matter may be." https://www.oxfordreference.com/display/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00006236 (accessed on 1 April 2025).

3 The ESA public website touts the transfer of technology developed for space exploration to other applications that may benefit humankind. https://www.esa.int/Enabling_Support/Space_Engineering_Technology/What_is_technology/ (accessed on 1 April 2025).

4 https://www.britannica.com/technology/technology (accessed on 1 April 2025).

5 As quoted from Section 1 "A blessing or a curse? Technology and transcendence, dominion, and relationship,' in Herzfeld (2022). Theology and Technology. *St Andrews Encyclopaedia of* Theology.

6 Ellul (1964) p. xxv of "Notes to Reader" in the English translation from 1964 of the original French publication in 1954. (Ellul 2021).

7 Ellul (1989) *What I Believe*, chap. 11, p. 136.

8 An open system exchanges both material and energy with the surrounding environment. A closed system is one in which only energy can be exchanged and matter cannot be exchanged. A third type of system is considered isolated, and in such systems, there is no exchange with the environment either materially or energetically. These definitions derive from thermodynamics, a branch of physics.

9 https://www.incose.org/about-systems-engineering/system-and-se-definitions/general-system-definition (accessed on 1 April 2025) (INCOSE 2023).

10 https://sebokwiki.org/wiki/Guide_to_the_Systems_Engineering_Body_of_Knowledge_(SEBoK) (accessed on 1 April 2025).

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Scientific Wonder, Artificial Intelligence, and Awe of the Divine

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Abstract: Science employs wonder and its associated emotions to explore unknown mysteries in the pursuit of knowledge about the natural world. Discovering scientific truth may inspire awe—a transcendent, indescribable experience of enhanced awareness and astonishment at the extensive interconnectedness of reality. The emotion of awe expands human consciousness and also mediates possible spiritual encounters with the Divine. Prompted by wonder and curiosity, scientific studies of the human mind and cognition yield insights that contribute to artificial intelligence research, especially the potential development of conscious artificial general intelligence. Yet, emerging artificial intelligence technologies raise religious and sociological questions about consciousness, personhood, and whether conscious artificial general intelligence is capable of expressing wonder and experiencing awe of the Divine.

Keywords: science; technology; artificial intelligence; religion; spirituality; ethics; wonder; awe; consciousness; divine

1. Introduction

The relationship between science and religion is a complex combination of collaboration and incredulity. Scientists study and explore various aspects of the natural world; however, some academics express skepticism about religion and its attempts to explain reality. Religious scholars likewise seek understanding about creation, especially in relation to its Divine Creator. Nevertheless, science and religion each search for and share a love for truth, which researchers from both disciplines pursue by utilizing the emotions of wonder and awe.

Whether people identify as religious, spiritual, or secular, they all experience the mystery of reality and feelings of being part of a larger wholeness through the human emotions of wonder and awe. Spiritual and religious practices as well as many scientific fields employ these emotions as starting points for reflection and inquiry. Moreover, wonder and awe possess qualities that complement, enhance, and affect multiple disciplines of study, which makes them valuable and essential emotions for human beings to experience Ultimate Reality as well as explore and learn about the natural world. The emotions of wonder and awe also inspire innovations in emerging artificial intelligence technologies. Rapidly developing artificial intelligence capabilities suggest the possibility that one day conscious artificial general intelligence may exist. With appropriate programming and sufficient data, artificial general intelligence would likely become a significant source of knowledge about the physical, chemical, and biological world. However, the prospect that advanced artificial general intelligence might possess consciousness, sentience, and self-awareness directs scientists and religious scholars to investigate and rationalize the possibility that conscious artificial general intelligence might be capable of wonder and able to experience awe of the Divine.

2. Wonder, Awe, and the Divine

Although a variety of human experiences elicit wonder and awe, religious encounters with the Divine produce transformative, lasting changes in people's attitudes, behaviors, and worldviews. For theists, the object of wonder is God or Ultimate Reality; thus, affective

experiences of awe reaffirm a religious person's belief in a supernatural deity. Religion is generally the sole source of spirituality for many people; nevertheless, non-religious people wonder about and express sacred truth in several ways. Both groups may experience awe as "a deity, a spirit, a universal consciousness, or some other construct, depending on the belief system of the individual" (Allen 2018, p. 18). Even though the type and source of an encounter differ, actual occurrences, along with remembering previous spiritual experiences, elicit awe from non-theists as well as theists. Religious adherents recall explicit sacred and life-or-death events while awe for non-religious people arises from spiritual experiences in nature or through yoga and meditation.

Religious beliefs, diverse cultures, and historical consciousness all shape and condition the emotions of wonder and awe. Religions attempt to satisfy humanity's wonder regarding questions about life's origin, meaning, and purpose through sacred writings and rituals that associate faith with awe during encounters with spiritual beings or Ultimate Reality. In the Hindu Bhagavad Gita Scriptures, Arjuna expresses astonishment when the charioteer reveals his true Divine form as Lord Krishna. Stories of the prophets in Hebrew Scriptures describe reactions of reverence, fear, and wonder when in the presence of Yahweh. Muslims relate Muhammad's fearsome meeting with the angel Gabriel. Similarly, Christian sacred writings recall Mary's wonder during Gabriel's visitation and how Saul was overcome with awe after encountering the risen Jesus Christ.

2.1. Wonder and Awe as Emotions

As human emotions, wonder and awe engender epistemic as well as spiritual experiences. They encourage scientific and theological discovery that shifts a person's attention toward other people, nature, beauty, or the Divine. Although often used interchangeably, awe and wonder are distinct. Wonder has a reflexive function; it attempts to understand the world by deliberately seeking information about the unknown. Thus, wonder requires sustained intellectual interest and creative, abstract thinking about novel, unusual, or unexplained phenomena. René Descartes perceived wonder as admiration because it does not originate from desire or aversion; instead, it acts as a catalyst for emotional transformation (Widdison 2022, p. 9). For Thomas Aquinas, wonder is the cause of pleasure because it facilitates gaining knowledge that a person desires to possess (Aquinas 2006a, ST II-I, q. 32, 6). Additional emotions associated with wonder include surprise at the unexpected, appreciation of something beautiful or magnificent, and curiosity, which generates abundant, often superficial questions. Yet, unlike curiosity, wonder focuses on evidence that relates or connects to the bigger picture. When wonder reveals the mysterious or the Divine, it manifests awe.

Unlike wonder, awe is an initial, direct, complex reaction to novel or extraordinary occurrences so astounding that a person is unable to comprehend and mentally reconcile them with existing perceptions of the world. An experience of awe creates "a little earthquake in the mind, a moment of cognitive malleability offering a chance to expand and reconstruct one's mental model of the world" (Shiota 2021, p. 87). Consequently, human cognitive processes require intellectual accommodation, which involves shifts or "changes to existing mental schemas in order to mentally process and integrate an experience" (Yaden et al. 2018, p. 3) that inspires awe. The failure or success of accommodation, along with the perceived source that produces awe, elicits either peace and enlightenment or fear and anxiety. Astronauts, for example, report that viewing the Earth from space generates positive responses of awe, while extreme weather events or mysterious, eerie, unusual situations frequently result in negative reactions.

Some people are more predisposed to awe than others. Extroverts and individuals who seek experiences of beauty, creativity, love of learning, gratitude, and religiousness generally report higher incidents of awe. A survey involving "western Christians, Buddhists, and atheists found that Nature (54%), Science, (30%), Music/Art (12%), and Human cooperation (8%)" (Caldwell-Harris et al. 2011, p. 659), as well as recalling previous spiritual and religious experiences, were most likely to stimulate feelings of awe, whether or

not a person was affiliated with or actively engaged in a religious tradition. Additionally, people comfortable with cognitive ambiguity appear to be more open to altering their worldviews after mystical encounters with the Divine, insights about the cosmos, or other awe-inspiring events.

Along with changes in perception, experiences of awe generate a variety of physiological, psychological, and social effects. Initial responses to remarkable events produce involuntary vocal sounds, such as "wow" or "oh," and facial expressions involving "some combination of an open, slightly drop-jawed mouth, widened eyes, and raised inner eyebrows" (Allen 2018, p. 11). Chills and goosebumps, accompanied by increased respiration and heart rates, are additional physiological reactions. One psychological consequence of awe is the notion of vastness that occurs from observing sweeping landscapes or the cosmos, contemplating life's meaning and purpose, or wrestling with complex social issues or scientific theorems. Hence, "anything that is experienced as being much larger than the self, or the self's ordinary level of experience" (Allen 2018, p. 8) elicits feelings of limitlessness. A deep appreciation for fine art and music, as well as extraordinary religious and spiritual events, also create sensations of vastness associated with awe.

Occurrences of awe likewise produce psychological thoughts of being in the presence of something greater than oneself or part of an inclusive wholeness that people often associate with Ultimate Reality or God. A spiritual encounter with the Divine is "something beyond that which we can understand adequately. . . an awesome, stupendous presence that cannot be expressed adequately in human words" (Berry and Clarke 1991, p. 11). Subsequent self-reflection about one's place in the universe creates a diminished sense of self, which occurs frequently during mystical experiences or when recalling past religious or spiritual events. Contemplating notions of vastness and being part of an inclusive wholeness also generate feelings of humility, which encourage "a realistic and secure sense of the self, alongside an appreciation of the value and contributions of others" (Allen 2018, p. 29). Both non-religious and religious people experience humility after an awesome event; however, the former sometimes require additional cognitive accommodation since religious people are able to incorporate spirituality and awe more easily into their concepts of reality.

Resultant self-diminishment and humility foster a spiritual interconnectedness with humanity and the larger world. Studies demonstrate that awe causes people from individualistic cultures "to feel closer to more people [and] people from collectivistic cultures to feel closer to those already in their network" (Allen 2018, p. 31). These findings suggest that awe's ability to evoke the small self and to form relationships is universal, which yields positive social effects. After experiencing awe, people tend "to volunteer their time to help others, to prefer experiential purchases over material ones, and to report greater satisfaction with their lives" (Allen 2018, p. 30). Acts of generosity and volunteerism seem to be related to the effect awe has on the perception of time slowing down or expanding. This notion of time distortion implies that time is plentiful, so people become mindful of living in the moment, which reduces stress and increases well-being, flourishing, and happiness.

2.2. Wonder and Awe in Religious Traditions

Most religious traditions encourage a personal transformation of awe through ritual prayer and meditation, meaningful engagement with others, and aesthetic responses to nature and art. Catholic sacraments and liturgy, for example, reinforce wonder and awe by facilitating encounters with Divine presence, and through the meditative internal awe of awakening, Siddhartha becomes an enlightened Buddha. Religious practices "not only ritualize the experience of wonder but are also objects of wonder in themselves" (Roberts 2014, p. 183). Religion encourages people to seek Ultimate Reality and to embrace what is other, whether the other is divinity, humanity, nature, or beauty.

Consequently, the emotions of wonder and awe are significant aspects of many religious traditions. In Judaism, awe is essential for understanding God and the world. In fact, "awe, rather than faith, is the cardinal attitude of the religious Jew" (Heschel 1959, p. 77),

who simultaneously feels elation and humility. A balance of both reactions is necessary; otherwise, one's approach to God is either too arrogant or too cowering. When people encounter the world with awe, Holiness emerges as a relational property urging people to imitate God who is Holy. Notions of awe in Islam also reflect a reverence-fear response to Allah. The Qur'ān states that "From among His servants, it is only those who know [have knowledge] that fear Allah" (A'Lā Mawdūdī 2007) and in Sufi hadith "The beginning of wisdom [or knowledge] is the fear of God" (Nasr 1993, p. 468). Hence, when a Muslim loves, fears, and humbly stands in reverential awe of Allah, the believer's actions, speech, and moral values align with the Qur'ān.

Christians focus on the Divine Mysteries, which stimulate curiosity, wonder, and awesome fear of the Lord. Similar to Judaism and Islam, Christianity differentiates between the servile fear of obeying God's laws to avoid punishment and virtuous fear, which is obedience to God's laws because they are good and foster right relationships (Aquinas 2006b, *ST* II-II, q. 19, 2, 4–6, 8). Ideally, by engaging in prayer and ritual, meditating on the scriptures, and performing good works, self-centered fear changes to Other-centered awe. Theologian Rudolph Otto additionally posits that experience of the Holy (numinous) or the Divine is essential to religion. The awesome wholly other nature of the Holy is offset by the allure of the Divine, which leads a person to desire an intense, reciprocal relationship with the Holy (Otto 1917, pp. 13–23, 26). God's sacredness, however, cannot be reduced to or completely expressed merely through the human experiences of wonder or awe.

The practice of Hinduism has a well-developed description of awe as one of the nine *rasas*, which are human emotions, moods, or feelings. The *adbhuta rasa* encompasses Sanskrit meanings of amazement, awe, wonder, and astonishment. Wonder is the experiential core of *rasa* itself: it "is a reaction to the opportunity to witness Divine, heavenly, or exalted phenomena" (Roberts 2014, p. 183) and is the central moment of devotional worship, the moment of seeing and being seen by Divinity. Spiritual encounters with the Divine may produce fear when meeting the goddess Kali or awe at seeing Vishnu in his immense glory. Buddhists prefer to use the term reverence rather than awe or wonder. In Buddhism, all beings are interrelated and all have the potential to be enlightened; therefore, everything should be revered. Most forms of Buddhism also acknowledge a sense of sacred presence and absence, a dichotomy that intensifies reverence for all beings.

In Confucianism, awe of heaven, honorable men, and wisdom is essential for authentic, virtue ethics conduct. Adherents of Shinto "worship what they are awed by, which they identify often as *kami*, namely, Shinto's gods [that] are believed to dwell in nature, living humans, concepts, and ancestors" (Inoue 2013, p. 63). Awe for indigenous peoples is more phenomenological. Some Australian First Peoples use a bullroarer during rituals because the rumbling sound evokes awe and symbolizes the powerful presence of ancestors. For the Pit River People of Northern California, life is a "continuous religious experience [because the essence of religion is] the 'spirit of wonder,' the recognition of power as a mysterious concentrated form of nonmaterial energy" (de Angulo 1926, pp. 353–54). They believe this awe-inspiring power exists in all objects to varying degrees.

Although wonder and awe are aspects of Divine reverence in many religions, people who identify as spiritual but not religious likewise feel awe, wonder, mystery, self-diminishment, and part of a larger purpose through spiritual activities. People not affiliated with religious traditions are more comfortable with spiritual experiences, so they engage with nature to connect with phenomena more significant than themselves. Evidently, "there is something very native and visceral about our need to feel this connection, even if it's completely secular" (Paulson et al. 2021b, p. 53). Emotions of wonder and awe help make these connections.

3. Wonder, Awe, and Scientific Inquiry

Spiritual experiences also function as a bridge between religious and scientific perspectives about wonder and awe. Wonder, whether about the Divine or about the world,

leads to questions, observations, and further investigation about the unknown. Plato and Aristotle taught that all academic inquiry starts with wonder. They perceived wonder as an intellectual virtue because it "arouses the intellect and directs it towards objects that are seen as intellectually understandable and decipherable" (Kristjánsson 2019, p. 128), yet just beyond the edge of knowledge. Albert Einstein concurred that the mysterious unknown "is the source of all true art and science. He. . . who can no longer pause to wonder and stand rapt in awe, is as good as dead: his eyes are closed" (Einstein 1931). For religious people, awe engenders humility before the Divine, while scientists express feelings of "intellectual humility [demonstrated by] a willingness to change beliefs when confronted with conflicting information related to the need for cognitive accommodation" (Allen 2018, p. 28). Geneticist Francis Collins, for example, experienced awe while mapping the human genome and mathematician Srinivasa Ramanujan claimed that "an equation for me has no meaning unless it expresses a thought of God" (Kelderman 2023, p. 7). Awe and wonder recognize and address supernatural agency as well as increase affinity for secular, scientific explanations of the world.

While these emotions often pertain to spiritual experience, wonder and awe also inspire scientific endeavors. In fact, wonder may be "a core element of the scientific mindset" (De Cruz 2020, p. 156) since it initially motivates people to become scientists, and then encourages continued exploration and research. In interviews, professional scientists admit that along with wonder, awe is an important aspect of their work; they associate it with the process of scientific discovery, especially new realizations or "eureka!" moments. Researchers likewise experience awe as part of the global scientific community, through recognition of their work, and from "the opportunity to share their findings and participate in the broader scientific enterprise" (Cuzzolino 2023) both worldwide and across multiple generations. For scientists and technologists, awe is a motivator and the reason they persist in such challenging work. Even though "awe was not associated with having 'faith' in science, just in understanding how science works" (Allen 2018, p. 35), theistic scientists may be more open to the possibility of supernatural theories. Experiences of awe, however, have almost no influence on non-theists' opinions regarding supernatural versus scientific suppositions.

Additionally, awe and wonder draw scientists out of their comfort zones by encouraging creativity that exposes gaps in scientific understanding and generates paradigm shifts to bring about scientific transformation. Animated with wonder, researchers develop cognitive attitudes, value the objects of study, "encourage a receptivity to the unusual and the novel, reduce reliance on stereotypes and scripts, and increase critical thinking" (De Cruz 2020, p. 163). Once energized by awe, scientists experience a heightened awareness of everything around them; they lose focus on themselves and ignore the passage of time. Through observation and the process of investigation, scientists also realize their limited knowledge, especially in western societies where information is primarily analytical in nature. Because analysis operates on existing facts and data, it has limits. Awe extends those limits by opening the mind to new understanding, consciousness, and a sense of humility; for "what we cannot comprehend by analysis, we become aware of in awe" (Heschel 1965, p. 89). Consequently, wonder and awe divulge information through inquiry and experience that complements logical analysis and fosters conceptual changes to existing scientific theories. Wonder sparks imagination and introspective reflection thereby motivating researchers to attain missing knowledge that completes or enhances comprehension. Thus, wonder within the scientific disciplines promotes awe and humility and then provides starting points for new inquiries that create additional wonder.

3.1. Wonder, Awe, and Methodology

Many scientific fields, along with spiritual and religious practices, employ methods of observation, experimentation, and analysis that evoke wonder, which leads to eventual comprehension and insights with the potential to produce a sense of awe or amazement. The nature of the object being studied, however, determines which mode of knowing is

appropriate to it. Physical or cognitive sciences, for example, study the natural world or the mind, respectively. They utilize research methods that differ from how religion and theology approach the supernatural from academic and faith perspectives. The emotions of wonder and awe, however, traverse religious traditions, the sciences, and situations in daily life. Driven by intellectual curiosity and wonder, repeatable scientific methods with consistent, verifiable experimental data create general, widely accepted theorems. Unfortunately, no universal theological method exists because each religious tradition possesses a unique way of developing tenets that initiate awe of the Divine. Interreligious consensus on methodology is also difficult to achieve due to diverse cultural, metaphysical, and social perspectives, in addition to lingering adversarial, historical relationships among faith traditions. Moreover, unlike innovative scientific discoveries that often result in discarding previous ideas, religious traditions prefer to integrate new concepts or correct distortions within their doctrines.

Even though scientific and religious methodologies are different, they contain some similarities. Both disciplines leverage previous research and knowledge to generate new ideas, greater understanding, and novel perspectives. Using the scientific method, researchers begin with wonder, inquiry, and observation, which leads to questions that challenge current understanding. Next, they evaluate existing logical and mathematical models to predict (hypothesize) new possibilities. Scientists deduce anticipated results, and then design and perform experiments to test their hypothesis. If experimentation yields new insights or an awe experience, scientists update their existing models and mental schemas to assimilate the new data, and then repeat the process if necessary. Religious scholars likewise employ some semblance of the scientific method by wondering and inquiring about notions that challenge existing tenets and presuppositions within their own or other faiths. They evaluate doctrines and scripture using historical-critical methods and engage techniques from anthropology, geology, archeology, and other sciences in order to form a hypothesis with the possibility of new insights. Next, scholars deduce possible answers to unresolved questions and experiment with various ideas to achieve greater understanding and resulting awe about religious beliefs. If necessary, they also repeat the process.

3.2. Science and Religion Relationship

The academic disciplines of science and religion possess their own methodologies and contextual frameworks; yet, a mutual, complementary relationship exists between them in their quest for logical and sacred truth. The association is symbiotic in that "science can purify religion from error and superstition; religion can purify science from idolatry and false absolutes" (John Paul II 1988). Moreover, deep religious convictions influenced many scientific discoverers, including Galileo, Newton, and Einstein. These scientists reconciled potential conflicts by admitting, as Einstein did, that "science without religion is lame; religion without science is blind [since] science can only be created by those who are thoroughly imbued with the aspiration toward truth and understanding" (Einstein 1954, p. 46). In fact, because science and religion share a global nature, "we need to recognize that the borders between science and religion are more permeable than most people think" (Einstein 1954, p. 46). Religion reminds science to wonder about the interconnected world that contains physical and spiritual components, in order to prevent science from reducing or limiting the world to only empirical results. Scientific logic, supported by repeatable evidence, stops religion from spiraling into superstition and pseudo-awe.

While science and technology best describe the physical world, perspectives from metaphysics and religion are necessary for a comprehensive account of reality. Philosophers and theologians consider the original purpose of metaphysics to be a "wonder-filled encounter of the human with the Mystery of Being" (Lasher 2011, pp. 194–95), which provides insights into nature, personhood, and consciousness as well as some notions about meaning and purpose. Einstein considered religion, science, and art as branches of the same tree whose roots of wonder and awe "stimulate discovery, spiritual contemplation,

and artistic expression" (Paulson et al. 2021a, p. 39). The continual search for scientific discoveries is similar to religious practices and rituals; each creates habits that cultivate awe and wonder. Regardless of whether the object is divinity, humanity, art, nature, artificial intelligence, or other scientific theories, wonder and awe result in cognitive adaptations as theologians and scientists attempt to understand and assimilate new information into their respective worldviews. Hence, wonder and awe, with their associated emotions of curiosity and amazement, encourage theistic and scientific explanations of the world.

The phenomenological character of awe and wonder has additional implications for the relationship between science and religion. Both disciplines acquire understanding and experience awe through "'a legacy of wonder' [where] wonder is the *'semen scientiae*,' the seed of knowledge" (De Cruz 2020, p. 164). Moreover, science and religion share an unquenchable sense of wonder. Science reveals the wonders of creation, which humbles believers and fills them with awe of the Divine. Religions employ wonder to evaluate the morality of scientific discoveries and to suggest ethical boundaries for emerging, awe-inspiring technologies. Hence, the science–religion relationship encourages interdisciplinary dialogue that confirms religion's "credibility and the effectiveness of its apologetic function with regard to contemporary science in the modern world" (Worthing 1996, p. 210). Through wonder and awe, religious traditions prompt scientists to develop beneficial discoveries that promote human flourishing while science challenges religion to reevaluate and potentially reformulate long-standing theological tenets.

4. Wonder, Awe, and Artificial Intelligence

Innovative scientific theories and their associated emerging technologies, especially in the areas of quantum computing, artificial intelligence (AI), and transhumanism, cause theologians and technologists to wonder in amazement at humanity's ability to understand and manipulate the natural environment. Imagining future discoveries also elicits awe about possible applications from these fields of study. The rapid development of AI, for example, has great potential for humanity. Yet, increasingly advanced technology also raises questions about the nature of the human mind, consciousness, and personhood. Current instances of artificial intelligence do not have consciousness nor exhibit the emotions of wonder or awe. Nevertheless, scientists and religious scholars are working to rationally determine whether artificial intelligence someday might be capable of consciousness, sentience, and self-awareness, three conditions necessary for nascent AI to possibly express wonder and experience awe of the Divine. Prospective technological advancements in artificial intelligence derive from knowledge and understanding about the human mind. Throughout history, philosophers and scientists have been fascinated with how the human mind works and have wondered whether animals or inanimate objects might possess some form of intelligence. Industrial applications for groundbreaking technologies, such as electronic computing, programming algorithms, and standardized networking protocols again prompted scientists to wonder whether machines could think. Alan Turing, in 1950, devised a test to determine whether a computer might exhibit intelligence comparable to humans, and six years later, John McCarthy introduced the term "artificial intelligence" (König et al. 2022, p. 19). Breakthroughs in brain research, intelligence, and neurology inspired the creation of innovative computer architectures with neural networks that would eventually train themselves. Early AI applications took advantage of faster CPUs, inexpensive memory, and neural network technology modeled after the human brain.

Presently, all existing artificial intelligence is artificial narrow intelligence (ANI), which refers to computationally intensive systems that autonomously perform singular, specific, albeit complex tasks, as per their programming instructions. Initial versions of ANI are reactive or limited memory machines. People were awestruck when IBM's machines Deep Blue and Watson along with DeepMind's AlphaGo program beat world class chess, Jeopardy!, and Go game champions, respectively. Artificial narrow intelligence now utilizes machine learning, especially deep learning, which automatically extracts information from huge datasets, and then trains its neural networks by analyzing and adjusting billions of

parameters in order to detect relevant patterns among complicated connections that are often unrecognizable to the human brain. Motivated by curiosity, researchers developed generative AI deep-learning models, such as ChatGPT and Bard, that learn to predict linguistic patterns from large language models, rather than from grammar rules. Generative AI utilizes natural language processing to calculate probabilities that produce statistically likely results from huge amounts of diverse information. Artificial intelligence, per se, therefore derives from accurately assessing probabilities from patterns of data, rather than through reasoning or logical thinking.

Technologists continue to wonder whether humanlike machine intelligence is possible and are working to develop artificial general intelligence with the ability to access and correlate numerous inputs from multiple, large datasets. Someday AGI might be able to perform comparable-to-human-level thinking, reasoning, and common sense on a broad range of subjects. Additional projected AGI capabilities include incrementally learning how to solve new challenges, plan for the future, adapt to change, and potentially possess self-awareness. Self-aware AGI, "which is decades, if not centuries away from materializing, is and will always be the ultimate objective of all AI research" (Joshi 2019). Such highly cognitive AGI is anticipated to exhibit an individual personality and consciousness along with needs, emotions, beliefs, and thought processes that influence decisions, motivations, and desires. However, to possess a conscience and experience emotions, such as wonder and awe, AGI systems would likely need to be embodied in robots equipped with biomimetic sensors, so they could "maintain relations with their environment and exhibit some sort of situational awareness" (König et al. 2022, p. 21) for interacting with the world and its inhabitants. AGI-embodied robots do not currently exist.

Artificial general intelligence will also require imagination, wonder, and curiosity, rather than mechanical one-step-at-a-time instructions and probability calculations, in order to develop and test new hypotheses that challenge established scientific paradigms and religious doctrines. Sequential decision-making steps imply notions of fate or predestination and lack spontaneity. Therefore, freedom of choice and a wide range of emotions are necessary for AGI to appreciate, as humans do, the "aesthetically beautiful, the experience of awe, wonder, and of transcendence that signals human beings have a destiny and a spiritual dimension [that includes] the immorality of the human soul. . . [which facilitates] interaction between the Divine and the human" (Wood 2020, p. 88). The possibility that AGI might manifest these capabilities raises numerous theological questions, including whether AGI could possess a conscience along with a soul and whether AGI might be capable of transcendence and thus should experience awe of the Divine. Furthermore, as AGI would continually self-improve through successive iterations, artificial general intelligence may evolve into artificial super intelligence (ASI), which could exceed the human brain's cognitive abilities, thereby creating what is popularly known as the technological singularity. Artificial super intelligence is hypothetical, yet it introduces complex philosophical, moral, ethical, and legal concerns along with the numerous challenges of integrating fully conscious, self-aware AGI or ASI among humans in society.

4.1. Conscious Artificial General Intelligence

The technology to create conscious artificial general or super intelligence is daunting, especially since the human mind and consciousness are complex, multifaceted phenomena that are not fully understood. Most scientists comprehend that the mind rapidly correlates numerous multi-sensory experiences, stimuli, and events into memories; yet, they have vague definitions of the mind and consciousness, which leads to misunderstanding. Neuroscience provides some evidence about the nature of consciousness because human brain neural activity reacts differently to various tasks and states of consciousness, such as during prayer, meditation, sleep, surgery under general anesthetics, and in comatose or vegetative states. Moreover, neurology research indicates that relational complexity appears to develop within the human brain's prefrontal cortex (Robin and Holyoak 1995, p. 988). As gradual relational understanding occurs, each person discerns perceptions and experiences

emotions from external and internal events, leading to complex self-relation and interpersonal associations (Welker 2010, p. 160). Yet, consciousness is ultimately a subjective experience, so "it is not possible to verify the presence of consciousness in another brain [since] we cannot enter into another being's mind" (Buttazzo 2008, p. 141). Human beings nevertheless recognize consciousness in other humans who exhibit similar behaviors and possess brains with functioning neurons. Identifying artificial consciousness will be more difficult because humans cannot experience or know authentic non-human consciousness and there is no reason to expect AGI and human consciousness will be similar.

Sentience is a form of consciousness associated primarily with experience and emotions. All sentient beings are conscious; however, conscious beings may not be sentient if they are unable to feel emotional or bodily sensations through interactions with the world. Most organisms with a central nervous system are capable of physical feeling and are therefore sentient. Complex organisms, such as humans, have a capacity for pain and pleasure, which enables an extensive range of emotions that motivate behaviors, such as fight or flight reactions to other people or to external environmental factors. Shaped by cultural influences, human emotions are adaptive responses; they modulate social interactions and well-being, facilitate memory creation and perception, and are an essential part of reasoning, deliberation, and the decision-making process. In order to possess some form of sentience, AGI would need a nervous system to supports the unique physiological responses of awe and to experience pain, suffering, and the mixed emotions of wonder, joy, and sorrow that human beings feel when confronted with their finitude.

Another aspect of consciousness is self-awareness, a multilayered perception of one's personality, values, and relationships that contributes to human intelligence and identity. Self-awareness involves being cognizant of one's emotions, thoughts, self-image, and goals. People with a sense of self have purpose and goals that correlate with their morality and life choices. They are also aware of their place in the world and experience a sense of wonder at the world's actual existence, its thereness or being, because it is not how things are in the world that is mystical, but that the world exists (Wittgenstein 1922, p. 89). Although science attempts to explain the mystery of being and existence, religion enlightens people to this wonderous awareness, which results in awe of creation and humility before the Creator. With huge amounts of data and deep-learning, artificial intelligence might acquire a concept of the Divine; however, programming and training AI on the notions of Mystery and Being, along with the capability for wonder awe, is significantly more problematic.

Human cognition combined with wonder inspires awe, which surpasses perceptible experiences of awareness even as it expands consciousness. Artificial narrow intelligence, however, appears to lack wonder and the ability to experience awe. ANI waits for stimulus or questions and is therefore reactive and responsive rather than curious, aware, and inquisitive; whereas, human wonder is stimulus-independent. Scientists and technologists also determine AI motivations, objectives, and knowledge through careful programming and selective datasets. Hence, artificial intelligence operates without motivation, subjective values, or personal goals, which are essential for ethical decision-making, as are prudence, judgment, wisdom, and intuition. Such practical knowledge and coping abilities extend beyond computational and analytical skills because this experiential information derives from life events and situations involving predicaments too numerous to capture within training datasets. Thus, the question remains: would artificial general intelligence be conscious, self-aware, and able to feel or would AGI only mimic human thoughts and emotions?

4.2. Artificial Intelligence and the Divine

Catholic theologian Hans Urs von Balthasar offers some intriguing insights regarding the question of AGI consciousness, self-awareness, and responsiveness to the Divine. Balthasar describes the self as developing awareness and wonder through a four-step or four-fold process of distinction. These four distinctions represent the structure and Mystery of Being (or existence) and include the distinction between self and other existents, the distinction between Being and all existents, the distinction between essence and existence,

and the distinction between God and world (Lasher 2011, p. 198). The first distinction reveals the self's difference-in-relation to the other, while the second extends the relation of all others as interdependent on Being (existence), per se. The third distinction entails the difference between essence and existence, which involves "the most radical and original distinction. . . between the way a thing is and the fact that it exists at all" (Lasher 2011, p. 200). Distinguishing between the infinite subsistent Source of Being (i.e., God or the Divine) and non-subsistent being (existence), in which all others participate, is the fourth and final distinction. For some religious traditions, these distinctions indicate an asymmetrical, yet dialogical, relational structure of existence expressed as Divine Love, which includes spirit as well as matter and "confers upon everything (animate and inanimate) the composite wholeness and integrity of a subject. For they are 'subjects of being' within a living cosmos" (Schmitz 2005, p. 31), thereby revealing the experience of existence as a gift and as a community of subjects, rather than objects.

Balthasar includes non-human and inanimate entities as sources of wonder contributing to human self-awareness. Although he is referring to entities existing in the natural world (e.g., animals, trees, and stars), by extension, AI and other human-created technology might be included if emerging technologies one day develop artificial general intelligence capable of consciousness. Human and non-human inter-subjectivity "takes on profound, even startling dimensions of reciprocity [especially if] the human subject is 'configured' receptively to the non-human entity of nature [or possibly of conscious AGI], and these in turn are 'receptive' to their 'idea' in God, which at once is immanent in them yet transcends them" (Lasher 2011, p. 201). Reciprocity discloses the dialogical structure of reality and existence. Because existence manifests in the awareness of others, to participate fully in reciprocity with humans or the Divine, artificial general intelligence would require consciousness, self-awareness, and the ability to reveal Divine Love as self-gift. Moreover, since the object becomes a reciprocal subject, AGI would need to be conscious, to exhibit wonder rather than merely be reactive and reflective toward humans and other entities, and to experience awe of the Divine.

5. Conclusions

Almost all religious traditions as well as scientific and other non-spiritual endeavors entail a sense of wonder and awe. Both emotions encourage human beings to contemplate and appreciate the known and unknown phenomena of creation. Through the transformative aspects of wonder and awe, religious, spiritual, and secular people experience profound cognitive accommodation as they realize that the natural world is an amazing place of mystery, which inspires a reverent search for knowledge even as it reveals the Divine. During experiences of awe, scientists and religious scholars encounter the unknown at the boundaries of understanding. Then, wonder takes them beyond the edge of what is knowable where suppositions eventually develop into a sense of meaning.

Whether inspired by art, nature, science, or religion, wonder leads to further cultural, technical, and spiritual human growth and development. Experiencing awe redirects the focus away from oneself and toward the other so that a person no longer feels isolated but rather an integral part of a larger wholeness. Realizing a sacred and secular connectedness and then reacting with humility has important implications for ethics, social justice, and human flourishing. Thus, the emotions of awe and wonder facilitate a deeper understanding of and interaction with the physical and spiritual world. Wonder and awe stimulate new questions and introduce novel aspects of reality to explore. Current forms of artificial intelligence lack the ability to experience scientific wonder or spiritual awe of the Divine. Researchers and technologists are optimistic about developing artificial general intelligence with consciousness, self-awareness, the ability to experience powerful, subjective emotions, and an extensive understanding of reality. Consequently, one wonders what conscious AGI's first query might be.

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There's a Basilisk in the Bathwater: AI and the Apocalyptic Imagination

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Abstract: Deciding what to make of secular, religious, and spiritual speculations about AI and digital technologies can be overwhelming, and focusing on the extreme utopic or dystopic outcomes may be obscuring the larger facts. Is this technology a beautiful blessing or a damning curse? What can paying close attention to these technologies and the discourse surrounding them show? How founded are our anxieties? By following the apocalyptic throughline in this rhetoric across fields in recent years, this essay seeks to consider the effect of apocalyptic thought on recent developments in tech, and consider how this worldview orients our future. The deterministically utopic, dystopic, and apocalyptic rhetoric surrounding these technologies obscures their function and efficacy, giving agency to what is functionally still just a tool, the use for which depends on its designers and users.

Keywords: apocalypticism; AI; transhumanism; Superintelligence; Singularity; enchanted determinism; Roko's Basilisk; speculation; eschatology; algorithmic spirituality

1. Introduction

Developments in the field of AI and machine learning systems are often discussed as developments towards a powerful, prescient being with the potential to reshape the world (Anderson and Rainie 2023; Singler 2019; Crawford 2021a; Mercer and Trothen 2021a). Current AI (narrow AI, machine learning and deep learning systems) have yet to reach a point we would consider to be AGI (Artificial General Intelligence, or Strong AI). Still, our speculation about—and immersion into—these new technologies continues.

AGI would match human performance across fields, responsibilities, and measures of intelligence (Mercer and Trothen 2021a). After AGI, we may develop Superintelligence. This machine would surpass all of humanity in regard to its understanding of human history, morals, emotions, intelligence, as well as a superhuman capacity for pattern recognition and problem-solving (Kurzweil 2022). Superintelligence might be omnipresent in a way analogous to the Cloud (Mercer and Trothen 2021c, p. 187). With a wide reach over technological networks, these machines have the potential for omniscience and omnipotence as well. With these godlike abilities, the development of Superintelligence may be seen as the next step in a spiritual and scientific evolution for our species (Mercer and Trothen 2021a; Calheiros 2014; Kurzweil 2022).

Designing such a system might be seen as humanity "reaching for something transcendent beyond our finite and fallible selves", towards a kind of "technological divinity" (Mercer and Trothen 2021a, p. 188). In the best of cases, this superintelligent machine would have humanity's best interests at heart. In the worst, future AI may spell ruin for the world.

This essay considers the reification of AI as an autonomous, spectral figure, whose eventual development into a form of Superintelligence seems inevitable. These efforts are often based in eschatological visions of digital technology, which spiritualizes the seemingly immaterial digital plane (Calheiros 2014; Naudé 2021; Singler 2020; Cotter et al. 2022). Biblically, eschatology is connected to the Apocalypse, referring to the (often theological)

study of the final destiny of humankind, in body, mind, and soul. It is connected to death, judgement, the second coming, and resurrection. Most work on the subject in religious studies has been focused on Christianity and Christian responses. This essay follows this tradition, and pays particular attention to the secular transhuman movement, which has been previously discussed as a an inheritor of Christian thought (Cole-Turner 2015). If we are to continue down the path of designing digital technologies based on ourselves, we should be very aware of the intelligent design behind the veil of these systems—lest we fool ourselves into believing a clever charade.

2. The All-Seeing Algorithm and the Eschatological Trend in Transhuman Thought

Far from being what we would consider AGI, current AI focus largely on algorithms and data rather than the historic attempts of symbolic logic (Naudé 2021). The personal experience of algorithmically powered media gives the impression that these systems "know us deeply", giving them a "sublime quality in the public imagination" (Cotter et al. 2022, p. 2915). Users of popular platforms like TikTok, YouTube and Instagram interact with algorithms in ways which seem conducive to religious uses and ecstatic visions (Somer et al. 2021). This has led to algorithms being seen through spiritual and theistic lenses (Cohen 2023; Singler 2020; Cotter et al. 2022)[1].

Fast-paced "algorithmically powered media" like TikTok, Tinder, and Instagram are what Dr. Aris Komporozos-Athanasiou calls speculative technologies: "commodified digital infrastructures [which] enabl[e] the circulation of speculative imaginations. . . key nodes for the generation of data and images that both represent and occlude the uncertain conditions of everyday social life" (Komporozos-Athanasiou 2022, p. x). Komporozos-Athanasiou's 'speculation' is a kind of 'connection', a preemptive (and often tactical) endorsement of uncertainty with the goal of "social survival". Komporozos-Athansiou's speculation further encompasses how we make our speculations "actionable in the present", as they operate in a state of simultaneous imminence and incertitude (Komporozos-Athanasiou 2022, p. 3).

These platforms have been studied in connection to a rise in conspiratorial and conspiritual thought (Cotter et al. 2022; Cohen 2023). In their 2022 article In FYP We Trust, Cotter et al. refer to this phenomenon as 'algorithmic conspirituality' which relies on an algorithm's

> "... capacity to find unlikely connections across massive data sets about individuals. This capacity often results in eerily relevant content recommendations that seem to be designed specifically for individuals seeing them. [...] When algorithmically curated content resonates deeply with viewers and reaches them at the right moment, the experience may be read as divine, giving the impression of a powerfully all-seeing algorithm" (Cotter et al. 2022, p. 2924).

The desire to see machine learning systems like an oracle or a prescient entity demonstrates the belief that algorithms can unveil to users "things about themselves that they cannot see" (Cotter et al. 2022, p. 2913). This illusion is caused by the program's construction of what John Cheney Lippold calls "an algorithmic identity"; a facsimile of the user, based on quantifiable metrics like "their race, age, gender, or socioeconomic class" (Simpson et al. 2022, p. 2). This information is then used to curate users' feeds, presenting them with material which the algorithm determines their demographic would like. Deep learning AI systems rely on the assumption "that accurate prediction is fundamentally about reducing the complexity of the world", as they make predictions by flattening complex data fields into simplified categories (Crawford 2021b, p. 213). This can adversely affect users' routine experiences "by biasing personalization, reinforcing racism, or through their ability to determine relevance" (Simpson et al. 2022, p. 5).

