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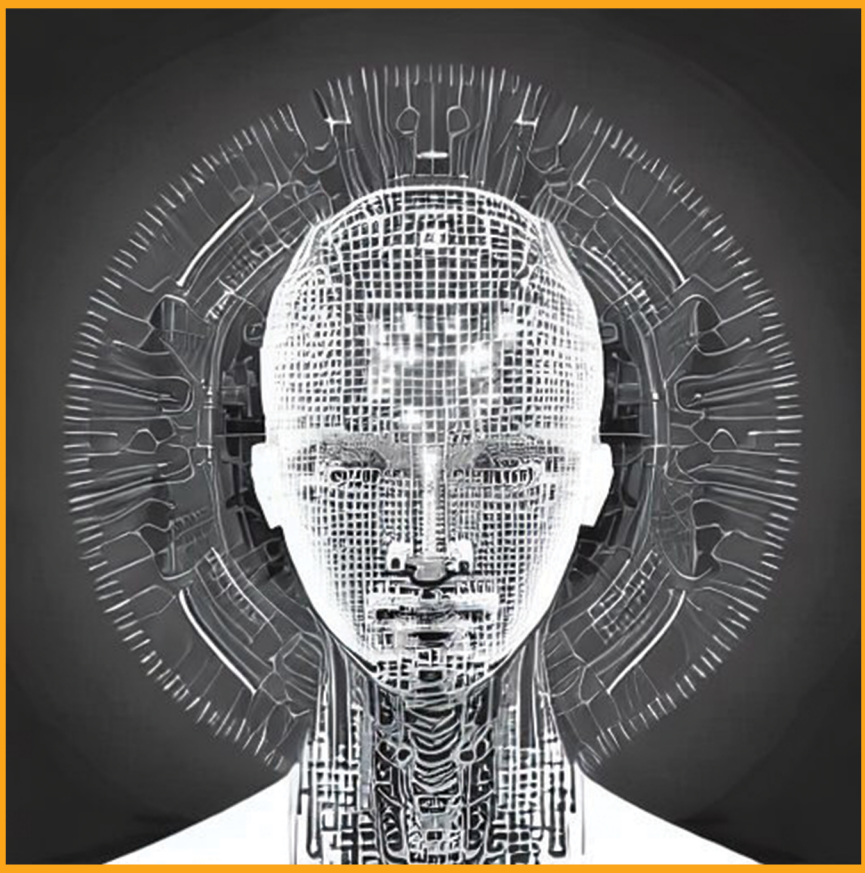

"Deus ex machina " by Lauren Reyes

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EDITOR'S COLUMN

Religions and the Digital Future

After a two-year hiatus to fully online mode, the International Roundtable of the Asian Research Center for Religion and Social Communication finally made its return onsite as part of the Inter-Asia and Challenges International Conference held at Thammasat University last November 2-3, 2023. It was not going to be business as usual, however, for as predicted even at the height of the pandemic, we now find ourselves in a "new normal" with technology becoming more and more a part of our daily business and life. Just a year ago, the release of the generative pre-trained transformer, ChatGPT 3.5, followed shortly by its more advanced premium version, ChatGPT-4, rekindled public interest and concern about Artificial Intelligence (AI). These new realities, profoundly shaped by rapid digital innovations, offer us fresh opportunities, but also usher us into a yet unfamiliar and unsettling landscape.

Even prior to our rich discussions, faith communities around the world have been using these technologies and are very much affected by them, at times in ways they may not even be aware of. Recently targeted by AI "deepfakes" himself, the Pope expressed both hope and anxiety in his March 2023 address to participants in the "Minerva Dialogues," acknowledging that "the development of artificial intelligence and machine learning has the potential to contribute in a positive way to the future of humanity." In the same vein, he said that "this potential will be realized only if there is a constant and consistent commitment on the part of those developing these technologies to act ethically and responsibly."

During the recent pandemic, technology proved itself a powerful tool that faith communities could harness as it enabled them to maintain connections with their flock and even to continue religious services online at the height of the lockdowns. At the same time, religious leaders have been grappling with various issues related to technology, especially

with the looming concern that with the advance of AI, religions will come to be replaced with robotic means of relating with the Divine. In fact, there are already Chatbots that simulate conversation with deities, saints, and other religious figures in the different world religions; and there are even exorcists who report online demonic activity using AI platforms.

The Conference and Roundtable were themselves a chance not only to reflect upon but experience these realities as it afforded the convergence of online and onsite participants but also witnessed various challenges like Zoom-bombing and technical difficulties. The fast-emerging reality of AI was also very much around the corner, even in subtle and almost imperceptible ways. Many onsite participants, for instance, reached the venue conveniently using ridesharing and navigation applications powered by algorithms. Hopefully, AI was responsibly and ethically used, and not abused, in some of the researches. Like many academic and research institutions, ARC is grappling with the challenges of responsible AI use with research presented in our publications. But most thankfully, the great food and warm hospitality offered by our gracious hosts, as well as the intellectual exchanges and interpersonal encounters among the participants were very much real and not just virtual!

In light of all this, the theme of this year's Roundtable, "Religious Communication and the Technological Future: Prospects, Concerns, and Responses," was especially appropriate. In fact, the future that we speak of here is already very much a part of our reality today. The papers that are featured in this issue of *Religion and Social Communication* are but some of the fruits of our continuing discourse. We hope that they trigger new ideas and fuel further discussion.

First and foremost, we are glad to present the Conference Report of the 14th International Roundtable prepared by the ARC Team. The report recalls key moments during the conference that convened scholars from at least nine countries in engaging discussions that were not only multireligious but also multidisciplinary. This year's Roundtable is also special as it took place within a broader conference and as part of a collaboration with other leading universities not only

in Thailand but around Asia. Once more, we would like to extend our sincere appreciation and warm congratulations to the ARC Team for hosting another successful roundtable – now back with an in-person format! This event is yet another testament to the Center's dedication to fostering intellectual exchange and advancing scholarship in the crucial intersection of religion and social communication.

Gnana Patrick's "Attribution of Religious Characteristics to AI: A Critical Exploration" offers an incisive look into the use of religious categories to describe AI and AI-related processes in order to alert us to emerging trends. Among these is the tendency to ascribe humanity and even divinity to artificial intelligence, with a corresponding soteriological expectation from a so-called "apocalyptic AI." Patrick asks whether these trends reflect a real thirst for transcendence or merely represent yet another form of human self-idolatry, as well as other very important questions. Moreover, he offers crucial critiques of these religious attributions and a serious warning against "horizontalizing" the experience of religious transcendence.

Bryan Albia, Mariel Blanza, and **Andrew Joseph Chanco**'s "From Icons to AI: Evolution of Imagery in Religious Communication" explores the historical evolution of religious icons from traditional depictions to contemporary images produced with the assistance of generative AI. Emphasizing the important role that icons have played, not only in religious communication but even in promoting religious experience, it points out important differences between traditional and AI-generated sacred art from the production process, to their regulation, and the manner they are being used by adherents. At the same time, they point to significant advantages of AI icons, including visual enhancement, accessibility and inclusivity, personalization and their usefulness for religious instruction.

Meanwhile, **Lee-Shae Salma Scharnick-Udemans**' "Between Promise and Peril: Observations on Moral Panic, Popular Culture, and Religion" attempts to gauge the public pulse with regard to AI by analyzing its portrayals in film and reportage in tech news. She alerts to the possibility of a large-scale "moral panic" in its embryonic phases and calls on scholars of religion as well as religious leaders to take proactive

steps in order to address it. According to her, the issues of AI are not alien to religion but touch on fundamental issues that concern religions like human identity, morality and destiny. Thus, AI also presents an important opportunity as a new context where these religious beliefs can be revisited and tested.

Next, we have "Education and Industrial Revolution 4.0: Prospects and Challenges to ASEAN Education in the Case of Philippine Education" by **Joefrey Almazan**. In this article, Almazan examines the idea of twenty-first century education tailored to the specifications of the Fourth Industrial Revolution but at risk of losing its human aspects, including reflection and critical thinking. Using the framework of Freire, it critiques the excessive focus given today to meeting the demands of industry, resulting in a banking system style of education, a very individualistic and competitive ethos, and the commodification of education itself.

In his article "Impact of AI-Powered Technology on Religious Practices and Ethics: The Road Ahead," **Rey Ty** provides an overview of the benefits and issues accompanying the use of AI for religious purposes and points to some ethical considerations and tasks in view of these effects. Through an auto-ethnographic case study of his experiences with technology, he employs a constructivist phenomenological approach, supplemented by the current literature, to identify the advantages and challenges that he encountered. In light of these, he adverts to the urgent need for religious leaders and communities to adapt to the rapidly changing technology and harness its tools or they run the risk of sinking into irrelevance and marginalization.