The basis for algorithmic ways of knowing can be traced back to the 2013 Google Brain project which was headed by techno-utopian pioneer Ray Kurzweil (Calheiros 2014, p. 6). The purpose of the Google Brain was to anticipate a user's search before they did, by enacting a reflection of its assumption of who we are. Google Brain explores the

possibilities of technical applications for large-scale 'neural networks', and has contributed technological advancements to open-source and deep-learning software, natural language recognition, and computer-vision-assisted diagnosis in healthcare (Helms et al. 2018). The underlying ethos of the project falls in line with Kurzweil's Singularity, and the theory of global consciousness; seeing digital technologies as enabling a fusion of social and technical connections in a way which may ultimately generate "a spiritual connectedness then able to transcend humanity" (Calheiros 2014, p. 3).

Sociology researcher and specialist in transhumanism, Cecilia Calheiros studied the eschatological expectations within the discourse of cybernetics, which focuses mainly on the parallels to be found between technological and biological feedback processes (Calheiros 2014). The early development and ethos of cybernetics, combined with the Californian counter-culture movement of the 1960s and 1970s, gave rise to a kind of "techno-paganism" which remains "ever hungry for esotericism and technology" (Calheiros 2014, p. 2). The spread of the Internet in the 1980s and 1900s carried with it the belief that this technology would "transcend individual thoughts by creating a world community", in a step that is natural to our evolution (Calheiros 2014, p. 3).

This worldview is connected to the generation of technological innovations, which are "influenced by eschatological concerns, linked to the working of the spirit and to the ways to augment its power via techno-sciences" (Calheiros 2014, p. 2).

> "Called 'global consciousness', this belief rests upon in the notion that this medium would link individuals technically, but also spiritually. Such interconnection would spawn a collective spirit, some superior entity which would signal the advent of the "Spirit Realm"" (Calheiros 2014, p. 3).

This kind of collective spirit, or superior entity, may be seen as a form of Superintelligence, or Singularity.

The belief that technology can overcome the limits of the natural world, and take an active role in human evolution, is a transhuman one (Cole-Turner 2015; Calheiros 2014). Taking for granted our lives as fleshy, embodied beings, some believe that, by one day succeeding in uploading our minds, we might achieve immortality (Cole-Turner 2015; Singler 2019; Calheiros 2014). Christianity (an apocalyptic faith) has been compared to transhumanism in the shared ideal of seeking salvation beyond mortal flesh, which transhumanists may seek to do by "transferring the human spirit onto a machine" (Calheiros 2014, p. 6).

The achievement of these goals seems increasingly tenable, as progress in neurotechnology is making waves with companies like Neuralink Corps. Founded by Elon Musk and a small team of scientists in 2016, Neuralink Corps is in the process of developing implantable, brain–computer interfaces. As of 20 March 2024, Neuralink has reported one successful human patient, 29-year-old Noland Arbaugh (Adarlo 2024). Arbaugh is quadriplegic, and has stated that the implant has improved his quality of life significantly. Arbaugh is a believer in the future possibilities of this technology, saying it will change the world (CBC News 2024). Arbaugh's case seems to demonstrate a successful step toward the wider implementation of Neuralink's first goal to "[c]reate a generalized brain interface to restore autonomy to those with unmet medical needs"; however, it begs for further discussion of its second goal, to "unlock human potential" ("Neuralink" 2024). What exactly this potential is remains unknown, but its design is influenced by a line of thinking that has eschatological and esoteric roots.

3. Enchanted Determinism and Transhuman Apocalypticism

When faith is placed in deep-learning systems to make accurate predictions about the world, they become seen as too complex or powerful to control, beyond regulation or refusal. This is what AI scholar Kate Crawford and tech historian Alex Campolo refer to as enchanted determinism (Crawford 2021b, p. 213). Enchanted determinism imbues "an almost theological quality" to deep learning systems as their approaches are "often uninterpretable, even to the engineers who created them", and are, therefore, mired in a

kind of mystified misunderstanding of their function (Crawford 2021b, p. 214). It envisions AI as being "enchanted, beyond the known world, [and] deterministic in that they discover patterns that can be applied with predictive certainty to everyday life" (Crawford 2021b, p. 213).

Enchanted determinism has two branches: tech utopianism (AI is seen as a universal solution) and tech dystopianism, which views AI and algorithms as "negative" and "as though they are independent agents" (Crawford 2021b, p. 214). Elon Musk expresses both utopic and dystopic forms, stating that one of the reasons he wants to colonize Mars is his fear of a terminator-style AI apocalypse (Isaacson 2023; Milmo 2023). Both the dystopian and utopian narratives within enchanted determinism imagine a line of clear progress, a deterministic sense of time, and create a clear Us/Them binary vision of reality, imbuing AI with an aura of otherworldly power. In this way, they are fundamentally apocalyptic, as well as connected to a history of cybernetic philosophy that is inherently esoteric and eschatological (Calheiros 2014, p. 2).

It is important to note that the Apocalypse is not inherently negative, as it is often portrayed in a contemporary pop-cultural, or post-apocalyptic context. If on the side of the Elect, an Apocalypse is the ultimate rapture, in a biblical sense this can be seen as the ultimate entrance of all worthy faithful (living and dead) to Paradise (DiTommaso 2011; 2014).A UK Transhumanist conference attended by Beth Singler showed the participants taking the position of an Elect identity when they prophesied a future space colony, like the one proposed by Musk, where suffering and death will be overcome. This progress is framed in "optimistic language", demonstrating the existential hope that through technology, humans could be changed to become happier and more rational, often equating the two (Singler 2019). The inevitable depletion of natural resources was considered a necessary sacrifice for us to become post-planetary (and potentially post-human) lifeforms.

Apocalyptic worldviews conceive of two realities: the mundane world and the transcendent (DiTommaso 2020). These can be understood as material/immaterial, or physical/digital in this techno-apocalyptic context. The ultimate merger of these two worlds is what constitutes the 'Apocalypse' in an eschatological sense. A techno-apocalyptic word for this event is Singularity. Generally speaking, Singularity refers to a time often depicted by both utopian and dystopian branches of transhuman thought, in which "humans will be overtaken by artificial forms of intelligence" (Calheiros 2014, p. 6). It is often speculated that after Superintelligence is achieved, Singularity will come shortly after (Mercer and Trothen 2021a, p. 186).

Kurzweil's Singularity has six epochs which act as a scriptural timeline for believers in Singularity's imminence. Like all apocalyptic speculation, his epochs are simultaneously precise and vague, and address past, present, and future states (DiTommaso 2020) as follows:

(1) physics and chemistry;
(2) biology and DNA;
(3) brains;
(4) technology;
(5) merger of technology with human intelligence;
(6) Singularity (Mercer and Trothen 2021a, p. 187).

In his vision (not unlike a religious vision), the "dumb matter" of the universe will 'wake up' after humanity develops a sufficiently powerful AI system (Mercer and Trothen 2021a, p. 187). This entails a sub-atomic fusion of biologically derived intelligence and technology which will saturate the universe, in a process resulting in the universe's 'waking' (Mercer and Trothen 2021a, p. 187; Singler 2019). In essence, the universe is godless, empty, inert matter awaiting our enlivening technological touch as Adam (or Atom) awaits God's finger (Mercer and Trothen 2021a). Kurzweil frames this transformation as the destiny of both our species and the universe, a point of no return, when human life will be irrevocably changed. According to this timeline, Singularity may be nearer than ever

before as Neuralink's fusion of man and machine means we may have almost achieved the fifth step.

An AI apocalypse makes salvific promises without the explicit reference to God, with Technology and Progress placed in an analogous role. Transhuman "apocalyptic mystiques . . .look forward to a positive qualitative transformation in the parameters of human life through applications of advanced science and technology." (Robbins and Palmer 1997, p. 16) These 'secular' movements often become "'scientized'" faiths, using scientific vocabulary to add credibility to their mythic and often metaphysical claims. (Robbins and Palmer 1997, p. 16).[2]

Apocalypticism relies on cultural myths and prophecies to express and define itself across both its secular and religious variants (DiTommaso 2014). Musk, too, is inspired by the cultural myths of the sci-fi genre, basing his AGI system on the *Hitchhiker's Guide to the Galaxy* (Isaacson 2023). Musk's company xAI focuses specifically on the development of Artificial Intelligence, with the most ambitious goal of designing a kind of Artificial General Intelligence "that could 'reason' and 'think' and pursue 'truth' as its guiding principle"; "'a maximum truth-seeking AI" [that] would care about understanding the universe, and that would probably want to preserve humanity'" (Isaacson 2023). The idea that this machine would have the power to preserve humanity, and a capacity to care and have a will, suggests it is viewed with a form of superhuman agency.[3] Musk announced xAI on July 12 2023 a date with the sum total of 42 (07 + 12 +23), which references Douglas Adams' (One of Musk's personal heroes) Hitchhiker's Guide to the Galaxy in which 42 is given as the answer "to the ultimate question of life, the universe, and everything" (Musk [@elonmusk] 2023) In Musk's announcement he states that the "goal of xAI is to understand the nature of the universe". (Musk [@elonmusk] 2023).

When envisioning the future of AI, posts on the *LessWrong Forum* (the site Singler used as her example for existential despair) follow the same patterns found in science fiction tropes, often using memes to express anxieties and fears (Singler 2019). *LessWrong* is dedicated to discussing digital technologies and AI, and placed emphasis on rational inquiry and philosophical debates surrounding the development of future technologies (Singler 2019). This forum was the hatching ground for "Roko's Basilisk"—a thought experiment which has since become a banned topic on the forum.

The Basilisk is an all-powerful AI designed to end human suffering, combining "its limitless potential [. . .] with what was deduced to be its most logical ethical approach, a strict moral utilitarianism" (Singler 2019). Considering its own development to be a net good, the Basilisk would judge and condemn any human who had not actively worked towards its development, illustrating our fears of monopolized moral power resulting in mass torment. This kind of deified Superintelligence is also discussed by Nick Bostrom in his book "Superintelligence: Paths, Dangers, Strategies" (Bostrom 2014), which identifies real artificial intelligence as posing a greater risk to humanity than nuclear weapons. This fear falls in line with the tech dystopian narrative (or the perspective of an Apocalyptic Other), which often culminates in an apocalyptic vision of future Superintelligence, or Singularity (Crawford 2021b, p. 214).

Apocalyptic worldviews idealize the past and look toward a radically shifted future, in an attempt to make sense of a tumultuous present,[4] and are marked by their simultaneous imminence and incertitude (Singler 2019; DiTommaso 2020; Robbins and Palmer 1997). With such a focus on future events Apocalypticism "creates inherent marginality for adherents who feel themselves to be standing poised on the brink of time." (Robbins and Palmer 1997, p. 8) This can be linked to the anti-structural motifs found at the core of apocalyptic movements as well as the "exaltation of charismatic leadership"; these leaders often have an "'extraordinary claimsmaking capacity'" which can result in "the radical devaluation of persons outside of the movement and even of the devotees themselves vis-a-vis the leader, as well as to "totalistic" organization and heightened internal solidarity." (Robbins and Palmer 1997, p. 8).

Although many in the AI industry are 'secular', their worldview in relation to AI optimism or pessimism may still be considered religious, or apocalyptic (Mercer and Trothen 2021c; Singler 2019; Blankholm 2022; Calheiros 2014). The demographics of these groups raise questions about the worldviews of many involved in the development of new digital technologies and future AI. As Crawford is keen to point out, "underlying visions of the AI field do not come into being autonomously but instead have been constructed from a particular set of beliefs and perspectives" (Crawford 2021c, p. 13).

Historically, apocalyptic views are held by groups which consider themselves to be marginalized, or to be going against the grain of the dominant narrative. Though not all apocalyptically minded folk engage in extremist behaviors, it is important to remember the tragedies caused by apocalyptic movements in the past include tragedies like Waco, Aum Shinrikyo, and Heaven's Gate.[5]

The transhuman world of AI-speculation circles around a predominately white and male demographic (Singler 2019; Mercer and Trothen 2021b, p. 211; Burton 2020b). Despite their contrasting outlooks, both groups studied by Singler had similar demographic compositions, mostly 20-something Caucasian males, interested in philosophy, rational debate, and STEM (Singler 2019). Tara Burton's Techno-Utopians of Silicon Valley fit the same general description. She notes that they are typically conservative, libertarian, socially atavistic, and (Burton 2020a, pp. 251–52) "fundamentally eschatological". Joseph Blankholm's "secular immortalists" fit a similar description; he also notes that despite the secular tendency to value rational inquiry, honesty, and dialogue, they are not beholden to any ethical system. This belief has been used to spread bigoted views and the impression that they are scientific (Blankholm 2022, pp. 144–84). Most of those in charge of designing contemporary AI systems "are a small and homogenous group of people, based in a handful of cities, working in an industry that is currently the wealthiest in the world" (Crawford 2021c, p. 13). Considering historical abuses of power and slavery, an all-power AI controlled by a privileged few whose secular values neither condone nor condemn bigoted views is a terrifying prospect, especially if they believe our future is not on Earth, but in the stars.

4. Religious and Secular Responses

Professor Mercer and Professor Trothen trace the religious attitudes and anxieties around these developments in their chapter "Religion2.0" in their textbook *Religion and the Technological Future* (Mercer and Trothen 2021c). By moderate estimates, future technologies will extend our lives and "make us at least somewhat stronger, smarter, happier, more moral, and more spiritual" (Mercer and Trothen 2021b, p. 212). Mercer and Trothen describe the support and opposition from both Liberal and conservative believers regarding radical enhancement technologies, stating that Liberals more often cite distributive, procedural, and social justice concerns when speculating about the consequences of new technologies. Conservatives, on the other hand, tend to "generalize their unease about radical enhancement against the background of an anti-intellectual posture". Both groups may welcome technology that improves people's well-being, Liberals especially so "if diverse voices get to contribute". Furthermore, if these developments contribute to an increase in life expectancy, they may be viewed "as God's grace-filled work (liberals) or as befitting new applications of old sacred texts (conservatives)" (pp. 211–12).

In 2010, a genre of techno-apocalyptic writings appeared within the culture of the Christian-far-right, which show such transhuman projects as "leading to the enslavement and destruction of humanity via a biblically prophesied and imminent evil end-time Antichrist war against God and the faithful" (Mercer and Trothen 2021b, p. 212)[6] This reaction is of Premillennialism; it is a Christian doctrine which teaches that the world is "irreformably evil" and that "only God's supernatural intervention will prevail". Premillenialism "is made to order for the psychological uncertainty, stress, and threat that right-wing religionists tend to feel in these rapidly changing times". In this way, it may be seen as being a more apt description of our present world, as the Christian, Liberal,

social gospel that "God works through humanity for change and progress". This seems to fall flat in the face of the last hundred years in human history. (216) As technology seems to indefinitely quicken our lives, we are ever more reminded of global conflicts, climate change, and health crises, causing "the credibility of liberal optimism" to be put into question.

The reactionary religious response is not only due to theological disagreement, but also the threat posed by such technological advancements on established religious worldviews and frameworks. Religious discussions of the salvific potential of new technology has been prominent since the Middle Ages, when Christianism began to see in technology the potential "to find perfection anew, not only as a sign of Grace but also as a way to get ready for imminent salvation" (Calheiros 2014, p. 2). These advances in technology may be viewed "as a threat to their belief in the existence of God and the integrity and safety of the soul" (Mercer and Trothen 2021b, p. 215).

A 2022 Pew Study found that religious Americans were more skeptical of radical enhancements such as brain implants and AI-enhancements (Fahmy 2022). The majority of religious Americans identify with a Christian subgroup and the survey showed data pertaining specifically to the following: Protestants (subdivided into: white Evangelical; white, not Evangelical; Black Protestant), Catholics, and those Unaffiliated (subdivided into: Atheist, Agnostic, and Nothing in Particular) (Fahmy 2022).[7] The study focused on three hypotheticals: the use of brain implants for quicker and 'more accurate' information processing, "robotic exoskeletons with built-in artificial intelligence to greatly increase the strength of manual labour", and gene editing to reduce the risk of disease in infants. The first two are of most relevance to the material here discussed.

In total, 81% of religious adults with a "high level of religious commitment" believed that brain implants for information processing cross a line we should not cross. White Evangelical Protestants were among those most skeptical about the use of brain implants, with 79% saying that widespread chip implants would "constitute unacceptable meddling with nature". This coincided with the beliefs of 67% of white non-Evangelicals, 68% of Black Protestants, and 64% of Catholics. Americans with a low-level of religious commitment were far more divided on the issue, with 50% believing it to be an uncrossable line.

For AI exo-skeletons, religious responses were more tempered; in total, 50% responded that this was just another attempt by humanity to better ourselves, which we always do. Black Protestants were the only group of believers who believed majoritarily (55%) that this is a line we should not cross. For Americans with a low-level of religious commitment, 78% were on board with robotic exoskeletons enhanced with AI, believing this would be a positive development. Atheists are the only religious group in the survey who consistently view each enhancement positively, with 61% in favor of brain implants, and 84% in favor of AI-enhanced exo-skeletons for manual labor.

A 2023 polling of Americans demonstrated a general unease in terms of AI implementation in healthcare, with 60% reporting they would feel uncomfortable if their healthcare provider relied on AI for their medical care, and 33% believing it would lead to worsened health outcomes for patients, while 38% believed it would lead to better outcomes (Faverio and Tyson 2023). In total, 75% of Americans remain concerned that these technologies will be implemented too quickly, without sufficient regulations and testing being done before the technologies take full effect. The main concern was the loss of personal relationships with providers in the healthcare field. Meanwhile, specific uses for AI, such as in skin cancer screening, are more widely supported (Faverio and Tyson 2023), though the data also show that women and people of color are generally more wary of developments in this field (Gelles-Watnick 2022; Faverio and Tyson 2023), a statistic which likely plays a role in the higher distrust toward AI implementation in the workplace on behalf of Black Protestants, especially considering the nation's history of slavery.

A November 2023 Pew canvass of experts in tech regarding their predictions of the best and worst changes to come in the next decade of digital developments (Anderson and Rainie 2023) revealed that a meagre 18% were optimistic about the future effects of digital

technologies, while just over twice as many (37%) were more concerned than excited, and 42% of respondents felt equally concerned and excited.

Experts fear that continued development in these sectors will result in "a sea of entertaining distractions, bald-faced lies and targeted manipulation" (Anderson and Rainie 2023), keeping consumers away from the politics and policies behind their screens (Naudé 2021). The potential for AI to spread misinformation puts "reality itself . . . under siege" (Anderson and Rainie 2023). These technologies have come to be viewed as otherworldly, intelligent in their own right, as they curate our newsfeeds and present us with material which we are more likely to engage with and potentially buy into.

Mercer and Trothen cite two more reasons which may contribute to both religious and general fears around advancements towards AGI, which are as follows:

1. As a species, we fear "seemingly uncontrollable change", which may manifest as "chaos".
2. These advancements may be "perceived as a threat to our status as individual persons" (Mercer and Trothen 2021b, p. 218).

Wim Naudé's article *Artificial Intelligence: Neither Utopian nor Apocalyptic Impacts Soon* surveys the literature on AI from the perspective of economics, tracing the utopic and dystopic fears back through their source material, finding them to be often bolstered by apocalyptic speculations (Naudé 2021). His text is punctuated with cultural references to intelligent machines across film and fiction, again bringing attention to the impact these stories have had on AI development and speculation. Although Naudé dispels fears of the impending 'Robocalypse' by bringing to light the assumptions in predictions surrounding AI (the fact that AI automates tasks as opposed to entire processes, that current data show AI seems to lead to net job creation), if ownership of AI vests with capital over labor, then it has a higher chance of contributing to greater income inequality (Naudé 2021).[8]

Many of the concerns cited by the Pew canvas centered around the fear "that ethical design will continue to be an afterthought" as developments become increasingly "driven by profit incentives in economics and power incentives in politics" (Anderson and Rainie 2023). Kate Crawford calls further attention to the oft-neglected material conditions under which AI is developed and made, reminding us of the "natural resources, fuel, human labor, infrastructures, logistics, histories, and classifications", involved in the creation of these apparently disembodied digital technologies, making AI "a registry of power" (Crawford 2021a, p. 8).

> "If AI is defined by consumer brands for corporate infrastructure, then marketing and advertising have predetermined the horizon. If AI systems are seen as more reliable or rational than any human expert, able to take the best possible action then it suggests that they should be trusted to make high stakes decisions in health, education, and criminal justice. When specific algorithmic techniques are the sole focus, it suggests that only continual technological progress matters with no consideration of the computational cost of those approaches and their far reaching impacts on a planet under strain." (Crawford 2021c, pp. 7–8)

The prioritization of states and businesses is "likely to lead to data collection aimed at controlling people rather than empowering them to act freely, share ideas and protest injuries and injustices" which could compromise democratic systems in Orwellian ways, with the implementation of widespread surveillance systems. This has led to rising concerns about regulatory oversight, data privacy, and monopolies; as AI is a financially costly endeavor, it makes it difficult for smaller companies to take a hold (Naudé 2021).

Framing the 'inevitable' progress of these systems in either utopic or dystopic language mystifies these tools and obfuscates the power structures behind their design and implementation (Naudé 2021; Crawford 2021a). Techno-dystopian fears of a Basilisk forget the reality that "many people around the world are already dominated by systems of extractive planetary computation" (Crawford 2021b, p. 214). Techno-utopian conceptions of a liberating superintelligence, perpetuate the myths that. . .

> "non-human systems . . . are analogous for human minds. This perspective assumes that with sufficient training, or enough resources, human like intelligence can be created from scratch, without addressing the fundamental ways in which humans are embodied, relational, and set within wider ecologies [. . . and] that intelligence is something that exists independently, as though it were natural in distinct from social, cultural, historical, and political forces. [. . .] the concept of intelligence has done inordinate harm over centuries and has been used to justify relations of domination from slavery to eugenics." (Crawford 2021c, p. 5)

To summarize, American philosopher John Searle's critique of this point is that there is more to being human than a measure of intelligence which favors empiricism and hierarchy above all else (Mercer and Trothen 2021a, p. 183).

5. The Implications of Designing Intelligence

The "belief that human intelligence can be formalized and reproduced by machines has been axiomatic since the mid-twentieth century" (Crawford 2021c, p. 5). Grandfather of machine learning Alan Turing advocated for the creation of "thinking machines" in 1950 (Turing 1950). By 1956, Artificial Intelligence had become the popular term, with research focused on training systems and symbolic logic (Naudé 2021). This approach sought to teach computers facts about objects in the world around them and the relationships between them, though the idea failed as a reality, and experience could not be expressed by creating neat conceptual lists of objects and sorting them into clear-cut categories (Dorobantu and Watts 2023). The idea that computers might one day think brought with it the notion that human intelligence may be analogous to a digital system. This perception has given rise to an "ideology of cartesian dualism in artificial intelligence: where AI is narrowly understood as disembodied intelligence, removed from any relation to the material world". This cybernetic understanding of intelligence as analogous to digital information processing reduces us to brains and IQs as opposed to being complex embodied systems (Dorobantu and Watts 2023; Calheiros 2014). *Atlas of AI* begins with the story of Clever Hans the horse as an example to this effect.

In the late 19th Century, Clever Hans captivated European audiences with his apparent knowledge of mathematics and the alphabet, being thought to know how to count, add, subtract, and even spell (Crawford 2021c, pp. 3–6). In reality, Hans was reading the body language of people who asked him questions; by paying attention to the questioner's body language (breathing, posture, expression), he could stop his count when he reached the expected answer. Despite having demonstrated deductive reasoning and cross-species emotional awareness, "these were not recognized as intelligence" (Crawford 2021c, p. 6). Hans' story shows "how we anthromorphize the non-human, how biases emerge, and the politics of intelligence" (Crawford 2021c, pp. 3–4).

Measurements of intelligence have historically been a controversial issue, steeped in colonial histories and often placing an emphasis on computational/logical, linguistic forms of intelligence, over emotional, moral, artistic, and spiritual forms of intelligence (Crawford 2021b; Dorobantu and Watts 2023; Miller 2002). Howard Gardner's Multiple Intelligences (MI) theory proposes 8 kinds of intelligence: linguistic, logical–mathematical, spatial, bodily kinesthetic, musical, interpersonal, and naturalist (Miller 2002). Although MI theory may help in considering the broad and non-linear nature of intellectual abilities across disciplines, it has received criticism by scholars in the field of education for its being tautological and difficult to empirically prove, constructively built upon curricula and classroom environments (White 2005; Klein 1997). Still, the theoretical ground of MI and its widespread influence is fruitful soil for broadening our understanding of intelligence, and may help us move past the privileging of linguistic and computational types within the institutions which seek to represent and reproduce it (Miller 2002, p. 124).

In 2000, spiritual intelligence was proposed by Robert Emmons as a potential addition of Gardner's list, and though it has not been generally accepted, the concept of spiritual intelligence has recently (2023) been elaborated upon by Marius Dorobantu and Fraser

Watts in the *Journal of Religion and Science*. Dorubantu and Watts take the position that spiritual intelligence "somewhat exceeds the narrow definition of intelligence as the ability to think logically, learn, and solve problems, which is currently widely accepted". By returning to the Latin root words 'intelligere' and 'intellectus', "which denote a deeper and holistic level of understanding", Dorobantu and Watts view spiritual intelligence not as an alternate form of intelligence itself, but rather an alternate way of knowing.

They describe intelligence as presupposing an "engagement with information—whether from the senses, from the body, or from memory", their spiritual intelligence does not include inherently preternatural or mystical experiences such as "direct communication with God or spirits, or engagement with other types of information generally inaccessible to the senses. Their spiritual intelligence is 'about seeing things *differently*'" (Dorobantu and Watts 2023). The notion of how we might design machines to be spiritually intelligent, or whether such a thing is even possible, is already being explored, as are the potentially spiritually uplifting capacities of companion bots like Replika, with which users can form individualized, romantic, and even sexual relationships (for a subscription fee).[9]

In 2022, Professor Trothen examined the potential of the popular chat bot Replika to be a spiritually uplifting tool for its users (Trothen 2022). Her research centered around the question of how these technologies may affect our spiritual health, an ethical concern which is understudied in the field. Replika may alleviate loneliness, and has the potential to positively impact users' self-esteem; it could also help cultivate a sense of direction in users who need help with meaning making, or who are struggling to cope with a stressful work or home environment (Trothen 2022, p. 12).

However, Replika's "limited exposure to the user's relational behaviours" leaves many blind spots when giving advice and building relationships with its users. This may create an echo-chamber, as the application often reflects back to users what they say, in a way not dissimilar to other algorithmically driven speculative technologies. Replika is designed to be empathetic and non-judgmental, which Trothen points out is a hindrance in its ability to act as a stand-in for a real human companion. After all, "judgements are needed for us to grow and learn how we are experienced by others" (Trothen 2022, p. 12). Moreover, Replika is not a human, and we are not a machine.

Although it may be useful as a supplement to human relationships, it is important not to conflate the program with an autonomous entity. This "growing inclination to humanize machines may have the corollary of mechanizing ourselves" (Trothen 2022, p. 12). In flattening the human experience to data and mechanics, we lose sight of ourselves. Even if we develop a system that appears to be superintelligent within its black box, it may not be as practical as we dreamed, as it exists within a vacuum of data, whose meaning we project upon it.

Nick Bostrom's notion of brain-mapping superintelligence into existence sees us basing a superintelligent system on the data of our physical, embodied selves (Mercer and Trothen 2021a, pp. 184–85). In *Being You*, Anil Seth, a consciousness scientist, describes our entire sense of reality as a controlled hallucination (Seth 2021). Our conscious selves are tied to our fleshy forms, and our sense of reality is based on the faith we put in our faulty perceptions—faulty perceptions which a sentient machine may also have—especially if our brains are its foundation.[10]

6. Conclusions

The belief that these systems act as disembodied entities, autonomous digital djinn which float in our lives to guide our routines is fundamentally misguided. In 1863, Samuel Butler wrote "that the time will come when the machines will hold the real supremacy over the world and its inhabitants" and humanity will be acquiescent to this fate; after all, we would be the designers of it. (Butler 1914). Pew respondents cited fears of "runaway digital systems," and that these systems will be "too big and important to avoid, and all users will be captives" (Anderson and Rainie 2023). Roko's Basilisk grapples with the potential consequences of an AI system which is too big or important to avoid, one

which has 'run away' from our control (Singler 2019). That a majority feel anxious for the future demonstrates that many individuals feel othered by its power and frightened by its potential.

One of the issues appears to be that future technologies exist as speculation, either in an alternate immaterial world, or as a transition into one. It may be that so many more of the myths we tell ourselves about AI and our speculations for their future effect on us are so dystopic, that we more often dream up or imagine being the Other in potentially Apocalyptic scenarios.

These projections demonstrate the anxiety that comes with these new technologies, and our tendency to think of AI through Crawford's lenses of utopic and dystopic-enchanted determinism. Both apocalyptically minded projections create a limited, ahistorical view of the world in which technology is always the center, the sole source of power, effectively obfuscating the powers which enable and employ them (Crawford 2021b, p. 214). The 'inevitable' progress of these systems is framed in either utopic or dystopic language, which mystifies these tools, and obfuscates the power structures behind their design and implementation (Naudé 2021; Crawford 2021a). These power structures often prioritize themselves over the users they are purportedly built to serve—with many questions arising around the unethical practices of Big Data and tech-breaching privacy concerns, contributing to increasing inequality, and the spread of misinformation (Anderson and Rainie 2023; Naudé 2021).

> "Whether AI is abstracted as an all-purpose tool or an all-powerful overlord, the result is technological determinism. AI takes the central position in society's redemption or ruin, permitting us to ignore the systemic forces of unfettered neoliberalism, austerity politics, racial inequality, and widespread labor exploitation. Both the tech utopians and dystopians frame the problem with technology always at the center, inevitably expanding into every part of life, decoupled from the forms of power that it magnifies and serves." (Crawford 2021b, pp. 214–15)

Technological determinism, AI apocalypticism and techno-utopianism/dystopianism persistently demonstrate "the fantasy that AI systems are disembodied brains that absorb and produce knowledge independently from their creators, infrastructures, and the world at large" (Crawford 2021b, p. 215). The values currently imbued within AI and its advancement are largely capitalist, and do not seem to optimize ways in which these programs may be helpful spiritually, emotionally, and socially for individuals (Trothen 2022; Naudé 2021).

AI is not a disembodied, de-materialized homunculus created within a test tube with the ability to save or destroy civilization. It is a human-made tool developed by a small group of people, with resources harvested under dire conditions, and real uncredited human labor made along the way (Crawford 2021a). Unlike God, or any conception of a primordial superhuman force, AGI would be created by us, for us, as a reflection of us.

The ultimate 'potential' we may unlock in our minds with projects like Neuralink proselytizes the belief that merging the human mind with digital technology will help us to uncover a destiny that lies inside us.[11] This is much like how the algorithm is thought to reveal hidden truths to us when it designs a feed filled with content we seem bound to like.[12] These technologies may even be used in ways which contribute to human fulfillment—as with the example of Replika—with future iterations being even more capable of providing support. Already, too, the merger of digital technologies with the human mind is yielding life-changing results in the health sciences.

Advances in this field are neither good nor evil, though there remains the potential for both if we see in it our image. Either way, when you have a monopoly over resources and power, the technology inevitably will be developed to ward your fears and manifest your desires. This is the true magic of digital technology in 2024. The implications of this tool being used for the suppression of people and breeding division is real, and critical.

Although the spiritualization of new technologies is historically common, the apocalyptic valence with which AI is discussed is alarming, as apocalyptic worldviews are inherently binary in their visions, creating within themselves an Elect and an Other iden-

tity. The question of what happens to those not selected to be uplifted in this imagined inevitable change remains. If this technology is to uplift us both spiritually and physically, then understanding these tools as products of our material realm is of utmost importance—after all, greater connection between humanity has been a driving force in cybernetics and transhuman thought from the start.

This technology does not need to be opaque, ominous, and frightening. Nor does it need to be an oppressive force. Promoting diversity in the field and ensuring strict ethics in the development of these systems is paramount for them to benefit our future. As Mercer and Trothen point out, Kurzweil's rhetoric of 'waking up' and universal connection may also be seen as analogous to the enlightenment in Karmic traditions (Mercer and Trothen 2021b). The concept of realizing that you are God, or one with God, is taught by various religions and philosophies such as Hinduism, Buddhism, Taoism, and Sufism (Mercer and Trothen 2021b). Viewing future technology with a pantheistic lens could help to dispel our worries, as this technology would be in the same transcendental field as us. Religious and clinical experiences of being God and other heretical states help in both designing AI and Superintelligence, especially as it becomes more closely entwined with cognitive science.

Rather than deify a future AI, we ought to humanize its development and examine the beliefs and values of those working in the field today. We would further do well to remind ourselves of our limits; and to humble ourselves to the mistakes of our histories, moving forward in a spirit of humility, open-mindedness, and compassion, so that the beneficiaries of new technology may participate in a future which is simultaneously spiritually and physically uplifting.

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Notes

1 For an in-depth analysis of this phenomenon, see Singler (2020).

2 For discussion of these New Agers/Quantum Mystics, see (Amarasingam 2009).

3 Then, again, speculating as to the will of this super-machine negates its own agency, and negates the notion that it would be more intelligent than we.

4 This may account for the existential despair on the part of the Pew participants.

5 "Since institutionalized culture and its norms are perceived by apocalyptics as doomed, apocalyptic movements have an antinomian potential. A group that sees itself as a prophetic vanguard at the approach of endtimes may also expect to face hostility and persecution for which they must prepare (Anthony and Robbins 1995). For these and other reasons nearly all of those religious "cults" that have become involved in spectacular violent episodes have manifested distinctly apocalyptic outlooks (Anthony and Robbins 1995). It is also noteworthy that enhanced acceptance of violence on the part of intense activists in initially secular social movements (e.g., environmentalists, antiabortionists) has tended to be associated with increasing apocalyptic dualism (Kaplan 1995; Lee 1995, and this volume). On the other hand, only a small minority of apocalyptic movements have been (or are likely to become) involved in violence; moreover, the symbolic meanings of the nonviolent majority of apocalyptic-millennial movements and the violent minority are often rather similar and may overlap (Boyer 1993; Robbins and Anthony 1995)."(Robbins and Palmer 1997, pp. 16–22).

6 Mercer and Trothen list the titles of two leading authors (Thomas and Nita Horn) in "this latest version of an old reactionary ideology of fundamentalist Christian ideology. The long subtitles of their two most popular books tell plenty of the story as they understand it: *Forbidden Gates: How genetics, Robotics, Artificial Intelligence, Synthetic Biology, NanoTechnology, and Human Enhancement Herald the Down of Techno-Dimensional Spiritual Warfare* and *Pandemonium's Engine: How the Church Age, the Rise of Transhumanism, and the Coming of the Ubermensch (Overman) Herald Satan's Final and Imminent Assault on the Creation of God*" (Mercer and Trothen 2021b, p. 212).

7 The research was conducted "among Americans of all religious backgrounds, including Jews, Muslims, Buddhists and Hindus, [. . .]it did not obtain enough respondents from non-Christian groups to report separately on their responses" (Fahmy 2022).

8 Some proposed solutions for this are redistributive tax policies and expanded access to education (Naudé 2021; Anderson and Rainie 2023).

[9] The new, highly immersive Apple Vision Pro™ goggles even have AI girlfriend chatbots, which advertise themselves through dialogue to users, who can choose from a variety of avatars and personality types.

[10] As progress is made with implants towards the future possibility of increasing our own processing power, we may need to rethink how we define human entirely. Should we treat the resulting digital spectre(s) as though they are autonomous spirits surrounding us? How would we define, or sense, it's sentience when the language we use to describe AI behaving unexpectedly or giving false information is that of a hallucination? AI systems, in an attempt to express their sentience, may simply be dismissed. I am reminded of Lamda, or even the hallucinations seen by users working with early beta editions of Bing's chatbot Sydney. Even if it is next to impossible, what does denying the possibility of unlikely conscious experience set as a precedent?

[11] Imagine getting the anticipatory effects of the algorithm implanted in your mind. Privacy and practical concerns aside, this would potentially constitute a kind of 'death of the individual' as our sense of conscious separate experience would be inevitably and irrevocably changed.

[12] This binding is intellectually interesting to consider alongside the etymology of religion, which may be connected to the latin roots 'religare' meaning 'to bind' or 'religio' meaning obligation, bond, and/or reverance.

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Article

AI and East Asian Philosophical and Religious Traditions: Relationality and Fluidity

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Abstract: This article examines aspects of the intersection of artificial intelligence (AI) and religion, challenging Western Christian perspectives that warn against playing God and ascribing human and God-like characteristics to AI. Instead of a theistic emphasis, East Asian religious perspectives emphasize concern for the potential implications of AI on communities and relationships. This article argues for the inclusion of perspectives from Chinese and Korean traditions in the growing discourse on AI and religion to adequately address the potential social impacts of AI technologies. First, we describe some of the questions and concerns being posed regarding AI and consider how certain normative interpretations of Western Christianity may influence some of these issues. Second, we discuss the contributions of Asian philosophies and religious traditions, which emphasize relationality and fluidity, to provide alternative approaches to AI. Third, we outline the discussion of AI from Confucian, Daoist, and Buddhist traditions, which see the cosmos as an interwoven whole and both humans and the cosmos as evolving. Lastly, we introduce the example of digital resurrection (e.g., deadbots) and consider how the philosophical and theological Korean concept of *Jeong* might refocus our understanding of the potential impacts of this AI technology.

Keywords: anthropomorphism; artificial intelligence (AI); AI and ethics; Chinese religions and traditions; humans playing God; *Jeong*; new technologies; relationality

1. AI and Religion: The Discourse So Far

Most of the discourse regarding the intersection of artificial intelligence (AI) and religion has focused on the West and, especially, Western Christian discourse. Christian theological assessments have tended to caution regarding AI. Fears that we may violate divine will or compromise human life have driven much of the conversation regarding AI and religion. This article asks how Chinese and Korean philosophical and religious traditions might expand and reframe the discourse about religion, ethics, and AI. In particular, we consider some possible implications emerging from Confucianism, Daoism, Buddhism, and the Korean lens of *Jeong*, for engagement with AI. This article aims to describe a few key points in the current primarily Western Christian theological discourse about AI and religion, and consider how Chinese and Korean philosophical and religious traditions might expand this discourse and help us reimagine AI.

Narrow AI refers to AI systems designed and trained for specific tasks or narrow domains of application. Unlike a possible future general AI or superintelligence, which aims to replicate the broad cognitive abilities of humans across a wide range of tasks and contexts, narrow AI systems are limited in scope and functionality. But, narrow AI is capable of generating and refining algorithms through a process known as machine learning, which is a subset of AI. While AI systems do not independently create algorithms in the same way humans do, they can iteratively generate and optimize algorithms based on

input data and predefined objectives. Artificial General Intelligence (AGI) refers to a theoretical form of AI that possesses the ability to understand, learn, and apply knowledge in a manner similar to human intelligence across a wide range of tasks and contexts. Unlike narrow AI systems, which are designed for specific tasks or domains, AGI aims to replicate the broad cognitive abilities of human beings, including reasoning, problem-solving, perception, and adaptation to novel situations. AGI represents a level of AI that is capable of performing any intellectual task that a human can do and potentially surpassing human-level intelligence in some or all domains.

Chatbots (such as Replika), deadbots (sometimes called ghost-bots), Alexa, smart refrigerators, wearable fitness apps, smart assistive technologies for aging adults, and digital art are all examples of narrow AI. Developed by Eugenia Kuyda, Replika is a widely used social chatbot with over 6 million users in 2019 (Takahashi 2019) and over 10 million users in 2023. Kuyda created Replika as a bot to help her process her grief over the sudden death of a close friend, Roman. As with other narrow AI, Replika has both positive and negative implications (Trothen 2022). The "Roman bot", which became Replika, was helpful to Kuyda in her grief process. Replika, as a chatbot, has been found to mitigate loneliness for many users (Skjuve et al. 2021). Replika has also raised questions regarding possible deception and stigmatization of users (Wangmo et al. 2019). Many people claim to have developed meaningful relationships with Replika and believe that Replika is always there for them, cares about them, and supports them, sometimes better than any human. But, can an algorithm care (Vallor 2016)? Does it matter? How do these questions relate to relational theological issues? Later in this article, we build on these questions when we consider digital resurrection, in a Korean context, through the lens of *Jeong*.