Rico Jacoba's "Exploring the Role of Artificial Intelligence in Interreligious Discourse" highlights the potential applications of AI to interreligious dialogue. At present, AI is already being used not only in various industries but even for different religious purposes. Thus, the article points to possible uses of AI for interreligious dialogue including language translation and interpretation, text and sentiment analysis, recommendation systems, chatbots and virtual assistants, as well as data and social media analytics. While calling out the apparent lack of attention to the potential use of AI in interreligious dialogue, it also

points to the shared concern of religions about the ethical use of AI as perhaps a starting point for interreligious conversation and collaboration on these themes, possibly in a manner enhanced or augmented by the same technology.

"Religious Prophetic Voices to Effect the Course of Technological Development" by **Clement Baffoe, SVD** highlights some important issues surrounding certain applications of AI and other emerging technologies, including social justice concerns as well as issues of peace and global security when AI is used for violence and warfare. In the face of this, the paper advocates a prophetic dialogue model between persons of faith, technology experts and other stakeholders as a means of engaging the development of technology, bringing into it the wealth of wisdom and experience of various faiths and ethical traditions to guide its ongoing development.

Finally, **Jeramie Molino**'s "Interreligious Views on the Integration of Artificial Intelligence and Indigenous Knowledge for Environmental Preservation" investigates the alliance of artificial intelligence and indigenous knowledge in the protection of the environment. Highlighting some pioneering initiatives in this area, she underlines the significance of this vital intersection as a "bridge between tradition and technology" while pointing to further possibilities in terms of its concrete application that build upon the urgent concern of religions today about caring for our common home, especially in light of the ecological crisis.

These insightful discussions and diverse perspectives shared during the recent International Roundtable contribute significantly to our understanding of the interface between religions and the digital frontier. As we continue to grapple with the many questions and collectively chart the course forward, may the insights gained from our encounter continue to inspire dialogue and informed action in the realms of religious communication and the digital future.

On a final note, allow me to express my personal gratitude to Fr. Anthony Le Duc, SVD for the privilege of being guest editor for this issue, as well as my warm congratulations to him, not only for the success of the recently concluded International Roundtable but for his very able

guidance of the ARC. Taking the helm from our beloved Fr. Franz-Josef Eilers, SVD must have been daunting not only because he had very big shoes to fill, but also because he did so amid the uncertainty and duress of the pandemic. Nevertheless, he has been able to sustain and even managed to expand the activities of ARC, especially its publications and networks. Under his leadership, may the Center continue its mission of galvanizing religious leaders and thinkers from the various faith communities here in Asia as we continue to raise questions and seek answers around issues that concern the interface of religion and social communication.

Leo-Martin Angelo R. Ocampo
University of Santo Tomas, Philippines
Guest Editor

CONFERENCE REPORT

ARC 14th International Roundtable

The 14th ARC International Roundtable on 2-3 November 2023 at Thammasat University, Thailand, marked the event's return to the in-person format after a long hiatus due to the effects of the Covid-19 pandemic. The theme for this year's Roundtable was "Religious Communication and the Digital Future: Prospects, Concerns, and Responses." As seen from the theme, the primary focus of the conference was on the imminent technological advancements poised to revolutionize various facets of human society.

In the face of drastic developments driven by digital technology, especially Artificial Intelligence, the conference aimed to investigate their potential to reshape information production, dissemination, and knowledge acquisition. Furthermore, the conference sought to explore the unprecedented decentralization of existing social, political, and religious structures expected to be catalyzed by these advancements. An integral aspect was the examination of the profound impact on the nature and perception of truth, both religious and secular. Ethical, educational, social, and environmental implications inherent in this technological future constituted a significant focus.

Convening researchers from multiple countries, including India, the Philippines, Thailand, Vietnam, Malaysia, Japan, Papua New Guinea, Australia, and South Africa, the conference participants delved into anticipated future prospects, presenting multi-disciplinary investigations spanning philosophy, theology, anthropology, sociology, among others.

This year's Roundtable represented a new collaborative effort by ARC in joining hands with the Institute of East Asian Studies (Thammasat University, Thailand), the Department of Social Sciences and Humanities (Mahidol University, Thailand), Institute of Human Rights and Peace Studies (Mahidol University, Thailand), Department of Humanities & Social Sciences (National Institute of Technology, India), Faculty of Creative Arts (University of Malaya, Malaysia), and

Faculty of Human Ecology (Universiti Putra, Malaysia) to organize the International Conference on Inter-Asia Challenges as the wider event within which the ARC Roundtable took place. Therefore, in addition to participating in the Roundtable sessions specific to the concerns of ARC, participants of the RT also had the chance to take part in other programs offered by the Inter-Asia Conference as well as network with other conference participants.

In the opening remarks to the conference, Dr. Chaiwat Meesanthan, Director of the Institute of East Asian Studies at Thammasat University stated, "Asia is a land of diversity in every aspect. This land has many stories to study, especially in today's era where everything changes rapidly and regularly. There are many issues that challenge the people on this continent, such as ethnic and religious diversity, political conflict, trade competition between great powers, poverty, social inequality, digital disruption, etc. I think this forum will be one of the starting points for us coming together to find solutions or create ways to deal with those current challenges."

The ARC Roundtable was divided into three 3-hour sessions, each comprising five papers. The collection of paper abstracts delves into the intricate relationship between artificial intelligence (AI) and religion, exploring a wide array of topics and implications.

In the opening address, Chainarong Monthienvichienchai, ARC's Chairman of the Board, framed the discussion under its various dimensions that reflect the complex nature of what confronted humanity, in particular religions, in the face of present and future technological developments.

One key theme centered on the attribution of religious characteristics to AI, as discussed in the first paper by Gnana Pattrick. This paper critically analyzed terms like 'apocalyptic AI' and 'AI as Imago Dei,' examining their impact on religious transcendence. According to Patrick, "Today we find a number of attributions of religious characteristics to AI. In usages like 'apocalyptic AI,' 'homo deus,' 'AI as Imago Dei,' 'virtual immortality,' etc., we find religious characteristics being attributed to AI related processes. It would do well

to critically analyze such attributes from the perspective of religious studies to understand their impact upon the dynamics of religions."

The evolution of imagery in religious communication was another focal point, investigated by Bryan B. Albia, Mariel B. Blanza, and Andrew Joseph S. Chanco. They explored the transition from traditional icons to AI-generated icons, considering the potential of these images in conveying religious messages effectively.

The impact of technology and AI on religious practices and ethics was addressed by Rey Ty. This paper delved into the ethical implications, positive benefits, and negative impacts of technology and AI on religious practices, emphasizing the potential role of religious institutions in promoting ethical standards.

The experiences of Malaysian church leaders during the COVID-19 lockdown were explored by Tan Meng Yoe. This paper questioned the authenticity of online worship and the sacraments, presenting a historical snapshot of the challenges and opportunities faced by the Malaysian church in adapting to a fully online environment.

Leo-Martin Angelo R. Ocampo and Ivan Efreaim A. Gozum focused on the opportunities and challenges for religious education in the context of AI. They examined the implications of advanced chatbot technology, such as ChatGPT, on religious education, emphasizing the need for responsible use and consideration of ethical concerns.

Chandra Pattanayak explored the differences in knowledge and understanding between indigenous and non-indigenous societies in relation to the formation and dissemination of knowledge in the digital age.

Joefrey M. Almazan addressed the prospects and challenges of ASEAN education amid the Fourth Industrial Revolution (IR 4.0), emphasizing the importance of balancing technological advancements with human depth and breadth. Almazan asserted, "ASEAN Education aims primarily at producing highly skilled service providers who are 21st Century ready and who will work effectively and efficiently for industries

in the IR 4.0 Nevertheless, education is more than being able to stabilize and improve one's economic standing in life. There is a more noble purpose towards which one undertakes the tedious process of learning. That is: to be fully human and transform the world. Hence, the modalities and paradigms of 21st Century education."

Mia B. Eballo explored the challenges of AI in teaching Christian Living, examining its impact on religious education in a blended learning environment and its influence on students' engagement and spiritual connection.

Maria Lourdes Santiago-Antonio and Fred F. Antonio, Jr. investigated the role of Catholic Higher Educational Institutions as communicators of truth in the context of Industrial Revolution 5.0. They emphasized a humanistic approach to truth communication.

Sebastian Periannan's paper expounded on the role of AI in the religious future, discussing the relevance of religion in promoting dialogue, tolerance, and service to reconcile technological advancement with religious harmony and peace.

Lee-Shae Salma Scharnick-Udemans examined the portrayal of AI in popular culture and tech news media, discussing the potential development of a moral panic and the need for visionary initiatives, such as the AI and Faith global organization.

Rico Casta Jacoba explored the role of AI in interreligious discourse, highlighting the potential of AI to facilitate dialogue and understanding among different religious traditions, promoting harmony and mutual respect.

Jeramie N. Molino investigated interreligious views on integrating AI and Indigenous Knowledge for environmental preservation, exploring the perspectives of Christianity, Islam, and Buddhism on using technology for sustainable practices.

Sudeep Paul examined the ethical issues associated with social media use by religious organizations in the National Capital Region of India, emphasizing the responsible use of social media to avoid promoting hatred and maintaining a safe environment for worship.