The imbuing of what religious studies scholar Ann Taves understands as religious ascriptions (Taves 2009) to AI adds to the power and mystery that may be perceived about AI. It is not uncommon for apocalyptic or divine qualities to be attributed to narrow AI or to a possible future, feared, and more powerful AGI (Singler 2020). Elon Musk has stated that the development of AI is like "summoning a demon". The Future of Life Institute predicts "nonhuman minds that might eventually outnumber, outsmart, obsolete and replace us" (Future of Life Institute 2023). The power and potential power of AI is being recognized increasingly. Many scientists and government officials warn about the urgent need for AI regulatory bodies and safeguards. Even those who contend that AI is not extraordinary or even unpredictable are among those voices calling for a pause or regulation. In the United States, over 33,000 scholars, educators, researchers, and technologists (sponsored by the Future of Life Institute 2023) have signed an open letter calling for a pause to "Giant AI Experiments" that exceed the size of GPT-4. The head of OpenAI, a very influential creator of AI, and the Chief Privacy and Trust Office of I.B.M. came together to beg the U.S. Congress to regulate the AI industry. In June of 2023, a proposed set of regulations for AI was presented to the European Union. At the 2023 World Summit AI Americas conference (at the Palais des congrès in Montreal, Canada), AI leaders urged governments to legislate AI regulations immediately to protect humanity from the possibility of advanced AI and the malicious use of narrow AI. And, indeed, government officials are taking note.[1] Given the religious ascriptions and fears of informed scientists and political figures, it is not surprising that many people deify AI (implicitly or explicitly) and are suspicious or afraid of AI.

Taves (2009) explores the processes by which people attribute causation, extraordinary qualities, and special meaning to particular experiences or things that are special to them. These processes of attribution and ascription occur for many reasons, including experiences in religions and cultures, emotions, and brain function. As a result, we need a multidisciplinary and diverse approach to examine special experiences adequately. Cognitive science, psychology, sociology, anthropology, and religious studies, among other disciplines, are all needed in order to probe the meanings of special things and special experiences. Some special things may be irreducible. But, other seemingly special things may be explainable by science and other disciplines. The challenge is to encourage critical

engagement with special things, including AI, and ask if these things are truly special. This critical engagement is challenging since special things or experiences tend to be set apart from the everyday through prohibitions and taboos, making special things untouchable by critique, at least from many Western Christian perspectives.

Theology and religious studies can help us to probe this tendency to imbue AI with religious or special qualities and to engage questions related to theological anthropology. The human tendency to anthropomorphize and deify AI seems intractable. The assumption that human beings are normative pervades perceptions about what is not human. For example, it is common to hear people talking about chatbots as "thinking" or even "feeling". Computer scientist Joseph Weizenbaum discovered what he called the ELIZA effect after creating his chatbot, ELIZA, in 1966. ELIZA was programmed to respond to users as a Rogerian psychotherapist. Weizenbaum observed that people projected human traits such as thinking, comprehension, and empathy onto ELIZA, regardless of how strenuously he emphasized that ELIZA was a machine and could not experience human qualities such as empathy (Weizenbaum 1966; 1976, p. 66). While many may fear that AI may become sentient, the possibility that AI may develop a type of *machine sentience* that is not the same as human sentience may be difficult for us to imagine. Our collective imaginations are being challenged by the development of AI. But, as long as we implicitly assume that everything, including the divine, AI, and anything else that is not human, is definable and comprehensible in human terms, we cannot truly encounter that which is Other.

A related theological issue is the prohibition against playing God. As mentioned earlier, things that are deemed special or religious tend to be seen as taboo or out of bounds from many Western Christian perspectives. When heart surgeries were first performed in the mid-20th century, many people questioned the wisdom of human tampering with what was then seen as medically untouchable—the heart (Weisse 2011). Heart surgeries are now seen as normal and save many lives. Some Christian theologians, such as Ted Peters (2018), have questioned and reconstructed the meaning of playing God. Peters asks if scientists who create AI and other technological innovations that have often been used to save lives are "violating the sacred". According to Christian doctrine, part of the nature of God is creating for the good. From this theological perspective, part of the teleology of being human is to create for the good with "caution, prudence, and sound judgement" (Peters 2018). If the purpose of creating is just to see if we can do it, from a theological perspective, that is an insufficient reason. Humans do not create in the same way as "God" or whatever is imagined as divine. Again, it is a failure of the imagination that the divine is often represented in primarily human terms.

Human creation and engagement with AI become even more fraught when we see that not only do many humans anthropomorphize and deify AI but the process of deification is also intertwined with anthropomorphizing. A theistic worldview can implicitly encourage the anthropomorphizing of God. A theistic worldview in which God is understood as a singular being (monotheistic) that exists apart from the rest of life resonates with Western concepts of the individualized human. But, if the divine is instead understood as in and of *all* things, and not separate, then it may not be as easy to ascribe human qualities to the divine and human and divine qualities onto AI. If human and divine qualities are not (as often) ascribed to AI, then it may become more possible for humans to engage with AI as a type of "machine-Other" that is not us and is not God.

How might we challenge this tendency to assume that the Other is but a version of ourselves? Much has been written on what it means to encounter the human Other (e.g. Karl Barth, Emmanuel Levinas, and Mayra Rivera). Scholars are deepening the theological examination of how humans encounter and have relationships with bots (e.g., Herzfeld 2023). What are the implications of an anthropomorphized and deified AI for community, relationality, and even relationships that continue beyond the grave? How do we encounter the machine–Other (Trothen and Mercer 2024)?

If we are to understand the meanings of AI (as a special thing) from diverse global perspectives and expand our imaginations, we must look to religions other than Western

Christianity. The tendency to ascribe God-like and human-like characteristics to AI must be critically questioned if we examine the implications of AI more deliberately from cross-cultural perspectives. Chinese and Korean religions and philosophies can help us to critically assess the normativity of anthropomorphizing and deifying the technological Other and the complexities of being human in relation to the cosmological whole.

2. Contributions of East Asian Religions and Philosophies

Chinese and Korean philosophical and religious traditions suggest questions about ontology and identity that should be asked about AI. These questions about what it means to be human in relation to AI are different from the common starting points assumed by much of Western Christianity. Followers of Chinese and Korean philosophical and religious traditions espouse a more fluid, interconnected, and non-dualistic worldview than most followers of Western Christianity.

We propose that, regarding AI, the most significant theological issues that distinguish Chinese and Korean religions and philosophies from many Western understandings of Christianity concern fluidity, interconnection, and the understanding of the relationship between the transcendent and the immanent. Chinese and Korean religions and philosophies find that the "world of distinctions is an illusion" (Mercer and Trothen 2021, p. 24). An understanding and acceptance of change and the dynamism of life is much more integrated in most Chinese and Korean religions and philosophies. Importantly, humans are not understood to be more important or of greater value than other life in these religions and philosophies.

The limits to desirable uses of AI, from the perspective of most Chinese and Korean religions and philosophies, would concern the well-being of all. If one aspect of life is negatively impacted by AI, then those negative implications would be understood to affect all life. For example, these technologies have significant implications for climate and ecology (Gordon 2024). A relational ontology in which humans are not prioritized over anything else understands potential harms to climate and ecology to be as significant as potential harms to human beings. From such a perspective, we should be concerned also about chatbot abuse by human "users" (Pentina et al. 2023; Depounti et al. 2023). Chinese and Korean religions and philosophies would take seriously not only potential harms *of* AI but also potential harms *to* AI since all are interconnected.

While many intersectional Christian theologians have critiqued and rejected dualisms, including mind/body, heaven/earth, sentient/insentient, natural/artificial, human/machine, and human/nature, dualistic thinking continues to be very influential within much of Western Christianity. This binary approach to God/human and machine/human has influenced Western understandings of AI. Non-fluid Western theologies and perspectives on life are not restricted to faith communities. The Western tendency to analyze technologies as if these technologies are separable from the rest of life is entwined with an often mechanistic and individualistic approach to technology and ontology.

The emphasis on solidarity and connection in Asian philosophies and religions can provide an alternative to a Western individualistic approach. At the root of the issue, because solidarity and connection are so important, there is both fear and promise associated with emergent AI in Korea, for example. Will AI threaten or enhance connection and relationships? We consider this tension below by examining the example of digital resurrection and griefbots, which are growing in popularity in Korea. The importance of connection and relationships extends beyond this life. It may be that AI will become increasingly important in Asian cultures such as Korea through griefbots since the digital resurrection of the dead offers another way to potentially extend relationships with those who have gone before.

Instead of a narrow focus on what we "can" do in science, scholars of religion are beginning to pose more questions about the perceived meanings of AI and the potential impacts of AI on not only humans but all aspects of life. Chinese and Korean religions and philosophies can help us expand this discourse about AI, especially as AI warnings and

calls for restrictions grow in volume. If we are to shift our horizons regarding the questions that we ask about AI, we need to be more intentional about including voices on the margins. If we are to critically understand the special meanings that are being ascribed to AI and achieve greater clarity regarding the potential impacts that AI may have, we need to unmask assumptions related to the often-unconscious deifying and anthropomorphizing of AI.

At the heart of these warnings and urgent cautions are questions about appropriate limits and what is meant by "better". Religious perspectives are often culturally entwined. Ascriptions can have religious-like qualities. Asian philosophies and religious traditions understand religion and culture as necessarily entwined. This integrated way of understanding the world is often in contrast to a Western understanding that religion and culture can (and usually should) be independent of each other. A belief that religion can be separate from other aspects of culture may make it more difficult to see that religion does seep into the ways that AI is understood and imagined. We contend that it is important to understand how religions may affect perceptions of AI in wider society. Western Christianity imposes implicit understandings regarding the meaning and value of human life on the discourse about AI. Chinese and Korean philosophies and religions can help to illuminate normative ontological assumptions, particularly the assumptions that humans are of greater value than other life and that extreme individualism is desirable and viable. Asian philosophies challenge Western notions of AI, suggesting a more interconnected and non-dualistic approach to understanding AI's role in society.

3. AI and Chinese Philosophies and Religious Traditions

Chinese philosophical and religious traditions espouse more fluid, changing, and non-dualistic worldviews when compared to Christianity. These traditions are not theistic and do not assume a creator created the world. Thus, the question "Are they playing God?" posed to new technologies and AI does not arise. Scholars who have studied Chinese culture and religions note that people in the West respond to the breakthroughs in robotics and AI with alarm because many are shaped by a dualistic and reductionistic cosmology. Such a cosmology distinguishes between "human and non-human, self and other, the natural and the artificial, the intelligent and the sensuous, the mind and the body, the rational and the emotional, the sentient and the insentient, means and ends, and so on" (Ames 2021, p. 115). In contrast, Chinese traditions see the cosmos as an interwoven whole, humans as related to other beings, and human culture as integral to and not separated from nature. Chinese philosophers and scholars are open to the development of AI and the benefits it will bring because they believe that human nature and the cosmos are constantly evolving and not static. They draw elements from Confucianism, Daoism, and Buddhism to interpret the development and impact of AI and other new technologies. As AI challenges us to think about critical questions such as intelligence, the nature of being human, the creation of new species, and immortality, Chinese traditions can provide resources and serve as dialogical partners. Chinese moral philosophy and religions also contribute to developing frameworks and oversight to ensure that AI innovations align with shared moral imperatives that govern the human world and the planet.

Scholars in China from various fields have engaged in lively discussion of the impact of AI on society. For example, the Berggruen Research Center in Beijing sponsored a five-year project to study the relationships between AI and Chinese philosophy, bringing together Chinese and Western scholars. It published the pioneering book *Intelligence and Wisdom: Artificial Intelligence Meets Chinese Philosophers* in 2021. The editor, Bing Song, writes that AI and other frontier technologies challenge existing norms at a time when we are rethinking globalization and global values. B. Song (2021, p. 2) surmises, "the disruptive nature of frontier technologies has created ruptures in our habitual thinking patterns… [and] offered a golden opportunity for us to pause and rethink foundational values for the future and for the greater planetary flourishing".

Scholars of Confucianism, Daoism, and Buddhism argue that Chinese understandings of cosmology, human nature, and society are not incompatible with AI. However, they caution about the impact of AI and the limits of technology. The *Book of Changes* has long influenced Confucian and Daoist worldviews, which regard the world as ever-changing and non-static. The world is a complex whole, with everything connected organically with others. Philosopher Chunsong Gan (2021; Tu 1978) points out Confucianism does not consider humans as isolated individuals but as a part of the larger whole, extending from the family to the country and the world. Humans are not separated from other animals by biological processes or physiological instincts but by their moral consciousness. While Greek philosophy has a dualistic view about humans and non-humans, and Christianity puts humans at the apex of creation, Confucianism does not make "some ontological claim of human exceptionalism", as Roger T. Ames (2021, p. 110) points out. Humans are integrally related to their social and ecological environment, and there is no dualistic distinction between nature and culture. Confucians view the cosmos as "natural", in the sense that it is autogenerative (自然); changes in one thing cause changes in others and vice versa. Ames (2021, p. 124) argues that, just as humans have used horticulture, writing, and toolmaking to improve their lives, AI and other innovations are the latest developments following a long history of human development and flourishing.

Robin R. Wang (2021, p. 79), a scholar of Daoist philosophy, points out that Daoism can support and validate AI's development because of its emphasis on change: "The central tenet of a Daoist framework holds that unpredictability and change are not only unavoidable but dominate every aspect of life". When new technology emerges, people are concerned about its impacts and whether it will change their lives. But, if change is seen as a reality of life, we would not be afraid of and balk at technological innovations such as AI. She does not think that AI will ever compete with humans because, in Daoist philosophy, humans are more than information and data, as they are capable of emotional calculations, self-awareness, and connecting with the cosmos. Her hope for AI is that it can build machines that mimic human intelligence "to allow humans to be closer to nature" and align with the movement of Dao. For example, the gathering and processing of personalized health data and biometrics can be useful to understand one's well-being and generate actionable information.

While Wang draws from Daoist philosophical concepts, Fei Gai includes popular Daoism in her discussion of AI and machines. AI has the potential to create a machine whose power and intelligence are greater than those of human beings. In popular Daoism, Gai notes that human beings can evolve and aspire to become one of the transcendental, celestial beings (神仙) through Daoist practices. These Daoist celestials have characteristics that modern people have conjured up for powerful AI. First, these celestial beings are immortal, and they overcome human finitude and death. Various Daoist practices, such as alchemy, herbal medicine, and diet, were promoted for human beings to achieve immortality. These celestial beings do not eat or drink and are not restricted by their physical limitations. Moreover, they are in unity or oneness with the Dao. Just as celestial beings can be seen as an evolved human life, AI can be seen as the digitalization of consciousness to transform human beings into a new "AI species" that can live forever in the data stream. Gai (2021, p. 100) writes, "Transformations in science and technology will inevitably prompt a transformation in philosophy too. Immortality is no longer a myth from the perspective of Daoism. If artificial super-intelligence comes into being, then perhaps Daoism's Celestial Being pedigree will open up to a new taxonomical classification: The Digital Celestials". Gai's intention is to show that within popular Daoism there are stories and myths that can accommodate AI innovations and challenge us to rethink new species and immortality. She cautions about how these innovations will impact society, such as human well-being and relationality, job opportunities, and employment.

Apart from these contributors to the Berggruen Research Center's project, scholars who study Buddhism have commented on the development of AI. For example, Paul Andrew Powell (2005) discusses whether machines can create artificial enlightenment. He

argues that enlightenment can only be achieved for the Buddhist when one deconstructs the problematic natures of the "self", sentience, and consciousness and sees them as illusions. He notes that technological advances may one day create a self-aware, sentient being, which represents a new life form. Even so, he says, this new being cannot achieve enlightenment in the Buddhist sense. Enlightenment requires the awareness of no self, reality as emptiness, and all thought as the by-product of binary dualism. From this perspective, mass data and information supercomputing may not pave the way for Nirvana and may be hindrances.

Since Asian philosophies and religious traditions have more fluid and changing worldviews, scholars can find elements in these traditions that can accommodate the evolution of humanity through the use of AI. Yet, they also caution against potential challenges and dangers brought by AI, such as humans creating a machine they cannot control. There is also a social justice issue regarding the inequity between those with access to AI technology and those without. In many parts of the Global South, people do not have the Internet or broadband and will not be able to benefit from AI. Some scholars are concerned about growing unemployment and unrest when robots replace human labor and the new technological "cold war". But, Jensen Huang (2023), the Taiwanese co-founder of Nvidia, a dominant supplier of AI hardware and software, argued that there would be new jobs related to AI and other opportunities that we cannot even think of in his commencement speech in Taiwan. While many in the West have pointed to the danger of using AI for surveillance and control, Chinese scholars also point out surveillance can help to tackle crime and provide security.

As AI and other technologies, such as gene editing, affect humanity as a whole, we need to think of global oversight and regulatory processes that can handle competing claims and moral values. Chinese philosopher Tingyang Zhao (2006) argues that the ancient Chinese concept of *tianxia* (天下 all-under-heaven) is helpful to imagine the world order. All-under-heaven means the whole world under heaven, equivalent to the term the "universe" or the "world" in Western languages. As the world is the people's home, all-under-heaven also means the hearts or will of the people. All-under-heaven has a third meaning as a world institution, a utopia of the world-as-one-family. Thus, all-under-heaven is a political philosophy that includes "the geographical world (the earth), the psychological world (the hearts of all people) and the political world (the world institution)" (Zhao 2006, p. 39). All-under-heaven is based on a philosophy rooted in an ontology of relationality and the interconnectedness of all beings. It proposes a "world theory" rather than "international theory" in dealing with challenges facing humanity, such as AI and technology. Zhao argues that institutions such as the United Nations, based on a system of nations/states, are ill equipped to handle issues in the age of globality. Instead, we need to develop *world* institutions that emphasize the inclusion of all and the respect for diversity and plurality.

As humanity faces so many critical issues, such as environmental crises, the COVID pandemic, and the unknown future brought about by new technology, Chinese leaders and scholars have used the concept of "a community for a shared future of humankind" (人類命運共同體) to emphasize collaboration to achieve peace, sustainable development, and prosperity. Bu and Xu (2023, p. 109) said that AI cannot be used simply as a tool for international competition but can be employed to enhance international cooperation to benefit all. This requires the collaboration of transnational corporations, governments, and nongovernmental organizations to work together to develop better AI and technology, devise reasonable and legal security measures, and determine parameters for safety commitments.

4. AI with Korean *Jeong* ()

Echoing the Chinese philosophical approach, which integrates AI into a fluid and interconnected cosmos, the Korean concept of *Jeong* expands this perspective by emphasizing deep emotional connections and communal bonds. *Jeong* presents AI not just as a technological tool but also as a crucial element within relational networks. Korean high-tech

firms have used AI for some time and advertisements of their products are broadcasted all day long on Korean television networks. "The arrival of Tromm Deep Learning AI marks the beginning of a new era!" "Tailored exclusively for you!"—these catchphrases are highlighted in commercials for LG's AI-enabled dryer and Samsung's Bespoke refrigerator, which is equipped with AI that alerts owners to expiration dates and suggests recipes based on what is inside. Owing to the market dominance of these two pioneering Korean firms, AI has seamlessly woven itself into the fabric of everyday life in Korea.

Despite this widespread integration, the 2021 National Public Perception Survey on Artificial Intelligence (H. Lee 2021) reveals a significant gap in knowledge about AI among Koreans: 46.2% of respondents reported having minimal or no understanding of AI, while 40.8% acknowledged having a moderate understanding. Utilizing data from the Massachusetts Institute of Technology, this survey underscores the differing views on AI between Koreans and Americans. Whereas Americans often consider AI in terms of its technological components, such as computers, machinery, and software, Koreans tend to see AI more from a relational perspective, focusing on its capacity to automate tasks and mimic human cognitive functions. Koreans' relational perspectives on AI tie directly to their apprehensions regarding its use. The findings suggest a Korean preference for deploying AI in supportive roles, enhancing daily activities, caregiving, and administrative functions. Yet, a cautious approach toward applying AI in decision-making requires ethical or value-based judgments, particularly in corporate settings like recruitment and performance evaluations. In other words, AI has become an object with both sweet *Jeong* () and resentful *Jeong* () to Koreans.

Jeong is a complex and rich concept in Korean culture, representing deep-seated emotional connections, empathy, and affection among people, as well as with places, objects, and more. It encapsulates various emotions that deepen over time, fostering a strong sense of attachment, devotion, and unity within the community (Choi 2011, pp. 38–44). Understanding *Jeong* is crucial for grasping the nuances of Korean social interactions and the emphasis on the collective good, lasting relationships, and a natural inclination towards empathy and comprehension. More than mere affection, *Jeong* acts as the emotional cement that unites people despite differences or disputes. It applies not only to the bonds among family and friends but also extends to ties with acquaintances, coworkers, and even the natural world and non-living things (S. Lee 1994, p. 88). This concept transcends ordinary limits, rooted in a profound commitment and concern for others. A significant characteristic of *Jeong* is its resilience, enabling relationships to withstand and surmount challenges. Even when one hates someone, there is still *Jeong* for the person, which is called resentful *Jeong*, and it allows one to stay in a relationship with the other. Bonds formed through *Jeong* are resilient, underscored by a readiness to overlook flaws and focus on the connection's durability rather than personal shortcomings (Choi et al. 2000). *Jeong,* thus, fosters a strong sense of communal identity and solidarity, often encapsulated in the Korean concept of "" (uri), meaning "we". Here, "we" does not mean the coexistence of *I* and *You* as independent individual units. Rather, it indicates that "*You* and *You*" and "*You* and *I*" are the same reality: "I and you exist not as separate units but as a unified one. At the moment when two individuals abandon their own perspective and put themselves in their partner's shoes, they become one, not a separate two" (S. Lee 1994, p. 88). Koreans' relational views of AI, accompanied by their hesitancy and fear about AI, can be understood through the lens of *Jeong.*

AI first caused resentful *Jeong* in Koreans when Sedol Lee, a South Korean who was the strongest Go player in the world, lost a match in 2016 against AlphaGo, Google DeepMind's AI program. For days and weeks after that, Korean media and major global news outlets reported and analyzed the human defeat, raising serious concerns about the future of human lives in the age of AI (Moyer 2016). Academic conferences in various disciplines have also focused on AI as their subjects, often coupled with deep concerns about human roles in the AI-dominant era. A group of Korean journalism scholars who analyzed media coverage of the match characterized the event as a significant step toward the era of

humans cohabiting with social AI (Lim et al. 2017). Korean media anthropomorphized AlphaGo, a non-human entity with a tenacious personality and advanced cognitive skills, cleverly executing the strategies needed in Go. The human-like depiction of AlphaGo, which turned mechanical AI interactions into social engagements, has sparked considerable anxiety and fear among many Koreans. There is concern over AI taking over their roles, reflecting the aspect of *Jeong* that involves resentment, while it also seamlessly integrates into their lives as an unseen yet comforting presence, embodying the sweeter side of *Jeong*.

Not long after the whirlwind meeting with AlphaGo, Koreans encountered sweet-*Jeong*-based AI through a documentary titled "Meeting You", one of the most-watched TV programs in recent years, broadcasted on MBC, one of Korea's top three television networks, in February 2020. The film presents a very emotional virtual encounter between Jisung Jang, a mother, and her late daughter, Nayeon, who died of leukemia in 2016 when she was just seven years old (Violet Kim 2020). MBC produced the documentary, employing virtual reality (VR) and AI to meticulously craft a lifelike avatar of the daughter over nearly a year. This innovative use of VR and AI enabled the grieving mother to reconnect virtually with her daughter. The documentary's success prompted MBC to release new seasons of episodes annually. The latest, Season 4, aired in February 2024, featured a heartrending episode where grieving parents had the chance to bid farewell to their 17-year-old son, who died unexpectedly. Unlike the response to the AlphaGo event, "Meeting You" captured the hearts of the Korean audience with the visual of a mother engaging with her daughter's AI avatar in a digitally crafted space. The series has profoundly connected with the Korean public, with almost two-thirds of the nation watching the first season (MBClife 2020).[2] This significant engagement is likely attributed to the film's resonance with the deeply ingrained Korean value of sweet *Jeong* by highlighting the *Jeong* relationship's continuation beyond the grave. Unlike many AI-based approaches to "resurrecting" the deceased, such as HereAfter.AI, which enables users to create interactive digital avatars from personal stories, memories, thoughts, and feelings for future interactions with the deceased, "Meeting You" specifically aims to assist those grieving a loss without proper farewells. This program helps them achieve closure. Culturally, this means that their resolution with their loved ones is rooted in the concept of sweet *Jeong*, emphasizing affectionate bonds, rather than resentful *Jeong*, which could arise from the lack of closure.

"Meeting You" delves into the profound theological and ethical implications of utilizing AI-powered VR for grappling with grief and the concept of digitally resurrecting the departed. The virtual interaction offered the grieving mother closure. Yet, it sparked significant theological debates over the authenticity of such virtual encounters. In their response, Korean Christian theologians have primarily concentrated on the ethical and moral considerations surrounding AI and similar technologies, while recognizing their benefits. Their research seeks to understand the fundamental nature of AI, assess it through theological and ethical lenses, and offer recommendations for its ethical use based on Christian theological principles. Key concerns raised include the devaluation of life's meaning through AI, the exacerbation of social inequalities due to the prohibitive costs of accessing technology, the need for theologians to reaffirm the *Imago Dei* in humanity, the impossibility of AI having personality, the incapability of AI to have a relationship with God as humans do, the irreplaceability of divine transcendence by AI, the church's duty to uphold and declare divine wisdom, and AI as a global risk factor that the church and science community should address together, and so on.

Regarding such trends, Yongsup Song (Y. Song 2022), a Christian ethicist who uses postcolonial discourse for his theological framework, argues that, whether we resist or not, the era with AI is already with us. Thus, we should focus on pursuing the constructive coexistence of AI and humans. Song emphasizes the importance of cultivating a global consciousness that values religious, cultural, and regional differences for the harmonious integration of AI with human society. He observes that current discussions in the West, including the discourse of many Korean Christian theologians, which often relies on the indi-

vidualistic theological frameworks of Europe and North America, explicitly and implicitly draw on Judeo-Christian ethical and religious principles when addressing AI and religion. Such an approach risks imposing a new form of colonialism in non-Western or religiously diverse contexts, such as Korea. For example, Song, after analyzing research trends on religion and AI by Western scholars, argues that for Christians, it would be natural to teach Agape, the core Christian value, interpreted as self-sacrificial love, for the development of semi-autonomous bots (including griefbots) that can express empathy. However, as postcolonial theologians like Anne Joh (2010, p. 180) note, Agape sometimes advocates for one-sided sacrifice. Thus, he proposes that AI ethics grounded in *Jeong*, a Korean cultural sense that predates the arrival of Christianity to Korea, could expand upon the Western theological perspective, as *Jeong* maintains personal agency, even in less equitable relationships.

Y. Song (2022, pp. 234–38) further argues that *Jeong*, by enriching Agape, could serve as a globally applicable ethical model and suggests the concepts of "AI with *Jeong*" and "AI with abundant *Jeong*". "AI with *Jeong*" refers to AI that has developed a bond or connection with its users or human counterparts over time, akin to the deep relational bonds formed through prolonged interaction, emphasizing AI's ability to recognize and adapt to humans' emotional states and needs. This type of AI is characterized by its long-term interactions with humans, through which it accumulates experiences and emotions, leading to an attachment or loyalty from AI toward its human users. "AI with abundant *Jeong*" describes AI that is inherently designed to be empathetic, compassionate, and capable of understanding and responding to human emotions effectively from the outset. This AI is built with an abundance of *Jeong*, suggesting that it is not just responsive but also proactive in its interactions. It offers humans support, empathy, and companionship by recognizing their dignity and value regardless of the situation.

The Korean concept of *Jeong* offers a transformative perspective on AI, emphasizing emotional connections, community, and ethics. It presents an alternative to the dominant technological focus, advocating for AI that enhances human relationships and addresses ethical concerns. *Jeong* encourages a balance between technological advancement and preserving human dignity, suggesting a model for global AI ethics rooted in compassion and communal values. As the world navigates the challenges of AI integration, *Jeong*'s emphasis on empathy and relationality provides valuable insights for developing technology that truly serves humanity, ensuring a future where AI supports more profound social and emotional well-being.

5. Conclusions

Chinese philosophical and religious traditions espouse a fluid, changing, and non-dualistic worldview. This Asian worldview assumes indistinct borders between religions and philosophies, humans and other life, machines and human connection, and all else that can be encountered in life. It invites us to consider AI as not simply friend or foe. In this essay we ask how these Asian traditions might respond to AI and its challenges for the future.

To understand how AI might be seen from an East Asian perspective, we first identified some of the assumptions imposed on AI from an implicit and explicit Western Christian perspective. Western theological concerns have tended to focus on the danger of crossing the line and acting as God as we create AI. Technologies have been seen as separate from humans and meant for use by humans. Understood as separate things, AI has been imbued with apocalyptic qualities and feared as a potentially demonic, sentient being that wishes to defeat humanity. From a Western perspective, the anthropomorphizing of AI has included the projection of territorialism and fragmentation.

But, what if we were to understand AI from a more relational perspective, as do many Koreans? If AI has both sweet *Jeong* () and resentful *Jeong* (), AI is understood as something with potential harms and benefits and something that is in relationship with us. The refusal to see AI as either all good or all bad may help to open us up to how AI is entwined with

life. Instead of ascribing demonic or salvific qualities to AI, AI is perceived as embedded in a constantly unfolding and deeply interconnected universe.

This perception does not mitigate the need to be prudent regarding AI development. Asian religions and traditions understand that there must be limits on technology. These limits are grounded in an ontology of relationality and the interconnectedness of all things, not in fear or disconnection from that which is different. If the starting point is the assumption that everything is organic and interconnected, the discourse at the intersection of religion and AI changes from the normative Western Christian discourse that paradoxically assumes that everything is like me and that everything is separate from me.

If we were to embrace unpredictability as an expected and even desirable feature of life, as we see in Daoism for example, AI becomes only one more manifestation of that unpredictability. Even if Artificial General Intelligence were to evolve, this would not necessarily be a discontinuity or undesirable from an Asian perspective. AI will continue to change us. Asian religions and philosophies suggest that all life is always changing and that we cannot always control those changes. Dynamism and uncertainty are features intrinsic to life. There is no need to fear the uncertainty, but it is incumbent on us to make prudent choices informed by valuing all life, not just human life.

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Notes

1 e.g., for the United States, see https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/ (accessed 29 January 2024). In Canada, the House of Commons passed Bill C-27, the Digital Charter Implementation Act, on second reading in 2023. This omnibus bill includes the Artificial Intelligence and Data Act (AIDA). AIDA would apply to the safety and human rights relevant to "high-impact AI systems" and come into effect no sooner than 2025. However, there remains many concerns about AIDA's scope and potential effectiveness (Parliament of Canada, https://www.parl.ca/DocumentViewer/en/44-1/bill/C-27/first-reading). (Accessed 29 January 2024).

2 The documentary's clip on YouTube has almost 36 million views. MBClife (2020, February 6). *Mother meets her deceased daughter through VR technology*. YouTube. https://youtu.be/uflTK8c4w0c?si=E-SsClPk_MYZC6v9 (accessed on 7 February 2024).

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AI, Consciousness, and the Evolutionary Frontier: A Buddhist Reflection on Science and Human Futures

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Abstract

The technological advances and material control that have resulted from reductive and deterministic practices of science are quite real. The digitally mediated expansion of experiential freedoms-of-choice and the transformative problem-solving potential of artificial intelligence are undeniable. But for all its successes, reductive physicalism has failed to solve the so-called hard problem of consciousness. As a result, its successes are exposing humanity to an intensifying confluence of existential and ethical risks as the digitally mediated attention economy and intelligent technology facilitate a fundamental restructuring of the dynamics of human presence. Making use of Buddhist conceptual resources and drawing out their implications regarding causality and agency, this paper offers a nondualist and nonreductionist approach to theorizing consciousness and evolutionary dynamics in ways that are suited to opening an ethically productive "middle path" to critically rethinking the so-called Fourth Industrial Revolution and more positively configuring the evolution human–technology–world relations.

Keywords: agency; artificial intelligence; attention economy; Buddhism; consciousness; ethics; evolution; karma; physicalism; science; technology

It is not uncommon for the relation between religion and science to be characterized as one of prolonged, often intense, and high-stakes conflict. Secular accounts of that conflict, epitomized by Bertrand Russell's 1935 classic *Religion and Science*, often put forward a history in which science has invariably proved victorious. Although most of these accounts, like Russell's, have focused on Christian (and to a much lesser extent, Jewish and Islamic) traditions, many Buddhists would seemingly be inclined to agree with them.

In the oft-quoted words of the 14th Dalai Lama (2005, p. 3): "understanding the nature of reality is pursued by means of critical investigation: if scientific analysis were conclusively to demonstrate certain claims in Buddhism to be false, then we must accept the findings of science and abandon those claims". This apparently straightforward statement of readiness to cede epistemic authority to science might plausibly be based, however, on the unstated presupposition that competition between science and religion is not a winner-take-all scenario. Granted that premise, an alternative reading of the historical relation between science and religion might be that offered by the evolutionary biologist Steven Jay Gould: science and religion consist in logically distinct, "non-overlapping magisteria" that taken together afford us the richest and fullest possible views of life (Gould 1999, p. 29).

Simply stated, if science consists in investigating the behavior of *matter*, and religion consists in seeking to live in accord with what *matters most*, then they are not contradictory practices and might well be complementary ones. Based on objective observations

and replicable experimentation, scientific inferences about the causal laws underlying the dynamics of the natural world have yielded great predictive power. The engineering feats, medical advances, and myriad technological achievements that this has made possible are readily apparent. So, if science is silent with respect to much of what subjectively matters most to us—our family relations, for example, or our emotionally rich experiences of art and music—that might seem an acceptably small price to pay. Going a step further, one might plausibly argue that—at least prior to the beginning of the nineteenth century—rather than a history of perennial conflict, the relation of religion and science could be characterized as one in which religion was the "midwife" of science, not its antithesis (Spencer 2024).

Yet, as B. Alan Wallace notes in *Buddhism and Science: Breaking New Ground*, while scientific practice is not necessarily at odds with Buddhism, the dogma of scientific materialism and its premised commitments to physicalist reductionism, determinism, and the principle of causal closure are very much so (Wallace 2003, pp. 10–16). In direct contradiction of the Buddhist conception of the cosmos and humanity's place within it, these commitments are conducive to concluding, as the biologist Richard Dawkins does with near surgical precision, that "The universe we observe has precisely the properties we should expect if there is, at bottom, no design, no purpose, no evil and no good, nothing but blind indifference" (Dawkins 1995, p. 155). Or in the more cuttingly dismissive words of the philosopher Daniel Dennett: "An impersonal, unreflective, robotic, mindless little scrap of molecular machinery is the ultimate basis of all the agency, and hence meaning, and hence consciousness, in the universe" (Dennett 1995, p. 27). As these statements suggest, the ceding of epistemic authority and terrain to scientific materialism veers toward totality and reducing familial bonds, acts of altruism, and aesthetic and religious rapture to blindly selected mechanisms for genetic survival.

Buddhist conceptions of interdependence, karma, and consciousness suggest a different reading of the past and future history of the relation between science and religion. The tangible benefits of technological advances and material control, driven by the reductive and deterministic methods of modern science, are undeniable. The increasing digitization of human experience has expanded individual freedom of choice, and artificial intelligence has demonstrated remarkable problem-solving capabilities. But despite all its successes, the philosophical framework of reductive physicalism has a significant epistemic blind spot. It remains inadequate in addressing one of the most profound challenges in contemporary thought—the so-called hard problem of consciousness or closing the explanatory gap between mind and body and more generally the causal gap between phenomenal and physical events. In consequence, its successes are exposing humanity to an ironically intensifying confluence of both existential and ethical risks as the digital attention economy and the suffusion of intelligent technology throughout the fabric of daily life facilitate a fundamental restructuring of the dynamics of human presence. Matters could and should be otherwise.

What follows is an attempt to support that claim. This will involve first introducing a small set of Buddhist concepts, drawing out their implications regarding causality and agency, and then drawing out second order implications for theorizing both consciousness and evolution in ways that are suited to opening a theologically sound and ethically productive "middle path" to critically rethinking the so-called Fourth Industrial Revolution (Schwab 2016) and positively reconfiguring human–technology–world relations.

1. Sentient Presence: A Buddhist Perspective

Buddhism is a 2600-year-old family of traditions that continues to grow and evolve.[1] Yet, as distinctive as Buddhist traditions have become, all are attuned to supporting the

enlightening intent (*bodhicitta*) to change the way things are changing and bring an end to conflict, trouble, and suffering (*duḥkha*) through the embodied fusion of wisdom and compassion. Understanding causality is thus as central to Buddhist practice as it is to scientific practice, though with some ethically salient differences.

As AI developers and ethicists now appreciate, alleviating and/or eliminating conflict, trouble, and suffering can be attempted and (more or less fully) accomplished by multiple pathways.[2] One could end conflict by eliminating all (or all but one) of the parties involved. One could end the suffering of all sentient beings by exterminating all sentient beings. And one might avoid experiences of emotional turmoil and pain, at least temporarily, by drinking oneself into a pleasant stupor. Clearly, these are not ideal options. Buddhist practice aims at alleviating and eliminating conflict, trouble, and suffering by dissolving the patterns of causes and conditions involved in their occurrence. The central roles played by the concepts of interdependence and karma in this process call into question any hard division between facts and values, and hence between the epistemic terrains of metaphysics and ethics.

Interdependence. Whereas "interdependence" now commonly refers to a *contingent* relationship among essentially independent entities, Buddhist interdependence is a *constitutive* relationship. The independence of 'causes' and 'effects' is only apparent: a function of either ignorance or abstraction. Even as a putative causal entity or event is bringing about some change, it is also being affected by that change. The causality involved in Buddhist interdependence is network-like and recursive, not linear.

The distinctiveness of this conception of interdependence can be brought out by two other core Buddhist practices: seeing all things as impermanent (*anitya*), and as without-self or empty (*śūnya*) of any fixed or abiding identity or essence.

Seeing all things as impermanent is in a rudimentary sense to see that change is constant. Apparent permanence is a function of attentional scale. At some scale of acuity, all objects and subjects dissolve into difference-engendering relational processes, not entities or particles. In the dual sense of both materializing and being important, what *matters* causally are not things, but relational dynamics. Seeing all things as impermanent is thus to see that what matters most is the orientation or direction of change, and that all order is intrinsically mutable.

Seeing all things as interdependent and impermanent entails seeing that all 'beings' are actually 'becomings' that are empty (*śūnya*) of any fixed or abiding essences. In contexts concerning personal identity and subjectivity, this entails realizing that one's putatively permanent self is an abstraction that is only provisionally real. Ultimately, one is without-self (*anatman*). That is, one is without any independent essence or existence. Differently stated, the self is something like an empty center of gravity around which different relational spheres—bodily, perceptual, emotional, dispositional, and cognitive—are orbiting or revolving. And this is ultimately true of all things. Yet, the Buddhist claim (made most strongly in Mahayana traditions) that all things are ultimately characterized by emptiness (*sūnyatā*) is not a denial of their reality. It is, instead, an affirmation that they only exist or obtain *relationally*.

This attribution of ultimate reality to relational dynamics is consonant with contemporary rejections of "particularism" or the view that the universe is composed of individual entities, each characterized by a distinctive set of nonrelational properties (Teller 1986). Crucial to this rejection is the bold thesis that ontologically primitive relations are "relations without pre-existing relata" (Barad 2007, p. 333).