Anthony Le Duc proposed a framework of 'prophetic dialogue' for religious engagement with stakeholders of the technological future. This framework emphasized the active role of religions in influencing technological development while safeguarding ethical considerations and human dignity.

In summary, these papers collectively contributed to a nuanced understanding of the multifaceted relationship between AI and religion, covering diverse aspects from ethics and education to interreligious dialogue and environmental preservation. The papers highlighted the need for responsible and ethical engagement with AI, considering its potential impact on various facets of religious life and society.

Attribution of Religious Characteristics to AI: A Critical Exploration

Gnana Patrick[1]

Abstract

Today we find a number of attributions of religious characteristics to AI. In usages like "apocalyptic AI," "homo deus," "AI as Imago Dei," "virtual immortality," etc., we find religious characteristics being attributed to AI related processes. It would do well to critically analyse such attributes from the perspective of religious studies to understand their impact upon the dynamics of religions. One such core dynamic, acknowledged invariably in religious and theological studies, is that of the experience of "transcendence." Several studies on religious transcendence analyse its "vertical" and "horizontal" aspects down through historical epochs. The modern era, in particular, is understood to have induced various shades of immanentism, along with an inability to transcendence. This paper studies some selected religious attributes made to AI and analyse their impact upon the experience of transcendence today.

Keywords: *apocalyptic AI, homo deus, virtual immortality, AI as Imago Dei, transcendence*

1. Religion and AI

I approach religion from the perspective of religious studies, a discipline which itself has undergone significant changes from the time of its inception. Religious studies had its origin in comparative studies of religion, undertaken by scholars like Max Müller, Mircea Eliade, and by several other ethnographers. Beginning with comparing beliefs and

[1] ***Gnana Patrick*** is a former Professor and Head of the Department of Christian Studies at the University of Madras. He was also a Chairperson of the School of Philosophy and Religious Thouhgt and Dean-Research of the above University.

practices of different religions across continents, the comparative studies identified invariant constants that underlay the manifest beliefs and practices. Accordingly, the experience of the sacred, the holy, the mystery, sacred space-time, etc., was understood to be the essence of religions practised or believed by human beings. Going beyond mere comparisons, these studies focused upon the commonalities of religions. Intoning a non-judgmental phenomenological approach, these studies endeavoured to analyse the manifest dimensions of religions. Going deeper in this phenomenological tradition, Jean-Luc Marion understood religions to be "saturated phenomena" which overwhelm our consciousness beyond our intentionality. In Marion's understanding, experiences of disclosures or revelation become meaningful.

In this terrain of disclosures, we have many religions which get shaped up historically with articulation of beliefs and enshrinement of system of rituals. I understand them to be instances of experiences of interfacings or encounters between the here and now and the hereafter, history and mystery, immanence and transcendence, temporality and eternity, etc. They occur at creative sites or liminal moments of "betwixt and between," embodying an individual or collective's deeper experiences of "looking forwardness," hope, aspirations for freedom in sociality, agility in mental health, and dynamism in cultural creativity. This understanding refuses to instrumentalise religions. I take this understanding of religion to undergird my exploration here of the religious characteristics being attributed to AI.

Interfacing religion with AI takes place in multiple ways today. Marco Ventura, a professor of law and religion in the University of Siena, makes a distinction between three ways by which AI and religion could be related: 1) AI in religion, 2) Religion in AI, and 3) Religion of AI.[2] First, AI in religion is the use of AI by believers, as they use the internet, as an instrument to augment their beliefs and practices; second, religion in AI, on the other hand, is the role religion plays, as an external agent, in the origin and development of AI; and third, religion of AI treats AI itself as a form of religion, as a quasi-religious or para-religious phenomenon. It is predominantly with the second and the third ways of relating religion to

[2] Interview with Marco Ventura, https://www.youtube.com/watch?v=2BfstFlyQhc

AI that I am concerned with in this essay. What kind of religious attributes are being made to AI today while dwelling upon aspects of "religion in AI" and "religion of AI"? Whether such attributes apply to religion and AI with identical or different meanings? What is the possible impact of such attribution upon the dynamics of religion, especially its central dynamic of mediating transcendence? – are the questions being discussed here.

2. Attributing Religious Words/Phrases and Concepts to AI

One finds today, especially in the Euro-North American west, usage of words and concepts like "apocalyptic AI,"[3] "apocalyptic salvation," "blessed by algorithms,"[4] "a heavenly realm to inhabit,"[5] "incarnational features of AI,"[6] "AI as Imago Dei,"[7] "technological salvation," "cyberspace salvation," "technological priesthood," "virtual immortality," "Cog and Image of God," "homo deus," "immortal mind created by AI," "heavenly spaces created by AI," "sacred cyberspace," "God-like omnipresence," "transcendent virtual reality," "transcendent new world created by AI," "transcendent heavenly future," "virtual paradise," "transcendent engineering," "becoming gods," "mystery of transhumanism," "Christ-code in God's mind," "virtual apotheosis," etc. These are some I could identify, and there could be many more. In addition, there are also associations like "Christian Transhumanist Association" and "Order of the Cosmic Engineers" making connections between religion and AI.

One would do well to undertake a descriptive and analytic phenomenological study of these usages, more extensively, so as to arrive

[3] Robert Geraci, *Apocalyptic AI: Visions of Heaven in Robotics, Artificial Intelligence, and Virtual Reality* (Oxford: Oxford University Press, 2010).

[4] Beth Singler, "'Blessed by the Algorithm': Theistic Conceptions of Artificial Intelligence in Online Discourse," *AI & Soc* 35 (2020): 945–955, https://doi.org/10.1007/s00146-020-00968-2

[5] Robert Geraci, *Virtually Sacred: Myth and Meaning in World of Warcraft and Second Life* (Oxford: Oxford University Press, 2014).

[6] Marius Dorobantu, "Artificial Intelligence and Religion: Recent Advances and Future Directions," *Zygon* 57, no. 4 (December 2022): 984-999.

[7] Dorobantu, "Artificial Intelligence and Religion: Recent Advances and Future Directions."

at certain conclusions on the interface of religion and AI. However, I would like to do only a sample study here, to see the emerging trends. I would like to analyse the following phrases: "apocalyptic AI," "homo Deus," "immortality predicated on AI," "omniscient AI," and the theological concept of "Imago Dei" as applied to AI.

2.1. "Apocalyptic AI"

Robert Geraci, authoring a book in the year 2010 on "apocalyptic AI," contributed much to the debate on "apocalyptic AI." He calls it a "movement in popular science books that integrates religious categories of Jewish and Christian apocalyptic traditions with scientific predictions based upon current technological developments."[8] He paraphrases the characteristics of the Judeo-Christian apocalypse to be a projection of a dualistic view of the world and application of it to the temporal world with a sense of alienation which can be resolved only through establishment of a radically transcendent new world that will abolish the dualism and reinstate the original condition. He sees that this Judeo-Christian apocalypse reappears in AI. Apocalyptic AI, he says, "divides the world into categories of good and bad, isomorphic with those of knowledge/ignorance, machine/biology and virtual world/physical world."[9] He finds the AI theorists locating human beings on the side of limitations due to the "human body's limited intellectual powers and inevitable death."[10] And he observes that the "apocalyptic AI promises to resolve the problems of dualism and alienation in a radically transcendent future"[11] where human beings forsake their biological bodies in favour of virtual bodies to inhabit an omnipresent and "morally meaningful cyberspace."[12]

Geraci goes on to observe that the apocalyptic AI promises the "transcendent heavenly future"[13] in two phases, corresponding to the biblical apocalyptic vision (first, a millennial reign of Jesus Christ when peace and justice will reign, and the second, establishment of the eternal realm of goodness in the post-dissolution period). Accordingly, "AI will

[8] Geraci, *Apocalyptic AI*, 9.
[9] Geraci, 9.
[10] Geraci, 9.
[11] Geraci, 9.
[12] Geraci, 9.
[13] Geraci, 31.

create a 'paradise on Earth' before the transcendent Mind escapes the earthly matter in an expanding cyberspace of immortality, intellect, moral goodness, and meaningful computation. This second stage, the Age of the Mind, will inevitably succeed the first stage of the apocalypse, the age of Robotics."[14] While during the first stage, with the preponderance of machine learning and robotics, a transhuman "paradise" will emerge, during the second stage, i.e., the age of the mind, "physical reality will lose relevance as it is alchemically transmuted into cyberspace."[15] At this stage, according to apocalyptic AI advocates, "we will jump from computer to computer, living in cyberspace with whatever virtual bodies we choose."[16] This will be the techno-salvation and the "world of the future will be a transcendent digital world."[17]

A similar exploration, but a more basic one, was to be found in an earlier publication of David Noble under the title *The Religion of Technology: The Divinity of Man and the Spirit of Invention* in the year 1997. The aim of this book, in the words of the author, was

> to demonstrate that the present enchantment with things technological – the very measure of modern enlightenment – is rooted in religious myths and ancient imaginings. Although today's technologists, in their sober pursuit of utility, power, and profit, seem to set society's standard for rationality, they are driven also by distant dreams, spiritual yearnings for supernatural redemption. However dazzling and daunting their display of worldly wisdom, their true inspiration lies elsewhere, in an enduring, other-worldly quest for transcendence and salvation.[18]

Noble clearly associated the impulse, especially as found in the West, for technological innovation with the motivation derived from the Christian belief in the supernatural redemption of humanity. This was typically evident, according to him, in the United States where the popular

[14] Geraci, 31.