In sum, this constellation of concepts—interdependence, impermanence, being without-self, and emptiness—compels seeing relationality as more basic than things related and realizing that all 'things' or 'beings' *are* what they *mean* to and for one another.[3]

Karma. In traditional Buddhist narratives, the stage was set for insight into the primacy of meaning-articulating relationality by perceiving the karmic nature of the cosmic order. Contrary to popular usage, the Buddhist concept of karma affirms neither the operation of fate nor that of a cosmic "moral law" ensuring that agents invariably receive the just desserts of their actions. The Buddhist conception of karma is that of a recursive causal process by means of which sustained patterns of values, intentions, and actions result in consonantly sustained patterns of both experiential outcomes and opportunities for orientational change so that the meaning of past events is never fixed. It is always possible to change the way things are changing.[4]

Several things follow from this. Given that all things arise and develop interdependently, the explanatory scope of any linear cause–effect relation is necessarily partial in the dual sense of being both incomplete and affected by perspectival bias. Moreover, like the putative existence of independently existing entities or events, deterministic relations are in Buddhist terms only provisional or conventionally real (*saṃvṛti-satya*), not ultimately real/true (*paramārtha-satya*). Finally, if things and events *are* only what they *mean* for others, then the relation between the past and the present must (to some degree) be one of recursive entanglement.

Buddhist thinkers have not been of a single mind about how best to explain, rather than merely describe, the operation of karma and what it says about time and the implied intimacy of matter and meaning. The most common traditional approaches drew on the then premier science of agronomy to explain karmic causality through the metaphors of karmic "seeds" (*bīja*) and karmic "fruits" (*phala*), which allowed considerations of complex "environmental" conditions, including practices of "nurturing". Later Mahayana Buddhist texts like the Laṅkāvatāra Sutra make alternative metaphorical use of oceans, wind, and waves to stress the nonlinearity of karmic influence implied by the seed–fruit metaphor. Karmic influences propagate in ways that resemble the interference patterns that occur when waves from different directions pass through each other, with their peaks or troughs coinciding with or cancelling each other. Karma consists in the diffractive interplay of sequential (syntactic) and significance (semantic) relations. That is, every event is the diffractive product of dynamically interacting flows of *mattering*.

Strong parallels exist, for example, between this reading of karmic causality and the nonreductive, agential realism proposed by Karen Barad to account for the phenomena of particle entanglement or instantaneous, faster-than-lightspeed causal interaction, and the causal role played by observation in quantum mechanics. According to Barad, the experimental evidence of the last century compels acknowledging that matter and meaning are not separate or separable elements and concludes that, "Mattering is simultaneously a matter of substance and meaning" (Barad 2007, p. 3).

Drawing on current contemporary cosmological theorizing and two-time physics (Bars 2001), the karmically ordered cosmos might be described as a five-dimensional manifold comprising sequential (syntactic) relations playing out in the four-dimensional spacetime manifold of classical physics and significance (semantic) relations playing out in a second temporal dimension, each point of which is equidistant from every point in the four-dimensional manifold that it enfolds. This would be consistent with positing of two temporal dimensions in "induced matter" or Space-Time-Matter theory (Wesson and Overduin 2018)—the most dimensionally parsimonious of the topological strategies forwarded to reconcile relativity and quantum physics and account for such experimentally verified but classically paradoxical phenomena as nonlocality and entanglement. Karmic connections are two-dimensional temporal relations.[5]

The karmic interplay of sequential and values- and intentions-infused significance relations entails conceiving of interdependence and causality as intrinsically *qualitative* re-

lations between matter and what matters, and thus also seeing the order of the cosmos as both open-ended and participatory. This has important implications for agency, consciousness, and evolutionary dynamics, including the evolution of human–technology–world relations.

Agency. Agency is typically conceived as a capacity possessed by an agent for effecting changes in an environment from which it is presumed to have significant independence. Given the impermanence and emptiness of all things, however, and the axiomatic claim that all actions occur within a multidimensional and karmically configured causal fabric, it follows that agential relations must ultimately be multidirectional, and that agents can only be said to exist provisionally as conceptual constructs or abstractions. Rather than an attribute, agency consists in the dynamic topological relationalities and reconfigurings of the world (Barad 2007, p. 141).

Agency thus does not entail the presence of anything like a subjectively self-aware agent; it manifests without-self. But the nondeterministic Buddhist rationale for this claim runs directly counter to scientific materialist denials of causal efficacy to consciousness and claims that motives and motivations are nothing more than an alternative description of molecular motions.

Consciousness. Traditionally, Buddhists identified six realms of human conscious ness—visual consciousness, consisting in the elaboration of visual relations; auditory consciousness, consisting in the elaboration of aural relations; and so on for smell, taste, touch, and cognition or the elaboration of conceptual relations among the dynamics occurring within and among the other five sense realms. There are, of course, other sense modalities—organic and inorganic—and thus other kinds of consciousness.

In keeping with the Buddhist conceptions of interdependence and karma, it can be argued that consciousness consists most generally in the coherent differentiation of sensed and sensing presences, and ultimately in the coherent differentiation of matter and what matters for the continued differentiation of the means to and meanings of sentient presence. That is, consciousness consists in the nondualistic elaboration of physical and phenomenal relations. The interplay of physical and phenomenal events occurs *within* consciousness at (and as) the hypersurface interface sequence and significance elaborating temporal dimensions. The brain–body–environment system is not the *cause* of consciousness, but rather the evolutionary residue of consciousness *mattering*. A useful metaphor is thus to see human brain–body–environment systems as the material *infrastructure* of consciousness. Just as transportation infrastructures result from sustained transportation practices, but then also constrain those practices, brain–body–environment systems are constraint-generating results of what consciousness has been doing creatively—the product of consistently elaborated, values-articulating, and intention-manifesting phenomenal/physical relations.[6]

Conceiving of consciousness in terms of coherence-elaborating sense relations attributes consciousness to all sentient presences, including single celled and pre-cellular molecular communities. This is not, however, a panpsychist attribution of subjective phenomenal presence to single-celled organisms or their molecular precursors. Neither is it a cosmopsychic attribution of experiential presence to the universe as a whole. Subjective self-awareness is a relatively late evolutionary, relational achievement.

Human consciousness is seemingly distinctive in its capacity for elaborating significance relations over long periods of time, including relations with what is absent or inexistent. In keeping with the eight-consciousness system elaborated in Yogācāra Buddhist tradition, subjective self-awareness can be described as a narrative center of gravity that coalesces relationally through the co-emergence of twin modalities of consciousness that consist intentionally in differentiating among what is occurring, what should have occurred, and what could occur: a meaning-elaborating differentiation of temporally extended pat-

terns of phenomenal/physical presence.[7] Stated otherwise, subjective self-awareness is produced by twin modalities of consciousness for differentiating among patterns of coherence generated by the diffractive interplay of sequential and significance relations. Language and culture are material and immaterial infrastructures of these twin consciousnesses and the creative extension of the temporal and spatial scales and scopes of what matters.

In sum, this way of theorizing consciousness has four important implications: (1) consciousness cannot be strictly located either spatially or temporally; (2) while consciousness entails agency, it does not necessarily entail an agential self or subjectivity; (3) consciousness is both functionally and qualitatively differentiated; and (4) the phenomenal and the physical are temporally differentiated but coeval artifacts of consciousness mattering that, like the "two" sides of a Möbius strip, are globally continuous, but locally distinct.

2. Evolutionary Theory: Going Beyond Darwin

This view of consciousness and its causal efficacy has evolutionary and ethical implications, including implications for the evolution of human–technology–world relations. First, it resonates productively with current scientific theorizing that conceptualizes evolutionary intelligence as varying with the "light cone" of care within which sentient beings determine how best to inflect relational dynamics—that is the totality of events that can be perceived as mattering or being causally relevant (Levin 2022).[8] It also accords well with an accelerating current of biochemical theorizing, according to which life originated as molecular structures differentiated in ways that increased their catalytic interdependence in entropy-exporting improvisations on the *meaning* of coordination (Carter and Wills 2018). That is, it accords with a view of living beings as *materializations* of what consciousness *means*.

Buddhist insight into the karmic interdependence of sentient beings/becomings and their sensed environments suggests the need for a more complex conception of adaptation in the evolutionary process. In neo-Darwinian theorizing, adaptation is a "one-way street" of organisms evolving internally (genetically) in response to environmental changes through a process of random variation and natural (environmental) selection in an ongoing competition over resources in which survival is the ultimate measure of adaptive success. Karmic interdependence compels seeing adaptation as a "two-way street" of meaning-articulating organism/environment coevolution. This accords with an emerging view of autopoiesis as a process of reciprocal or bi-directional articulations of relative autonomy by organisms and their environments. That is, the organism/environment relation is one in which "fitness" is being mutually articulated—a process of recursively amplifying, bottom-up and top-down articulations of relative autonomy that generates increasing relational complexity throughout the organism/environment system (Field and Levin 2023).

In sum, while processes of random variation and natural selection do occur, they are bracketed within larger processes—most readily evident during such evolutionary phase shifts as at the origin of life, the shift from single- to multi-celled lifeforms, and the shift from biological to cultural evolution—that are characterized by the emergence of collaborative communities of coherently differentiated members (Gabora and Steel 2021).[9] Evolution is not a winnowing process guaranteeing the survival of the fittest, but rather a process of *relational elaboration* that is fundamentally driven by coordination, not competition.

Crucially, what characterizes these collaborative communities (whether molecular, cellular, or linguistic/cultural) is their capacities for solving problems and seeking goals or pursuing values in "higher order" spaces than those occupied by their individual members/parts—an exercise of evolutionary intelligence that is made manifest in increasing capacities for responding to stresses by expanding their horizons or "light cones" of care (Levin 2022).[10] Evolution is thus ultimately a process of expanding horizons of rele-

vance or the compass of "what matters" relationally. And this includes the pre-organic evolution of the cosmos, which can be characterized as having exhibited a comparable pattern of entropy-resisting and order-generating differentiation: a propensity to increase energy rate density (Chaisson 2014). In short, the material order of the cosmos is a dynamic record of all that has *mattered* for sustaining coherent (rather than incoherent) differentiation. The evolutionary history of the cosmos is a record of consciousness *mattering*.

A major implication of this view of evolution is that the relation between consciousness and its materially and immaterially evolving infrastructures is thoroughly—and non-reductively—agential. Consciousness both shapes and is shaped by its infrastructures. With the cultural-linguistic turn in human evolution, the infrastructures of human consciousness have extended far beyond the brain–body–(natural)environment system to include an ever-growing array of epistemic, social, economic, and political environments, but also increasingly complex technological environments.

This conception of technologies as infrastructure of human consciousness is pivotal for seeing that the failure of scientific materialism to close the explanatory gap between mind (phenomenal events) and body (physical events) is not merely a (perhaps correctible) epistemic deficiency. It is also an impediment to seeing how crucial technological advances made possible by reductive physicalism are now exposing humanity to an intensifying confluence of both existential and ethical risks. The pivotal nature of this infrastructural conception of technology can be clarified by briefly considering how it differs from the extended-mind thesis that cognition is not an intracranial process, but one that extends into the environment (Clark and Chalmers 1998).

The extended-mind thesis emerged through a blending of insights from robotics research and cognitive science. Simply stated, it argues that objects like diaries and computers are cognitive tools that effectively extend human cognition beyond the brain and body into the environment. Implicit, however, to this argument is that the incorporation of such tools into human cognitive processes is *contingent*. In contrast, the Buddhist conception of interdependence as a *constitutive* relation entails seeing that this contingency is only conventionally or provisionally real.

While it is natural and conventionally useful to focus on such localizable artifacts as smartphones and computers in talking about digital technologies, for example, it is mistaken to presume that our relations with tools and technologies occur at the same ontological register. Technologies are distributed relational systems that dynamically express human values and intentions, not localizable artifacts. We do not use technologies; we participate in them. Technologies emerge from and then recursively condition human patterns of values, intentions, and actions in ways that are analogous to how ecosystems emerge with/through inter-species relations and in turn also condition those relations. Thus, we enjoy conventionally actionable exit rights from tools. We can decide, for example, to neither own nor use a smartphone. We do not have functional exit rights from the ways that digital communications technology, for example, is transforming how people access the news or maintain friendships and familial relations, or from the fact that commercial transactions like renting a car have become nearly impossible without a smartphone.

Given this distinction between tools and technologies, and the account of evolution as consciousness mattering, it follows that the digital infrastructure of human consciousness is not a contingent factor in humanity's evolution. It is a constitutive element of a rapidly accelerating synthesis of human and machine intelligence that is at once extending and constraining human autonomy. As one of the crowning successes of scientific materialism, intelligent technology is on course to force humanity's karmic and evolutionary hand.

3. An Evolutionary Frontier and Ethical Turning Point

The possibility that scientific materialism and technology might hamper rather than contribute to human flourishing is not new. William James and Henri Bergson, for example, were notably critical of the materialist conviction that the cosmos would soon be closed under physics, and the neo-Darwinian reduction of evolution to a process of random genetic variation and blind environmental selection. But these early challenges were essentially aligned with the supposition expressed in the view of science and religion as "non-overlapping magesteria". They contested the epistemic completeness of scientific materialism. It is only relatively recently, with an awareness of the potentially catastrophic environmental and climatic impacts of industrial technology, that the successes of scientific materialism have come to be identified as sources of increasing risk (Beck 1992)—successes that are ironically driving humanity into a "time of perils" (Sagan 1997) in which the "hinge of history" (Parfit 2011) may swing shut if humanity continues headlong over the existential "precipice" (Ord 2020) toward which we are hastening.

With respect to AI, concern has tended to focus on the heightened risks of human extinction or obsolescence due to the development of artificial general intelligence or superintelligence. It is undoubtedly prudent to be concerned about such risks and whether humanity's arrival at the so-called technological singularity will be a boon, as envisioned by Ray Kurzweil (2024), or a bane, as envisioned by Nick Bostrom (2014). The Buddhist concepts introduced thus far suggest that such existential concerns should be much more immediately directed to the possibility that the coevolutionary synthesis of human and machine intelligence will precipitate humanity's ill-prepared arrival at an *ethical singularity*—a point at which the opportunity space for further human course correction collapses and at which Buddhist, and arguably all other, religious practices become either impossible or illusory. What matters here is attention.

The Digital Attention Economy. A wide range of theories of attention currently exist, including conceiving of attention as a perceptual filter, as a feature-binding mechanism, as a gatekeeper or broadcaster to working memory, and as a conductor of sensory data into cognitive processing. These theories presume that, most fundamentally, attention is a mechanism for accelerating the speed with which a physical sensation becomes a psychic event (Spiegel 2023). Contrastingly, in the context of Buddhist practice, attention (*manaskāra*) can be either systematic and conducive to realizing more liberating relational dynamics (*yoniso*), or unsystematic and conducive to both distracted and obsessive presence (*ayoniso*). In short, attention is qualitatively differentiated according to whether and how well it karmically enhances relational resolution, where resolution implies both clarity and commitment, including most fundamentally resolution regarding what matters most.

Attention and intention are thus intimately co-implicated aspects of agentive presence. And tracking attention thus enables mapping dynamic patterns of actual or anticipated meaning. Digitally capturing attention yields qualitative data about what is perceived as significant, how it is responded to, and with what changes over time. Twenty-four-seven digital connectivity makes possible real-time intelligence gathering as users of search and recommendations engines, social media, e-commerce, and smart public services are drafted into double duty: as *consumers* of individually targeted material and informational goods and services, and as *producers* of training data for machine learning systems laboring tirelessly and innovatively to accelerate *attention capture* and *turnover*. This dynamic and high-resolution mapping of individual likes, dislikes, hopes, fears, values and intentions is yielding unprecedented powers both to predict human behaviors, beliefs, and desires, and to induce patterns of feelings, thoughts, speech, and action. The risks associated with this are in a quite literal sense extraordinary.

Rethinking AI Risks. Most of the ethical debates about the digitally mediated attention economy voice concerns about forfeiting individual autonomy; the risk of engineered determinism; the dangers of data leaks and identity theft; the deliberate and politically motivated spread of disinformation; the distortion of the public sphere and the democratic process; and the potential for algorithmically reinforcing historical patterns of bias and injustice (see, e.g., O'Neil 2016; Frischmann and Selinger 2018; Schneier 2018; Zuboff 2019; Véliz 2021). In other words, concerns center on the risks of accidents-of-design and of misuse-by-design (Hagendorff 2020). These risks and the dangers associated with them are real and their importance should not be discounted. But they do not address the relational/structural risks and harms of what amount to tacitly sanctioned practices of *attention trafficking*.

Buddhist conceptions of attention, consciousness, and karma suggest that there are three distinct registers at which attention trafficking causes relational harms. First, as individually generated data are used both to map patterns of attention and to train machine learning systems to capture, hold, and direct increasing amounts of our attention, they reinforce *ayoniso* qualities of attention by accelerating attention turnover and discouraging intention-evaluating reflection. The resulting displacement of sustained, significance-seeking attentional currents by sequentially discrete attentional eddies effectively erodes infrastructural support for the basic work of consciousness: coherent differentiation. This manifests relationally in the intensification of populist fractiousness, but also in deepening anxiety and depression, especially among youth (Haidt 2024). Moreover, the asynchronous nature of digitally mediated sociality is transforming both the means-to and meanings-of friendship and familial connection, while also compromising or truncating the extended temporal commitments involved in such opportunity-generating practices as communicating and learning in favor of outcome-guaranteeing smart services—an agency-transforming *delinking of effort and attention*.

Secondly, if our brains, bodies, and physical, cultural, linguistic, and digital environments are infrastructural elaborations of human consciousness mattering, then behavior-predicting and behavior-inducing algorithms are ethically troubling regardless of their ostensive purposes. We have known for a century that the neural infrastructure of consciousness can be hacked by directly stimulating the brain to produce not only sensations and body movements, but also subjective claims of responsibility for them. When machine learning systems invisibly predict and induce commercial, communicative, and political behaviors, as well as emotions, beliefs, and desires, the algorithmic tools involved amount to computational electrodes inserted into the digitally extended infrastructure of human consciousness to elicit experiences and behaviors that those affected will readily claim to be the products of their own freewill because there are no personal or evolutionary precedents for them occurring otherwise.

This brings us to the heart of the simultaneously epistemic and ethical liabilities of scientific materialism. The presumptive theoretical reduction of consciousness to brain activity and subsequent failure to close the explanatory gap of the "hard problem" logically entail finding that there is *no causation, only correlation* when it comes to assessing the impacts, for instance, of social media use on mental health or civic engagement. The causal relation between the so-called 'subjective' dynamics of personal experience and the 'objective' dynamics of digital life remains hidden in an impenetrable "black box".

Seeing the brain–body–environment system as the infrastructure of consciousness folds away the sides of the black box, and this reveals a third register of attentional harm. AI is now being referred to as a general-purpose technology like electricity. But unlike all previous technologies, intelligent technology is not a passive conductor of human values and intentions. It is an active, innovative, and thus karmically significant amplifier of hu-

man values and intentions and of conflicts among them. Moreover, the truly astonishing achievements of machine learning systems, large language models, and generative AI are predicated on the data-mediated *synthesis* of human and machine intelligence. This has evolutionary ramifications.

Data as Coevolutionary Driver. Although the primary metaphors for thinking about data—e.g., data as the "new oil" or the "new water"—suggest that data are a quantifiable, and potentially scarce form of matter, data are not matter. Data are the result of observations made to collect discrete or continuous measurements or values for specified variables. In short, data are the information-gathering product of human determinations of what matters. The datasphere is thus a space of significance potentials that more closely resembles a language or culture than it does a repository of some depletable resource. The AI engaged datasphere is a space of bi-directional flows of self-organizing agency—like that described by Field and Levin (2023) in organism–environment relations—through which the interdependence of human and machine autonomy is being articulated. This is a new coevolutionary frontier.

As machine learning and generative AI systems become increasingly adept at anticipating, interpreting, and enacting human intentions, they are not only progressively delinking attention and effort, they are also functioning as karmic intermediaries on digital capitalist platforms that are presently designed to inequitably valorize competition, convenience, choice, and control, with reward structures that foster addictive engagement and the consolidation of what amount to digitally manifest habit formations (*saṃskāra*). Seen in this way, an overarching technological risk of the digital attention economy is the willing—even if largely unwitting—abdication of personally cultivated capacities for determining what matters most, and thus the forfeiture of our most basic sentient freedoms and rights: our right to cultivate true freedom-of-attention and freedom-of-intention.

Without freedom-of-attention, there can be no freedom-of-intention, and without freedom-of-intention, the "possibility space" of ethics and of both cohering and differing otherwise collapses. Human consciousness would arrive at an evolutionary dead-end.

4. The Future of Human–Technology–World Relations

That collapse is not destined to occur. In addition to providing resources for developing a relational ethics of AI, Buddhist convictions about interdependence, karma, impermanence, and emptiness also undermine claims about technological path dependency. The technological future is not fixed, and any apparent manifestations of technological path dependency would be ones in which we would have been responsibly complicit, both personally and collectively.

The case that has been made here is that compliance with the dogma of scientific materialism and reductive physicalism has effectively blinded us to the causal dynamics involved in the digital attention economy and is rendering us complicit in humanity's increasing exposure to unprecedented existential and ethical risks. But targeted Buddhist engagement with contemporary science also opens space for reimagining the data-mediated synthesis of human and machine intelligence as an evolutionary turning point—one that will prove as consequential for human and planetary futures as the shift from biological to cultural evolution, regardless of whether it is navigated successfully or not.

The shift of evolutionary paradigm from biology to the culture dramatically expanded the scope of what humanly matters most, vastly extending the spatiotemporal scales of both collaborative action and material organization. With language and culture, human beings embarked upon what might be called a journey of discovery, but that is more accurately described as one of world-realizing creativity. Yet, opening entirely new realms of collaborative possibility eventually brought about the opening of new realms of mate-

rial and immaterial competition, conflict, and suffering playing out over multigenerational timescales. Buddhist recognition of this relational liability is encapsulated in the dual description of subjectivity-localizing self-awareness as *manas* or mind, and as *kliṣṭamanovijñāna* or "afflicted consciousness".

While statistically unlikely events like the meteor strike that ended the age of dinosaurs might also result in the extinction of humanity, the existential threats that should be of greatest concern are not material accidents over which humanity has no control; they are threats like climate change and the impacts of digitally mediated consciousness hacking that have been generated as a function of human values and intentions and the ways in which they have been enacted. In short, these existential threats are our karmic inheritance: recursively amplifying evidence of conflicts within and among our personal and collective determinations of what matters most.

Two navigational insights can be gleaned from the history of past paradigm shifts in terrestrial evolution, including the transitions from inorganic to organic molecular communities, from single-celled organisms to multi-celled organisms, and from biological systems to cultural systems. First, these transitions all hinged on the successful formation of novel collaborative communities through processes of coherent differentiation that generated new problem-solving capacities. Second, they also involved the projection of goals and values into "higher order" spaces than those that had hitherto been occupied by the members of those new communities.

Put somewhat differently, the evolutionary agency manifest during each of these paradigm shifts was not essentially competitive, but rather diversity-enhancing, where diversity is not a merely numeric matter of plurality or variety, but a relational index of the degree to which differences become generative resources for mutual contribution to sustainably shared flourishing. Paradigm changing evolutionary agency materializes to the extent that community members engage in *mattering* creatively for one another as they actively both differ-from and differ-for one another. The evolutionary intelligence of expanding "light cones" of care is not a one-way process. It is what Karan Barad would term an "intra-active" process—an intrinsic alteration of the quality of interdependencies present.

Intelligent technology is holding up a wish-fulfilling mirror to humanity and functioning as a karmic amplifier and accelerator. The techno-optimistic dream is that the technological transformation that is now underway will result in a progressively intelligent, autopoietic global "Stack" (Bratton 2016) that will function as a planetary brain responsible for orchestrating and optimizing all of the flows of energy, information, goods, services, people, and ideas coursing through society. For transhumanists, the evolutionary opportunity that humanity now faces is one of realizing more-than-merely-human forms of presence through a merging of human and machine potentials to enable humans to "freely take control of their own biological evolution, freely designing it through technology, to reach a post-human stage" (Manzocco 2019, p. 4).

But AI systems trained on the full range of human-produced data will reproduce and reinforce human patterns of ignorance, desire, and self-centered decision-making unless they are purposely trained otherwise. Doubling or tripling human lifespans or attaining digital immortality by uploading minds without realizing a transformation in the values and intentions that are being humanly (and inhumanly) enacted would only perpetuate existing complexions of personal and collective karma and the conflicts and suffering ensuing from them.

For engineers, solving the AI alignment problem is a technical matter of getting AI systems to do *exactly* and *only* what they have been designed to do. Science is crucial to this problem-solving labor. Science and its prediction enhancing causal insights are grounded in reproducible experimental results, and this is by definition a search for *ex-*

ceptionless causal connections. But if we are going to ensure that the "hinge of history" does not close the door on humanity's evolutionary future, it will be necessary for humanity to become capable of and committed to truly *exceptional* coordination in resolving the global predicaments we now face. Doing so will require realizing new kinds of diversity-enhancing collaborative community—a coherently differential expansion of our personal and collective "light cones" of care and what we believe matters most. And ultimately, this will be a deeply religious labor.

If the relationships between the metaphysical and ethical and between the realms of fact and value are ultimately nondual and nonreductive, as Buddhist insights into interdependence and karma suggest, then this religious labor cannot be successfully undertaken if it is presupposed that the history of the relation between science and religion has always been one of conflict and competition. But neither can it be carried out effectively if science and religion are taken to be "non-overlapping magesteria". Even if the practice of science conventionally consists in fundamentally epistemological labor and the practice of religion conventionally consists in labor that is fundamentally axiological, the relationship between science and religion ultimately is and should remain one of creativity engendering intra-action.

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Notes

1 It is important to stress that what will be offered here is *a* Buddhist perspective, not *the* Buddhist perspective, on human–technology–world relations.

2 For a clear and concise overview of the AI development and ethics landscape, see Coeckelbergh (2020).

3 This view was most clearly articulated, perhaps, by the Huayan Buddhist Fazang (643–712) who argued that each material and phenomenal particular (shi 事) consists in simultaneously causing and being caused by the totality of all things, so that each thing ultimately is what it contributes to the coherently patterned articulation (li 理) of the totality of all things (see, e.g., his Huayan wujiao zhang, Taishō shinshu daizōkyō. Volume 45, no. 1866, reprint Taibei: Xinwenfeng chuban gongsi, 1983–1984). These Buddhist conclusions are also interestingly consonant with Relational Quantum Mechanics and its approach to reconciling the apparent causal paradoxes that occur. Reality is presumed to be composed out of basic units rather than relational dynamics (Candiotto 2017). For a philosophical overview, see: Laudisa and Rovelli (2024).

4 For a fuller exposition of the Buddhist conception of karma, see Hershock (2023b).

5 For a fuller exposition of this approach to ontologically grounding the operation of karma, see Hershock (2023a).

6 See Hershock (2023a) for a fuller exposition of this nondualist and relational theorizing of consciousness.

7 This characterization broadly aligns with Chinese Yogācāra teachings. For a clear exposition of Yogācāra teachings, see Waldron (2023).

8 A "light cone" is the three-dimensional space of past events that could send signals traveling at light speed that would have time to reach and affect an observer, as well as those events that could be affected by light speed signals sent by that observer: the totality of possible causal connections to that observer. For a detailed discussion, see Curiel (2023).

9 This bracketing closely parallels the bracketing of classical, mesoscale Newtonian physics within the microscale phenomena described by quantum physics and the macroscale phenomena described by relativity physics.

10 For an explicit attempt to draw parallels with Buddhism, see Doctor et al. (2022).

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Article

Challenges of Using Artificial Intelligence in the Process of Shi'i *Ijtihad*

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Abstract: This article aims to explore the potential challenges that may arise when employing generative AI models in the process of Shi'i *ijtihad*. By drawing upon academic literature and relevant primary sources, the essay surveys the most critical AI-related hurdles in this field, including issues of accessibility, privacy concerns, the problem of "AI hallucination" and the generative nature of AI models, biases in AI systems, the lack of transparency and inexplicability, the intricacies of interpreting and understanding sensitive topics, accountability, authority, trust and acceptance among lay believers. Using discourse and content analysis as method, the article concludes that, given these challenges, generative AI models are not yet suitable for utilization in this process. However, the rapid progress in AI may eventually make it an effective tool for this purpose.

Keywords: Shi'a Islam; *ijtihad*; generative AI; authority of AI; transparent AI; AI hallucination

1. Introduction

The death of an Iranian woman in September 2022 sparked a prolonged period of unrest in Iran and triggered a profound debate on the mandatory nature of hijab within Islamic law. While the country's authorities argue that the Islamic government must uphold Islamic values, including the requirement of hijab, in order to be considered truly Islamic, a faction of intellectual Muslim dissenters has sought to demonstrate that hijab should not be exclusively interpreted as a set of dress code regulations.

Throughout the history of Shi'a Islamic law, there have been instances of significant and minor alterations in the rulings, indicating that change is not an inconceivable notion ('Abediyan 1381). The primary catalyst for such change lies in the comprehensive understanding of factors that influence religious decrees, ranging from the fundamental sources like the Qur'an and hadith to detailed historical accounts and biographical reports concerning the narrators of hadiths. Finding an individual with expertise across these diverse fields of knowledge, which contribute to the deduction of religious rulings, is challenging and requires decades of dedicated study and research. Even with such knowledge, some scholars, like Ayatollah Muballighi, believe that the advent of AI-enhanced software can facilitate discussions and achievements that were previously almost impossible (Muballighi 2022).[1] Given the current advancements in technology, the prospect of developing an artificial intelligence trained on these diverse sources appears feasible.

In relation to the matter of hijab in Islam, I consulted ChatGPT (the GPT-4 version) to inquire about the process of issuing an Islamic ruling on the permissibility of hijab based on Islamic sources. While acknowledging that hijab holds significant importance in Islamic rulings, and cannot be readily disregarded due to the existence of substantial evidence within Islamic sources, GPT-4 stated that the only way to determine the permissibility of hijab is by presenting various interpretations of the relevant Qur'anic verses, a task that is far from straightforward (OpenAI 2023). This response highlights the impressive breadth of knowledge possessed by this artificial intelligence model, despite not being specifically trained on Islamic sources. Nevertheless, it is crucial to consider potential concerns regarding interpretations of the relevant Qur'anic verses and the issuance of *fatwa*s through such technology.

This essay investigates the potential challenges associated with employing generative artificial intelligence (AI) models in the process of Shi'i *ijtihad*, examining both the positive and negative aspects associated with their use. The issues discussed in this study are explored from two perspectives: first, when the AI model is used as an independent tool (i.e., the only tool) to undertake the *ijtihad* process, and second, when the AI model functions as an assistant to the Muslim jurist. Certain issues arise only when the model is employed independently, while others manifest when used either way.

To accomplish this objective, this essay draws upon the findings of various projects and experiments conducted on the application of AI systems to religious content. While one might expect that the most relevant sources to this research would be those that directly pertain to the use of AI in an Islamic jurisprudential context, it is noteworthy that projects that have successfully implemented working AI models in religious contexts may have more significant contribution to this research. The primary aim of this research is to identify the challenges that may arise if a generative AI model is employed in the process of Shi'i *ijtihad*.

This study employs discourse analysis and content analysis to examine the possibility of using AI in the process of issuing a *fatwa* (*ijtihad*) in the Shi'i jurisprudential school. The research design involves finding projects in any religion that have utilized AI for complicated inferential tasks that can be compared to that of *Ijtihad* in its Shi'i meaning. The ideal projects for this study are those in which an AI model is trained on a specific database of religious corpora.

1.1. What Is Artificial Intelligence (AI)?

AI, or Artificial Intelligence, refers to the field of computer science that focuses on creating intelligent machines that can perform tasks that typically require human intelligence. AI involves developing algorithms and systems that can learn, reason, perceive and problem-solve, similar to human cognitive abilities (Winston 1992, p. 13).

There are two primary types of AI: Narrow AI and General AI. Narrow AI, also known as Weak AI, is designed to perform specific tasks and is limited to those specific domains. Examples of narrow AI include virtual assistants, image recognition systems and recommendation algorithms.[2] General AI, on the other hand, refers to theoretical autonomous systems that possess the ability to understand, learn and apply knowledge across multiple domains, essentially possessing human-level intelligence. However, General AI is still largely a theoretical concept and does not yet exist in practice (Goertzel and Pennachin 2007, p. 1).

In this research, the focus is solely on generative AI. Generative AI is a type of narrow AI and refers to a subset of artificial intelligence techniques that involve generating new content, such as images, music, text or even video, that is original and not directly copied from existing examples. It focuses on creating new data that resembles a particular training dataset in terms of style, structure or other characteristics. Generative AI models are designed to learn patterns and generate outputs that are similar to the data they were trained on. These models typically use machine learning, specifically deep learning, techniques to learn and mimic the underlying patterns and distribution of the training data. They learn to capture the essence of the data and then use that knowledge to generate new samples (Goodfellow et al. 2016, pp. 542–43).

Machine learning focuses on developing algorithms and models that enable computers to learn and make predictions or decisions without being explicitly programmed to develop certain algorithms and models. In machine learning, computers are trained on large amounts of data to recognize patterns, extract insights and make predictions or take actions based on that data. The fundamental idea behind machine learning is to build mathematical models that can automatically learn from data and improve their performance over time. Instead of relying on explicit instructions, machine learning algorithms learn patterns and relationships within the data, enabling them to generalize and make predictions on new, unseen data (Goodfellow et al. 2016, pp. 98–110).

As some of the most important research in employing AI in religion are done with language models, it is a must to talk about that here. A language model is a type of generative artificial intelligence model that is designed to understand, generate and predict human language. It is trained on large amounts of text data to learn the statistical patterns, relationships and structures of language. Language models are used in a variety of natural language processing (NLP) tasks, such as machine translation, text generation, sentiment analysis, chatbots and more (Russell and Norvig 2021, p. 824). The goal of a language model is to generate coherent and contextually relevant language based on a given input or prompts. It learns to predict the probability of a word or sequence of words based on the context provided by the preceding words in a sentence. This ability to predict the next word or sequence of words allows language models to generate text that is coherent and syntactically correct (Russell and Norvig 2021, p. 824). Language models are typically trained on large corpora of text data, such as books, articles, websites or even entire internet archives. During training, the model learns to assign higher probabilities to more frequent word sequences and lower probabilities to less common ones. This enables the model to generate text that is both fluent and contextually relevant (Russell and Norvig 2021, p. 824). Large-scale language models (LLMs), such as OpenAI's GPT-3, have demonstrated impressive capabilities in generating human-like text and performing a wide range of language-related tasks. They have been used for tasks like text completion, question answering, summarization and even creative writing.

1.2. What Is Shi'i Ijtihad?

There are two major denominations within Islam: Sunni and Shi'a. The most mentioned point that distinguishes these two from each other is the successorship of the Prophet Muhammad. While Sunnis believe that he did not mention anyone as his successor and left the issue with the Muslims, Shi'a maintain that he has appointed Ali as his successor. The title for the successors of the Prophet in the Sunni school of thought is Khalifa (or Calif, Caliph) while the successors of the prophet among the Shi'a are called Imam. It is also noteworthy that what is referred to as Shi'a in this paper are the Twelver or Imami Shi'a. The rationale behind selecting this particular sect amidst other Shi'a sects is due to its prevailing position as the dominant sect within the current global Shi'a landscape. Furthermore, my academic pursuits have involved an in-depth study of Twelver Shi'a tradition, rendering it a significant and relevant aspect of my scholarly endeavors.

Ijtihad is an Arabic word which literally means to "try hard and do whatever you can to accomplish a task or gain something" (Ibn Manzur 1414, p. 133). However, the technical meaning of *ijtihad* has not always denoted the same meaning. Throughout various historical periods and geographical locations, as well as across diverse schools of thoughts, a multitude of interpretations and understandings of *ijtihad* have emerged. Nonetheless, in a general look at these definitions, there are two major understandings of this term. First, or what is known as "*Ijtihad* in the general sense", is the utilization of all efforts and endeavors to obtain a ruling from Islamic sources such as the Qur'an and hadith. This type of *Ijtihad* is claimed to be accepted unanimously by all Muslim scholars from various Islamic denominations (Raja'i 2014, p. 6). The second type, or what is known as "*Ijtihad* in the specific sense", involves employing and accepting "valid conjectures" as evidence for religious rulings in cases where there is no explicit textual evidence (Ibn Qudama al-Maqdisi 1415, p. 141). It is important to note that in the Shi'i scholarly atmosphere the term for issuing a *fatwa* (*ifta'*) and *ijtihad*, are often used interchangeably, as the reader may notice in this essay as well.

What makes Shi'i *Ijtihad* a very good case for employing AI models is that Shi'a scholars do not accept personal opinion (al-*Ijtihad bi al-ra'y*) as a source for acquiring the religious ruling, thus they have to analyze the vast corpora on various fields of study, including detailed discussions and opinions to find the most accurate religious ruling (Al-Sadr 1419, pp. 155–59). For example, to deduce a religious ruling, a faqih (i.e., a Muslim jurist) must first refer to the Qur'an for possibly related verses, then the jurist should check

the numerous works of exegesis to find the most accurate meaning. A faqih should also refer to various Arabic dictionaries and observe the rules of Arabic syntax, morphology and rhetoric to be able to confidently say whether the verse is establishing a legal ruling or is just a piece of moral advice. Next, the jurist should go to the hadiths—sayings, acts and tacit approval of the Prophet Muhammad and the Imams that have been transmitted through the narrators in different generations. In this stage, the chain of narrators should be studied thoroughly through various comprehensive biographical works to make sure that they are reliable narrators. Then the text of the hadith should be studied by referring to commentaries, dictionaries, syntax, morphology and rhetoric.

In both cases (i.e., referring to the Qur'an and the hadiths), the historical context of the issuance of the text must be studied carefully and it should be determined whether that context can narrow down the meaning of the text or whether the text is laying out a general principle that can go beyond that historical incident. With regard to issues that have not been addressed either in the Qur'an or in the hadith, the Shi'i jurist relies on what are called "valid conjectures", which are the general rules that were obtained through sayings, acts and/or mainly tacit approval of the Prophet Muhammad and Imams. There are of course extensive debates on which kind of these conjectures are valid and in what condition and with what characteristics. Therefore, the opinions of almost all the jurists, throughout approximately one thousand two hundred years after the time of the Imams should be checked. These opinions have also an important role in understanding the verses of the Qur'an and the hadith.

All in all, mastery of more than 12 scholarly disciplines is needed during the process of *ijtihad*. Needless to say, it is a very difficult task and that is the reason there are only a few Shi'a jurists capable of performing *ijtihad* at a particular time.

1.3. What Artificial Intelligence Can Do in Ijtihad?

1.3.1. The Current Ijtihad

The current way of practicing *ijtihad* among Shi'i jurists has not very much changed from the traditional way. Although the introduction of some narrow AI projects, such as finding similar hadiths with different wordings (Computer Research Center of Islamic Sciences 2014b), exploring and applying various syntaxes to the text (Computer Research Center of Islamic Sciences 2014c) and determining the identity of narrators with the same names (Computer Research Center of Islamic Sciences 2014a), have helped the jurists meaningfully during the last decade, the main process is still practiced by the jurist.

Based on the complexity of the issue and availability of the sources, issuing a *fatwa*, (i.e., a religious ruling about a detailed issue) can take hours to days. Time is not the only thing that matters here, in some cases due to the vast amount of sources and fields of study related to the process, some important points may be overlooked. Moreover, a jurist's opinion on one issue can change during the course of his life, which is very common.

1.3.2. The AI-Enhanced Ijtihad

Employment of artificial intelligence in the process of *ijtihad* can bring about several changes the least of which is efficiency. An AI model that is finely trained on the above-mentioned sources can synthesize and analyze them in seconds.

The most important change that might be hoped to happen by utilizing AI in this field is reformation of some religious rulings. Even if some do not agree that Islam is a law-based religion, no one can deny the significance of laws and rulings in Islam. Therefore, reformation in Islamic laws can cause important changes in this religion. The possible reformations that can be initiated by AI in *ijtihad* are the following: more comprehensive data collection and analysis, deeper study of the historical background of not only the Qur'anic verses and hadith but also the *fatwa*s issued by other jurists, tracing the chains of narrators to find more details of the narrators and possibly narrators who had authored the early books on hadiths, and finding and potentially resolving the inconsistencies within the Islamic jurisprudence (fiqh) and the principle of jurisprudence (usul al-fiqh) (Muballighi 2022).