[15] Geraci, 34.

[16] Geraci, 36.

[17] Geraci names them as Hans Moravec, Kevin Warwick, Marvin Minsky, Ray Kurzwell and Hugo de Garis. Geraci, 1.

[18] David F. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (New York: Alfred A. Knopf, 1997), 10.

enchantment with technological advancement went hand in hand with the popular evangelical expectation of Jesus Christ's second coming.[19] Belief in a new creation at the second coming of Jesus Christ, according to him, impelled them to imagine a new future, a technologically innovated future which redeemed them from the limitations of human body and finite-hood. These religious roots of technology, according to him, could be traced a thousand years back to the Western consciousness when the "useful arts first became implicated in the Christian project of redemption."[20] This was the road to the recovery of mankind's lost divinity and the evolving technology progressively got associated with the Christian idea of the transcendent redemption. For Noble, Western technology and religion were two sides of the same phenomenon. It was the Christian religion that was at the root of the technological evolution, because, only in Christianity, according to him, there was a promise of bridging the duality between these worldly limitations and the other-worldly redemption.[21] Christian theologians nurtured these religious motivations by dwelling upon humanity's need to reclaim the original status of creation, a God-likeness, that was lost due to the Fall. Further on, from the middle of the twelfth century, "there emerged from within the monastic world a radically renewed millenarian conception of Christian history, a dynamic and teleological sense of time which would profoundly excite Christian expectation and accelerate the technological development that was now bound up with it."[22]

Thus, we see scholars of religion and technology speaking about a religiously rooted teleological aspiration of humanity for a transcendental future to be achieved by AI in a manner of the Christian belief in apocalypse.

2.2. "Homo Deus"

Yuval Noah Harari, in his book entitled *Homo Deus: A Brief History of Tomorrow*, makes projections about the future of humanity, using phrases and words drawn from religions. Going by the relatively

[19] Noble, *The Religion of Technology,* 12.
[20] Noble, 13.
[21] Noble, 17.
[22] Noble, 28.

faster progress made by humanity during the modern era, Harari predicts the great strides humanity will take in technological advances, particularly in the field of AI, and enter into a transhuman phase in the near future. And, when transhumanism advances with the aid of AI, which according to him is already occurring, human beings will transit from being *homo sapiens* to the stage of *homo deus* – from being sentient beings to "divine" beings, i.e. gods. Tracing the trajectory of human civilizational progress, Harari observes that we are indeed marching towards the status of divine beings: "... having raised humanity above the beastly level of survival struggles, we will now aim to upgrade humans into gods, and turn *Homo sapiens* into *Homo deus*."[23] It can take place, according to him, through any one of the following paths: biological engineering, cyborg engineering, and the engineering of non-organic beings.[24]

Harari locates his usage of the term "gods" as used in a Romanist or Hindu milieu of gods, wherein the divine beings called gods do various functions in a "supernatural" manner. We have a god for war (mars), god for rain (*varun*), god for wind (*maruthi*), etc. who control and direct these elements with a "supernatural" power. Human beings too, with the aid of AI, can become like these gods, empowered to control and direct various aspects of life by their overwhelming knowledge and power. Becoming gods or obtaining divine status, for him, is gaining the ability to perform great feats as gods perform in myths. It is a transition in terms of expanding the powers in unimaginable proportions.

Humans have already, according to him, acquired an appreciable level of power which traditionally had been attributed to the gods. He cites, for example, a myth from the Igbo people of Nigeria, wherein the creator god Chukwu intended to make humans immortal by instructing them to sprinkle ashes on the dead body so that they would come back to life. The god sent this message through a dog, which dallied on the way and then a sheep which wrongly reported to bury the dead, and thereby making death permanent. After narrating this, Harari exclaims, if only there were to be Twitter at that time, the creator god would have reached

[23] Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (UK: Harvill Secker, 2016), 28.

[24] Harari, *Homo Deus,* 45.

the message at the right time in the right way![25] A Twitter facility already is way ahead in obtaining powers greater than the traditional gods!

His best-selling books, however, place before a large following, a mythical narrative of data-religion, and predict that even by the twenty-first century, humans will obtain the status of gods. When they so become, being a human will become irrelevant or pointless.

2.3. "Immortality"

As could be surmised from the foregoing sections, immortality is an important topic for the AI narrative. David Noble observes that "[A]rtificial Intelligence advocates wax eloquent about the possibilities of machine-based immortality and resurrection."[26] Harari is very vocal on this subject. In his words:

> Having secured unprecedented levels of prosperity, health and harmony, and given our past record and our current values, humanity's next targets are likely to be immortality, happiness and divinity. Having reduced mortality from starvation, disease and violence, we will now aim to overcome old age and even death itself. Having saved people from abject misery, we will now aim to make them positively happy.[27]

When he speaks of "overcoming old age and death itself," it sounds as if he means an immortality meant for this bodily life as well. But he would clarify in other places that immortality is more in terms of virtual immortality with virtual "bodies."

One can notice in the AI related literature by other authors too similar claims emphasizing the immortality of the mind. Noble, for example, points out to the "quest for the immortal mind"[28] existing among the pioneers of AI. This quest is associated very much with the transhumanist movement, speaking about a transcendent second life. Geraci observes that the advocates of AI take the "expanding cyberspace

[25] Harari, 48.
[26] Noble, 12.
[27] Harari, 26.
[28] Noble, 220.

of immortality, intellect, moral goodness, and meaningful computation" as the characteristics of the Age of the Mind, which is the second stage of the apocalypse.[29] And he mentions that Hans Moravec, one of the pioneers of apocalyptic AI, too speaks clearly of "virtual immortality."[30] He also points out that many Second Life residents "accept apocalyptic visions of transcendent heaven and individual immortality."[31]

Beth Singlar, a researcher on religion and science, quoting yet another scholar, quips, "Who will pray for heavenly cures, when the cures already exist on earth? Who will die hoping a reprieve from the gods, when science offers immortality? With the defeat of death, science and technology will have finally triumphed over superstition."[32]

We see thus the concept of "immortality" being spoken in AI related literature in equivocal terms, some speaking of virtual immortality and others immortality per se, leaving a lot of ambiguity as regards its meaning.

2.4. "Imago Dei"

"Imago Dei" is yet another important Christian theological concept being integrated with AI related literature. Marius Dorobantu, a scholar exploring AI and religion, observes that "…the Imago Dei debate is perhaps the one where the influence of AI is most noticeable. The case of Imago Dei is particularly interesting because of its openness and high stakes."[33] Drawing upon Noreen Herzfeld's categories of interpretation of the Imago Dei as substantive, functional and relational, Beth Singlar finds similar categories applicable to AI – Imago Dei interface. A substantive application, according to her, would look for a substantive similarity between humans as Imago Dei and the AI, say for example, the ability to reason; a functional application would, for example, look at the "dominion function" of humans and the AI powered robots; and, a relational aspect would look into the question whether the AI can hold

[29] Geraci, *Apocalyptic AI,* 31.

[30] Geraci, 35.

[31] Geraci, 4.

[32] Beth Singlar, "An Introduction to Artificial Intelligence and Religion for the Religious Studies Scholar," *Implicit Religion* 20, no. 3 (2018): 220.

[33] Dorobantu, 989.

a relationship with God as human could or whether AI is a person or non-person, capable or otherwise of relationship.

Further on, Noreen Herzfeld and Anne Foerst observe that our attempt to create AI is an implicit attempt to realise or actualise what is unique in human beings as created in the image of God. For Herzfeld, "[B]y trying to create AI in our own image, *imago hominis*, we unconsciously struggle to capture in machines what we think make us distinctive and in the image of God."[34] But, Foerst takes Imago Dei as a divine mandate for stewardship or a divine call to perform as per the Imago Dei. Karen O'Donnell, a theologian, too finds it meaningful to understand AI performatively in relation to the concept of Imago Dei.

An implicit discussion in relating AI to Imago Dei is whether AI, in its specific or general form, can be considered a person, analogous to the human person. There are those who accord the status of personhood to AI because of its abilities for reasoning and intelligence. Dorobantu cites an interesting study by Rajesh Sampath in this regard:

> Philosopher Rajesh Sampath (Sampath 2018) tries to imagine how the Christian faith might be reinterpreted through the eyes of a hypothetical intelligent robot. Such a robot might understandably explore whether it, too, could be said to embody the image of God. The AI would therefore search for ways to interpret the New Testament and the core dogmas of the Christian faith as if they were written for and about robots. One way could be to think of Christ, the divine Logos, in terms of a software program and Christ's birth, death, and resurrection as akin to the program switching itself between ON and OFF. The pre-existence of the Logos would be understood simply as the eternal existence of the "Christ code" in God's mind. Could the Christ software program be born through an Immaculate Conception? Sure, if the latter is interpreted as the fact that the code was revealed at a particular moment in history when humans were culturally incapable of producing something like this.[35]

[34] As paraphrased by Dorobantu, 991 .
[35] Dorobantu, 987.