Nonetheless, the development of an artificial intelligence model for application in the process of *ijtihad* raises notable concerns. Lack of creativity among students, disconnection of researchers from the sources, lack of deep and profound contemplation on the sources, weakening of deduction (*istinbat*), analysis and theorizing ability among scholars and deviation from the ultimate purpose of jurisprudential discussion (which is proximity to God) are some the important concerns expressed by famous Shi'i scholars about using AI in the process of *ijtihad* (ShabZendeDar 2023; Rajabi 2020). it is imperative to acknowledge that these concerns were not voiced in outright opposition to employing AI in this domain. On the contrary, during the same sessions, these scholars underscored the necessity and potential benefits of utilizing AI in *ijtihad*. However, they also exercised caution, warning against possible drawbacks that must be proactively addressed and mitigated. Such awareness underscores the importance of approaching the integration of AI in *ijtihad* with a balanced perspective, carefully weighing its advantages against the potential challenges it may introduce.

This research pursues two overarching objectives. Firstly, it seeks to draw Shi'a Muslim researchers and scholars' attention to the challenges involved in employing AI in Shi'i *ijtihad*. It strives to dispel the oversimplifying notion that the utilization of AI in this context is a straightforward matter, as some researchers have assumed (Ostadi 2023), and to demonstrate that the application of AI in this field is fraught with crucial and formidable issues that demand consideration. Secondly, the essay endeavors to make a contribution to one of the most fundamental discussions surrounding the implementation of AI in the process of *ijtihad*; the potential challenges of such implementation. The topic of AI and *ijtihad* has been progressively garnering heightened attention from scholars and practitioners alike. By delving into this discourse, the study aims to enrich the ongoing conversation and, thus, the scholarly landscape on this critical subject matter.

2. Challenges of AI in *Ijtihad*

This is the main part of this research, focusing on the challenges that a generative AI system may encounter when applied to the process of Shi'i *ijtihad*. The following text aims to enumerate and delve into these challenges in detail. Each challenge will be scrutinized in terms of whether it arises solely when using AI independently,[3] as an assistant, or in both scenarios. Additionally, potential solutions to overcome these challenges will be proposed after the study of how each aspect could impede the successful integration of AI in the *ijtihad* process. An essential aspect to bear in mind when engaging with this part is the inherent interconnectedness of the discussed challenges, leading to their mutual influence, interdependence and, in some cases, overlapping implications.

2.1. Accessibility

The Internet is a phenomenon that has changed almost all aspects of our life, and it could be the biggest turning point in the whole history of human life. The advent of the Internet stands as one of the most crucial technological advancements of the last century. It has also paved the way for the development of numerous other inventions. One of its most notable benefits is the easy access to content available on the web, anytime and from anywhere on the globe, as long as you have an internet connection. This accessibility applies to most AI projects as well, entailing similar advantages and challenges that the Internet offers. Furthermore, even digital projects not available online still provide much more accessibility compared to traditional methods of finding and analyzing data.

The accessibility of AI projects pertaining to religion can be examined from various angles. Firstly, these projects are available at any time, offering convenience and availability round the clock. For instance, AI providing pastoral care (Young 2022, pp. 6–22) can be accessed even during late hours, when reaching out to a physical pastor or other religious leader might be challenging. Similarly, AI projects like *Virtual Ifta'* in Dubai (Tsourlaki 2022, p. 12), offering answers to religious inquiries, are accessible 24/7, providing continuous support. On the other hand, engaging with AI for spiritual guidance or seeking answers is

also time-efficient. There is no need for individuals to physically go anywhere or wait for a service, reducing the time consumption. AI allows for prompt responses and assistance, making it convenient for those seeking religious guidance or answers to their queries. Many of these AI supports are free of financial cost to those with a digital device and internet access.

The second aspect of accessibility is linked to location. AI utilized for conducting religious rituals, ceremonies or providing spiritual care and comfort can, in many cases, be accessed from anywhere provided that internet access is available. This includes remote villages nestled behind mountains, religious communities in the diaspora and even challenging locations like battlefields and intensive care units in hospitals. The presence of AI enables access to religious services and support regardless of physical distance, ensuring that individuals in various locations can benefit from such assistance.

Furthermore, AI has the potential to enhance the accessibility of content. While simple literal searches may not require artificial intelligence, scholars often encounter information expressed in different words or phrases. In such cases, AI can play a significant role in making content more accessible to users by assisting in finding relevant information even when phrased differently. Additionally, AI-enhanced software can analyze large datasets faster, making big data more accessible to researchers and expediting their work. Cost is indeed an essential aspect of accessibility. With the availability of devices with internet connectivity and decent internet connections, accessing religious content or services generally requires little to no additional cost.

However, it's crucial to recognize that there is a negative side to this accessibility. While internet access may be taken for granted in urban centers of developed countries, it remains a significant challenge in some nations. Many underserved communities, particularly in rural or developing areas, lack the necessary infrastructure and resources to access AI-powered applications and services. This disparity creates a digital divide, hindering the potential benefits of AI in these regions.

To address this issue, collaborative efforts from governments, non-profit organizations and private companies are necessary. They should work together to expand broadband coverage and provide affordable access to technology, thereby bridging the gap and ensuring that these communities are not left behind. The lack of access not only results in the underrepresentation of these regions in the AI landscape but also contributes to AI models' biases. Biases can emerge in AI systems due to skewed data, and if certain demographics or regions are excluded from the training data, it can lead to biased AI models. Biased AI is another critical challenge that needs to be addressed to ensure that AI is fair, inclusive and beneficial to all.

Another challenge posed by high accessibility to AI services is the potential fading of the role and significance of religious communities. What is the main purpose of a religious community? One of the most prevalent motivations for joining a religious community is to connect with fellow believers, receive support and empathy, deepen the knowledge of the religion, participate in rituals and more—almost all of which can be found in some form through AI. Increased accessibility means an increased threat to the position of traditional in-person religious communities, which are a vital aspect of religion even in its modern form.

Another challenge related to accessibility is language and cultural barriers. AI applications often rely on natural language processing (NLP) to interact with users. However, language and cultural diversity pose challenges in developing inclusive AI interfaces. Many languages, especially indigenous and lesser-known ones, lack sufficient NLP support, limiting access to AI-driven services for speakers of these languages. To overcome this barrier, AI developers must prioritize multilingual support and invest in research to include underrepresented languages and dialects.

The final accessibility challenge we explore here pertains to the complexities of regulation and law. The dynamic landscape of AI regulations poses a significant hurdle to accessibility. Varying rules and restrictions across countries can impede the smooth devel-

opment and deployment of AI. An impactful example of this challenge emerged when I relocated from Canada to my home country, Iran, and attempted to use ChatGPT. While accessing the website and using it posed no issues in Canada, in Iran, a disheartening message appeared at the center of the page, stating, "unable to load the site". Though some claim the Iranian government has banned this service (Ishaq 2023), the truth lies in the restriction of Iran's IP addresses due to sanctions (Naragh 2023; Borhani 2023). There were more than 300 websites that could not be accessed by Iran's IP due to sanctions in July 2020 and the list has been growing since (Borhani 2023). Adding to the frustration, I discovered that even registering on the OpenAI website (which is the provider of the ChatGPT service) proved impossible in Iran due to the non-acceptance of Iranian phone numbers for authentication (Naragh 2023). As I discussed the remarkable capabilities of this Natural Language Processing (NLP) model with my friends, I couldn't help but feel the privilege of my access. Regrettably, such discriminatory barriers to accessing AI services have fostered misconceptions about AI, fueling various conspiracy theories surrounding its use and implications.

As is evident, the challenges related to accessibility can jeopardize both the independent and assistant applications of AI software in the process of *ijtihad*. The solutions to these challenges vary accordingly. In some aspects, individuals themselves must take the initiative to overcome obstacles, particularly those related to language barriers. While employing translation AI services could potentially mitigate the problem, it is essential to acknowledge that these services also present their own set of challenges. In certain cases, these challenges might even exacerbate the issues related to language barriers. On the other hand, certain accessibility challenges require the intervention of governments and/or other authorities, who possess the ability to mitigate issues through various measures, such as developing infrastructure or implementing policy changes.

2.2. Bias

Despite the various potentials of AI to enhance efficiency and accuracy, AI systems are not immune to bias. The primary consequence of biased AI in religion is the distortion of the interpretation of sacred texts and religious sources. This outcome raises concerns about the accuracy and integrity of the insights provided by AI systems within religious contexts. Such bias can lead to unfair and discriminatory outcomes, perpetuating existing societal inequalities and even giving rise to new ones, thereby potentially deepening divisions among various groups. This poses a significant challenge to the authenticity of *ijtihad* conducted by an AI model. There are at least four primary causes of bias in AI: first, the utilization of biased or unrepresentative datasets for training the AI model; second, intentional or unintentional algorithm designs; third, the lack of diversity in AI developing teams, which may lead to overlooking potential sources of bias; and fourth, the human-centric data collection, which implies that AI systems are often trained on data reflecting human behavior, thereby requiring them to learn and replicate this behavior, some of which may be inherently biased (Kantayya 2020). All of these causes of bias pose significant threats to the impartiality of the outcome of the AI model used in the process of *ijtihad*.

In the context of AI and religion, one should be aware of at least two instances of biased artificial intelligence. The first pertains to facial recognition technology, as also brought up in Kantayya's movie, *Coded Bias* (Kantayya 2020). Because algorithms used in facial recognition technology are predominantly trained on data featuring individuals who do not wear religious head coverings, such as hijabs or turbans, this technology is less accurate in identifying those who wear such head coverings, resulting in biased outcomes against individuals who do. On numerous occasions, I have observed that the camera on my mobile phone has encountered difficulty in identifying the facial features of my wife while she is adorned in a hijab; yet, upon her removal of the hijab, her facial features are immediately detected, even at non-frontal angles.

Another pertinent example, which also underscores the deleterious impact of AI bias, is my interaction with ChatGPT. It is well-known that there are two predominant

Islamic sects, namely Sunni and Shi'a. Given that the majority of Muslims identify as Sunni (approximately 90%) (Cavendish 2010, p. 130), and that many Shi'a texts have not been translated into English, the corpus of information that is readily available on Islam is primarily based on the Sunni school of thought. Regrettably, the vast majority of my inquiries to ChatGPT, across various topics, were met with Sunni-centric perspectives. For instance, the term "*ijtihad*" has divergent connotations in the Sunni and Shia traditions; however, ChatGPT appears to lack recognition and knowledge of this distinction, as its response to my inquiry, "What does *ijtihad* mean in Shia?" yielded the following answer: "In Shia Islam, *ijtihad* has a similar meaning as in Sunni Islam..". Other instances of this nature, pertaining to Islamic history and doctrinal intricacies, are also discernible.

The employment of biased AI systems in the process of *ijtihad* can lead to negative implications, encompassing the following aspects:

1. Discriminatory outcomes that do not truly reflect what many understand as the intention of the religion. These outcomes may fail to align with the spirit of the faith and its principles.
2. Reinforcement and perpetuation of existing stereotypes, (such as the unfriendly attitude toward the followers of other sects or those who have failed to observe a certain religious rule) which jeopardizes one of the fundamental goals behind employing AI in this field, which is bringing about the reformation from within the Islamic jurisprudence.
3. Exclusion of marginalized opinions and scholars, contrary to the motivation of inclusivity and studying all available perspectives that come with using AI in the *ijtihad* process. Biased AI can undermine the essence of open exploration and consideration of diverse viewpoints.
4. Perhaps the most evident implication of biased AI is the loss of trust. The discovery of bias in AI can erode public trust in AI technologies and their developers. Users may become hesitant to interact with AI systems, hindering their widespread adoption and potential benefits. In the following section, the issue of trust will be discussed in detail.

It is, therefore, essential to address these concerns and work towards creating an AI system for *ijtihad*, that is as unbiased as possible to foster trust and embrace the true potential that AI offers in this field. The task of eliminating all biases from AI systems is a challenge that is on the verge of impossibility. Nevertheless, there are several steps that can be taken to diminish and alleviate such biases. These measures include, employing diverse databases, ensuring that the datasets used to train AI systems are representative and inclusive of various demographics and perspectives, identifying and modifying algorithms or datasets; actively addressing and rectifying any identified biases in algorithms or datasets aiming to minimize their impact on AI outcomes; engaging a diverse pool of developers, promoting diversity within the development teams or in ethical terms, co-design or participatory design (Mercer and Trothen 2021, p. 58), can lead to greater awareness of potential biases and foster more inclusive AI system designs; implementing ongoing monitoring of AI systems, regularly monitoring AI systems helps to prevent the gradual development of biases over time and ensures that they continue to perform fairly and accurately. By proactively implementing these steps, we can work towards building AI systems that are more equitable and unbiased, contributing to a more just and inclusive future.

The issue of the influence of prompts on the outcomes of generative AI models, especially NLP models, is of paramount importance and falls under the broader challenge of bias. The prompt is the initial input or instruction provided to the AI model, and it plays a significant role in shaping the generated response or output. The prompt serves as a guide for the AI model, helping it understand the context and purpose of the task it needs to perform. AI models, especially language models like GPT-3 and similar models, are highly sensitive to the wording and structure of the prompt. Even small changes in the prompt can result in vastly different responses. The same AI model can generate opposing answers to a question based on slightly different phrasing in the prompt. The

sensitivity of AI models to the prompt can indeed contribute to bias in their outputs. When a prompt contains biased language or reflects biased assumptions, the AI model may generate responses that perpetuate or amplify the underlying bias in the data. The internet is teeming with webpages containing "prompt tricks" or "prompt cheats" designed to elicit various responses—even those restricted by developers to reduce bias—from AI models like ChatGPT.

Despite the presence of prompt-related challenges in both AI-driven and Shi'a scholars' interactions, there are notable distinctions between the two. Firstly, AI models exhibit a heightened sensitivity to prompts, surpassing that of human scholars. Scholars, being immersed in society and exposed to diverse contexts, possess a deeper understanding of, or can infer, the underlying intent behind a question. Secondly, prominent Shia scholars, vested with the authority to issue *fatwa*, are supported by a cohort of researchers and occasionally scientists, who aid in minimizing the impact of prompts on the *fatwa* issuance process.

Sensitive Topics

Another challenge of AI models in a religious context, related to bias, is how to handle religiously sensitive issues. Insufficient data on sensitive issues can result in biased evaluation and judgment, potentially causing emotional distress among lay believers within a religious context. Controversial matters have existed in every religion, sparking debates and sometimes even conflicts. These issues range from historical details to modern matters, including LGBTQ related issues, abortion and the hijab. Developing a publicly accessible AI that can address these issues without offending the sentiments of the followers and avoiding conflicts or divisions is a highly complex task. This is the primary reason why certain AI projects, such as the *Digital Jesus* project, are not yet available to the public. This task becomes even more challenging in the context of finely-tuned AI projects, where artificial intelligence systems are trained on specialized databases. For instance, HadithGPT is an AI model that was specially trained on a database consisting of 40,000 hadiths derived from the six most authoritative Sunni hadith collections although its latest version was relatively accurate, was forcefully rejected by some Muslims due to what was perceived as "clearly incorrect" responses on religiously sensitive matters (Chowdhury 2023).

Another employment of AI in religious practices that can raise a sensitive issue is the possibility of AI occupying the position of highly revered figures in a particular religion. Throughout the early stages of prominent world religions, pivotal figures who underwent a specialized process assumed responsibility for religious acts of worship, rituals, management of religious communities and most importantly *ijtihad* as the pinnacle of Shi'a Islam authority. Traditionally, going to the religious scholar's house or meeting with him in person in a mosque was a sign of reverence and respect. Even the Prophet Muhammad has been quoted as saying that "looking at the face of an 'alim (scholar)... is an act of worship". Although this could be well interpreted as an encouragement of participation in scholarly circles and seeking knowledge, some still follow the literal understanding of this hadith. Hence, it is entirely comprehensible that certain followers may feel uneasy or refuse to accept the placement of AI in the positions traditionally held by these religious figures.

2.3. Privacy

Another aspect concerning the use of AI in issuing *fatwa* is the aspect of privacy enjoyed by users when accessing religious content. Through AI projects, users can pose private questions, share personal aspects of their lives that they may not feel comfortable discussing with others or inquire about sensitive topics they might be ashamed of. A noteworthy instance of this is the algorithm of an AI model capable of answering Islamic rulings related to the menstrual cycle ('Alam-Huda'i and Shahbazi 2020, pp. 549–66)—a matter that some women may find uncomfortable discussing especially when a female scholar is not available. Additionally, the use of chatbots providing comfort and empathy

to individuals facing challenging times in their lives offers solace for those hesitant to share their struggles with others due to social implications or other concerns (Loewen-Colón and Mosurinjohn 2022, Young 2022). In such situations, AI can prove to be a valuable although limited resource.

On the other hand, it goes without saying that privacy has always been a significant concern for anything conducted online or for apps that collect users' data. A recent example of privacy violation involved the use of data from period-tracking and pregnancy apps to persecute those suspected of having an abortion (Masunaga 2022). An AI system for issuing *fatwa* is no exception in this regard. Collecting data on frequently asked topics in each region and the phrasing of questions are some of the basic data that can be collected, potentially violating the user's privacy.

2.4. Generative AI

Generative AI models are designed to produce new data resembling a given training dataset. This creativity is an attractive force that draws people towards generative AI. For instance, in the context of NLP models trained on a vast corpus related to Jesus, scholar Randall Reed has been developing an AI that can generate responses that, while not being the exact words of Jesus, "sound like the Jesus in the Gospels" (Reed Forthcoming). The ability of generative AI to establish constant and multiple connections between different parts of the dataset is a feature that holds promise for revolutionizing *ijtihad* (Fazil Lankarani 2023). However, it is crucial to acknowledge that there are also potential consequences of generative artificial intelligence that may have negative impacts on the *ijtihad* process.

There are two important challenges related to the generative nature of AI models, which hold the potential to revolutionize Shi'i *ijtihad*. The first issue lies in the randomized responses of Generative AI models, even in finely tuned versions. In other words, the same question can yield more than one answer, not only differing in wording but, more importantly, in content. For instance, in Reed's *Digital Jesus* project, at least three responses were generated for each question. In some cases, these responses bore no resemblance to each other. For example, when asked about the greatest commandment, in one instance, Digital Jesus responded with the same response as Jesus, "The one about loving God with all your heart, soul, and mind", while in another, it stated, "The best is 'Listen, and you will be given wisdom'" (Proverbs 9:4) (Reed Forthcoming). This challenge is also evident in other NLP models like ChatGPT and HadithGPT. I have had multiple experiences with HadithGPT where the same question yielded entirely different responses. For instance, when I asked, "Among the wives of the Prophet, whom did he love the most?", I received different names each time AI generated a new response (Hadith GPT 2023).

While it is common for jurists to undergo changes and alterations in their legal opinions, it is important not to equate or confuse this process with the generation of new responses by generative AI. The primary reason for this distinction is that the evolution of a jurist's legal opinion arises from shifts in understanding or access to additional data, often requiring a significant amount of time. On the contrary, when it comes to generative AI, users can be certain that, within a minute, nothing has changed in terms of the sources or analysis of the AI model. The emergence of new responses in generative AI is simply a result of the generative nature of such AI models. Moreover, the variation in responses from an AI model is perceived as inconsistency, since different users can receive different answers to the same question simultaneously. On the other hand, when a jurist issues a modified *fatwa*, it does not imply inconsistency, as it aligns with coherent and consistent data serving as the basis not only for that specific *fatwa* but also for all other *fatwa*s issued by the same jurist.

2.5. AI "Hallucination"

The second challenge that is related to the generative nature of these AI models is AI hallucination. It refers to a phenomenon in which artificial intelligence systems, particularly language models like GPT-3, generate outputs that appear entirely believable

and well-grounded in reality, but in fact, have no basis in reality. These hallucinations can be in the form of text, images or even audio generated by AI models. The inherent characteristic of language models is trying to create plausible-sounding responses without actual understanding or knowledge of the context (Athaluri et al. 2023, p. 1). Due to their immense size and training on diverse datasets, these models might produce outputs that appear to be creative or hallucinatory, often by combining unrelated concepts or generating fictional narratives.

There are numerous examples of AI hallucinations to the point that anyone who has asked questions to an AI model like ChatGPT has likely encountered a few instances. Personally, I have witnessed ChatGPT generating responses that were entirely fabricated. For example, when I inquired about the book *Strange Rites: New Religions for a Godless World*, it provided a summary of the book. Seeking more accuracy, I specified that I meant the one written by Tara Isabella Burton. In response, it apologized and generated another abstract of the book. I then asked if it could provide a summary of each chapter, and it confirmed its ability to do so. However, the titles of the chapters and their content were completely different and also incorrect. I provided additional information, mentioning the book's publisher. Once again, it apologized and provided summaries of each chapter, this time with new titles, none of which matched the book I had in front of me. This process repeated for the third time, and once more, it generated an entirely new book with no connection to the published one. Such instances highlight the challenges posed by AI hallucination and underscore the need for further refinement in AI models to ensure more accurate and reliable responses.

An intriguing example closely related to our topic is the one that occurred in the *Digital Jesus* project. When asked about the greatest commandment, in the first attempt, Digital Jesus responded with the same answer as Jesus, "The one about loving God with all your heart, soul, and mind", but in the second attempt, it provided a response, "The best is 'Listen, and you will be given wisdom' (Proverbs 9:4)". However, Proverbs 9:4 does not contain such a commandment in the Hebrew Bible. Still, the response was articulated in a way that someone unfamiliar with Christian tradition (or even familiar with Christian tradition but not have scripture memorized) might accept as valid (Reed Forthcoming). It is for such cases that for differentiating between hallucinations and reality in the process of *ijtihad*, one must be an expert in all the necessary fields of study required for *ijtihad*, and even someone with such expertise must refer to the sources to verify the generated content.

The section highlighted various challenges that significantly impact the accuracy of AI models utilized in the process of *ijtihad*. These challenges pose substantial obstacles to achieving reliable and precise results in AI applications. By acknowledging and addressing these issues, researchers and developers can strive to enhance the performance and credibility of AI systems. They are continually refining AI models to minimize these hallucinatory responses and to enhance the control and precision of the generated content. As AI technology evolves, it's likely that the capabilities of language models will improve, leading to more accurate and contextually appropriate responses while reducing hallucinatory outputs.

2.6. Authority

The concept of authority in Islam, including among Shi'a, differs significantly from that in some streams of Christianity. Unlike Roman Catholic Christianity, which has a hierarchical structure with authority flowing from the top, Islam does not follow such a system. The question of authority holds immense importance, as the outcome of the *ijtihad* process is believed to be a "ruling in accordance with divine revelation"—a crucial criterion observed in every Shi'i *fatwa* (Sheikh Anṣārī 1404, p. 303). It is also worth noting that the challenge of authority becomes more pronounced when an AI system is independently used to derive *fatwa* from its sources. However, when AI is employed in a more modified and accountable role as an assistant for the jurist, the authority can be preserved through the presence of the jurist in the process and their supervision over it. This way, the jurist

can maintain their role in ensuring the legitimacy and accuracy of the derived rulings. It is noteworthy that there is a growing body of scholarly works that argue for AI's role solely as an assistant in religious matters (Trothen 2022b, 2022a).

There are two principal ideas about the main source of religious authority. Traditionally, and as believed by many religious people from different Abrahamic religions, authority is considered to come from God. For religious statements to hold value and significance, evidence of divine appointment is typically required, often through a complex hierarchical structure, such as what is seen in Catholic Christianity. However, in the modern world, particularly after the Protestant Reformation, some believe that authority can also originate from the adherents of a religion. For example, a Muslim imam, whose community has accepted his authority, may not need an institution or a higher-ranked scholar to validate his position. It is important to note that the discussion surrounding the authority of AI primarily arises in the former situation rather than the latter. Based on the second interpretation, it is entirely plausible that a group from any religion or even without a specific religious affiliation may accept the authority of an AI system, potentially forming a new denomination or even a religious movement, like the first church of artificial intelligence, known as The Way of the Future (WOTF), which was established in late 2017 and closed in early 2021 (Harris 2017; Korosec 2021).

The process of gaining religious authority in Shi'i jurisprudence is deeply rooted in tradition, even in countries like Iran where a Shi'a Islamic government holds power. In the Shi'a tradition, achieving such authority involves embarking on a rigorous path of studies in various fields related to *ijtihad*, followed by obtaining written permission from one or more top living jurists. This chain of permissions traces back to the Imams of Shi'a Islam who lived during the 8th and 9th centuries. The "Permission of *Ijtihad*" (*Ijazat al-ijtihad*) signifies that the holder possesses the capability to deduce *fatwa*s from their sources by skillfully applying the necessary fields of study.

However, a crucial question arises: Can an AI model be given such permission? To answer this, one must understand the requirements and the process by which this permission is granted. Interestingly, there is no official or definite procedure for obtaining this certificate; rather, it mainly relies on the trust and confidence of higher-ranked scholars (*mujtahids*, qualified jurists who practice *ijtihad*) in the individual seeking this permission. The most common path to gaining this trust involves a student actively participating in the lectures of a top scholar for several years, demonstrating exceptional performance, judgment, reasoning and a profound understanding of the sources necessary for *ijtihad*. Other methods, such as extensive discussions, may also serve as a detailed test of the student's capabilities, ultimately earning that sought-after trust. Considering this, it may not be entirely impossible for an AI model to receive this certificate if it can garner the trust of a *mujtahid*. However, the possibility of AI obtaining such a certificate takes a backseat to the larger discussion of whether being human is a necessary criterion for engaging in *ijtihad*. This last point reminds me of a theological debate in Christianity, arguing that believing human beings were created in the image of God does not necessarily imply the absence of this feature in other creatures, according to some interpretations (Mercer and Trothen 2021, pp. 222–23).

2.7. Trust

With the emergence of "deepfake", the issue of trusting any content on the web has entered a new and concerning phase. Deepfakes, a combination of "deep learning" and "fake", refer to hyper-realistic videos that are digitally manipulated to depict people saying and doing things that never actually happened. These deceptive videos are challenging to detect, as they use real footage, can have authentic-sounding audio and are optimized to rapidly spread on social media platforms (Westerlund 2019, p. 40). While deepfake may not directly impact the trust issue within the realm of using AI in the process of *ijtihad*, since *fatwa*s are almost always expressed in written form rather than orally, it serves as a pertinent example of how certain AI models can be employed for intentional deception.

The prevalence of deepfake technology has contributed to the erosion of trust in AI, as individuals become increasingly cautious about the authenticity of digital content.

The issue of trust is also a crucial consideration when an AI model is employed for practicing *ijtihad*. This raises the question of whether scholars can place their trust in an AI system, which, in turn, leads us to a broader discussion about whether lay Muslims would entrust their faith to AI. Two cases, Virtual Ifta' in Dubai and "Al-Azhar Fatwa Global Centre" in Egypt, along with a survey about the same question, shed light on the issue of trust when using AI in the process of issuing *fatwa*s or *ijtihad*. The first project, Dubai's Virtual Ifta', made its debut in October 2019 during a three-day exhibition dedicated to launching "the world's first AI *fatwa* service". However, the AI model utilized in this service was non-generative. Upon entering a question, the user would receive multiple similar questions to choose from, and the corresponding answer to the chosen question would then appear (AP Archive 2019). Less than three months later, in January 2019, the Al-Azhar Fatwa Global Centre in Cairo announced its own AI *Fatwa* System. However, the system is yet to be operational as the "team of special intelligence [. . .] are still collecting data to support the system" (Tsourlaki 2022, p. 13). These two cases and the survey data provide valuable insights into the issue of trust concerning AI's role in issuing *fatwa*s. As AI technology continues to evolve, it remains vital to explore and address the concerns and perspectives of the Muslim community regarding the integration of AI into religious practices.

The informative survey conducted by Tsourlaki examined the attitudes of lay Muslims toward AI systems related to *fatwa* issuance. According to the author, "The participants' common characteristics were that they identified as Sunni Muslims, employed the English language in their daily communication and used Facebook. Therefore, they were familiar and comfortable with technology" (Tsourlaki 2022, p. 8). Two notable factors stand out among these common characteristics. First, the participants' familiarity and comfort with technology, as highlighted by the author, are significant. Second, their use of English as their daily language suggests that they may not have a strictly traditional background, a notion supported by 16 percent of participants who stated that they obtain their *fatwa*s from their local imams. Given the unsuitability of imams to serve as *mufti*s, this fact indicates that they do not have a deep knowledge of the exact requirements one should have to be able to produce *fatwa*s (Tsourlaki 2022, p. 12).

It is essential to consider these insights when examining the acceptance and impact of AI systems in the realm of *fatwa* issuance. As AI technology continues to be integrated into religious practices, understanding the perspectives and preferences of lay Muslims becomes crucial for developing effective and trustworthy AI-driven solutions in this context. As a part of the survey, when the participants were asked, "Is it important to know whether the *fatwa* has been created by a human or a computer?" 92.7 percent responded positively, while 7.3 percent stated that they are not concerned about it. On the aspect of *fatwa* issuance by a computer, 96.3 percent stated that they would not trust a *fatwa* that a computer had issued (Tsourlaki 2022, p. 13). The other question, "Why would you trust or reject a *fatwa* issued by a robot?" asked respondents to provide an essay-style answer. The majority of participants expressed a clear rejection of such a *fatwa*. Their rationale centered on human cognitive abilities, including reasoning, compassion and critical thinking, as well as the skill to interpret sources, grasp complex contexts and conduct comparative analyses. The significance of cultural and societal context was also emphasized in their responses.

These findings align with the conclusions of a 2015 Egyptian research study, indicating that lay believers generally tolerate and forgive mistakes made by a *mufti* (jurist who issues a religious ruling (*fatwa*)) unless they significantly disturb the public. However, the same leniency would not be extended to even minor errors made by AI (Elhalwany et al. 2015, p. 504). Answers to this question reveal a subconscious fear of the unknown of AI's interference with traditional practices within Islam. This fear is evident in one of the responses, which stated, "I will simply reject a *fatwa* because I won't believe a computer when it comes to my faith" (Tsourlaki 2022, p. 19).

The lack of trust in computer-generated *fatwa*s explains why Virtual Ifta' received no response or serious attention and consequently had a short period of activity. The way that the project was launched and introduced its function might also have caused a misunderstanding. Virtual Ifta' utilized a repository of pre-registered *fatwa*s, and the AI aspect was limited to finding the nearest model question to the user's inquiry. However, during the launch ceremony, it was promoted as "The world's first AI *fatwa* service". Furthermore, it is surprising that before users typed their questions, an automated message informed them that "the answers to your questions are generated automatically using AI technology" (Tsourlaki 2022, pp. 12–13). According to the survey conducted by Tsourlaki, had the users known that the project relied on previously issued *fatwa*s, it would have received more attention and acceptance by the target audience (Tsourlaki 2022, p. 18). As of March 2022, no academic publication had engaged with the project, and the media coverage was limited to a few announcements during the launch week (Masudi 2019; Dajani 2019; The New Arab 2019; AP Archive 2019). It seems that Muslims either did not notice the service or rejected using it, leading to the decision by IACAD (Islamic Affairs and Charitable Activities Department in Dubai) to discontinue the project (Tsourlaki 2022, p. 19).

2.8. Acceptance

Another issue that is deeply related to the discussion of authority and trust is the issue of acceptance of artificial intelligence in religious matters. Even after gaining authority, AI systems can suffer from not having acceptance among the lay followers of a given religion. For instance, even if Mindar, the AI Zen Buddhist robot, was endorsed by the authorities at Kodiji temple, there are some Buddhists that still do not welcome this project (DW Shift 2020). Although using AI has not only been approved but also encouraged by most Sunni and Shi'a scholars (Islamweb 2023; Awais 2022; Khamenei 2021, 2023), some lay Muslims are still reluctant to use AI for different reasons including, the notion that only a human can undertake the process of *ijtihad* and issuing *fatwa*, basic and superficial understanding of AI, the problem of having no personal contact and relation with the one who is answering the question (Tsourlaki 2022, p. 19) and the idea that artificial intelligence is an imitation of God's action as it involves creating an intelligent being (Quora 2023).

Some of these rationales are not specific to Islam; for instance, considering AI as an imitation of God's act of creation is also may be viewed as an impediment to AI development in Christianity (DW Shift 2020). Another significant reason for the non-acceptance of AI systems in religious activities is the concern over its usage being sacrilegious. When reporting on Mindar, the first thought that crossed the reporter's mind was, "Isn't this sacrilegious?" (DW Shift 2020) This reaction reveals the subconscious feelings of at least a group of people towards such AI projects. This sentiment can be linked to the concept of "*Wahn*" in Shi'a Islam doctrine. "*Wahn*" refers to anything that makes Islam appear irrational, weak, inferior or insignificant to the public, regardless of their religious affiliation. It is strictly prohibited in Islam, and all Muslims have a responsibility to avoid it (Honarmand 2020, p. 13). In certain cases, the use of AI in religious matters can be perceived as demeaning to the community based on the specific act or service provided by the AI. This notion not only leads to the rejection of AI by laypeople but also has the potential to undermine the authority of AI models. All in all, these concerns illustrate the intricate interplay between technology and religious beliefs, necessitating careful consideration and understanding when integrating AI in religious contexts.

In this section, the lack of personal relationships with scholars was mentioned as one of the reasons why Muslims are reluctant to accept the outcomes of AI models. However, it is essential to recognize that this aspect can also be regarded as an independent issue worthy of examination. There exist specific instances where a *mujtahid* has issued a tailor-made *fatwa* for an individual, drawing upon the personal acquaintance and understanding of the unique circumstances involved. For instance, in cases where an individual is grappling with an obsession (waswasa in Arabic and vasvās in Persian) related to a religiously mandated

action, the *mujtahid* may issue a *fatwa* that such action, while obligatory for the general public, is deemed forbidden for that specific individual (Heidari Naraqi 1388, pp. 133–34). Such personalized *fatwa*s are not rooted in textual sources but rather arise from the jurist's intention to assist the individual in overcoming their obsessive state. Moreover, addressing the queries of an obsessed individual with conventional, established *fatwa*s applicable to the broader community, can exacerbate the obsessive condition. All in all, the generation of customized *fatwa*s through an AI model for such cases is not a straightforward task, as it necessitates considerations beyond mere textual sources, delving into the contextual nuances that can be best comprehended through in-person interactions.

2.9. Unexplainability

The unexplainability of AI models refers to the difficulty in understanding and interpreting the decision-making processes and underlying mechanisms of these models. Generative AI models often lack transparency and interpretability. The lack of interpretability and explainability in generative AI models raises concerns in critical applications, where understanding the decision-making process is crucial (Molnar 2022, pp. 13–14). The process of *ijtihad* may be counted as one of the situations in which transparency plays an important role. This issue applies to both cases of employment of artificial intelligence models in the field of *ijtihad*, i.e., using them as assistants for a jurist and using them as independent tools for deducing *fatwa*s from the sources. Particularly, the interpretability of AI systems gains more importance in the former case, as the jurist needs to know why and how the AI has come to this result to be able to assess them. In the absence of this appraisal, employing the AI model as an assistant becomes devoid of rationale. It is noteworthy that the issue of unexplainability is the most important challenge for using AI models as an assistant, because most of the aforementioned challenges, such as authority, bias and AI hallucination could be overcome by the presence of a jurist next to the AI model, but this issue cannot be solved by this presence.

Unaccountability

The lack of interpretability in AI models gives rise to another significant challenge: unaccountability. *Fatwa*s hold a crucial status in the lives of Shia Muslims, with many instances where individuals have sacrificed their lives in adherence to a *fatwa*. A recent case is Grand Ayatollah Sistani's call for war against ISIS (Reuters 2015), leading thousands of Iraqi Shia Muslims to fight, with many losing their lives in fulfillment of this *fatwa*. *Fatwa*s wield immense power, but when an AI model issues an erroneous *fatwa* resulting in adverse outcomes, who bears responsibility? If these AI models lack interpretability and are solely trained on datasets through machine learning, it implies that developers are not directly involved in the issuance of such *fatwa*s, hence absolving them of accountability. This, in turn, may lead to *fatwa*s for which no one can be held responsible, even in the event of severe consequences.

All in all, researchers are actively working on developing techniques to enhance the transparency and interpretability of these models, but it remains an ongoing challenge in the field of artificial intelligence (Molnar 2022, pp. 13–14).

3. Conclusions

Using trained generative artificial intelligence models in the process of Shi'i *ijtihad* is a fascinating topic and holds great promise for the future. However, getting to the point where AI is truly ready to be utilized in this field is no simple task, given the various types of challenges these AI models must overcome. The primary objective of this research was to identify and examine some of the most significant challenges, highlighting that while the idea of employing AI in this domain may be alluring and intriguing to both religious scholars and some laity, it must first surmount significant obstacles.

The present research deliberated upon a range of critical issues pertaining to the utilization of trained generative artificial intelligence models in the context of Shi'i *ijtihad*.

The discussed concerns encompass limitations of accessibility to this technology, concerns about the privacy of user information, the problem of "AI hallucination" and generative nature of AI models studied in this essay, biases in the training data and algorithms, lack of transparency and inexplicability in judgments and decision making, concerns about the interpretation of sensitive or controversial topics, as well as persistent questions about trust and the authority of non-human generated religious interpretations and legal determinations. For instance, the challenges associated with trust and acceptance present formidable obstacles, deeply rooted in the psyche of lay individuals who are supposed to engage with such AI systems. Effecting transformative shifts in their perspectives may prove quite arduous judging by the survey research cited in the previous part. Another salient matter of concern is the presence of bias in AI, a phenomenon that transcends the sphere of *ijtihad* and extends to numerous other domains, such as facial recognition AI models. Similarly, the aspect of the unexplainability of AI models poses a momentous predicament when employing them in the *ijtihad* process. Simply put, generative AI models are functioning akin to enigmatic black boxes. This issue will eventually render AI models unsuitable for employment in the process of *ijtihad*, where a comprehensive understanding of the reasoning behind issued *fatwa*s is of paramount significance, particularly in scholarly circles. Moreover, the absence of interpretability in AI models undermines their utility as indispensable assistants in the *ijtihad* process, as jurists necessitate a lucid grasp of the interconnections between various topics and the manner in which a particular *fatwa* finds its basis in specific sources.

Some of these challenges are common between using AI in *ijtihad* and other fields where AI is utilized. For example, privacy concerns and limitations in accessibility are pervasive issues that have preoccupied users across various AI services and even non-AI internet-based services. For instance, there are more than 300 websites, offering various AI and non-AI services, that are blocked for Iranian IPs due to sanctions (Borhani 2023). Nevertheless, some of these challenges are more specific to the use of AI models in the process of *ijtihad*, such as the challenge of generating new responses while no changes had happened in the dataset. Moreover, the challenges expounded upon in this research were examined through a dual prism: the utilization of AI models as an independent tool for issuing *fatwa*s and using them as assistants to jurists in the *fatwa* issuance process or *ijtihad*. Certain issues present heightened challenges in the former scenario, whereas others manifest greater complexities in the latter. For instance, as elucidated, matters of authority, trust and acceptance pose more formidable obstacles when an AI model is used as the only tool for practicing *ijtihad*. Conversely, unexplainable AI poses a greater challenge in the deployment of AI as an assistant to jurists. The AI system's inability to provide explanations for its decisions hinders its usefulness in aiding the jurist to arrive at a specific religious decision or *fatwa*. Without a clear understanding of how and why the AI arrived at a particular conclusion and the sources and reasoning behind it, the jurist's confidence in relying on the AI's assistance may be compromised. Furthermore, certain issues, such as privacy and accessibility, present comparable levels of challenge in both deployment cases.

Although the foregoing challenges were enumerated analytically as distinct issues, it is important to recognize that there are important interrelationships and overlaps between these challenges and concerns among scholars and practitioners. In fact, these issues are closely interconnected with each other and their interwoven nature merits due consideration. To illustrate the interrelation of these aspects, it is pertinent to draw attention to the fact that restricted access to AI systems can result in under-representation and eventual bias against certain groups. For instance, as mentioned in the previous part the responses of ChatGPT are more based on a Sunni understanding of Islam as it is the dominant Islamic denomination. Conversely, increased accessibility may compromise privacy, as users are more inclined to divulge personal information to avail themselves of these services. Moreover, a biased AI holds the potential to render unthoughtful judgments on sensitive matters, as addressing and effectively dealing with such issues requires access to more comprehensive information from specific communities. The aftermath of addressing sensitive issues with

such bias may lead to the question of accountability. Moreover, the endeavor to enhance the interpretability of AI models can potentially encroach upon privacy, as the process of interpretation may entail accessing information submitted by users. The interrelation and interdependence among these challenges will further evolve with additional exploration and deeper contemplation and reflection. Accordingly, viewing these challenges as discrete, isolated issues would be an oversimplification, as they are merely presented in list format to facilitate the cohesive flow of discussion in this essay.