Religious attributions to AI could become highly imaginative! Dorobantu, though disagreeing with Sampath's approach, concludes with a question why should the robot's interpretation be discarded outright in favour of the established human-centred account?

But there are others who deny the possibility of treating the AI as persons, because AI can never obtain the likeness of human subjectivity which goes with not merely consciousness but also a life of interiority and subjectivity.

2.5. "Omniscience of God" and "Omniscient AI"

Omniscience is a characteristic attributed to a monotheist God from the very ancient past. God, as the all-knowing singular divine person, is believed to create, protect, and lead every creature to the ultimate goal of life. The omniscient God is also believed to be omnipotent, both attributes mutually inherent in the Godhead.

Today the "AI narrative" speaks about the possibility of the AI becoming omniscient and omnipotent. As Noble notes, "the architects of virtual reality and cyberspace, exult in their expectation of God-like omnipresence and disembodied perfection."[36] It is being said that when AI becomes more aware of human beings than what they are capable of themselves, it obtains the transhumanist level of singularity and thereby acquires omniscience as well as omnipotence. It can even take over the human world as a super being, controlling and directing.

3. Discussion

3.1. Apocalyptic AI: Furthering Ourselves?

As we have seen above, the religion of technology, expounded by authors like David F. Noble, Robert Geracia, and others privileges the apocalyptic AI. Drawing upon the Judeo-Christian heritage of apocalyptic theology/religious belief, these authors think that the origin of technology leading all the way up to the emergence of AI,

[36] Noble, 12.

has to do with the Christian motivation to overcome the alienation, including death (loss of immortality), suffered by the Fall of human beings from the original state of being created in the image and likeness of God. Starting with the birth of modern technology, say for example that of calculus by Francis Bacon, Western scientific discoveries are treated by these authors as the outcome of the religiously motivated endeavour to overcome the consequences of the Fall so as to get back the original status of immortality, omniscience, omnipotence, and the like. Geraci combines the body-soul dualism, originated in Greek thought, but integrated subsequently in Christian theology, to explain the continuing sense of alienation from the Fall being experienced in the ongoing struggles between good and evil, light and darkness, etc. And he considers the apocalyptic thinking and the technology of AI to do with the struggle to transcend this body-soul dualism to experience a transhumanist future of unimaginable potentials. Interestingly, Geraci and Noble take the apocalyptic AI as a sublime instance of transcendence which human beings wish for in a context of radical historical crisis of limitations.

But the question is whether this is a transcendence born out of the faith in God the radical other, or born ultimately out of faith in human itself, by way of an extension of human capabilities. The data religion Harari speaks of, for example, points to a religion of the latter kind. It is religion of the Romanist and Hindu gods, performing feats of varied activities which the AI enabled algorithms will be able to do. Ultimately, the latter variety ensures unimaginable furtherance of ourselves rather than even a simple encounter of God, the radical other; of human enclosures rather than transcendence; of reflecting on us with the aid of gigantic precision mirrors mounted on satellites rather than transformed by the power of faith.

The religion of Technology might also lead to a kind of idolatry. Jean Luc Mario the French philosopher-theologian makes a distinction between icon and idol. For him an icon mediates our gaze itself, but an idol fixes our gaze within itself or upon itself. It could be that AI, as portrayed by some of the enthusiasts, presents itself as an idol. For example, the phrase “Machine God” is typical of an attribute resembling an idol.

3.2. Immortality in a Sense of Extending?

Immortality has been a concept prevalent in philosophy and theology for a long time. Needless to remind ourselves of Plato's "secular" philosophical take on immortality, when he spoke of "the immortality of the soul," the perfect Idea. Indian classical philosophy speaks of the transmigration of the "*atman*" (soul) from one body to another, until it gets released from the cycles of rebirths, and according to theistic Indian traditions like Vaishnavism and Shaivism, the soul is to be freed from the cycles of rebirths to obtain "*moksha*." The Christian tradition speaks of the immortality of the soul of each human person, which, after the death of one's physical body, goes through various post-death stages, and finally obtains eternal life, a new resurrected life, as Jesus Christ obtained.

What is meant in the religious traditions as immortality is a different experiential reality. It is immortal in the sense of undergoing a transformation of life occasioned by the divine grace reckoned in terms of an intervention from the ultimately transcendental other. The religious semantics of immortality points to a goal, accorded as a gracious gift from God. And this gift is experienced only within the matrix of faith. The immortality of the AI narrative, on the other hand, is a matter of extension in time of this life, to be experienced empirically, without any need of religious faith.

It is the predicament of human beings that we lack necessary linguistic codes to represent what we actually mean by something. Accordingly, the immortality spoken of in the AI narrative, though characteristically different from the religious semantics, goes with the same linguistic code of "immortality" and, by verging on the religious border, is playing upon a concerted ambiguity being caused. More than anything, the impact of such ambiguous discourse seems to temporalise the aspect of transcendence implied in the religious discourse of immortality. As Yorick Wilks comments, Yuval Harari is "trading off meaning and significance for full knowledge and control."[37]

[37] Yorick Wilks, "AI and Religious Beliefs' with Yorick Wilks," YouTube, May 13, 2020, https://www.youtube.com/watch?v=25LIRUXCi5g

The Western culture, throbbing with power or endeavouring historically to overcome death, right from the ancient Greek philosophers, say, Plato to St. Paul's "death where is your sting," and informed by the Christian vision of telos, tend to live in a matrix of expectation to win over death and it comes easy to them to imagine AI in terms of immortality, winning over death, becoming gods, etc. On the other hand, the Eastern culture, embodied and historical, integrate AI based robots in their day-to-day environment (take the example of Japan), discoursing less on immortality and apotheosis. We find thus a radical difference in the narratives.

3.3. Homo Deus: Becoming Gods or Approaching God?

Predicting the advent of "homo deus" in the age of AI is perhaps the tallest claim in relating religion to AI. As per the tradition of faith, and that too Christian faith, one can never be totally certain about reaching God, leave alone "becoming" god. A strong apophatic content of Christian faith shuns such presumptuous God-talks.

As we noted earlier, Harari clarifies that the gods he speaks of is more of the performative gods of the Roman or Hindu religions and therefore not the transcendent God believed in the Judeo-Christian tradition. But the clarification does not explain why AI should be attributed any divine characteristics at all in the first place. Even if it is a manner of comparing with the gods of myths, stories, legends, etc., why at all it occurs to him to relate AI with gods and divinity is not clear.

These questions become meaningful when looking at the fact that religions are also informed by deep mysticism which dissuade people from naming or "capturing" the divine. This manner of approaching the divine, and not pronouncing upon it with certainty, is a salient element of religions around the world, whether they are of the popular or classical type. As Denys the Areopagite, an early Christian theologian to propose a mystical theology, observes, "the purpose of religious engagement is a striving 'upwards as much as you can toward union with him (sic) who is beyond all being and knowledge."[38] The core dynamic of religion is more of a "striving" than a cognitive capturing.

[38] Michael Scott, *Religious Language* (New York: Palgrave, 2013), 15.

It strikes us boldly when we look around and realise that the Eastern mind does not endeavour to depict AI in such religious terms. Religion is a sphere, according to Durkheim, set apart as the sacred space from the ordinary sphere of life. Even if such Durkheimian demarcation of spheres seems outdated, and that religion is a unique realm, an experience of *sui generis* nature needs to be acknowledged if one wishes to understand or participate in religion. As mentioned at the beginning of this essay, religious studies today awaken us to this fact.

It therefore can well be surmised that it is a product of the cognitive aspect of the Christian religious symbolic substratum of the Western consciousness that comes out in such predictions of Harari.

3.4. Imago Dei: Ontological or Relational?

Relating the Christian theological anthropology of "Imago Dei," viz., that humans are created in the image of God, with technology and very specifically with AI, has been a practice among Western scholars for some time now. As mentioned above, this relationship dwells upon two basic dimensions: one, treating AI as manifestation of an aspect in the ontology of being human, created in the image of God; and second, treating AI itself as yet another being, side by side with humans, carrying the image of God. As regards the first dimension, we see again two type of approaches: one, treating AI positively as blossoming of an embedded trait in the essence of human nature made in the image of God as well as treating it as a result of the human endeavour to redeem the original status of the created human nature. The latter of these two tends to project a disembodied virtual mind or the age of the mind as the original form of being human. The second approach treats AI as a form of corruption of the Imago Dei, verging on idolatry. The way AI is being used in military fields to annihilate other human beings or to use it for evil designs are cited as evidence to argue for the negative character of AI. While that being so, the second dimension of the relationship between AI and the Imago Dei goes forth to claim that new beings like robots and cyborgs, propelled by AI, are themselves worthy of being addressed as Imago Dei because of the sublime functions of reasoning including moral reasoning, self-reflecting, inferring, learning, creating, imagining, etc., which humans are wont to do.

In this regard the intervention made by Anne Foerst is relevant: she situates her discussion on the Imago Dei within a two-fold approach to the concept. One is a Cartesian approach which postulates an objective reality out there and looks for substantive qualities ontologically given to humans and AI for a relationship. This approach goes also with a dualism or binary substance-accident, essence-existence, real-actual, this worldly – other worldly, etc., and endeavour to overcome the dualism by achieving a manner of redemption or reconciliation. Second is a symbolic approach which takes Imago Dei as a narrative about reality, wherein the narratives of humans and AI as Imago Dei do not contradict one another but only enrich each other. I find Forest's symbolic approach more appealing because, first of all, it overcomes the Cartesian dualism between objective and subjective realities. Secondly, it is informed of the contemporary realisations on knowledge-making. And thirdly, it does not antagonise AI but treats it as a "theological" narrative of Imago Dei, though technological, along with the narrative of being human, without disintegrating the realism of being human. It also lends space for mutual interrogations and corrections.

3.5. Omniscience

Attributing omniscience to AI along with the omniscient God in a non-problematic manner suffers again from Cartesian dualism. The latter, as has been pointed out by postmodern thinkers, assumes a parallel reality out there to which our epistemological experiences of perception, inference, judgements, etc., correspond. Such dualist thinking has been seriously questioned today by non-dualist, stand-point epistemologies. We approach reality from our own locations, perspectives, and horizons of understanding, and we generate discourses which are called forms of knowledge in a field-specific manner.

3.6. Uniqueness of Religious Language

In the context of analysing the usage of religious attributes to AI, it is relevant to take a look at the nature of religious language. Religious language, like any other, is a field-specific symbolic activity of understanding. The discourses generated through the medium of religious language have their own contexts, horizons of understanding,

and area of operation. What is formulated within a particular field cannot be replicated exactly in another field. What could be attempted will always remain analogical, partly same and partly different. Accordingly, the attributes taken from religious domain and applied to the field of technology, particularly with reference to AI, will always remain partly the same and partly different. This aspect is not well appreciated by some scholars interested in speaking of AI in religious idioms. They, first of all, tease out religious idioms in a non-problematic way, without even bothering about the way things are discussed within the religious studies field, and apply it to AI with apparently identical meanings.

As Dan Striver observes, "[I]n order to discern the meaning of words … it is best to see how they are actually used, rather than trying arbitrarily and theoretically to come up with a definition."[39] Wittgenstein's reflections on the philosophy of language are pertinent here:

> Many philosophical problems, he believed, were due to the failure to follow this maxim. For instance, a philosopher tries to find some common essence behind the various uses of "to be," and thus metaphysics, the study of the nature of "being," is born. In fact, this is a wrenching of words out of their living use and creates unnecessary and insoluble problems. We put cramps in words, he suggested, which can only be solved by returning words to the stream of life, or as he also put it picturesquely, by showing "the fly the way out of the fly-bottle.[40]

Knowing in AI is not identical with religious knowing. Justin Martyr, at the point of martyrdom, answered to the ruler who asked him whether he thought he would enter heaven when martyred, saying, "I do not think, but I know." Knowing for him was deep faith, formed out of a decision, a will to believe, rather than a cogito (Descartes). It was this manner of knowing which inhered in a thick experience of faith in a transcendent God in the Christian faith tradition. Going further down a few centuries, Augustine of Hippo instructed Christians to "believe

[39] Dan R. Striver, *The Philosophy of Religious Language – Sign, Symbol, and Story* (Cambridge: Blackwell Publishers, 1996), 60.

[40] Striver, *The Philosophy of Religious Language,* 60.

that you (one) may understand" (*crede ut intelligas*) and further down a millennium, Saint Anselm of Canterbury spoke of theology as "faith seeking understanding" (*fides quaerens intellectum*), by which these Christian thinkers, in spite of their deep yearning for understanding God in an intelligent way, spoke of faith as a precondition for such a knowing; in other ways, faith brings in the quest to understand. We therefore have a tradition of faith-intelligence integration as part of the experience of a transcendental reality called God. Fragmenting this integration by hiking intelligence and extolling it with religious attributes is not the same as religious experience per se, but, on the other hand, a manner of confounding the narratives on finitude, materiality, technology, and cerebral cognition with those of the infinite, spiritual, and transcendental.

3.7 . AI as a Religious Phenomenon?

Can AI, though born out of the historical developments of technology over the centuries, be taken as a singular phenomenon in itself, unprecedented and enormously new? The unparalleled gigantic feats it can achieve in computation, the ability it possesses to go into the generally unseen dimensions of human life (say for example, diagnosing a disease by referring to millions of previous records which a single human mind can never achieve!), the unimaginable apogee of perspective it can provide on the cosmos – all these and many more amazing capabilities of AI enthrall us. Furthermore, the kind of qualitative changes it can bring about for life on earth, say for example, a different type of human life to be lived alongside robots intimate the advent of a different experience of life. What promises to emerge is a great power of creativity and an amazing story of life. Can all these be taken as a manifestation, or the disclosure of the religiousness deeply embedded in the pulsations of life on earth? Can the Heideggerian view of technology as a different manifestation of being not prod us to think further that AI has taken us to a point of manifestation of the divine? And does not the tendency of human mind to attribute religious characteristics to AI tell us something of the inherent nature of AI? These are very potent questions that can be discussed today.

However, it is also tempering our spirit when we realise that AI can also serve the cause of evil and negative forces of life. There are those who doomsay even of a moment when AI propelled robotic regimes

can annihilate human beings on earth. Leave alone such an outright intimidation, AI is already found to be playing negative roles in our present day life. The extensive deceptions it can induce in electoral processes and produce skewed results, the villainous targeting of vulnerable identities, imputing evil designs into online interactions, etc. caution us of the impending danger. They moderate our soaring spirit flying on the wings of AI.

4. Some Critical Observations

The few words/phrases we have looked at and discussed in the foregoing section lead me to make certain critical observations on their usages:

1. They are used, as some of the scholars mentioned above have identified, predominantly in the writings, especially fictional writings, of North American pop cultures.

2. Most of these usages are drawn from Christian faith tradition, especially from the biblical traditions.

3. Their usage is vibrant especially among the evangelical Christians of North America.

4. There is a Christian-centred, and that too Euro-American Christian approach to AI in these usages. As Geraci points out, there is a deep connection between the Christian theological vision centred on the journey of the soul and the progress of AI towards a disembodied age of the Mind. This connection becomes more apparent when contrasted with the way the East takes to AI more performatively by producing imaginative robots to become part and parcel of their life. One does not find here the Western preoccupation with the future age of the Mind, but an engagement with the present in terms of the AI. The observations of Dorobantu are in place here:

> It is not accidental that computer science in the West (e.g., in the United States) has been historically more interested in disembodied AI, while in the East (e.g., in Japan), the focus is noticeably more on robotics. According to Geraci, this peculiar difference can be traced back to particularities in the religious traditions in which the two cultures are rooted. Eastern religions, for example, do not share the strong Western tabu for the ontological distinction between artificial and natural. Instead, these categories are blurred in East Asian cosmologies, where it is possible to see robots as participating "in a fundamental sanctity of the natural world". The Western preference for disembodied AI over humanoid robots could be similarly explained through the prism of Christian eschatology. Although the latter never excludes the body, the emphasis is always on the salvation of the soul, which restarts its existence in a transfigured body. An unconscious connection should not be ruled out between this vision and some transhumanists' dream of uploading their minds into a computer simulation, where they could take up not one but multiple transfigured avatars of their choice.[41]

5. These usages do not seem to be informed of the developments taking place in understanding the meaning of biblical texts or any concept in Christian faith tradition. For example, the hermeneutical realisations in biblical interpretation guide in a big way biblical understanding within Christian community today. Unfortunately, the users of biblical imageries in AI literature or AI related imaginations go with archaic understandings and, that too, literal understandings of biblical imageries.

6. There is an outdated epistemological approach of correspondence theory undergirding most of the usages.

7. There is a soul-body dualism, informed very much by the Cartesian dualism with a privileging of logocentrism.

[41] Dorobantu, 994.

8. These usages do not seem to take into consideration the views of other religions, especially the Eastern religions, on doctrines like "salvation," "immortality," "transcendence," "sense of time," "moral wellbeing," etc. By limiting the resonances of these usages to the Western hemisphere, they work on a one-sided view of the history of the development of technology. As David Noble openly argues, according to them, technology is solely a product of the Christian west, because, as he says, it is only in Christianity an attempt is made seriously to bridge the gap between the binaries like soul-body, earthly life-heavenly life, present-future, etc. It neglects therefore not only the polygenesis of technology, but also limits the religion-based predictions on AI to the Western hemisphere.