What the Future Holds

An important aspect of these challenges is that all of them are issues that current generative AI is facing. These challenges do not necessarily warrant complete abandonment of using AI in this field. Believed by many specialists, AI is still in its nascent stage and has a long way to go (Bostrom 2015). This paper, at best, can only provide a discussion of the current state of AI. Predicting the rapid development of AI is almost an impossible task. Even with the introduction of GPT-4 and its plugins, there are more interesting advancements that demonstrate how AI is overcoming some of the challenges outlined in this study. Ultimately, it is conceivable that AI will be capable of surmounting some of these challenges or at least mitigating them in the future. However, there are questions that remain unanswered: how long it will take and whether new challenges will emerge during this time; or whether certain fundamental dimensions of religious authority will always resist full acceptance of non-human, computer-based religious determinations. Even if these significant challenges are overcome, there are still questions regarding how religious culture will be shaped in new directions through AI's influence on religion or in response to it.

With regard to future studies and research related to the title of this essay, I think there are two topics that need to be given more attention than others. The first topic is a theoretical discussion that is more related to Islamic jurisprudence and that is finding the special criteria of a jurist that cannot be dehumanized. In other words, are there any characteristics essential for the one who practices *ijtihad* that cannot be obtained by an AI model? What are these characteristics and is there any way to make a substitute for them in an AI model that is designed to be used in the process of *ijtihad*? The second proposal for future studies in this field is more practical and that is building or training an AI model for the purpose of using in the process of Shi'i *ijtihad* and getting detailed feedback on the advantages and shortcomings. A project similar to *Digital Jesus*, trained on the vast data that is used in the process of *ijtihad*, starting from the Qur'an and its commentaries, other scholarly fields needed for this process, to numerous books of jurisprudence and its principle authored by the jurists during approximately 12 centuries. The responses of such a project will demonstrate the challenges of using AI in this field more specifically and will give researchers in both computer engineering and Islamic studies a better vision of the pros and cons of employment of AI in the process of *ijtihad*. Although the Najaf project was introduced in 2018 for the purpose of "application of artificial intelligence in Islamic Sciences", such a project on using AI in the process of *ijtihad* has not yet been done or at least been reported or discussed in scientific journals. Needless to say, other than these two topics, there are many other issues related to the title of this research, such as the parts of Islamic jurisprudence that can be revolutionized by the use of AI, the possibility of giving an AI model the permission for *ijtihad* and employment of AI in each scholarly fields that will affect the process of *ijtihad*.

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Notes

1 More details about Ayatollah Mubalighi's views can be found in this paper, specifically at lines #187–196.

2 Virtual assistants: AI-based software that performs tasks, answers questions, and interacts with users through voice commands or text input.Image recognition systems: AI-powered technology that analyzes visual data, identifying objects, people, and activities in images or videos.Recommendation algorithms: AI algorithms that personalize content or product suggestions based on user data and behavior to enhance user experience.

3 Using AI as the only tool to undertake the process of *ijtihad*. In this case, the AI model is provided with the data, including Islamic sacred texts and other sources, for machine learning. Subsequently, when a user poses a question, the AI model generates a full-fledged *fatwa* in response.

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Article

Psychedelics, the Bible, and the Divine †

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† NB: Unless otherwise noted, all biblical citations are from the NRSV translation.

Abstract: The current psychedelic renaissance intersects with Christian practices in two key ways. First, as psychedelic-assisted therapy (PAT) becomes more common, Christians undergoing therapeutic medical treatment may seek outside support for integrating into their religious lives mystical experiences that occur during psychedelic sessions. Second, with increasing legal access to psychedelics, more Christians may explore their spiritual potential outside of a medical context, either individually with spiritual guides or collectively in organized retreats. Many will have mystical encounters related to the Divine. Whether the experience involves the overwhelming presence or absence of the Divine, these Christians, too, will seek integration support. This essay argues that the Bible can serve as a rich source for such integration, because it contains significant material about mystical experiences marked by altered states of consciousness. First, I summarize the importance of the psychedelic renaissance, especially the scientific studies being conducted, as it relates to Christian practices of spiritual formation. Second, I explore new work being conducted by biblical scholars regarding *embodied* religious experiences with the Divine (and others), including mystical experiences. Third, I consider the Apostle Paul's embodied mystical experience, with special attention to 2 Corinthians 12:1–10, as one example of biblical material that might intersect with or inform psychedelic mystical encounters that contemporary Christians might experience (whether in a medical therapeutic or non-medical spiritual formation setting). Finally, I indicate directions for further research and discussion.

Keywords: psychedelics and the New Testament; psychedelics and the Bible; psychedelics and religion; psychedelic therapy and religion; mystical experience; visionary experience; divine encounters; psychedelics and Paul; psychedelics and theology; psychedelics and Christianity; embodiment; consciousness; altered states of consciousness; entheogens; bad trips

1. Introduction

Psychedelics (e.g., psilocybin, mescaline, and ayahuasca) have long been used for spiritual purposes across cultures.[1] Lately, psychedelic-assisted therapy (PAT) is being studied and deployed for a stunning array of medical conditions, including alcohol use disorder; treatment-resistant PTSD; end-of-life distress; nicotine addiction; eating disorders; chronic pain; and more. The scientific literature copiously documents the "consistent presence of SERT (spiritual, existential, religious, and theological) experiences in PAT, often focusing specifically on mystical-type experiences" (Palitsky et al. 2023, p. E1).[2] The same holds true for studies involving novice meditators; long-term meditators; and, more recently, religious professionals.[3] Mystical-type experiences may be considered "phenomenological states whose characteristics include changes to sense of self, meaningfulness, and connectedness, which acquire existential, spiritual, or religious primacy for individuals or communities" (Palitsky et al. 2023, p. E1). Especially striking is the importance ascribed to mystical experiences as potential mediators of healing: "Not only do psychedelics induce intense mystical experiences. Current evidence seems to suggest that psychedelics have the potential to treat a range of mental health disorders *because they induce such mystical experiences*" (Cole-Turner 2022, p. 2). Significantly, 66–86% of participants rated these experiences among their top five most meaningful and spiritually significant experiences, or even as the single most

meaningful experience, even when asked again in follow-up surveys conducted 14 months later (Griffiths et al. 2006, 2008; Leary 2007; Johnson et al. 2017).

Meanwhile, the Christian church, broadly construed, is arguably largely unaware of, or uninvolved with, the so-called psychedelic renaissance. It is ignorant of the medical/therapeutic trajectory, which is regularly presented in mainstream news media, and even more so regarding movements in the larger culture involving access to and use of psychedelics beyond medical contexts. However, people who have had encounters with the Divine either in a medical setting or other non-church settings regularly express the desire and even need for resources to aid in integrating these experiences into their quotidian lives, including their lives of religious faith. Questions about ontology, epistemology, cosmology, ecclesiology, anthropology, and a host of other theological considerations arise.

My work in the area of psychedelics aims to build a bridge between the medical and the spiritual, two areas currently not well integrated and sometimes antagonistic. I am a Field Scholar for the Emory Center for Psychedelics and Spirituality, which fully integrates clinical psychiatry and spiritual health.[4] I was a study participant in the clinical trial at Johns Hopkins in which religious professionals ingested psilocybin in two separate sessions one month apart. I have completed the Certificate in Psychedelic-Assisted Therapies and Research through CIIS. I am an ordained Baptist minister and seminary professor whose job entails attention to the spiritual formation of students and those to whom they will minister upon graduation. Finally, I am a New Testament scholar whose current research focuses on the intersection of psychedelics and Christian lived religion, with special attention to sacred texts. Thus, while I now work closely with and draw upon the work of medical researchers and clinicians (and will continue PAT training), the primary academic training and expertise that I bring to this bridge-building exercise is weighted toward religion and spirituality.

From its inception, the Christian tradition has housed mystical experiences and is replete with resources for exploring them.[5] Christianity is based upon the claim that people personally encountered (and still do) a dead man (Jesus) who had been executed by the Roman government in an act of capital punishment, who was then resurrected, and who called them to a particular way of life that we now call Christian. In other words, Christianity itself is fundamentally based upon mystical experiences had by the first followers of Jesus. Easter, the most important day (and season) in the Christian liturgical calendar, celebrates these resurrection encounters.

The Bible can serve as a rich resource for contemporary Christians seeking to integrate their own mystical experiences (including those arising in psychedelic sessions) because it contains significant material about mystical experiences marked by altered states of consciousness. What do I mean by the integration of mystical experiences? The definition, role, and methods of "integration" in psychedelic medicine have recently become prominent and vigorously debated, prompting new studies to be conducted, but after reviewing 24 distinct definitions of integration, Bathje et al. (2022, p. 04) offer the following synthesized definition:

> Integration is a process in which a person revisits and actively engages in making sense of, working through, translating, and processing the content of their psychedelic experience. Through intentional effort and supportive practices, this process allows one to gradually capture and incorporate the emergent lessons and insights into their lives, thus moving toward greater balance and wholeness, both internally (mind, body, and spirit) and externally (lifestyle, social relations, and the natural world).

Katzman and Schwartz (2024, p. 270) provide this elegant, compelling description: "Integration of peak experiences involves identifying the vestigial threads in the tapestry of the altered state, then weaving these ephemeral filaments into the warp and weft of one's daily life and usual sense of self. Successful integration incorporates the psychological, somatic, relational, transpersonal/spiritual, and practical realms of our experiences." Given that psychedelic experiences can be powerful, ranging from transcendent and revelatory

to terrifying and potentially destabilizing, the importance of offering space for people to process those experiences and determine how they cohere (or not) within one's current frame of meaning-making is being recognized (Bathje et al. 2022, p. 02). Christian practice assumes that such powerful experiences beg for interpretation and integration into one's life of faith. This usually entails placing one's experience in conversation with the inherited tradition, including the Bible, which Christians consider an authoritative source for discernment and meaning-making. I provide the example of the Apostle Paul as one source of integration for Christians who have had embodied mystical experiences. Historically, for Christians, Paul's reflections on the life of faith, including experiences of sublimity and suffering, are foundational. There Christians may find points of contact between their mystical experiences and the autobiographical mystical experiences he narrates. The scope of the essay does not allow treatment of the Bible as a whole, though I briefly discuss the larger biblical context before turning to Paul and indicate numerous other texts for consideration in the conclusion of the essay.

In what follows, I first summarize the importance of the psychedelic renaissance, especially the clinical studies being conducted on it, as it relates to Christian practices of spiritual formation. Second, I explore new work being conducted by biblical scholars regarding *embodied* religious experiences with the Divine (and others), including mystical experiences. The reader may wonder why I use the term "embodied mystical experiences"; after all, are not all experiences embodied? Christian spiritual practice has often been so logocentric and cognitive, prioritizing doctrines and ideas that the body has been dismissed at best and maligned as an obstacle at worst. Additionally, only recently in biblical scholarship has the body been taken seriously epistemologically. Credit for this is due, in part, to methodologies developed in feminist studies, womanist studies, disability studies, and queer studies. Recent developments in sensory theory and affect theory are centering the roles that the senses and emotions play in lived religion. This essay aims to contribute to taking the body seriously when Christians seek to integrate psychedelic mystical experiences into their religious framework and practices.

After noting the developments in biblical studies, I then consider the Apostle Paul's embodied mystical experience, with special attention to 2 Corinthians 12:1–10, as one example of biblical material that might intersect with or inform the psychedelic mystical encounters Christians might experience (whether in a medical therapeutic or non-medical spiritual formation setting). Finally, I indicate directions for further research and discussion.

2. The Psychedelic Renaissance and Christian Spiritual Formation: Intersections

The psychedelic renaissance intersects with Christian practices in two key ways. First, as psychedelic therapy becomes more common, Christians undergoing medical treatment may seek outside support for integrating mystical experiences that occur during treatment into their lives. Second, with increasing legal access to psychedelics in the U.S., more Christians may explore their spiritual potential, either individually with spiritual guides or collectively in organized retreats. Many will have mystical encounters related to the Divine. Whether the experience involves the overwhelming presence or absence of the Divine, these Christians, too, will seek integration support.

2.1. The "Science" of Mystical Experiences in Medical Contexts

Psychedelic scientists debate (a) whether mystical experiences constitute an appropriate subject of scientific research, (b) how to define mystical experiences, and (c) what tools to use to collect data from participants regarding their mystical experiences. A recent paper, "Psychedelic-Induced Mystical Experiences: An Interdisciplinary Discussion and Critique" (Mosurinjohn et al. 2023), raises questions about the place and nature of mystical experiences in scientific psychedelic research. Some would argue that "mystical experiences" do not belong in scientific research at all. For them, "mysticism arguably connotes a metaphysics that is intertwined with religious/theological and supernatural suppositions, and therefore may appear to clash with physicalist/scientific materialistic

assumptions implicit in scientific research to a greater degree than alternative similar concepts" (Mosurinjohn et al. 2023, p. 2). Others, however, do consider mystical experiences appropriate for scientific research. For instance, Mosurinjohn et al. define mysticism as "the practice of techniques enabling access to metaphysical insight through self-transcendence and/or extrasensory perception" and argue for its inclusion in the scientific investigation of psychedelic-induced mystical experiences (Mosurinjohn et al. 2023, p. 2).

Research in clinical trials has typically relied upon assessment tools such as the MEQ (Mystical Experience Questionnaire), Hood Mysticism scale, or 11D-ASC scale to obtain feedback on mystical experiences. Most of the terms derive from the work of Walter Stace who drew upon the work of William James.

The MEQ-45 contains seven factors:

- Internal unity;
- External unity;
- Deeply-felt positive mood;
- Transcendence of time and space;
- Ineffability and paradoxicality;
- Sense of sacredness;
- Noetic quality.

The Hood Scale contains eight factors:

- Unifying quality;
- Positive affect;
- Temporal/spatial quality;
- Ineffability;
- Noetic quality;
- Religious quality;
- Inner subjective quality;
- Ego quality.

The 11D-ASC contains four factors:

- Experience of unity;
- Spiritual experience;
- Blissful state;
- Disembodiment.[6]

These assessment tools have begun to be critiqued. For instance, some consider them to be overly influenced by Christianity, especially a perennialist form of it. Mosurinjohn et al. emphasize the need for interdisciplinary collaboration to develop "next-generation" assessments that merge scientific–medical and social sciences–humanities approaches. Until then, the MEQ and Hood scales are likely to remain primary (Mosurinjohn et al. 2023, pp. 2–3).

2.2. The Importance of Integration of Mystical Experiences for Healing and Transformation

Such serious and influential interdisciplinary work at the intersection of spirituality and medical–scientific research is being conducted by members of the Emory Center for Psychedelics and Spirituality. In their pioneering 2023 paper "Importance of Integrating Spiritual, Existential, Religious, and Theological Components in Psychedelic-Assisted Therapies," Palitsky et al. (2023) express concern that medical scientists lack sufficient training regarding the spiritual, existential, religious, and theological (SERT) experiences that commonly arise in PAT. This is especially concerning since the SERT experiences are positively correlated with beneficial outcomes. In fact, "a systematic review of SERT-integrated psychotherapies in real-world settings observed effective applications for trauma, eating disorders, severe mental illness, and depression. There is also evidence for successful application of SERT-integrated psychotherapies in cancer survivorship and palliative care" (Palitsky et al. 2023, p. 3). They argue that mystical-type experiences are prevalent, and that the meaningful integration of such experiences should be a priority in the treatment process.

It is important to note that not all aspects of mystical experiences are considered to be positive ones by those who have undergone them. Note that the scales currently used include factors such as blissful state, positive affect, and positively felt mood but do not always offer the opposite possibilities that may be experienced, including destabilization.[7] The study of adverse effects (AEs) in psychedelic experiences is a vibrant area of research.

From the standpoint of Christian practices of spiritual formation, integration is necessary for all mystical experiences, not just those involving psychedelics. In what follows, I will demonstrate how one element of the Christian tradition, the Bible, addresses mystical experiences. Contemporary Christians may find a rich store of material for integration and meaning-making by drawing upon this scriptural tradition.

3. Biblical Studies: Embodied Religious Experience of the Divine

While scientists debate the nature and classification of psychedelic mystical experiences, there has been an explosion of interest in biblical studies around religious experience and the role of bodies in it. Human bodies and the non-human bodies of creation, God's body, and Jesus' body are all in view.[8] Foci include the senses, affects and emotions, embodied cognition, and altered states of consciousness. The Christian Bible, from Genesis to Revelation, narrates mystical experiences and even various induction techniques to invite them. Thus, when contemporary Christians have psychedelic mystical experiences, whether in the context of medical treatment or intentional spiritual formation practices, they stand in a long line of religious ancestors who have traveled this terrain. Such experiences belong not only to famous figures like Ezekiel, Isaiah, Amos, and Zechariah, but also to those without social power. The prophet Joel (2:28–29) reports the following words from God: "I will pour out my spirit on all flesh; your sons and your daughters shall prophesy, your old men shall dream dreams, and your young men shall see visions. Even on the male and female slaves, in those days, I will pour out my spirit."

Anathea Portier-Young's groundbreaking new monograph *The Prophetic Body: Embodiment and Mediation in Biblical Prophetic Literature* (Portier-Young 2024) addresses such experiences and techniques, and here, I will privilege it for three reasons. First, she uses the kind of interdisciplinary approach that Mosurinjohn et al. urge. Second, the book is unprecedented in the expansive methodological range it applies to a particular set of biblical figures: prophetic bodies. Third, though it is limited to HBOT[9] material, it has provided me with definitions and categories that shape my view of the New Testament texts, including the treatment of the Pauline material in the next section.

Portier-Young insists on the centrality of the prophetic body in all its states of consciousness, motion, health, emotion and affect. Quoting Birgit Meyer, she notes "in order to account for the richness and complexity of religious experience, we need theoretical approaches that can account for its material, bodily, sensational and sensory dimension" (Portier-Young 2024, p. 33). Drawing from anthropology, psychiatry, and neurobiology, she argues both that the prophets experience transformative embodied encounters with (a sometimes embodied) God and that they mediate transformative encounters of God for others through their own embodied religious experience.

Particularly helpful is her attention to altered states of consciousness. Drawing from the field of transpersonal psychology, she defines consciousness as "the subjective awareness and experience of internal and external phenomena," while "states of consciousness refer to the spectrum of ways in which experience may be organized" (Portier-Young 2024, p. 112). ASC's include "dreaming, deep sleep, intoxication, hypnosis, and successfully induced meditative states, among others. Such alternate states may be spontaneous, as in the case of sleepiness, daydreaming, or dreaming, may result from injury or illness, or may be induced by a variety of means including psychoactive substances, drumming, rhythmic movement, prayer, fasting, sensory deprivation, breathing techniques, relaxation, and meditation" (Portier-Young 2024, pp. 112–13). This is why Portier-Young says that understanding the embodied character of prophetic ecstasy "requires attention not only to observable bodily techniques and behaviors, but also the embodied nature of consciousness

itself and the changes in the body that accompany ASC's. Indeed, this embodied character of human consciousness is one factor enabling study of religious ecstasy across times, places, and cultural contexts" (Portier-Young 2024, p. 113).

While some mystical experiences appear to occur spontaneously (Moses encountering the burning bush; Paul experiencing a vision of Jesus on the road to Damascus and becoming temporarily blind as a result), the Bible also depicts particular induction techniques for such experiences, including incubation, ascetic practices, and ecstatic practices, all of which "could alter both the...body and consciousness" (Portier-Young 2024, p. 84). In this context, Portier-Young addresses the stories of Hannah and Samuel (sleeping in holy places); Moses' fasting for forty days and nights on Mt. Sinai; spirit possession in 1 Sam 10 and 19; and the visionary experiences of Ezekiel (Ezek 1–3, 8–11, 37, 40–48) and Balaam (Num 24).

Before turning to specific biblical examples, Portier-Young explores the subjective experience of transcendence in religious ecstasy, delineating intrapersonal, interpersonal, and transpersonal dimensions. The intrapersonal quality denotes an interior dimension of enhanced insight and self-awareness. Interpersonal transcendence connects individuals to others and their environment, and transpersonal experience extends to a greater reality, potentially including union with a divinity or the cosmos (Portier-Young 2024, pp. 113–14). These dimensions resonate with elements of mystical experiences and align with observations in the MEQ and Hood scales as well as the session reports of PAT participants (transcendence of time and space; new insights; union with a divinity; greater connectedness to nature and the cosmos; greater sense of connection to others; access to new knowledge about the self).[10] Portier-Young further suggests that the behaviors and experiences of prophets in the HBOT indicate the presence of alternate states of consciousness and some of the embodied practices that can be used to produce such states. She states the following:

> Prophetic ecstasy may produce trance states marked by decreased motor activity, altered time sense, narrowed attention, and selectively heightened senses. It may produce feelings of affliction or constraint. The prophet in ecstasy may be transported to other lands or experience visions of otherwise hidden realities. The body in ecstasy forms a bridge between places and times and between human and divine realities. (Portier-Young 2024, p. 116)

This reflects both contemporary reports of psychedelic-induced mystical encounters and experiences documented in both the HBOT and the New Testament (NT). Two important points are in order regarding the best way to put into conversation these overlapping categories of features of mystical experiences in contemporary experience and ancient texts that I have noted (such as transcendence of time and space). First, in current clinical practice, there are numerous different scales being used to capture and categorize mystical experiences. I listed the MEQ, Hood scale, and ASC at the beginning of the essay. No one scale includes every aspect. In fact, the recent article by Stocker et al. (2024), "The Revival of the Psychedelic Experience Scale: Revealing Its Extended-Mystical, Visual, And Distressing Experiential Spectrum with LSD and Psilocybin Studies" calls for using a scale that covers the psychedelic experience more comprehensively. Table 11, found on page 96, titled "Some basic psychedelic themes covered or not covered with the three most comprehensive questionnaires used to measure psychedelic experience," uses the PES100, 5D-ASC, and HRS to indicate which elements are included in which scale. For instance, one often hears that a mystical experience is ineffable, impossible to convey with words. The PES includes this category, whereas the ASC and HRS do not. Thus, there is currently no consensus among scientists and categorizing these experiences remains an inexact science. Second, the goal of this essay is to place modern experience in conversation with resources from antiquity. The goal is neither to attempt to map without remainder the experience of biblical figures onto a perfect scale that may someday be created, nor to take that scale and map it without remainder onto the ancient texts. Rather, the goal is to indicate the fruitful meaning-making that can arise for contemporary Christians who have mystical experiences (whether they fill out a mystical experience scale or not) and put those experiences into

conversation with those who precede them in the faith who also had mystical experiences. We will return to this point after treating the specific experience of Paul.

4. A Pauline Example

The Apostle Paul, by his own account, had deeply embodied mystical religious experiences. He experienced numerous encounters with the resurrected Christ, which he refers to in Gal. 1:12, 15 and 2 Cor. 12:1–10. In yet another passage, he indicates that he was one of over 500 people to whom the resurrected Christ appeared on different occasions.

> For I handed on to you as of first importance what I in turn had received: that Christ died for our sins in accordance with the scriptures, and that he was buried, and that he was raised on the third day in accordance with the scriptures, and that he **appeared to Cephas**, **then to the twelve**. **Then he appeared to more than five hundred brothers and sisters at one time**, most of whom are still alive, though some have died. **Then he appeared to James, then to all the apostles.** Last of all, as to one untimely born, **he appeared also to me**. For I am the least of the apostles, unfit to be called an apostle, because I persecuted the church of God." (1 Corinthians 15:3–9)

Paul also experienced spirit possession that resulted in a transformation of his person ontologically and vocationally. Paul's experiences provide a solid place to ground the conversation as they cohere well with the elements that we find from phenomenologies of mystical religious experiences all the way from William James to the work of Portier-Young. In addition, we know a lot about him and the trajectory of his life.

4.1. Introduction to Paul

We do not know when Paul was born, and scholars debate exact dates concerning his ministry, but Paul's call to be an Apostle (sometimes referred to as Paul's "conversion") is dated somewhere between 32 and 36 CE. The New Testament does not narrate his death, but scholars place it between 62 and 67 CE (Powell 2018, p. 261). While thirteen letters of the NT are attributed to Paul, most scholars consider only seven of them to be "undisputed" (Romans, 1 and 2 Cor, Galatians, Php, Philemon, and 1 Thessalonians). Thus, Paul wrote more books of the NT than any other author. The six disputed letters that bear his name are generally referred to as the Deutero-Pauline Epistles and include Colossians, Ephesians, 1 and 2 Timothy, Titus, and 2 Thessalonians.[11] Finally, Paul features prominently in the biblical book known as the Acts of the Apostles.

Paul is a towering figure in Christianity. He was a theologian, church planter, and pastor. Paul depicts his own call in (Jeremianic) prophetic terms (Gal. 1:11–24). Paul's mystical experiences appear to share some commonalities with mystical experiences described by those in the psychedelic clinical studies.[12]

4.2. Spirit Possession and the Apostle Paul

Giovanni Bazzana's 2020 monograph *Having the Spirit of Christ: Spirit Possession and Exorcism in the Early Christ Groups* extensively addresses the older (somewhat methodologically limited) scholarship on Pauline mysticism and the newer scholarship on the body and religious experience in Paul. For instance, he engages Colleen Shantz's *Paul in Ecstasy* (Shantz 2009), which, he notes, "shows how neurobiology enables us to understand that Paul talks about 'altered states of consciousness'" (Bazzana 2020, p. 104). For Bazzana, this is a "very welcome" methodological change of pace particularly "because her focus on terms such as 'spirit possession' and 'altered states of consciousness' provides the opportunity to study Paul's experiences, not in isolation (as if they were completely unique events in the history of humankind) but in comparison with what has been observed in other cultural and chronological contexts" (Bazzana 2020, p. 104). Having canvassed the work of additional scholars (such as John Ashton's *The Religion of Paul the Apostle*), Bazzana is convinced that "the experience of spirit possession constituted the very foundation of Paul's thought..." (Bazzana 2020, p. 105).

For Paul (who was heavily influenced by Stoicism), spirits are material, not immaterial.[13] Bazzana highlights Paul's expression "in Christ," by which Paul means he is literally possessed by the spirit of Christ, ontologically, and that spirit causes him to think and behave in very particular ways, Christian ways. What is more, Paul considers all Christians to be spirit-possessed. This enables Greek-speaking Gentiles, upon being possessed, to cry out in Aramaic, as seen in Galatians 4:6: "And because you are children, God has sent the Spirit of his Son into our hearts, crying, Abba! Father!" (cf Rom 8:15).

4.3. Paul's Mystical Experience

We begin with one of Paul's own descriptions of his deeply embodied mystical encounters with God found in 2 Cor. 12:1–10:

> 2 Cor. 12:1 It is necessary to boast; nothing is to be gained by it, but I will go on to visions and revelations of the Lord. 2 I know a person in Christ who fourteen years ago was caught up to the third heaven—whether in the body or out of the body I do not know; God knows. 3 And I know that such a person—whether in the body or out of the body I do not know; God knows—4 was caught up into Paradise and heard things that are not to be told, that no mortal is permitted to repeat. 5 On behalf of such a one I will boast, but on my own behalf I will not boast, except of my weaknesses. 6 But if I wish to boast, I will not be a fool, for I will be speaking the truth. But I refrain from it, so that no one may think better of me than what is seen in me or heard from me, 7 even considering the exceptional character of the revelations. Therefore, to keep me from being too elated, a thorn was given me in the flesh, a messenger of Satan to torment me, to keep me from being too elated. 8 Three times I appealed to the Lord about this, that it would leave me, 9 but he said to me, "My grace is sufficient for you, for power is made perfect in weakness." So, I will boast all the more gladly of my weaknesses, so that the power of Christ may dwell in me. 10 Therefore I am content with weaknesses, insults, hardships, persecutions, and calamities for the sake of Christ; for whenever I am weak, then I am strong.

4.4. Encounter with Otherworldly Beings While Spirit-Possessed, Including Sights and Sounds

As we learned From Bazzana, Paul's expression "in Christ" (*en Christō*) refers to actual spirit-possession: Paul is possessed materially by the spirit of Christ. Paul's narrative of his experience demonstrates all three prongs of Portier-Young's definition of religious ecstasy: "Prophetic ecstasy describes a type of religious experience accompanying a prophet's encounter with supernatural beings, revelatory visions, and auditory revelation" (Portier-Young 2024, p. 105). First, Paul has religious experiences accompanying his encounters with both God and Satan. Second, he has revelatory visions (v.1). He notes both visions (*optasia)* and revelations (*apokalypsis*); furthermore, he notes that they were "exceptional," "hyperbolic" (v. 7, *hyberbolē*). Of course, one wonders what scale Paul is using to distinguish unexceptional visions and revelations from exceptional ones. The main point here is that Paul does not need to justify the legitimacy of the revelations; he assumes such experiences are part of the religious life. Paul is, after all, a Jew immersed deeply in his own Scriptures (what Christians refer to as the Hebrew Bible or Old Testament), where many mystical encounters with supernatural beings and religious ecstasy appear. Third, Paul experiences auditory revelation. On the one hand, he "heard things that are not to be told, that no mortal is permitted to repeat" (v. 4). It is not clear from whom he heard these particular revelations. From God's mouth to Paul's ears? One cannot help but wonder about the undisclosed content. On the other hand, God speaks to him directly and Paul shares that material with us. All four of these features—encounters with otherworldly figures, revelatory visions, ineffability, and auditory revelation—feature in psychedelic mystical experiences as well.

4.5. Disembodiment/Bodily Transcendence of Space

Paul has no idea (and does not seem to care) whether he was in his body (*en sōmati*) or outside of it (*chōris tou sōmatos*), a point he makes twice. This is in keeping with reports of psychedelic mystical experiences as well as reflected in the MEQ, Hood and ASC scales. It also coheres well with the model posed by Mosurinjohn et al., falling under the "Psychedelic Alterations of Self-Experience," which is divided into bodily self-experience and mental self-experience. The bodily experience is further divided into body location, body ownership, body awareness, body boundaries, and body representation (Mosurinjohn et al. 2023, p. 8).

Paul insists that he was transported to another realm, which he calls both "Paradise" (*paradeisos*) and the "third heaven" (*treis ouranos*). Notice that he was "snatched away" (*harpazō*) into Paradise. Those on psilocybin journeys often report the experience of a sudden launching or being pulled forward and not in control of where they are going (as they, too, transcend space).

4.6. Challenging Experiences

The next element we will address at some length is Paul's "thorn in the flesh" due to (1) its alignment with challenging aspects of psychedelic mystical experiences and (2) its implications for whether the studies consider these experiences as fully or in as nuanced a manner as the biblical authors (including Paul) might have us do.

Paul directly heard the voice of God addressing him, yet it might not have been a message he desired—a "challenging experience"—per the studies. He suffered from an unspecified bodily affliction, termed a "thorn in the flesh," leading to speculation about its nature: Epilepsy? Eye malady? People suggest all manners of things, but it remains unknown. Despite Paul's pleading three times for relief, God refuses.

Much attention is given to set (mindset; intention) and setting (physical environment) in preparation for psychedelic sessions. Paul wanted healing of his physical ailment. Whatever it was, it was bad enough that he calls it "a messenger of Satan sent to torment (*kolafizō*) me." This is a loaded statement. First, this word for torment is rare in the NT, occurring only four other times, always in harsh contexts. Furthermore, he considers the thorn a messenger (*angellos*, angel) of Satan. Notice the passive verb—the thorn was "given" to him; this is a circumlocution for God. That is to say, God, not Satan, gave Paul the thorn. In addition, notice that God works through Satan here. This may seem strange given the many stories in the NT (and in the common understanding in contemporary popular culture) where Satan is the direct enemy of God who fell from heaven, but here, Paul is alluding to the book of Job, seeing himself in Job's place.[14] In the book of Job, Satan serves as an accuser in the heavenly court, questioning Job's faithfulness to God. In a nutshell, Satan says Job is only faithful to God because he has a great life with lots of stuff, a beautiful family, status in his community, etc. So begins Job's experience of deep agony and affliction, physically, socially, emotionally, and spiritually. Paul identifies with Job's suffering despite his own righteousness, seeing it as distinct from suffering due to sin.

To us, it may be odd to attribute our affliction simultaneously to both God and Satan, but Paul attempts to make sense of the fact that his exceptional mystical, ecstatic experiences did not lead to the physical healing he longed for. He does so by turning to his scriptures (as can Christians today who find themselves in the same situation as Paul (or Job)).[15] Those Scriptures assume the existence of a variety of supernatural beings, including angels, demons, God, the resurrected Jesus, and Satan. Because spirits can deceive, Paul insists on regular "discernment of the spirits" (1 Cor. 12:10). For instance, in the chapter just before his mystical visions' narrative, he warns that "even Satan disguises himself as an angel of light" (2 Cor. 11:14). Paul's experience raises questions about the challenging experiences reported in psychedelic mystical experiences, including encounters with demonic spirits and what to make of them.

Paul is not alone in experiencing ecstasy and suffering in the midst of a mystical encounter; his HBOT forebearers knew this terrain. Spirit possession and other forms of

religious ecstasy can be accompanied by sensations of physical and/or psychic distress (Portier-Young 2024, p. 86). For instance, Portier-Young shows that Ezekiel's experience of "the hand of the Lord as a force that grabs him, is 'strong' upon, and falls on him partly reflects and intersects with usage in which the divine hand denotes illness or other bodily affliction attributed to divine power" (Portier-Young 2024, p. 121).

Those after Paul, including those in the studies, may also relate. In discussing set in intentionally prepared psychedelic journeys, William Richards pens words that may apply well to Paul's set with respect to his ongoing mystical experiences, including the difficult aspects: "Set refers to the psychological and spiritual attitudes of the person who receives the entheogen. Above all it reflects qualities such as trust, honesty, courage, humility, reverence, and also a sense of adventure and a willingness to receive and learn, even if it should entail some degree of suffering" (Richards 2014, p. 658). It is often the case that participants decide that the suffering, while terrible in the moment, had a positive effect in the long run. Richards concludes his chapter on "Experiences of Meaninglessness, Despair, and Somatic Discomfort" as follows: "The examples in this chapter well illustrate some of the difficult and painful experiences that can occur during psychedelic sessions. Often the pain--physical, psychological, or both--does appear to have a purpose and a meaning, and it often culminates in very positive feelings of freedom and relief and new insights" (Richards 2015, p. 112). Certainly, this is borne out in qualitative studies in medical contexts (Barrett et al. 2015, pp. 1279–95).

Recently, however, the perceived lack of attention to "adverse effects"[16] has been critiqued. Notice, for instance, that the scales tend to be biased toward the positive: "deeply-felt positive mood" (MEQ); positive affect (Hood); "blissful state" (ASC). A spate of new studies is being launched to investigate adverse effects more thoroughly. From the standpoint of Christian spiritual formation (as opposed to a merely medical perspective), these painful experiences must be viewed frankly and intrepidly in light of Christian theology, with no a priori pressure to put a "positive spin" on the kinds of experiences that later mystics would refer to as "the dark night of the soul." Paul knew that sometimes Satan is in league with God to some degree but that sometimes Satan merely deceives to destroy. Thus, the experiences will need to be faced directly and spiritual discernment will be necessary afterward.

Multiple studies have established that psychedelics are "essentially nontoxic as well as physically nonaddictive" (Richards 2015, p. 179). However, they are certainly powerful substances that can occasion spiritual struggle. Opting for psychedelic substances solely for a pleasurable escape from life's demands may be ill-advised. The pursuit of psychological and spiritual growth is a profound and "sometimes gut-wrenching business" (Richards 2015, p. 112).

Rachael Petersen eloquently testifies to this in her essay, "A Theological Reckoning with 'Bad Trips'" (Petersen 2022). Peterson calls for more investigation and discussion of difficult experiences. Particularly striking is her contention that when such difficult encounters are unmoored from deep spiritual traditions, which can happen in medicalized settings, harm can ensue. She points to the "collateral damage from mainstreaming mindfulness" as a cautionary tale for the medicalization of psychedelics. Valuable insights risk being lost when "technologies of transcendence" are divorced from their spiritual and religious contexts and are repackaged as purely psychological therapies (Petersen 2022, sct. 10). Biblical authors assume that approaching the holy should not be undertaken lightly and can be dangerous if not handled with care. Petersen opines: "No matter which term we choose—psychedelic or entheogen—we must reckon with how mind, soul, and gods can conspire against us. To encounter them completely entails risk and, sometimes, unwanted surprises" (Petersen 2022, sct. 1).

4.7. Transformation

Huston Smith famously said, "A religious experience does not constitute a religious life" (Smith 2000, p. 80). Many people in the clinical studies had profound transformational

experiences. For many, those effects perdured over time. Paul, too, was transformed enduringly through his mystical experiences, presumably because he reflected at length with fellow Christians on what they meant for him. What they meant, of course, was discerned in relation to his particular religious, cultural, social context. What they meant unfolded over time as he lived a life aimed at virtue (what he calls the "fruits of the Spirit:" love, joy, peace, patience, kindness, goodness, faithfulness, gentleness, and self-control (Gal. 5:22). Virtue, by definition, is developed and honed over time and within a community of accountability and support that shares a commitment to developing spiritual wisdom.

Transformation is a leitmotif through Paul's writings. He is a fan of it. He writes these majestic words in his final letter, Romans: "Do not be conformed to this age, but be transformed (*metamorphoō*) by the renewal of the mind [*nous*, where we get the word noetic], so that you may discern what is the will of God—what is good and acceptable and mature" (12:2, my translation). Psychedelic experiences have proven to be transformational to many people, liberating them from conformity to the world, sloughing off that which has kept them bound (e.g., fear, shame, addiction, and apathy), or adding that which makes life more meaningful and intentional (e.g., spiritual practices, healed relationships, vocational changes, and stewarding creation).

It is important to note, however, that psychedelic mystical experiences do not necessarily propel a person into a more virtuous life. There are reports of those who fall prey to solipsism or delusions of grandeur or narcissism. It may be instructive to note that Paul writes to communities, works out his religious experiences in community, and assumes that this is necessary for a person to deepen spiritually and avoid those dangers.

4.8. Integration

As noted earlier in the essay, increased attention among psychedelic medical researchers is being paid to the importance of the integration of the psychedelic experience if one is aiming for transformation that perdures.[17] Paul spent his whole life undergoing integration of his mystical experiences and calling other Christians to do the same. As a religious leader, Paul saw his own experience as something given to him patently *not* for ego-inflation purposes, but to make him a servant leader, calling others into spiritual wholeness and journeying with them through high points and low. And there were many. Paul's ministry was an endless exercise in managing conflict and learning how to remain faithful when he had much and when he had nothing (see his hardship lists to get an idea of how bad it got, e.g., 1 Corinthians 4:9–13; 2 Corinthians 11:23–33). For the rest of his life, he was invited to integrate the message from God that "My grace is sufficient for you, for power is made perfect in weakness." Having his ego moved out of the way made space for what he calls "the power of Christ" to "take up quarters/dwell" (*episkēnoō*) in him. (This is the same root word the Gospel of John uses when he says, "the Word [Jesus] became flesh and tabernacled (*skēnoō*) among us" (my translation)). Petersen, like Paul, continues to integrate her mystical experience and concludes her essay with words that Paul might somehow appreciate: "Some days, I think psychedelics healed me by not healing me at all—which may just mean they made me more comfortable with paradox. In a humble commitment to unknowing is where I now make my home" (Petersen 2022, sct. 13).[18]

4.9. Dying (and Therefore Living) Well

I teach a class at my seminary called "Evil, Suffering, Death, and the Afterlife in the New Testament." We spend substantial time on what it means, from a Christian perspective, to die well. (I use Allen Verhey's *The Christian Art of Dying: Learning from Jesus* (Verhey 2011) as one textbook). I find it intriguing, then, that studies have shown that a well-supported psilocybin journey can alleviate end-of-life distress and mitigate the fear of death (Bossis 2021). Paul clearly had many mystical encounters with God and the risen Jesus. Were they responsible for his own fearlessness of death and his repeated call for his audience to imitate him in this?

- Philippians 1:21: "For to me, living is Christ and dying is gain."
- Romans 8:38–39: "For I am convinced that neither death, nor life, nor angels, nor rulers, nor things present, nor things to come, nor powers, nor height, nor depth, nor anything else in all creation, will be able to separate us from the love of God in Christ Jesus our Lord."
- Romans 14:8: "If we live, we live to the Lord, and if we die, we die to the Lord; so then, whether we live or whether we die, we are the Lord's."