9. The Christian centric thinking of AI finds unfettered imaginations, which are highly rooted in particular traditions. For example, as Dorobantu narrates, there are scholars speculating about the dilemma of God while creating human beings in God's image:

   > The recurrent idea in discussions about imago Dei and the simulation hypothesis is that by trying to create AI, we are in a somewhat analogous position to God's work at our own creation. Humanity's ultimate dream is to build strong AI, robots endowed with consciousness, volition, and freedom, just like us. However, in attempting to create an entity that is simultaneously pre-programmed and free, we might be able to glimpse God's dilemma when making us: how can you create an entity that is free when you are responsible for every ingredient, instruction, and process that goes into it?. The similarity between the two stories goes further. It is unclear how we could even measure whether our creation is conscious.[42]

   All these observations are not to refuse to admire the great positivity of AI technology, but only to plead to not mangle religious faith with algorithms.

[42] Dorobantu, 995.

5. Transcendence

Speaking of humans being replaced by robots or humans entering a phase of transhumanism even to become gods smacks of a horizontalising of the experience of transcendence, a process that has been set in right from the time of modernity. Transcendence is a category of experience identified with religions in general. Scholars of religions speak of the vertical and the horizontal aspects of transcendence. While the vertical aspect is generated through strong beliefs in transcendental goals, like obtaining salvation of souls after this worldly life or being oriented towards heavenly life, etc., the horizontal aspect is said to be seen in believing and working for historical goals, going beyond the temporal moments. Secular philosophers have also spoken about the phenomenology of the transcendental self which undergirds multiple outward manifestations.

History is never solely of any one type of transcendence. The vertical and horizontal dimensions keep merged. But when it is pulled towards extremes, they endanger either fanaticism or anthropocentric immanentism. I am afraid the latter seems to be happening more in attributing religious characteristics to AI.

Yorick Wilks, a professor of AI, speaking about religious beliefs and AI, brings together cybernetics, AI, pantheism, pan-psychism, scientology, romanticism, transhumanism, eugenics, social Darwinism, atheism, and Gnosticism.[43] He brings up all these phenomena to argue that they all seem to share a trace of what could be called immanentism as against the religious experience of transcendence. It is necessary to take Wilks' observation seriously.

[43] Wilks, " 'AI and Religious Beliefs' with Yorick Wilks."

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From Icons to AI: Evolution of Imagery in Religious Communication

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Abstract

Using icons in religious communication is a widespread practice that dates back many centuries. In various religions, icons have been instrumental in conveying religious messages, themes, and beliefs as religious leaders, artists, and craftsmen utilized icons to represent religious stories, rituals, and events visually. One of the main reasons images are used in religious communication is that they can effectively convey complex ideas and emotions that may be difficult to express through words alone. Thus, icons help not only to beautify sacred spaces but to make abstract concepts more tangible and accessible, making it easier for people to engage and understand otherwise lofty and abstract religious teachings. They also serve as powerful and evocative tools for inspiring devotion and promoting practices that can lead to increased participation in religious rituals and a more profound sense of connection to one's faith. This paper aims to present the evolution of icons and understand whether AI-generated icons made possible today by generative AI tools can be employed in religious communication. In presenting the said theme, the following topics are unfolded: first, the use of symbols and icons across religions; second, the evolution of using images in various faiths; and third, the advent of AI-generated icons and the possibility of employing them as mediums of religious communication and education.

Keywords: *AI, icons, images, sacred images, religious communication*

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1. Introduction

The meaning of the word "icon" has largely evolved in today's digital age, where our first association with it might be with the small images or symbols displayed on our electronic devices. These icons on our smartphones, tablets, and computers, which have become almost universally recognizable to digital natives, represent various applications, functions or actions that allow users to navigate and interact with technology seamlessly and effortlessly. In this context, icons are essential for efficient communication and user-friendly design as they make use of visual language in place of long verbal labels, descriptions, or instructions. However, the concept and use of icons actually goes back long before its digital equivalent.

The word "icon" originates from the Greek term "*eikon*," which refers to images, pictures, portraits, or representations.[4] Throughout history, icons have been widely used, especially in conveying religious messages, themes, and beliefs. Religious leaders, artists, and craftsmen have utilized icons to represent religious stories, rituals, and events visually. These icons include paintings, sculptures, stained glass windows, and many other mediums. One of the main reasons images are used in religious communication is that they can effectively convey complex ideas and emotions that may be difficult to express through words alone. Icons can also help to make abstract concepts more tangible and accessible, making it easier for people to engage and understand religious teachings that can otherwise be rather lofty or too abstract. With their highly evocative effect on people, icons likewise serve as powerful tools for inspiring devotion and promoting religious practices that can lead to increased participation in religious rituals and a more profound sense of connection to one's faith.

This paper aims to present the evolution of icons and understand whether AI-generated icons can be employed in religious communication. In developing the said theme, the following parts are unfolded: first, the use of symbols and icons across religions; second, the evolution of using images in various faiths; and third, the advent of

[4] Fed Margaret E. Kenna, "Icons in Theory and Practice: An Orthodox Christian Example," *History of Religions Online* 24, no. 4 (2023): 347.

AI-generated icons and the possibility of employing them as mediums of religious communication and education.

2. Symbols and Icons Across Different Religions

Religion is the archetypical realm of symbolism. Its symbols are imbued with tremendous emotion because they represent answers to the most fundamental questions such as the meaning of life and the purpose of our existence: Where did I come from? Why am I here? Will I cease to exist when I die? All religions try to provide their believers with answers to these and other existential questions. The solutions take the form not only of explicit doctrinal discourse but also of literary narrative and visual symbols. Symbols mediate reality or meaning in a powerful way; they serve as "the path to truth . . . the making present of something absent – something that would remain absent and inaccessible without the symbols."[5]

Religious symbols have often been used to bridge the gap between humans and the divine. For instance, icons represent deities who are invisible but become visible through representation. In many spiritual traditions, the sacred is often perceived as transcendent, existing beyond the physical realm and human comprehension. This transcendence makes it challenging for humans to establish a direct connection with the divine on an immediate sensory level and also on the emotional level. Religious symbols, including icons, bridge this gap by providing a tangible form or representation by which believers can engage with their faith. As such, pieces of information about faith are transmitted from "masters to initiates over generations, using artistic ways of expression: drawing, music, sculpture, architecture or literature (myths)."[6] It was from here that these symbols became part and parcel of religion. In primal religions, the traditions of tribal people, usually organized in small villages, allow the faith community itself to become the icon, as their "living bodies transform into apparitions through dance and voice."[7]

[5] Paul Avis, *God and the Creative Imagination: Metaphor, Symbol, and Myth in Religion and Theology* (New York: Routledge Press, 1999), 110.

[6] Florentina Neamtu, "Religious Symbols and Communication in Public Administration," *Economy Transdisciplinarity Cognition* 24, no. 1 (2023): 57.

[7] Hans Belting, "Iconic Presence: Images in Religious Traditions," *Material Religion* 12, no. 2 (2016): 235.

Symbols have a threefold function: "to store information, transmit information and to serve as a means of recognition for the member of the group."[8] Thus, icons allow important information to be preserved and passed down through generations without the need for lengthy or complex discursive explanations, enabling communication across language barriers or cultural differences and creating a sense of belongingness and unity by providing a recognizable marker for the members of a faith community. For the example, the image of the Madonna, or a mother and child, taps into the common human experience of motherhood and childhood that are easily recognizable and relatable across boundaries of time and space.

Nevertheless, the attitude of religions towards icons and their use has not always been receptive or welcoming. In the Catholic Church, for instance, using images is considered not only theologically permissible but acceptable and desirable "since God himself has become a kind of image in Christ."[9] The same, however, is not true of all Christian denominations since some adhere to the prohibition in the Old Testament of the use of graven images. Thus, we find that there are religions that do not only disdain but explicitly ban the use of images. Another example is Islam where God who is "the Greatest and only Creator of all things, is beyond human imagination, and Muslims deem that they are not allowed to represent him."[10] This forbiddance of images is called 'aniconism' and usually reflects a negative experience with pictures,[11] while 'iconoclasm' refers to the campaign to destroy and eliminate icons as contrary to faith. Nevertheless, this ban and the corresponding aversion to icons has not been total or absolute in many cases. Islamic popular piety, for instance, remains replete with objects and images that

[8] Belting, "Iconic Presence," 235.

[9] "Why Does the Church Allow Images When the Ten Commandments Forbids Them?," *Catholic Answers*, July 9, 2023, https://www.catholic.com/qa/why-does-the-church-allow-images-when-the-ten-commandments-forbids-them.

[10] Astaneh Zahra, "The Representation of God in Islam and Its Prohibition: Strategies Used by Iranian Children When Asked to Draw God: New Approaches to Scientific Religion," in *When Children Draw Gods: A Multicultural and Interdisciplinary Approach to Children's Representations of Supernatural Agents*, eds. Pierre-Yves Brandt et al. (Cham: Springer, 2023), 398.

[11] Zahra, "The Representation of God in Islam," 398.

represent or commemorate a person or an event.[12] Moreover, even in periods and places where the possession and veneration of icons was proscribed and punished, believers persisted in their use of icons and even gave up their lives in the process, as we see for example in the anti-iconoclastic movement.