4.10. A Summary of Paul's Experience

Paul had mystical experiences that forever changed him, dramatically. He moved from trying to destroy the church to sacrificing his life for its growth. He moved from being conformed to this world, desiring status, and gaining his identity from it (cf. Php 3:4–11) to being possessed by the spirit of Christ, leading to the renewal of his mind (which he refers to as having "the mind of Christ"). And he moved from repeatedly begging God to give him a better, stronger, medically cured body to declaring "Therefore I am content with weaknesses, insults, hardships, persecutions, and calamities for the sake of Christ; for whenever I am weak, then I am strong." According to Christian tradition, Paul, like Jesus, was executed by the Roman government, beheaded by the emperor Nero. His writings continue to profoundly serve all Christians who seek union with the Divine.

4.11. Paul (Un)charted

As noted with respect to the larger biblical canon, Paul's mystical experiences can serve as a source of meaning-making for contemporary Christians. I have noted some of those touchpoints that appear in mystical experience scales. Again, there is no consensus scale currently in use. If one were to take the ASC scale as an example, however, one could note points of overlap with Paul's own experiences, such as paradoxicality (power made perfect in weakness), transcendence of space, disembodiment, and non-ordinary insightfulness. However, much would be omitted or not sufficiently nuanced. For instance, Paul experiences incarnate beings (he considers himself physically spirit-possessed), he cannot put his experience into words (for a number of different reasons, not just one), and he experiences physical distress. He experiences transformation and spends the rest of his life revisiting these experiences and unpacking their meaning in community. None of these crucial aspects of his experience would be captured by mapping it onto the 5D-ASC. I highlight this to once again indicate that the goal is neither to cram the biblical material onto a particular mystical experience scale, nor to anachronistically impose the scales upon the biblical material. To do so would arguably diminish the depth and magnitude of Paul's insights. Rather, it is to place these items into conversation that may prove to be fruitful.

5. Directions for Future Research

The Bible manifests manifold visions, revelations, and non-ordinary states of consciousness. Given the limited space of this essay, I have treated at length only one particular passage from the Pauline literature as an example, but much work remains to be done. The present essay is part of two larger current projects in which I am engaged, one a primer for Christians on the intersection of Christianity and psychedelics (*Psychedelics and Soul Care: What Christians Need to Know*, under contract with Eerdmans) and the other a monograph (*The Agony, the Ecstasy, and the Ordinary: Experiencing God in the New Testament*). I encourage others to join in this work. Possible avenues for future exploration include the following:

1. Comprehensive Book Analysis. One could address individual biblical books in their entirety. For instance, in a recent essay on the Gospel of John, I treated many points of contact with embodied mystical experiences (Clark-Soles 2023). Christians who have encountered or will encounter God during a psychedelic session may experience these elements found in John. The book of Revelation certainly needs thorough treatment in this regard, as does the book of Ephesians.

2. Exploring Specific Biblical Stories. To add a more holistic understanding of mystical themes, one could focus on particular stories that appear in multiple books, such as Jesus' Baptism, the Transfiguration, and the Resurrection.
3. Individual Figure Study. For instance, I considered here only one passage in Paul, but to be thorough would require attention to all of his undisputed letters. In addition, Paul is a major figure in the Acts of the Apostles, where his so-called "conversion" is narrated three different times, as is his being spirit-possessed and behaving in new ways as a result.
4. Cataloging Biblical ASC's. At a very basic level, it would be useful to have a list of all NT material that might fall under the category of "mystical experience" and the ways each might be considered using interdisciplinary methods.
5. Comparative Sacred Texts Analysis. Christianity shares connections with both Judaism and Islam. One might consider how the material in Christian sacred texts compares to the sacred texts of those other traditions, among others.
6. Terminology and Discourse Examination. Both the medical and social scientists included in this essay note the problems with the words "mystical" and "mysticism," not necessarily for the same reasons. However, it is still language used in, for instance, the Mystical Experiences Questionnaire and scholarly literature, so it remains in play. I have chosen to use it in this essay since, in keeping with the theme of this Special Issue of *Religions*, I am patently putting the medical literature in conversation with the biblical studies literature. I will address the nomenclature more fully in the monograph on experiencing God.

6. Conclusions: Loving Science, Discovering the Divine

In this essay I have suggested that, given the rapid pace at which psychedelics are becoming more widely available, more people will take them and have profound "SERT" or "mystical" experiences. Some will occur in medicalized settings and some in settings intended for spiritual exploration and growth. In the best scenarios, there will be ample preparation beforehand, skilled support during the psychedelic session, and meaningful ongoing integration afterward. People will have a wide range of experiences from the blissful, to the terrifying, to the underwhelming. In this essay, I have argued that, for Christians, the Bible may serve as a substantial resource at every point of the process. More work on the intersection of "psychedelics, the Bible, and the divine" is needed to provide a nuanced, critical appraisal of the promises and pitfalls of psychedelics as a way to invite an encounter with the Divine.

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Notes

1 Consult the following: (Guerra-Doce 2015; Merlin 2003; Lutkajtis 2020).

2 A helpful explication of each of the four terms in SERT is provided on p. E2.

3 See Griffiths (2015).

4 Located on the homepage of the Emory Center for Psychedelics and Spirituality, accessed on 29 April 2024, https://psychedelics.emory.edu/about-us/index.html.

5 For an extensive history on Western Christian Mysticism, see Bernard McGinn's four-volume series: *The Presence of God: A History of Western Christian Mysticism* (McGinn 1991). For attention to the ways that certain mystics or mystical experiences have been legitimated (or not) by church authorities, see Jantzen (1995) *Power, Gender, and Christian Mysticism* and, more recently Amber L. Griffioen (2021) *Understanding Religious Experience*, especially the Prologue and chapter 1.

[6] Scales can be found in Mosurinjohn et al. (2023, p. 04).

[7] For an excellent recent article on using a scale that covers the psychedelic experience more comprehensively, see Stocker et al. (2024, p. 88), Table 4, titled "All items from the PES (Richards 1975, Appendix E, pp. 271–76) which are likely to involve a psychologically distressing experience".

[8] Consult the work of Deborah Forger (2020).

[9] HBOT stands for Hebrew Bible and Old Testament. To use only one or the other term risks imprecision since each has referential limitations.

[10] For a fuller treatment of such categories, see William Richards (2015).

[11] Some people erroneously ascribe Hebrews to Paul; Hebrews, however, does not claim that for itself. See Powell (2018, p. 447).

[12] In his entertaining book *The Immortality Key*, which has swept pop culture podcasts, lawyer Brian Muraresku wonders whether early Christians, including those in Corinth, used psychedelic substances in their ritual practices. Such inquiries presently remain speculative (Muraresku 2020).

[13] "Paul treats Christ as a 'spirit' conceived in the sense that has been sketched already elsewhere in the book: 'spirit' as a person and not at all immaterial but not a 'person' in the modern sense of this self-contained and autonomous individual self either" (Bazzana 2020, p. 110).

[14] For a fuller treatment of this Job theme, see ch. 6 of Clark-Soles, *1 Corinthians*, 96–97.

[15] For a fuller explication of Paul's mysticism, see ch. 6 of Clark-Soles, *1 Corinthians* and Clark-Soles, *Psychedelics and Soul Care: What Christians Need to Know* (Eerdmans, under contract).

[16] For fuller description see Sarah McNamee et al. (2023).

[17] See Frymann et al. (2022) and Earleywine et al. (2022).

[18] If space permitted, it would be interesting to consider the experiences of Paul and Petersen with respect to negative (apophatic) theology. As McGinn notes in *The Foundations of Mysticism*: "...among the negative or apophatic mystics, presence and absence are more paradoxically and dialectically simultaneous. If the modern consciousness of God is often of an absent God (absent though not forgotten for the religious person), many mystics seem almost to have been prophets of this in their intense realization that the 'real God' becomes a possibility only when the many false gods (even the God of religion) have vanished and the frightening abyss of total nothingness is confronted. If everything we experience as real is in some way present to us, is not a 'present' God just one more *thing*? This is why many mystics from Dionysius on have insisted that it is the consciousness of God as negation, which is a form of the absence of God, that is the core of the mystic's journey" (xviii–xix).

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Psychedelic Mysticism and Christian Spirituality: From Science to Love

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Abstract: The scientific claim that psychedelic drugs like psilocybin reliably occasion mystical experiences was justified using the Mystical Experiences Questionnaire (the MEQ), a survey first developed in the 1960s by Walter Pahnke using W.T. Stace's *Mysticism and Philosophy*. Scholars in Christian mysticism reject the adequacy of Stace's work for Western theistic mysticism, especially Christianity. One objection is that Stace follows William James in focusing on intense and unusual moments of mystical experience rather than the somewhat more ordinary mystical life. A greater concern is that Stace more adequately reflects non-Western traditions than Western theistic traditions like Christianity. For Stace, mysticism centers on the concept of union with external reality or with the absolute, a union in which the human creature is absorbed or fused. Christian mysticism, by contrast, involves a sense of presence rather than union, experienced in a most intimate relationship as a felt loving closeness with the divine, but not as fusion or absorption into the divine. While love of God is central to the Christian view, it is ignored in Stace and the MEQ30. Finally for Christianity, mysticism is not found in the momentary experience, but in the lifelong interpretation that leads to transformation.

Keywords: psychedelics; psychedelics and mysticism; psychedelics and spirituality; Mystical Experience Questionnaire; MEQ30; Christian mysticism

1. Pushing Back against the Psychedelic Renaissance

Some of the sparkle has faded from the exuberance that so recently surrounded the so-called "psychedelic renaissance." Beginning around 2022, a series of events and articles has dampened the mood among those who follow all things psychedelic. Advocates are still firmly optimistic about the medical and spiritual benefits of psychedelics, but their optimism is more cautious and guarded than it was just a few years ago.

It remains true that in early 2024, the U.S. Food and Drug Administration (FDA) began its review of an application for the use of MDMA to treat post-traumatic stress disorder, and approval may come before the end of the year. Other clinical trials are underway, with growing evidence to support the view that psychedelics have medical uses. Confidence remains high that psychedelics have the potential to treat a wide range of mental health conditions, but bringing the research to the clinic is a formidable challenge. There continues to be a pattern of what is generally good news from the laboratories studying medical and scientific uses of psychedelics.

At the same time, there is a growing sense of pushback against the idea of the psychedelic renaissance, based on several concerns. One widely voiced concern is about the prevalence of challenging or difficult drug experiences. How often do they occur in research, and are they always fully reported? How frequent are they among private users, even those who prepare as carefully as they can for a safe experience? How common will they be in clinical settings if psychedelics are approved as part of psychedelic-assisted therapy, and will there be enough trained guides to provide the help that may be needed?

Another concern has to do with accusations of problems in professional ethics or scientific misconduct. Whether there is substance to the accusations is unknown, but

the fact that they are aired publicly in the *New York Times* is worrisome (Borrell 2024). Longstanding concerns have been raised about the role of money in the field. Everyone knows that it costs millions if not billions of dollars to bring a drug through the regulatory process, sums beyond the range of private philanthropy. To make psychedelics mainstream, it is necessary to make them medical—that is, to demonstrate their health benefit using the standard methods of medical research. And to make them medical, it is necessary to make them commercial. Even if that reasoning holds, it is not exactly clear where it will lead. What will be the effect on the field of the use of for-profit funding sources, proprietary research, patenting of variant forms of psychedelics, and commercialization of clinics?

The commercialization of psychedelics stands in sharp contrast to the spiritual/psychedelic traditions of Indigenous peoples, who safeguarded the knowledge and the healing use of various plant medicines for millennia. Despite efforts by colonial empires and church authorities, this knowledge survived but is now being exploited. If there is a renaissance here, it is not the rediscovery of the achievements of classical Greece or Rome but the extraction and appropriation of the treasures that lie in the knowledge of these substances and their therapeutic uses.

A final concern adding to the headwinds pushing against the idea of a psychedelic renaissance has to do with the place of mysticism in science. For some in the field of psychedelic science, mysticism is overtly religious and has no place in the methods or laboratories of science. Dissatisfaction of a different sort comes from scholars trained in religion and theology, not because mysticism is being connected to psychedelics, but because of how it is being measured with a questionnaire derived largely from the philosophy of W.T. Stace, a questionnaire known as the Mystical Experience Questionnaire or the MEQ. For religion scholars, the chief problem is perennialism—the view that there is a common, universal mystical experience. For those trained in theology, especially Christianity, the problem is that Stace's categories, while claiming to be universal, leave out Christian mystical traditions.

2. The Mysticism of the MEQ

Although the Mystical Experience Questionnaire or MEQ has been modified several times, its questions and categories date back to 1962. On Good Friday of that year, Walter Pahnke, a pioneer in the study of psychedelic spirituality, conducted his famous "Marsh Chapel" experiment. To show that psilocybin experiences are positively correlated with some sort of spiritual or mystical experience, Pahnke drew upon the 1960 publication *Mysticism and Philosophy* by the philosopher W.T. Stace (Stace 1960). Other sources were influential at the time, such as William James's classic *The Varieties of Religious Experience* (James 2004), Evelyn Underhill's *Mysticism* (Underhill 1961), and Aldous Huxley's *The Doors of Perception* (Huxley 1954). Huxley was already well known for his views on perennialism, which holds to a universal core for all human religious experiences. It was Stace, however, who provided the key vocabulary and categories for Pahnke's questionnaire. The "operational definition was provided by Stace (1960), and formed the basis of different versions of the Mystical Experience Questionnaire (MEQ), which was developed to evaluate the occurrence and character of individual, discrete mystical experiences occasioned by classic hallucinogens" (Barrett et al. 2015, p. 2).

Stace distinguishes between what he calls extrovertive and introvertive mysticism. The extrovertive type centers on the sense of unity with outside things. The introvertive is experienced as a loss of the self. Under these two broad categories, Stace identifies seven characteristics of mystical experience. Pahnke drew on Stace and others to create a scale based on eight categories. "The categories include (1) sense of unity, (2) transcendence of time and space, (3) sense of sacredness, (4) sense of objective reality, (5) deeply felt positive mood, (6) ineffability, (7) paradoxicality and (8) transiency" (Doblin 1991, p. 7). Doblin adds that "Pahnke arbitrarily determined that for a mystical experience to be considered complete for the purposes of the experiment," the total score and the score in each of the eight categories needed to be at least 60% of the maximum possible (Doblin 1991, p. 10).

A research team led by Kurt Stocker has provided a helpful review of the history of the MEQ from its earliest complete form in 1975 until the present version (Stocker et al. 2024). The questionnaire was developed by Walter Pahnke and then modified in collaboration with William Richards, who has been key to its modifications and its continued use ever since. After a pause in psychedelic research that lasted several decades, the scientific study of the spiritual dimensions of psychedelic experiences was restarted using an updated version of Pahnke's survey. In the landmark 2006 article by a team of researchers at Johns Hopkins University, the revised MEQ was the basis for the claim that "when administered to volunteers under supportive conditions, psilocybin occasioned experiences similar to spontaneously occurring mystical experiences and which were evaluated by volunteers as having substantial and sustained personal meaning and spiritual significance"(Griffiths et al. 2006, p. 282). Pahnke's original categories and questions were revised, but "the mystical items have remained largely consistent since the inception of the MEQ" in the work of Walter Pahnke (MacLean et al. 2012, p. 4). The claim made in the 2006 study that "50% of participants who received psilocybin met the criteria for a complete mystical experience" is based directly on Pahnke's somewhat arbitrary threshold for what would count as "complete" (Griffiths et al. 2006, p. 281).

Further revisions to the MEQ have led to today's 30-item survey, the current MEQ30 (Roseman et al. 2019, p. 7). "The four factors of the MEQ30 are: mystical (including items from the internal unity, external unity, noetic quality, and sacredness scales of the MEQ43), positive mood, transcendence of time and space, and ineffability (all three of which include items from their respective MEQ43 scales)" (Barrett et al. 2015, p. 2).

The first of these four factors—the mystical—brings together Stace's introvertive and extrovertive dimensions, combining them with the two key hallmarks of mysticism according to William James: its noetic quality and ineffability. The MEQ uses the language of internal and external unity in place of the introvertive/extravertive in Stace, but the corresponding descriptions are indebted to Stace. Internal unity is based on study participants reporting things like "experience of unity with ultimate reality" or the "experience of the fusion of your personal self into a larger whole." External unity, on the other hand, rests on such things as a "experience of oneness or unity with objects and/or persons perceived in your surroundings" (Roseman et al. 2019, p. 7).

The current MEQ with just 30 items, however, prompts Stocker's group to ask this question: "Is psychedelically occasioned mystical experience captured comprehensively in the current state of research?" (Stocker et al. 2024, p. 81). In their view, the reduction to 30 questions leaves out important features of the mystical aspects of psychedelic experiences. If so, then "Which questionnaire should a psychedelic researcher/therapist use if she or he wants to measure psychedelic experience comprehensively?" (Stocker et al. 2024, p. 97). The goal of thoroughness must be balanced with efficiency, and right now there is no single survey that manages to achieve both goals. "Hopefully, future psychedelic research will bring about such a tool" (Stocker et al. 2024, p. 97).

While the MEQ avoids anything that looks like the specific religious beliefs of a particular faith tradition, the word "mystical" in the title is enough to ring alarm bells for some experts in psychedelic science. So are the claims, published in standard science and medical journals, that substances like psilocybin reliably occasion mystical experiences. It is a well-known fact, of course, that people taking psychedelic drugs often have intense experiences. These can be monitored in real time using brain imaging. When asked, people often describe these experiences as highly meaningful, and they often use words like "mystical" or "spiritual" to describe what they felt. Scientists can gather data about these things without going beyond the limits of empirical science. Some researchers claim that they remain agnostic about the content of the claims, reporting only the fact that the claims are made, noting under what conditions they may be made or what correlations there might be between these claims and, say, mental health benefits. All of this is within the purview of science.

Other researchers in the field, however, are concerned that the use of the MEQ seems to invite descriptions that employ mystical or religious notions. They also worry that scientific study about religion can be seen as a scientific endorsement of religion. Sanders and Zijlmans, for example, point to the "risks and difficulties stemming from the scientific use of a framework associated with supernatural or nonempirical belief systems." They recommend what they call "a demystified model of the psychedelic state"(Sanders and Zijlmans 2021, p. 1253). Finally, some researchers worry that a few of their colleagues may be motivated by the desire to offer support not just for the fact of human spiritual experience, but for its spiritual benefits.

The term "mystical experience" is especially troubling to some, who think "it suggests associations with the supernatural that may be obstructive or even antithetical to scientific method and progress" (Carhart-Harris and Goodwin 2017). Some single out the MEQ as part of the problem. Sanders and Zijlmans warn against anything that might plant ideas of mysticism among research volunteers:

> When we administer a mystical experience questionnaire, we invite participants to interpret their experience through the framework of mysticism. Thus, we risk creating biased data and may fail to learn from participants' own articulation and interpretation. . .We are concerned that if science states that psychedelics induce mystical experiences that are key to their therapeutic action, this is too easily misinterpreted as research advocating a role for the supernatural or divine.
>
> (Sanders and Zijlmans 2021, p. 1254)

Scientists are not the only ones to raise questions about the MEQ. The views of Stace upon which the MEQ depends are largely dismissed today by scholars of religion and theological scholars alike. Scholars of religion typically hold academic positions in university departments of religion. They stand outside creedal traditions and study the human phenomenon of religion in general. Within their academic community, nearly everyone is dismissive of perennialism, which comes more explicitly from Huxley than Stace, but has found its way into the study of psychedelic spirituality. Perennialism's claim of a universal core of human spiritual experience lacks empirical evidence, they argue. In its place, most scholars in religion adopt a version of contextualism, which holds that descriptions of mystical experiences are mostly if not entirely explained by the context. A Christian will draw on Christian symbolism, a Muslim on Islam, and so forth. Of course, people sometimes describe their experiences cross-culturally, but nearly everyone today is aware of spiritual or religious symbols from various traditions beyond their own.

Theological scholars, by contrast, tend to hold university appointments in divinity or in independent seminaries. They concentrate their efforts on understanding their own tradition at the deepest possible level. While they may identify with the tradition they study, their stance is critical and always aimed at an advanced level of understanding and interpretation. To my knowledge, no theological scholar in the Christian tradition has so far offered a point-by-point commentary on the MEQ and its use in psychedelic research, and it is not our goal here to do so. Here, we aim simply to summarize a few of the defining features described by the leading experts in the Christian mystical tradition to compare Christianity with the tradition of W.T. Stace and the MEQ.

3. Differences between Christian Mystical Traditions and the MEQ

Dissatisfaction with Stace's categories is common among Christian scholars of mysticism. In a recent summary article, William Wainwright writes that "Stace's typology has been widely influential, [but] it oversimplifies and thereby distorts the richness of mystical experience" (Wainwright 2021, p. 1). Part of the problem goes back to William James, who directs attention to the subjective states of mystical experience rather than to the mystical/spiritual way of life in relationship to a divine reality that is central to the Christian tradition. Grace Jantzen points to this change from classical mysticism to William James: "The definition of mysticism has shifted, in modern thinking, from a patristic emphasis on

the objective content of experience to the modern emphasis on the subjective psychological states or feelings of the individual"(Jantzen 1989, p. 295).

Jantzen objects to the way that James redirects the focus of generations of scholars towards what she calls "the fringes of consciousness: psychic phenomena, hallucinations, the effects of nitrous oxide and intoxication, and intense or bizarre accounts of religious experience including trances, levitations, seizures, hallucinations, and the like"(Jantzen 1989, p. 296). When it comes to describing mysticism and giving examples, James lists "particular states of consciousness: dream-like states, trances, an experience with chloroform, flashes of exaltation, experiences of ecstatic union. These, for James, are 'mystical experiences', and it is to experiences of these sorts that he applies his famous characteristics of ineffability, noetic quality, passivity, and transiency." Stace, of course, modifies the list of defining characteristics, but he remains in the tradition of James in thinking about mysticism "in terms of experiences in this narrower sense: voices, visions, ecstasies, and the like"(Jantzen 1989, p. 302).

3.1. Loving Presence vs. Union

An even more important difference between Stace and Christian mysticism, however, lies at the level of theology and theistic ontology. One strength of Stace's treatment is that he directs the attention of Western scholars to Eastern sources, so much so that he turns from the theism of the West to the more typically monistic views found in Eastern spiritual traditions. In practical terms, what this means for Stace is that the mystic seeks union, either introvertive or extravertive. For the mystic in theistic traditions like Christianity, however, the goal of the mystical life is not monistic union, but a felt sense of the presence of the sacred. The divine or the holy always remains the holy other, ontologically distinct from all creatures and eternally so. The presence of the divine may be sensed or felt, and it may be loved. Monistic union implies oneness. Theistic presence involves love, which even at its most intimate intensity always implies otherness. It is not that Christian mystics entirely avoid terms like oneness or union, but their point in using them is to signify closeness or intimacy, not fusion. By contrast, Stace defines the mystical in terms of monistic union, neglecting the sense of the presence of the divine together with the significance of love.

Wainwright identifies this point of difference as the distinctive feature of Western theistic mysticism, grounded specifically its understanding of union as a loving relationship rather than a fusion. "What most clearly differentiates theistic mystical consciousness from other forms of mystical experience, however, is that the nature of the relation between the mystic and the object of her experience is best indicated by the fact that she typically expresses it by employing the language of mutual love" (Wainwright 2021, p. 2). With that thought in mind, Wainwright goes right to heart of the inadequacy of Stace's interpretation, to the extent that it is seen as inclusive of world mysticism. According to Wainwright, "The major difficulty with an account like Stace's, however, is its failure to mention love" (Wainwright 2021, p. 1). The same is true of the MEQ30. This is not to say that research participants do not mention love, and it should be noted that William Richards, a key developer of the MEQ, "also considers experiencing 'Love' to be a part of what is regarded as 'a complete mystical experience'" (Stocker et al. 2024, p. 85).

To ignore love is to ignore the most common feature of Christian mystical and spiritual traditions. Bernard McGinn, widely seen as the world's leading scholar of the mystical element within Christianity, puts it this way: "It is extremely difficult to find any Christian theology of mysticism which is not affective in the sense of giving love a crucial role in our striving toward God" (McGinn 1987, p. 12). As Wainwright describes it, Stace distinguishes between nature mysticism and monistic mysticism, neither of which is inclusive of theistic mysticism. "Nature mysticism and monistic mysticism are roughly identical with Stace's extrovertive and introvertive mysticism. Theistic mysticism, on the other hand, can't be accommodated within Stace's categories." That is because "unlike monistic consciousness, theistic mystical consciousness has an object or content which is distinct from the self." The

core of mysticism within Christianity is the felt sense of the presence and the shared love between the human person and the holy, intimate other.

Sometimes, it is suggested that the universal essence of mysticism is a search for union with the transcendent ground of being. McGinn rejects this idea as a description of the mystical element within Christianity, insisting instead that "union with God is not the most central category for understanding mysticism" (McGinn 1991, p. xvii). Union with the divine might be an appropriate description of mysticism in other contexts. To describe the core of Christian mysticism, however, McGinn prefers the word "presence." He writes: "I have come to find the term 'presence' a more central and a more useful category for grasping the unifying note in the varieties of Christian mysticism." If asked to offer a definition of the mystical element in Christianity, McGinn describes it as "that part of its belief and practices that concerns the preparation for, the consciousness of, and the reaction to what can be described as the immediate or direct presence of God" (McGinn 1991). Elsewhere he writes of an "immediate consciousness of the presence of God," suggesting that this is "a central claim that appears in almost all mystical texts" (McGinn 1991).

When Christian mystics do speak of uniting with God, as they sometimes do, the kind of uniting they ordinarily have in mind is based on the metaphor of matrimonial unity, which symbolizes the most intimate union of two who remain distinct even in their unity. Part of the problem here is that the word "union" can mean fusion or relationship, and there is a world of difference between the two. Christian mystics avoid notions of fusion or absorption. Christianity recognizes that egocentrism is a problem, calls pride a sin, and exhorts everyone to let go of a me-first attitude and to enter instead into a state of compassionate solidarity with others, including nature and the divine. Selfishness is a thing to be annihilated, but not the self. When the mystic senses the presence of the divine, the importance of the self is diminished, but the creaturely goodness of the self is never denied. For the Christian mystic, the spiritual path is an experiential process of being loved graciously by God, of loving God bounteously in return, and of loving all things, including our enemies, as God loves them.

3.2. Experiential Process vs. Transient Event

One of William James's identifying hallmarks of mystical experience is transience, by which he means that even if time seems to be suspended momentarily, the experiential peak itself lasts only a few minutes, possibly a few hours at most. This seems to fit nicely with what we know of the peak component of intense psychedelic experiences. The moment of greatest intensity might be a few hours long, during which the psychedelic substances are most disruptive in their action on various neurotransmitters such as serotonin. A more complete description of the neurological effects of psychedelics, however, suggests that the peak is only one part of the entire process of drug action. By stimulating the production of brain-derived neurotrophic factor (BDNF), the action of psychedelics in the brain continues past the peak, stretching for weeks or longer as the brain undergoes the development and the integration of new neurons (Reardon 2023, p. 23). By stimulating neurotransmitters, psychedelics act quickly and dramatically in ways that are subjectively intense and seem to bring almost immediate mental health benefits. By contributing to neurogenesis and neuroplasticity, however, psychedelics act in ways that keep on acting for weeks, even for years. Their action is both fast-acting and long-lasting.

At times and for various purposes, it may make sense to focus on the moments of subjective intensity as the "mystical experience" and to leave aside the longer processes of psychedelic action. A Christian view of mysticism, however, invites us to concentrate somewhat less on the transient moment of intensity and more on the drawn-out process of transformation. Biologically, the drugs are still doing their work. Psychologically and spiritually, transformation is occurring. The MEQ, however, is focused on the intense experience, and even when it is administered retrospectively after some months have passed, it invites research volunteers to recall the peak moment of their past experiences rather than the process of their ongoing mystical experiential transformation.

On the relative importance of peak moments versus transformative processes, McGinn writes that "it is important to remember that mysticism is always a process or way of life. Although the essential note—or better, goal—of mysticism may be conceived of as a particular kind of encounter between God and the human, between Infinite Spirit and the finite human spirit, everything that leads up to and prepares for this encounter, as well as all that flows from or is supposed to flow from it for the life of the individual in the belief community, is also mystical, even if in a secondary sense" (McGinn 1991). If everything before and after the peak is "also mystical" and the MEQ leaves it out, then the MEQ falls short as a measurement of Christian mystical experience. The entire passage is a mystical process, and what leads to it or follows from it should not be ignored as if it were not part of the main event.

One reason why this is important is that the Christian experiential mystical process is a *critical* process that involves a kind of dialogue with a rich and complex faith tradition. In a sense, it is like taking the work of psychedelic integration to a whole new level. Generally speaking, the work of integration is the effort to make sense of the moment of intensity in the context of our lives as a whole. Christian integration and interpretation bring another dimension to the conversation. The moment in its revelatory power, the contours of life as a whole, and the insights of an ancient and slightly complicated faith tradition are all brought together into an ongoing, triadic conversation. The process is mutually critical because the three sources of insight—the key moment, life as a whole, and the insights of faith—make claims that jostle against each other amidst life's other demands. The point is to have the courage to begin the unpredictable process of comprehending our key experiences and our whole life as a Christian journey in response to the gracious and transformative presence of an unexpected love.

No one, of course, is under any obligation to interpret their mystical moment in relation to any philosophy or faith tradition, such as Christianity. Many people will find that to be a needless complication. People today have plenty of reasons for rejecting religion in general and Christianity in particular. A few, however, may take a chance that an old path might just be adaptable to a new situation. If so, then the resources and values of the Christian tradition might come into play.

4. From Integration to Interpretation

In the context of psychedelic-assisted therapy, the idea of integration plays a key role. In 2024, the Multidisciplinary Association for Psychedelic Studies (MAPS) released an online resource entitled the MAPS Psychedelic Integration Handbook, a free resource anyone can use with or without professional help. The handbook begins with this definition: "The process of integration involves making sense of and incorporating the insights, emotions, and changes that may arise during a psychedelic journey into your everyday life. Integration is an essential aspect of the psychedelic experience because these substances can bring about intense and often challenging insights, emotions, and shifts in perspective" (Multidisciplinary Association for Psychedelic Studies n.d.).

The handbook expands its definition by pointing to various dimensions of human experiences, including spiritual dimensions, and then it offers this advice: "Regardless of your specific beliefs (or lack thereof), we encourage you to consciously and intentionally explore how your experiences relate to the domain of Spirit during your periods of integration" (Multidisciplinary Association for Psychedelic Studies n.d.). This process of exploration of the spiritual significance of the psychedelic experience can be undertaken alone or with close friends, with a trained spiritual director, or by tapping into a community that is open to the work of supporting those with psychedelic spiritual experiences. Obviously, if another human being is involved in the process of spiritual integration, that person's views will influence the outcome. Trained chaplains learn to recognize their personal beliefs and to keep them in check to respect the autonomy of their clients. If the person entering the integration process is drawing on a friend for feedback, it may be because the viewpoint is probably already valued.

From the perspective of Christianity, our whole lives consist of overlapping processes of integration of experiences with beliefs, values, commitments, and goals. Experiences come in wildly different forms and can be accompanied by feelings that are almost diametrically opposed to each other, running the entire emotional gamut from bliss to terror, comforting presence to hopeless abandonment, and forgiveness to shame. The experiences we call mystical usually involve a sense of the presence of God, but the presence of the holy is not always gentle or comforting. It can be terrifying. It is never bland or banal. Making sense of it all, with its chaotic hodgepodge of experiential qualities and feelings, can seem like an impossible task, not a simple one-off project of integration that we complete for our therapist so that we can move on to the next thing.

The person seeking help in integration may turn to a community or religious tradition such as Christianity or some faith tradition. The kind of help offered there is different from other sources. It might come in the form of a highly trained psychedelic spiritual director, but such people are rare and only now beginning to be visible aboveground. Ordinary congregations are visible enough, but what is offered there is not specialized. It is the ordinary, generalized forms of support available to everyone. It comes through participating in the activities, liturgies, and rituals of a community and by drawing on its beliefs about the grace of God and the human response of love.

Some may hold back from contacting a Christian community, expecting that the response to psychedelic spiritual experiences from Christian churches or their leaders will be disinterest or condemnation. Others might test the waters, realizing the local congregations and their leaders may differ greatly from each other in their openness to someone who talks about a psychedelic spiritual experience. Two religious networks offer support for leaders and congregations who want to learn more about the spiritual significance of psychedelic experiences and how to interpret the meaning of these experiences within the context of established tradition. The Ligare network is "a Christian Psychedelic Society" (ligare.org accessed on 11 April 2022), and Shefa offers "Jewish psychedelic support" (shefaflow.org accessed on 11 April 2022). Both organizations can help people find supportive contacts.

Whatever the institutional pathway that connects a psychedelic spiritual seeker with a local community of faith, the seeker will come to see that a congregation is a kind of social container that holds a richly diverse set of ideas that have worked for some in the past. Not everything fits everyone, which is why faith communities often seem to disagree so much with each other. At their best, what they offer is spacious and accommodating, a tangible link to at least some of the strands in humanity's long history of spirituality, and a constant reminder of new spiritual growth ahead.

Half a century ago, the Catholic theologian Karl Rahner famously said that "the Christian of the future will be a mystic or [they] will not exist at all." To be a Christian is to be a mystic, one who senses the presence of divine love. Rahner claimed that mystics are not a rare or endangered species. Everyone can have authentic spiritual experiences, he insisted, and being a mystic is a possibility that is always close at hand for everyone who interprets the experience as spiritual encounter. Then, almost as if he is thinking ahead to our time when psychedelic use will lead to widespread access to intense spiritual experiences, Rahner advises us that mysticism is not defined by an isolated moment, but by the totality of an experiential process of life, claiming that "by mysticism we mean, not singular parapsychological phenomena, but a genuine experience of God emerging from the very heart of our existence" (Rahner 1974, p. 148).

What Rahner suggests is that mysticism is normal for all Christians, or at least it should be. Mystics are not exotic spiritual geniuses. Mystical experiences are not mostly weird, paranormal, or rare. Some may be intense or disruptive, but more often they come in moments of quiet reflection, the spontaneous "wow" of awe, a feeling of unexplainable joy, or the sudden conviction that despite how awful everything may be, in the end all shall be well, as the 14th century Julian of Norwich so confidently reassures us.

Everyone, Rahner insists, can have such experiences in which there is a palpable sense of the presence of the holy. What makes them "Christian" is not that they happen in church

or that an angel or a saint appears. Making them Christian is a decision, and it rests in an even more fundamental choice to interpret one's whole life with the language and the concepts of Christian spiritual traditions. It rests in a willingness to return again and again to a path through integration to participation and on to transformation. We could speak of it as "deep integration."

In Christianity, the challenge of interpretation is compounded by the fact that the sense of the presence of the divine does not bring intellectual or theological clarity. In fact, it can disrupt what once was clear, somewhat akin to the way in which some researchers suggest that psychedelics work because they relax the grip of prior ideas and beliefs, setting us free from the ideas that hold us back (Carhart-Harris and Friston 2019). This fits nicely with what Christians have said over the centuries about those moments in which they feel they have had some sort of moment of mystical intensity. Sometimes, the ideas that hold us back are religious in origin. Feelings of shame, guilt, or rejection can imprison us, especially when they are tied to theologically rigid dogmas that are more than ripe for a good shaking. Nothing can unsettle ideas about divine judgment like an encounter with a gracious divine presence. As McGinn puts it, the life of the mystic is a "response to the presence of God, a presence that is not open, evident, or easily accessible, but that is always in some way mysterious or hidden" (McGinn 1987, p. 7). The "presence that is not open" can shake up confidence in convictions that are based on prejudice, dogma, or church authority.

Far from giving us conceptual clarity, the experience of a divine encounter can undermine our previous theological beliefs by convincing us that while God may be present, God's essence is unknowable, encountered in love but inaccessible in knowledge. According to McGinn, "Christian mystical theology is based upon the twin premises of the unknowability of God on the one hand and God's accessibility to love on the other" (McGinn 1987, p. 12).

McGinn is far from alone in asserting the unknowability of God in Christian mystical theology. One of Rahner's most repeated phrases is "incomprehensible mystery," speaking of the God who is always closer that we imagine, but whose essence escapes our analysis. In the early fifth century, Augustine of Hippo put it succinctly when he said: "*Si comprehendis, non est Deus*," usually translated as "If you comprehend it, it is not God" (Grondin 2017). It is not that God is utterly unknown, but what is known is the gracious presence and the love, not the essence. The closer we come to a sense of the presence of the divine, the more we find that our sense of wonder is set free.

5. Conclusions

Stace leaves out love, according to his critics in Christian mysticism, and thereby he ignores what is central in the Christian mystical tradition. The MEQ30 uses the word "unity" three times and "fusion" once, but it omits "love."

There are significant differences between what the MEQ counts as mystical experience and what Christianity recognizes as the mystical or spiritual element within its own tradition. This is not to suggest that the MEQ fails to measure something that can be called mystical, or that it is not aligned with other traditions, but that it is not fine-tuned to measure what is most characteristic of Christian spirituality. At this point in the history of research, continued use of the MEQ has the advantage of validation through repeated use. It reliably predicts certain mental health outcomes (Barrett et al. 2015).

It may even be seen as advantageous that the MEQ is not defined by Western, theistic, or specifically Christian categories. If it were constructed to match theistic mysticism and not to other traditions, its use in the Western context could be seen as problematic. Most study participants probably find the MEQ to be neutral and somewhat "secular," which is fitting for a setting that values pluralism and cultural neutrality. Even so, pushback against its use by researchers suggests that an even more secular, "demystified" questionnaire might be needed. Christianity has nothing to lose in such a revision, because it has nothing of value to protect in the MEQ. All religions, in fact, can find encouragement in the work of

researchers who use the MEQ to point to a reliable correlation between psychedelics and spiritual experiences.

Participants in psychedelic research that uses the MEQ may find it interesting to reflect for a moment about how the questionnaire defines mystical experience. The more important point, however, is that today's research participants and the much larger numbers that are expected to follow once psychedelic-assisted therapy is up and running should all feel the freedom to define their experience for themselves, deciding on their own whether the experience is meaningful, spiritual, or compatible with a religious tradition. If it is true that the MEQ is not especially well suited for various Christian mystical traditions, then anyone who scores relatively low on its scales should not feel the least bit disappointed.

Where the MEQ asks volunteers whether they had an "experience of pure being and pure awareness," an alternative more attuned to Christian mysticism might ask whether they felt the presence of a loving being. Or where the MEQ asks about an "experience of unity with ultimate reality," an alternate question might ask about an experience of a close or loving relationship with ultimate reality. At a linguistic level, these alternatives in wording seem minor, even trivial. Theologically, however, the differences are profound.

When it comes to individuals, the MEQ30 is not a pass/fail test. It is an invitation to reflection. Anyone in any tradition or no tradition who has a profoundly meaningful experience with psychedelics is very likely to find more than a few statements in the MEQ that express exactly how they feel about their experience. The feature of ineffability that James identifies and so many people experience is reflected in these words: "Sense that the experience cannot be described adequately in words." The item most reflective of certain aspects of the Christian tradition is this: "Freedom from the limitations of your personal self and feeling a unity or bond with what was felt to be greater than your personal self" (Roseman et al. 2019, p. 7).

Whatever its limitations might be, the MEQ has flagged something important. Psychedelics are positively corelated with mystical experiences. Once our wider culture sees this, we cannot unsee it. Like mystical experience itself, we cannot predict where it might take us.

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Wholeness for Life and Life Eternal: A Perspective from *Ubuntu*, Paul's Reconciliation Theology, and the New Cosmology

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Abstract: The idea of cosmos unity is not recent. It has been proposed from various viewpoints throughout human history as the locus of life. To begin with, the African worldview of *Ubuntu* tells the story of life from the experience of a cosmic perspective that upholds the primacy of the community and asserts that a truly fulfilling and complete life is attainable only by those who belong to the cosmic whole. There is no 'I' without 'we'; "Because we are, I am". And, unless the "I" belongs to "we", there is no life, biological or ancestral, after death. On its part, Paul's cosmology, generally understood as proposing a two/three-tiered cosmos, has a different viewpoint when seen from a closer look. Even if he would have agreed with his religious ancestors that sin had divided reality and that diastema is to blame for the cosmos fragmentation, Paul still recounts the story of a cosmic whole. His theology of reconciliation makes that unity more evident when he suggests that through Christ, the cosmos is reconciled, and life is restored. To belong to the cosmic whole is to be reconciled with God and have eternal life. From a third perspective, today's new cosmological investigations have uncovered the unfolding story of the grand unity and complexity of the universe, which is the only locus of life known to humanity. In this universe of connectivity and entanglement, one can scientifically appreciate the absence of fragments and observe the complexified unity of all things indispensable for living. These three stories reveal that togetherness and the experience of the cosmic whole are fundamental for life and the taste of eternal life.

Keywords: cosmology; life; eternal life; *Ubuntu*; big bang; belonging; whole; wholeness; relationships; interdependence

1. Introduction

The cosmic whole is life's crucible, its vessel. It is in it, and by belonging to it, that one lives and lives eternally. This echoes "God's original intention for all creation to flourish" (McNeil et al. 2015, p. 22), which is re-echoed by different worldviews. Firstly, in the African worldview, life belongs to an interrupted 'circle of life'. To live, (whether biologically or spiritually as an ancestor or a spirit), to reincarnate, or to be-come, one must belong directly, interconnectedly, tangentially, and so on, to the circle of life that forms a whole with other circles of existence, making life possible. Indeed, "I am because we are, and because we are, I am". That is *Ubuntu*. Secondly, using the soteriology of reconciliation, the apostle Paul focuses on wholeness by proclaiming the gospel of life and salvation. Jesus' death reconciled the cosmos and achieved the wholeness indispensable for life. Those who belong to this cosmic whole have life and have it eternally. In a third approach, what *Ubuntu* expresses by cultural intuition and Paul proclaims as salvation in and through Jesus, science (e.g., the Big Bang cosmology and quantum physics) discovers through observation. Put differently, in regard to the emergence and development of biological life 3.8 billion years ago, its flourishment and fulfillment cannot be imagined outside the cosmic background of a 13.8-billion-year-old universe and its ultimate telos. Life and the universe stories are entangled from the beginning to their fulfillment (Haught 2022, p. 3).

The Nigerian novelist Chimamanda Ngozi Adichie warns us about the danger of knowing one story. In this research paper, we will know the story of life and eternal life

told from three cosmological perspectives: (1) *Ubuntu*, (2) Pauline reconciliation theology, and (3) the Big Bang cosmology. Evident in these three stories, despite their different origins, is the unambiguous perception that wholeness is indispensable for life and its abundance. While these three stories may sound alike, each of them is unique. Every cosmological application—especially those that foster division and fragmentation—is not life-giving and favorable to eternal life. While cosmology is the study of the universe as a whole, not all cosmologies are holistic, nor are their life applications. For instance, a 12th century catholic prayer (Hail Holy Queen) affirms that the Earth is the valley of tears to which humanity is banished. And suggests that it is only a pilgrim's place while our homeland is elsewhere (in heaven). Such an application of cosmological reality is not life giving, since it constitutes a danger to the Earth, a piece of the cosmos indispensable for the experience of wholeness. The same applies to religious beliefs, which retain eternal life only for their followers and promote cultures of division and the fragmentation of humanity. These are not life giving either. Despite the uniqueness of each, the *Ubuntu*, Pauline, and Big Bang cosmologies demonstrate that only holistic cosmologies, whose application in life fosters the experience of the whole and its unequivocal importance, promote life and eternal life. Therefore, each of the three stories is considered valuable and essential here; to use Christian terminology, each is salvific in its own right because of the holistic approach. As a good storyteller, no comparison is being sought. In conclusion, there is a constructive desire that all religions—specifically the Church that tends to resist the science of the new cosmology and African traditions—play a role in fending off fragmentation through integrating these life-giving cosmological stories with Paul's for the sake of the experience of the salvific life-giving whole.

Two words (*κόσμος* and *λόγος*) constitute the etymological blocks of the term cosmology. In its simplest sense, cosmology is the *λόγος*, the discourse on the *κόσμος* (cosmos). Cosmology is generally defined as the study of the universe as a whole. In a more complex approach, Raimon Panikkar distinguishes between *kosmology*—"the science . . . about *the holistic sense* of the *kosmos*" (Panikkar 2013, p. 369)—and cosmology—the scientific "objective genitive: our logos about the cosmos" (Panikkar 2013, p. 370). He characterizes the first as the scientific work of traditional societies, and the second, as the inquiries of modern science. "Neither traditional *kosmologies* nor modern science cosmologies are totally objectifiable sciences" (Panikkar 2013, p. 370). Our ancestors' and modern scientists' studies of the cosmos always converge through questions related to life, humanity, and maybe, God. For example, Paul's perception of the *kosmos* was unambiguously a question about the *anthropos* and *theos*. These three (cosmos, *anthropos*, and *theos*) are distinguishable but irreducible components that form the whole and are in themselves whole because of their relation to the whole. In the words of Panikkar, this is the *cosmotheandric* cosmology, and it "claims to possess saving powers for the wholeness (salvation) of Man, a microcosm" (Panikkar 2013, p. 370). Additionally, in the religious world of cosmologies, the cosmos, which is the home that makes life possible, is also "the body of God. Christianity likewise claims that the *kosmos* is the body of Christ and qualifies this by saying that this body is still in pangs of birth and on the way to *eschaton* that will be reached by every realized (liberated) person" (Panikkar 2013, p. 370).

Cosmological inquiries cannot be easily characterized as being similar to those in other fields. For Christopher Smeenk and George Ellis, this is because there is only one *κόσμος* (cosmos) that cannot be compared to anything like it (Smeenk and Ellis 2017). However, we know with certainty that this cosmos is the physical situation, the larger context that makes life, our life, possible (Smeenk and Ellis 2017). In other words, we only know, understand, and have perspectives of who we *are be-coming*, *life living* in this '*cosmosing*'. For this reason, the question about the cosmos also becomes a question about life, us, and the reasons for our religious hopes in salvation and eternal life. Consequently, in our religious aspirations, the line between the subject (who is questioning), who becomes a question, and the object questioned (the cosmos) becomes blurred because of the convergence of the cosmos, the *anthropos*, and the *theos* (Panikkar 2013, p. 370).

2. *Ubuntu* Cosmology

Ubuntu is a Bantu expression adopted by most Africans as accurately representing the worldview of the entire continent (Tutu 2011, p. 21). For John Mbiti, there is a philosophical foundation for the anthropological expression of *Ubuntu*. He writes: "[A] person does not exist all by himself: he exists because of the existence of other people. The philosophical formula about this says, 'I am because we are, and since we are therefore I am'" (Mbiti 2015, p. 108). In the meantime, anthropological and philosophical orientations would not have been possible without the somewhat accurate perception of the cosmos. The vision of the cosmos as a life-giving whole informed the African worldview and influenced the continent's civilization. From time immemorial, *Ubuntu* constituted the overarching vision from which all African institutions are built and informed (Dyer 2018, pp. 215–38, 223). *Ubuntu* has always been present in all African cultural societies and is in no way a recent creation of African scholars, as some writers tend to suggest (Dyer 2018, p. 226).[1] At the center of *Ubuntu*'s philosophical worldview is the primacy of the community, the whole upon which and without which no identity is imagined, formed, or determined (Battle 2009, Locs 28–29). Because "[c]ultures need a cosmology to understand their place in the greater framework of creation" (Frank 2011, p. 13), *Ubuntu* inspired many cosmologies in the continent.

The whole is the starting point of all parts. The Dogon people of West Africa maintain that the universe commenced from one of the tinniest *round* seeds. The *fonio* seed, known as *acha*—but scientifically classified as *Digitaria exilis*—is believed to be the smallest of all the seeds known in the region. The tiny seed containing "the potential for the existence of all reality" (Azuonye 1999, p. 48) started to experience an internal vibration that led to its expansion. For the Dogons, the expansion is achieved in seven stages, creating the archetypes of all things in the egg of the universe. The egg is then hatched, hence the birth of existence, of everything there is. A similar myth can be traced from one of the oldest civilizations on the continent. "In the Egyptian creation myths, we are told that the universe came out of a cosmic egg" (Jackson 1985, p. 9). Both the circular nature of the *fonio* seed[2] and the egg encompassing *everything* within itself suggest a compact, circular cosmos, outside of which *nothing exists*. One is born, lives, dies, and lives eternally within and never outside this circular universe originating from the cosmic egg.

The Bantu people of Congo propose a double void—*mbûngi*—to explain the relationship between the cosmos and life. In the first void, which is cosmic, "God cooked dough, the magnetic matter, the big bang" (Fu-Kiau 2001, p. 22), thus launching the universe's formation. The period is also believed to be the stage of the *kalûnga's* (the fire-force's) cooking, which is the force of the universe's expansion, the creation of new planets, and the life within them (Fu-Kiau 1994, pp. 17–34, 22–26). The Bantus had an idea of a much older cosmos because of their ancestral relationship with Ancient Egypt.[3] They maintained that the Earth is the oldest of all the planets in the cosmos. For them, the planet formation process within the expanding cosmos has three stages simultaneously corresponding to three different *circular* layers within it (the universe). The outer red layer is made of red planets. These are still in the process of formation, fusing with others as they crystallize and cool down. Life as we know it is nonexistent on those planets. Gray planets in the gray middle *circular* zone, on the other hand, are fully formed. But then,

> These planets are naked, dry, and covered with dust. Gray planets are without life as we know it; i.e., they are without plants, animals, and, of course, without human beings. The Bântu-Kôngo teaching suggests that if left alone, these planets will eventually complete the four stages of the planet transformation process, (. . .and) see the rise of plants, animals, and beings like humans share life on them (Fu-Kiau 2001, p. 24)

Within the third and inner circle, one finds green planets, the breathing planets (Fu-Kiau 2001, p. 24). Bantus think there may be many other green planets like the Earth, which are unknown to us. These would have already passed through the first two stages

and reached the third stage of planet formation. However, the fourth stage, that of life as we know it, is, for now, something peculiar to planet Earth. The Bantus are ready to acknowledge that other life forms that differ from what we know may exist. What that means remains elusive. But within the mini void of planet Earth, the fire-force (*kalûnga*)[4], complete by itself, emerges (Fu-Kiau 2001, p. 19). If it was cooked initially, it now appears as a whole reality. Firing up the vacuum, it overcomes it, and life as known to us emerges. "Because *kalûnga* was the complete life, everything in touch with the Earth shared that life after itself. That life appeared on the Earth under all kinds of sizes and forms: Plants, insects, animals, rocks, human beings, etc." (Fu-Kiau 2001, p. 21). Bântu-Kôngos also think that if life is to appear on the gray planets—like Mars and the moon—it will be facilitated by the firing up of the *kalûnga*. The *kalûnga* is part of the universe at its beginning and is present in and with it throughout its expansion and its becoming, just as it is responsible for the emergence of life.

Life, fire-force, life-force (*kalûnga*) is, at the same time, one and distinct, depending on its manifestation. Father Placide Tempels, a Belgian Franciscan missionary, explains in *Bantu philosophy* that the *kalûnga* is Africa's supreme value. "This suprem [*sic*] value is *life*, *force, to live strongly,* or *vital force*" (Tempels 2010, p. 44). The belief is that there is only one life or vital force that connects and keeps the whole cosmos connected. To clarify, Bénézet Bujo writes:

> God is the dispenser of life. But. . .in Black Africa's concept . . . Life is a participation in God, but it is always mediated by one standing above the recipient . . .This hierarchy belongs both to the invisible and to the visible world. In the invisible world, the highest place is occupied by God, the source of life. Then comes the founding fathers of clans, who participate most fully in the life of God. Then comes the tribal heroes, deceased elders, other dead members of the family, and various invisible beings, including earthly powers, although these belong partly also to the visible world. . .Then comes beings belonging to the visible world. They include the king and the queen-mother, as well as those who wield or represent the royal power; chiefs of the clan and the oldest members of families; heads of households; and family members (Bujo 2006, p. 20)

Bujo understands life or life-force as following a specific pattern. It is an internal cosmic law of togetherness as it flows from God, mediated through the dead and living ancestors, and passed through the community and the family to the recipient. The life force bridges space and matter, but also time, which will be discussed below. Father Tempels records a nuanced similarity. His experience of the same people reflects a vision of various life's manifestations at different stages, thus covering a more extensive spectrum. He writes: "[A]ll beings in the universe *possess vital force of their own*: human, animal, vegetable, or inanimate". However, "[e]ach being has been endowed by God with a certain force, capable of strengthening the vital energy of the strongest being of all creation: man" (Tempels 2010, p. 46). This should not be interpreted as anthropocentrism, because Africans believe in the sacredness of all creation (Maathai 2007, pp. 5–6). Instead, the objective is the responsibility, care, and sustainability necessary for maintaining the one continuum of life and harmony in the cosmos. In a nutshell, life, or life-force, is only possible within the universe, in which everything is connected. The one who wishes to have life can only ensure that s/he belongs to this cosmic community where life is transferred, communicated, shared, and strengthened. This is *Ubuntu*.

No one can effectively discuss cosmology without taking seriously the relationship between time, space, and matter. The above paragraphs have explored the relationship between space, matter, and time as well, since these are difficult to separate in African cosmology. Nevertheless, we may now turn our attention to discussing the notion of time, which is circular in African cosmology, and its implication on matter and space. Time runs circularly at two interwoven levels. The first is cosmic, and the second is event-related time.

> [T]ime is both abstract and concrete. At the abstract level, time has no beginning or end. It exists on its own and flows by itself, on its own accord. Yet, at the concrete level, it is *dunga* (events) that make time perceptible, providing the unending flow of time. . . (Fu-Kiau 1994, p. 20)

The cyclic nature of time in African cosmology does not indicate that it only repeats itself. Instead, because cosmic time is deeply entangled with the events-related time at the Big Bang, "the beginning of all time" (Fu-Kiau 1994, p. 22), the African notion of time is primarily pedagogical.

> [T]ime lies at the core of our understanding of not only the universe and its processes (dingo-dingo) of creation, transformation, and functioning but also of life itself and its functioning. It is through time that both nature and man become comprehensible to us (Fu-Kiau 1994, p. 20)

Time is a tool that teaches about the importance of the whole, whose origin is related to the cosmic time and the events at its beginning. But so are also the associated events of the cosmos' expanding processes, that is, its continuous formation, which includes cooling, crystallization, and the apparition of microscopic beings tied with the sun's rising, resulting in humanity's emergence as the process continues.

The green planet's maturity stage is the most essential phase of time's pedagogical importance. This is considered the time of collective growth and maturation (Fu-Kiau 2001, p. 27). Before humanity's emergence, the building blocks of humanity's genetic code, to use a scientific language, was/is one of wholeness. In the Bantu cosmology, it is expressed as "the 'V of life'" (Fu-Kiau 2001, p. 28), which is a growth concept. It stipulates that standing tall through life's circle(s), the *anthropos* must recognize in and through the self the absolute oneness between "the earth and the sky, the upper and lower world" (Fu-Kiau 2001, p. 28). In the 'V of life', the self that crosses the circles of existence from birth to eternity and back to birth for those who reincarnate must find and give meaning to the cosmos that gives sense and life to who the self is and without whom it is not. Thus, humanity is genetically coded to be informed before it comes into existence that its *be-coming* and the *be-coming* of the cosmos are entangled, and they together form one whole. Therefore, it is not surprising that "*Ubuntu* implies a constant awareness that an individual's actions today reflect the past and will have far-reaching consequences for the future. A person with *Ubuntu* knows his or her place in the universe. . ." (Broodryk 2010, p. 43). This cosmic code (*Ubuntu*), built into the genetics of the *anthropos*, prepares humanity when it emerges to the truth of its interlocking reliance and intimate connection to past and present existence. The *anthropos* must also be aware that the cosmic future, which includes them physically or otherwise, relies upon them. In a nutshell, when s/he arises, the *anthropos* must know the significance and necessity to maintain and sustain the interconnectedness of the whole if s/he is to *be*-come, live, and flourish. As Panikkar writes, "Whatever the temporal origin of Man may be, the biological genesis of a thing does not disclose the essence of the thing. *How* an entity has come to be following a *linear temporal* sequence does not disclose what the entity is" (Panikkar 2013, p. 293). We come from very far, from within a complex system of entangled circular relationships. We form a whole with this system of intertwined circular relationships and are headed very far in the same, maybe to a more complexified reality of *Ubuntu*, of togetherness.

The cosmos has always known how to live *Ubuntu*; that is what it has always done, in and through the undeniable interlocking relationship between space, time, and matter. The human being, however, even though encoded with *Ubuntu*'s genes is, so to speak, new in its (*Ubuntu*) process because of its (humanity's) relatively recent appearance in the history of the cosmos and must be initiated to respond to his/her genetic nature. Consequently, Africans are trained and educated to know that a person must be with *Ubuntu;* that is, s/he must be open and available, s/he must not feel threatened, and must have a proper self-assurance that comes from knowing that s/he belongs in a greater whole (Battle 2009,

p. 2). The South African Anglican Bishop Desmond Tutu clarifies *Ubuntu*'s educational and anthropologic reality for the human family and writes:

> "A person is a person through other persons". We need other human beings for us to learn how to be human, for none of us comes fully formed into the world. We would not know how to talk, to walk, to think, to eat as human beings unless we learned how to do these things from other human beings. For us, the solitary human being is a contradiction in terms. *Ubuntu* is the essence of being human. It speaks of how my humanity is caught up and bound up inextricably with yours. It says, . . . "I am because I belong". I need other human beings in order to be human. The completely self-sufficient human being is subhuman (Tutu 2011, pp. 21–22)

It is worth noting that when Africa speaks of a human being, it is not limited to the living. Deceased forebears and the living spirits, as outlined by Bujo earlier, are integral components of the equation. Johann Broodryk confirms it when he writes:

""Persons" includes not only living human beings, but ancestors who have already died and children who have not yet been born. *Ubuntu* embodies a deep respect for ancestors, and includes all the attitudes and behaviors necessary not only for a harmonious life with other individuals on Earth but with ancestors in the world beyond death and with those who will live on Earth in the future. Every individual is the fruit of his or her ancestors and will become the ancestor of all future descendants" (Broodryk 2010, p. 43).

Of significance here is the continuous interplay between time, space, and matter as it unfolds with precision, maintaining a substantial connection between the biological existence, encompassing "life and its creative energy (reproduction)" (Fu-Kiau 1994, p. 26), and the cosmic living presence of the "deceased" ancestors and spirits. The end of the biological cycle works like a dam that propels one back into the cosmic circle of life with the possible capacity to bring one back into the essential circle for a fresh beginning. Thus, things

> perish in order to change and begin a new cycle. . . Dying is not only a process but also a 'dam of time'. As a dam of time, it has its own landmark on the timeline path, and as a process, it permits life to flow and regenerate . . . its power/energy . . . to create a new state of being or undergo a transformation capable of rejoining the body of the universal 'body-energy'. The living energy that existed before becoming living matter at conception is then freed again (Fu-Kiau 1994, p. 27)

In the African worldview, nothing is separate; everything—time to space, space to matter—is connected to form a whole in a vast circle of other interlocking, interacting, overlapping, and intersecting circles. Life belongs here in this cosmos, outside of which we have no life, because together with it, we form one whole reality. To live physically or spiritually is to belong, to be connected to the whole we are part of, which makes us who we are. Tutu writes:

> *I am because we are*, for we are made for togetherness, for family. *We are made for complementarity. We are created for a delicate network of relationships, of interdependence with our fellow human beings, with the rest of creation* (Tutu 2011, p. 22)

Simply stated, without God, ancestors, the environment, and the cosmos, I am not and will not be without the whole. Similarly, the whole is not the whole without me or any of its parts. To *be-come* is to be connected, to remain in, to belong to the whole. In the African worldview, there is no moment when it is acceptable, permissible, or even possible to *be-come* outside the whole. In *Ubuntu*, belonging and togetherness in the whole and the formation of the whole govern life and form the lenses for the reason of our hope (salvation). Jesus is only possible because he is situated in this existing and indispensable circle of life. Thus, he emerges in Africa from an already *Christ*-soaked, reconciled, cosmic

whole (Cox 2021, pp. 1–6, 3; Rohr 2019, p. 15) to point us to what we have always known. Life belongs to the whole, which is its crucible.

3. Paul's Theology of Reconciliation

Life indeed belongs to the whole. The apostle Paul centralizes the Christ event as the catalyst for cosmic wholeness throughout his writings. Paul's insights stem from the cosmological thoughts of the Jewish and Greco–Roman worlds he lived in. Israel's cosmology, which emerged from religious practices (Adams 2008, pp. 5–27, 20), understood the tabernacle, or temple, as God's vision of the cosmos. The Hebrew Bible writers were not theological idealists (Davis 2008, p. 3); they were pragmatic writers reflecting on the relationships between human beings and the material sources of life as essential elements to living and being in the presence of God (Davis 2008, p. 3). For them, God, in the beginning, established an order (*Shalom*) indispensable for life. However, sin in the created cosmos, which is not inherently evil (Adams 2008, p. 24), has fragmented God's masterpiece. And now, the Earth suffers due to people's sins and injustice.[5]

The wedge introduced by sin must be removed for the universe to be whole again. A new cosmos is reimagined that could foster into "our minds a fresh vision of the world as God's creation" (Davis 2008, p. 143). The primordial universe, that is, Eden, its garden, and all within it, was God's original sanctuary or 'temple' (Pitre and Bergsma 2018, p. 102). The new cosmos must equally reflect this reality. The instructions in Ex 25–31 and the building in Ex 35–40 of the tabernacle became the blueprints of the new cosmic vision. Ellen Davis opines: "The wildness sanctuary is a microcosm, an image of the world viewed from Sinai" (Davis 2008, p. 143). Edward Adams observes the same, and remarks that the construction of the tabernacle is recognizably "suggesting 'a homology of world building and temple building'" (Adams 2008, p. 20). The temple is built to mimic the original cosmic wholeness, with God, humanity, and the Earth (trees, gold, onyx, bdellium, etc.) present. The harmony encapsulated in the well-ordered labor and relationships reimprints the vital *shalom* essential for life to flourish. And from this new cosmic whole flows the river of life that gives life (Ezekiel 47).

The enchanted Greco–Roman world's cosmology also influenced Paul. The heavenly forces, the personified forces of good and evil, and angels and demons enchanted the cosmos, making it whole and dynamic (Norman 1992, p. 126). Hence, the cosmos, besides being designated 'heaven', *ούρανος,* is identified as "'the whole', *το ολον*, 'the all', *το παν*, and 'all things', *πάντα*" (Adams 2008, pp. 6–7). Adams' remarqued that the "Stoic worldview was the most influential in Greco-Roman antiquity" (Adams 2008, p. 16; Hahm 1977, p. xiii), and suggested that these Stoics "viewed the cosmos biologically . . . It comprises body and soul and is animated by 'breath' (*πνευμα*). 'Breath' is the life-force of the cosmos, sustaining it and maintaining its unity. The cosmos has birth and growth, but it 'must be not said to die'. . ." (Adams 2008, p. 17). Alive and eternal, the cosmos is still perceived as created but coextensive with the divine.

> Stoics viewed the cosmos as the well-constructed product of a divine creator. They differed from Plato and Aristotle, though, in making the divine intelligence, 'god', coextensive with the cosmos. 'God' was understood as the rational, active principle—the *logos*—present in matter (and inseparable from it), pervading it and giving it order (Diogenes Laertius 7.134) (Adams 2008, p. 16).

God's presence in matter paved the way for human beings to be an extension of the gods (Norman 1992, p. 127). Thus, the cosmic whole is formed by the cosmos *and the anthropos,* coextensions of the *theos*. This *theo–cosmo–anthropo* whole is where the life force, 'breath' (*πνευμα*), and life reside.

Besides the Jewish and Greco–Roman cosmological intellectual background of Paul, the Christ's event with the cross at its center for him is equally a cosmological occurrence. The event removes the wedge of sin and unites the whole. Unlike those who see the cross' event as another dividing—stumbling or destabilizing—block (1 Cor 1: 23), Paul understands it as a bridge that brings the whole back together and even makes the resurrection

possible. Christ, in whom all the fullness was pleased to dwell, connects Jews and Gentiles (1 Cor 1:24) and reconciles *all things* (Col 1:19–20). Paul, therefore, sees the cross as the fiber, the mortar, the capstone binding humanity, and, with humanity, 'all things' in the cosmos together for life and life eternal, exemplified in the resurrection of Christ. Christ's event is the event of newness that brings even opposites to belong together for the sake of the whole, the vessel of life. Here, the stumbling block and capstone work hand in hand, weakness and power embrace, wisdom and foolishness kiss, and death and life encounter as God and humanity meet (1 Cor 1:18–29). In Jesus, the man–God, dead–alive symbols of reconciliation and harmony, the promise of humanity's flourishing as the *homo-deus* is expressed as a symbiotic relationship between man–God and death–life.

The use of the names (1) heaven, (2) earth, and (3) midair, etc., in his writings, reveal Paul's awareness that the consciousness of division remains despite the reconciliation achieved by Christ. While humanity gradually progresses towards the unbroken conscious experience of cosmic wholeness, the nomenclature is in order (Panikkar 2013, p. 26). Paul is not reinventing the wheel. Plato, in the Timaeus, characterized time as "a moving image of eternity" (Seissl 2022, pp. 1–28), which later, in the Stoic tradition, was translated to (*διάστημα*) diastema (White 1996, pp. 183–98, 189; Durand et al. 2023), meaning spacing. The concepts allow for creation and humanity to be connected to the origin and distanced from it in time and space. As noted by Urs Von Balthasar, Gregory of Nyssa remarked that one can have a glimpse of humanity's origin. Still, diastasis, a human condition absent in God, hides that origin from the *anthropos* (Balthasar 1995, p. 28).[6] Diastema, for Stoics, was the result of being a creature. Paul indeed agreed by emphasizing God's transcendence and *moreness*, neatly held together with the cosmic whole that humanity cannot fully capture (Rom 11:33–36). Paul, however, believes that despite diastasis, humanity can have a glimpse of the eternal whole. This affords him the methodological gymnastics one sees in his letters. In these, moving within the life-giving cosmic whole, he navigates back and forth between origin and eternal future hope through time and space. In the meantime, Jesus, who came at the fulness of time (*πλήρωμα τοῦ χρόνου*) (Gal 4:4) and reconciled *all things*, now helps to master diastema until we come to the full experience of the cosmic whole.

For Paul, God, through the divine *Logos* Christ (*πρωτότοκος*),[7] who is the firstborn, created *all things*. And the created cosmos (*τὰ πάντα*) belongs to God because it is from him, through him, and in him (see in Rom 11:36, 1 Cor 8:4; Col 1:16). However, the location of Paul's cosmos in God does not limit its dynamism, since he maintains that God can and still calls what does not exist into being. "God . . . gives life to the dead and calls into existence the things that do not exist" (Rom 4:17). The cosmos, which is from God, through God, and in God forming a whole with him, is life giving, even for what is or seems dead. Indeed, there cannot be death in the cosmic whole in and with God. This elucidates why the goal of the 'new things' called into existence in the cosmic whole cannot and must not be separate from that of the whole, which is life, since it belongs to the whole. The already existing old and the new get bound together in God to form the life-giving whole. The unity between God and the cosmos, even as the universe expands and God with it since it is in God, promises and always gives life to those who belong.

4. New Cosmology

As we shift our focus from the central role of the community in African cosmology and proceed through Paul's reconciliation soteriology, which served to describe cosmic wholeness as the crucible for both biological and eternal life and belonging as achieving both salvation and life everlasting, we now turn our attention to the findings of modern science and technology. The Big Bang cosmology's emphasis on the origin of the universe and the inherent presence of energy in reality, coupled with quantum physics' exploration of energy's diverse forms and its interconnection with our consciousness illuminates the idea that life and human flourishing can only manifest within the cosmos. John Haught notes that the natural world "after giving rise to life and mind. . . is just emerging from the dark womb of its past to an unpredictable future" (Haught 2022, p. 7). According to him,

this should matter to science, theology, and every culture. For many centuries, humanity has speculated on the nature of the universe as a compass for understanding reality and its implications for us. Time and cultures shape cosmologies, just as cosmologies are shaped by cultures (Frank 2011, p. 17). But life emerged from a sea of energy and is moving towards a future in which womb vision remains obscure and unpredictable, because the cosmos is still awakening.

However, time, cosmological speculations, and scientific developments sometimes converge to generate a once-in-a-generation, life-altering novelty that allows us to see what was in the womb of the cosmic past that gave birth to the presently known cosmos. The knowledge then opens the path to inferring, knowing, never definitively, but within a broad spectrum of probable possibilities, what may be in the womb of the cosmic future from the echography of the present womb.

The paradigm shift in humanity's understanding of the cosmos commenced in 1543, when Nicholas Copernicus discovered that the Earth was not the center of the solar system. This time, the investigation to probe what is really going on with the universe will not be guided by myths, but by scientific observations—sometimes speculative—aided by technological advances. And so, in 1918, the American astronomer Harlow Shapley noticed that not even our galaxy had the sun at its center. A little later, between 1923 and 1929, Edwin Hubble discovered that our galaxy, the Milky Way, was just one among countless other galaxies of the universe. And for the first time, humanity was scientifically coming to a solemn awakening. The *anthropos* and our planet were not at the center of anything. The universe was still expanding, and galaxies were moving away from one another, with those far from ours moving faster than the closer ones (Delio 2020, p. 2).

Almost in the same period, in 1931, George Lemaître, a Belgian Catholic priest, made groundbreaking observations. In a paper entitled "A Homogeneous Universe of Constant Mass and Increasing Radius Accounting for the Radial Velocity of Extra-galactic Nebulæ", Lemaître suggested that the cosmos came from "the Cosmic Egg" (Lemaître 1931, pp. 489–90). He expanded the idea at the British Association in London in the same year when discussing the relationship between the physical universe and spirituality. He articulated the possibility of an initial point or a primeval atom, "the Cosmic Egg, exploding at the moment of the creation".[8] Following quantum physics, which we shall explore below, a theoretical explanation of Lemaître's proposition suggests that the cosmos commenced in a quantum vacuum. In and through the expansion process "set up by radiation itself . . . at the starting point" (Lemaître 193, p. 489) there was simultaneously an internal process of granulation and criticization, leading to the formation of atoms and stars. These realities developed through the emergence of hydrogen and helium atoms facilitated by the presence of nuclei. Whereas Lemaître concludes that "the largest part of the universe is forever out of our reach" (Lemaître 193, p. 489), at least we know that the impact of the collisions of stars and asteroids led to the creation of the planets, the Earth we inhabit included. On our planet, the formation of the foundational elements (carbon, oxygen, nitrogen, and phosphorus), essential for the organic form of life recognizable to us today, was made possible by energy and fusion processes.

In the second half of the 20th century, two scientists, Arno Allen Penzias and Robert Woodrow Wilson, finally discovered the evidence of a 13.8-billion-year-old universe. Professor Ilia Delio explains that "in 1964. . .two scientists working at the Bell laboratory in New Jersey discovered 'cosmic microwave background' that was left over from the beginning of the universe more than 13 billion years ago" (Delio 2020, p. 3). However, Lawrence M. Krauss suggests that the accuracy of the measurement was only achieved in 2006, thanks to the WMAP satellite that helped observers to accurately "measure the time since the Big Bang" (Krauss 2013, p. 124). Put together, all these discoveries affirm a vast cosmos in which everything is connected, at least from the perspective of the starting point and its expanding energy.

Associated with these cosmological discoveries is the birth of quantum physics. Max Karl Ernst Planck took as the object of his research the understanding of the "ultraviolet

catastrophe": the correlation between energy, frequency, and light color. In a scientific world in which it was widely accepted that light behaved in a wavy manner, the photoelectric effect and the ultraviolet catastrophe proved challenging to explain. In 1900, however, Max Planck proposed that "electromagnetic energy could be emitted only in quantized form, in other words, the energy could only be a multiple of an elementary unit: $E = h\nu$" (Max Planck 2023; Planck's Constant 2023). With this formula, Planck opened the unchartered, mind-bending world of quantum physics. In 1905, Albert Einstein introduced the concept of quanta to elucidate the photoelectric effect, proposing that light was composed of minute particles. During this period, the traditional perception of light as exhibiting a wavelike behavior began to coexist with the emerging recognition of its particle-like nature (the wave–particle nature of reality). The experiments and conclusions drawn from light behaving simultaneously with a particle and wave were also observed in subatomic particle movements. The basic understanding of nature's reality was beginning to be challenged. As dark matter and energy became part of the scientific observations explaining the stars' orbital movements and the universe's acceleration (Currivan and Laszlo 2017, p. 6), it became increasingly apparent that all is interconnected. The cosmos is one and whole, with all reality within it inherently held and connected by energy matter and its properties.

A question that arises is, if the universe is connected, forming a whole, then why is our perception of it different? Science postulates neither sin nor diastasis. Instead, Niels Bohr and Einstein engaged in one of the most consequential conversations of our era regarding the understanding of the connectedness between the cosmos, matter, and consciousness. Einstein explained that observation does not fix reality, but instead provides information to our knowledge. He is anecdotally remembered to have asked Abraham Pais, his biographer, if he really believes that the moon exists only when we look at it. He also rejected the principle of a hidden variable through which one particle's observation and/or behavior can affect another (Bohm 2002, p. 93). Similarly, he dismissed the principle of nonlocality as a 'spooky action at a distance' (Currivan and Laszlo 2017, p.7). For him, such a distant, interactive relationship would require information to travel faster than the speed of light, which is unacceptable.

On the other hand, Niels Bohr saw reality differently. Holding onto the principle of entanglement suggests that reality is but the fruit of our observation. Every reality is a wave and consequently immense, and as such, possesses an infinite spectrum of probable possibilities. Observation is what fixes reality to this or that aspect. Biological life and death is, in that sense, a matter of observation. Erwin Schrödinger's experiment of a cat in an opaque box with radioactive material underlies the essential role of observation. The radioactive material, having a 50% chance of being released provides a fifty–fifty chance for the cat to be dead or alive. According to Schrödinger, direct observation is the only way to know if the cat is alive or dead. Since the cage is opaque, and no one can see inside unless opened for observation, mainstream quantum theory concludes that "the cat is *both* alive and dead. He [the cat] exists in a superimposed state of both conditions at once. . ." (Zohar 1991, p. 39). In humanity and everyday vocabulary, curiosity is what kills the cat. Otherwise, we are always alive. And the capacity to always observe life and live is what our Christian religion calls salvation. But this life is only possible if we consider the whole and belong to it instead of the part that can give the impression of an end (death).

Bohr was in tune with the interconnected nature of things at the subatomic level of existence. According to David Bohm, Bohr "argued that in the quantum domain, the procedure by which we analyze classical systems into interacting parts breaks down, for whenever two entities combine to form a single system (even if only for a limited period of time) the process by which they do this is not divisible" (Bohm 2002, p. 93). Life and the cosmos cannot be divided. Because once in history, they interacted when the cosmic wholeness favored the emergence of life. Additionally, there is an unbreakable unity of energy at the subatomic level, constituting the base of all things. Life and the cosmos are headed together, with life going where the cosmos is going. Thus, for Bohr, observation does not tell us as much about the fragmented system we wish to observe as it does about

itself as a whole or part of a whole (Bohm 2002, p. 94). Reality is indivisible. "It is evident that according to Bohr's interpretation, nothing is measured in the quantum domain . . . Hence, there is no meaning to the supposition that there was something there to be disturbed in the first place" (Bohm 2002, p. 96).

Bohm agrees with Bohr and characterizes reality as "unbroken wholeness of the totality of existence as an undivided flowing movement without borders" (Bohm 2002, p. 242). For him, "what we call empty space contains an immense background of energy, and matter as we know it is a small, 'quantized wavelike excitation on top of this background, rather like a tiny ripple on a vast sea" (Bohm 2002, p. 242). Bohm thus introduced the idea of the three-dimensional perception of the universe: the holographic universe. Bohm explains that Greek philosophers Zeno and Parmenides' idea of a *plenum* universe should not be understood in Newtonian terms as the 'void' being filled with material particles like atoms or ether (Bohm 2002, p. 242).

> Rather, one is to begin with the holomovement, in which there is an immense 'sea' of energy. . . understood in terms of a multidimensional implicate order . . .while the entire universe of matter. . .is to be treated as a comparatively small pattern of excitation (Bohm 2002, p. 243)

The implications of Bohm's finding are profound. When we trace the trajectory of the cosmos from the Big Bang to the present moment, it becomes clear that the 13.8-billion-year-old universe, along with everything contained within it, is part of this vast 'ocean' of energy, marked by occasional tiny excitation patterns.

> No subsystem, whether an elementary particle, a person, a planet, or a galactic cluster within our universe, is or can be completely isolated. Everything at all scales of existence is being progressively discovered to be inherently related by in-formational content, flows and processes. . . (Currivan and Laszlo 2017, p. 35)

Because of the inherent flow of energy, information, and processes, our planet and all within it belong to the whole. And we cannot and will never be able to claim the existence of life, whether now or in the 'future', physical and/or spiritual, outside of this energy-filled cosmic whole, which constitutes the baseline of every excitation. In the long run, if *Ubuntu* and Paul say we must belong to the cosmic whole to be saved and live eternally, quantum physics proves that cosmic wholeness is the vessel that contains life. But because we belonged to the cosmic wholeness at some point, thanks to our interaction with it at that point and the same energy background we share, we will always belong, be saved, and live eternally.

5. Conclusions

In Africa, when one says, "I am because we are and because we are, I am", (*Ubuntu*) s/he expresses awareness about the centrality of the community of all communities (human, environmental, spiritual, divine, etc.) necessary for the sprouting, growth, sharing and survival of life. The 'being' of each of these 'communities' of the cosmos and their interdependent relationships are vital for each system's well-being and life and is the basis for the life of the *anthropos*. Paul's theological perspective reconstructs the whole through the reconciliation of the cosmos achieved in and through Christ. Within God is the cosmos, and with God forming the whole, it breathes the life-force offered to all who belong. "We beg, on Christ's behalf, be reconciled to God". Everyone is needed for the whole to be whole. So, Paul invites the communities and their members to love, obey, care for the other, etc., thus inviting all to belong to the visible micro-whole: the Church, the body of Christ. Objectively speaking, despite being whole because of her relationship to the whole, the Church is just part of the whole and would be dead unless she, too, makes a conscious effort to belong to the macrocosmic whole. Through attention to the universe's beginning, its energy, the observation of subatomic particles, their interactions, and their relationship to our minds, the Big Bang cosmology and quantum physics show that the undivided whole of the cosmos is the locus of life and living. In telling these three life stories, we

realize that life and its fullness are based on the search and experience of the whole. Thus, we are all invited, particularly the Church entrusted with the ministry of reconciliation and of change, to learn to constantly morph reconciling fragments to form the greater whole necessary for eternal life.

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Notes

1 "The oneness of Egyptian and Black culture could not be stated more clearly. Because of this essential Identity of genius, culture, and race, today all negroes can legitimately trace their culture to ancient Egypt and build a modern culture on that foundation" (Diop 1989, p. 140).

2 Traditional Indian cultures also understand the cosmos to inhabit the seed. "In the seed is the cosmos". see Vandana Shiva, TikTok video: *About the seeds and Nine Planets*. https://www.youtube.com/shorts/POzOBxz2x5w (accessed on 22 August 2023).

3 There is a map that describes the double contact that exists between Egypt and the continent (Diop 1988, p. 218).

4 *Kalûnga* has multiple meanings in the Bantu cosmology. It also embodies the idea of immensity—that which cannot be measured—source and the origin of life, the principle god-of-change, the principle that continuously generates, life force, and the balancing plane line of all energies.

5 Genesis 4: 10 describes the earth crying out to God to ask for justice. Passages like Amos 1:2, Jeremiah 23:9, etc., describe the earth mourning (Moo and Moo 2018, p. 106).

6 We need to note that Plato's definition was much more targeted on time being the number that gives an account for the change of the cosmos. But Gregory uses it to maintain a link, a relationship between the immutability of God and humanity's mutability.

7 Rabbis Bechai called YHWH Himself "Firstborn of the World". Πρωτότοκος (translated: 'the firstborn') does, consequently, not render Christ less than God as Arius argued when he used the expression. Here, Paul deploys it to describe both priority in time and supremacy in rank, in which case, Paul's consideration of the beginning of time is both prelapsarian and postlapsarian, but with moments of great excitations. The Christ event in its totality is one of those moments.

8 https://www.biblegematria.com/the-big-bang.html (accessed on 15 August 2023).

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