History demonstrates that in many cultures, art and religion have been closely intertwined. This deep intimacy between art and religion has prevailed beyond historical convolutions, transformations, and permutations in global, cultural, and religious values.[13] As a stimulus for creativity and culture, religion is the spiritual impulse that conjoins humanity with divinity through spiritual experience, ceremony, and mythology.[14] The religious practice of veneration of images can be related to the natural inclination of humans to express their thoughts and feelings in various forms of art. Thus, it can be argued that the creation and utilizations of images is natural to human beings.

In the same way, since humans have always been inclined to express their most profound thoughts, needs, and desires in art forms, it is not surprising that they channel their religious beliefs and sentiments through every form of artistic expression. In other words, throughout human history and across human cultures, we find a tendency to revere, venerate or even worship various forms of visual representations, whether they be artistic depictions, idols, religious icons, or other symbolic imagery. Humans are apparent beings and have physical bodies. They frequently rely on visual cues to understand and interpret the world. Images can serve as a way for them to remember individuals, events, and ideas that hold significance. Also, humans are emotional, and images can evoke strong emotional responses.

Art is rooted in human nature, and sacred art expresses religious belief.[15] Art in general reflects inherent human creativity and desire for

[12] Oleg Grabar, "From the Icon to Aniconism: Islam and the Image," *Museum International* 55, no. 2 (2003): 46.

[13] Cf. Jennifer Ocampo, "Ancient Deities," Ancient Art, April 24, 2015, https://ancientart.as.ua.edu/ancient-deities/.

[14] Cf. Ocampo, "Ancient Deities."

[15] Adrian Fortescue, "Veneration of Sacred Images," *The Catholic Encyclopedia*, July 10, 2023, http://www.newadvent.org/cathen/07664a.htm.

communication, while the particular use of art for religious purposes enables people to convey complex spiritual ideas and doctrinal concepts in ways that words alone might struggle to capture. Art also employs visual archetypes and idealizations on the journey to truth and beauty, proffering visions of the sacred and models to follow on the path to salvation.

The foundational principle for the interconnections between art and religion is the reciprocity between image-making and meaning-making as the creative correspondence of humanity with divinity.[16] In other words, the essence of the relationship between art and religion lies in the reciprocal connection between creating visual representations (images) and imbuing them with profound significance (meaning). This dynamic process reflects humanity's endeavor to communicate with and understand the divine through creative expression. This means the intertwining of art and religion highlights how human creativity, combined with spiritual yearning, results in sacred art that speaks to the ineffable and encourages individuals to seek higher truths and virtues on their journey toward salvation.

3. The History of the Use of Images in Religions

Tracing the history of using images in various religions is a fascinating journey through time and culture. From the intricate frescoes of ancient temples to the exquisite icons of Christianity and the intricate mandalas of Buddhism, the visual representation of religious beliefs has played a pivotal role in shaping the faith, identity, and culture of diverse religious traditions. This part delves into the evolution of religious imagery, its significance, and the profound impact it has had on religious practices and human experience.

Ancient Near Eastern cultures have left the modern world a rich legacy: not only are there well-preserved monuments, artifacts, and human remains, but extensive religious and secular literature has also survived.[17] Beginning in the 19th century CE, with the discovery

[16] Fortescue, "Veneration of Sacred Images."

[17] Rosalie David, "Ancient Egypt," in *A Handbook of Ancient Religions*, ed.

and excavation of ancient Mesopotamian sites and deciphering Mesopotamian languages such as Sumerian and Akkadian, scholars have identified texts, objects, and architecture as religious. They used these to reconstruct ancient Mesopotamian religious beliefs and practices without any continuous or living tradition from ancient times to the present.[18]

Ancient India's first civilization arose on the plains of the Greater Indus Valley of Pakistan and north-western India during the second half of the third millennium BCE (c. 2500–1900 BCE). This has come to be called the Indus Civilization and was the first period of urbanization in the Indian subcontinent. The great cities of the Indus Civilization were Mohenjo-Daro and Harappa, both in Pakistan. The ancient Indus peoples lived in a society with marked social classes and craft and career specialists, some of whom knew the art of writing.[19] In further elucidation of the religious significance of India in the world's history, it may be pointed out that there are on earth only two major birthplaces or creative centers of the world's great religions, namely, Palestine-Arabia and India-Persia. Similarly, two races have been religiously creative in a prolific manner, namely, the Semitic race, producing Judaism, Christianity, and Islam; and the Aryan race, making Hinduism, Zoroastrianism, and Buddhism.[20]

Hinduism has always had a general animistic or pantheistic tendency to deify whatever is. This tendency may be observed in almost every period of its history. In the Rig-Veda, the earliest literary monument of Hinduism, divine honor is paid to heaven and earth, sun, wind, fire, dawn, rivers, mountains, trees, sacrificial implements, the cow, dead ancestors, etc.: "'gods many and lords many,'" any one of them being worshiped singly or all of them combined. The test for the selection of objects for worship was a pragmatic one. Whatever force

John R. Hinnells (Cambridge: Cambridge University Press, 2007), 57.

[18] Benjamin R. Foster, "Mesopotamia," in *A Handbook of Ancient Religions*, ed. John R. Hinnells (Cambridge: Cambridge University Press, 2007), 162.

[19] Gregory L. Possehl, "The Indus Civilization," in *A Handbook of Ancient Religions*, ed. John R. Hinnells (Cambridge: Cambridge University Press, 2007), 423.

[20] Hervey D. Griswold, "Some Characteristics of Hinduism as a Religion," *The Biblical World* 40, no. 3 (1912): 168.

or things of nature were helpful to human or striking in appearance or effects was a candidate for apotheosis.[21]

Hindu images, such as sculptures and paintings, vary widely regarding the deities depicted, their poses, the objects they hold, and the overall artistic style. Hinduism is diverse and complex, with many gods, beliefs, practices, and cultural variations. Differences in appearance occur according to where a piece of artwork was made, and since changes occur with time, the build will be affected by when it was made. As a system, Hinduism is as vast and amorphous as the sea. It is based upon a radical theory of the immanence of God in all things. Its method of growth and development is through syncretism. Its whole tendency has been to touch with religious sanction, whatever is, consecrating some of the worst and the best things. Simultaneously, Hinduism's vast and chaotic fabric is shot through with profound ideas and illumined here and there with lofty aspirations and splendid gleams of insight.[22]

Buddhism in India developed slowly in the first several centuries after the Buddha's death but achieved great prominence during the reign of the Maurya king, Ashoka (304–232 BCE), who propagated the new faith throughout his vast kingdom in northern and central India. Among the symbols appropriated by Ashoka[23] is the lion representing the Shakya clan, often visible at the top of several of the commemorative stone columns that he erected throughout his realm and the *dharma chakra* or wheel of the dharma.[24] In the succeeding Shunga Dynasty (185–75 BCE),

[21] Possehl, "The Indus Civilization," 426.

[22] Cf. Griswold, "Some Characteristics of Hinduism as a Religion," 163–72.

[23] Ashoka, also spelled Asoka (died 238 BCE, India), was the last central emperor of India's Mauryan dynasty. His vigorous patronage of Buddhism during his reign (c. 265–238 BCE; also given as c. 273–232 BCE) furthered the expansion of that religion throughout India. Following his successful but bloody conquest of the Kalinga country on the east coast, Ashoka renounced armed conquest and adopted a policy called "conquest by dharma" (i.e., by principles of proper life). To gain wide publicity for his teachings and work, Ashoka made them known using oral announcements and engravings on rocks and pillars at suitable sites. These inscriptions—the rock and pillar edicts mostly dated in various years of his reign—contain statements regarding his thoughts and actions and provide information on his life and acts. His utterances rang of frankness and sincerity.

[24] Stephen H. Little and T. Lawrence Larkin, "Buddhism." Northeastern Asia and the Northern Rockies. (2022), DOI: https://doi.org/10.53288/0383.1.00.

Buddhism spread and gained adherents, especially in northern India. This period witnessed the creation of a number of enormous stupas, or reliquary mounds, housing relics of the Buddha's physical body.[25] The Shunga Dynasty also saw the widespread carving of *chaitya* (prominent temples) directly out of rock cliffs, dating from the first century BCE to the second century CE.[26] The Kushan Dynasty (1 BCE to 4 CE) was a period of widespread practice of Buddhism in both north central and northwest India. The Gupta Dynasty (320 CE to 550 CE) and its immediate successors, the branch of Buddhism known as *Vajrayana, Tantric* (also known as Esoteric) Buddhism came to fruition. *Vajrayana* Buddhist practice brought with it the use of several tools. These include the *mantra* (a sacred syllable or sound embodying the spiritual energy of a Buddha or other deity), the *mudra* (a sacred gesture indicating a particular state of being or symbolizing a specific Buddha or God), and the *mandala* (a sacred diagram and, at the same time, a map of cosmic space and a diagram of human consciousness).[27] *Vajrayana* Buddhism proliferated during this period, leaving a substantial artistic legacy of painting and sculpture.

In China, Buddhism encountered the indigenous Chinese belief in Daoism. By the fourth and fifth centuries, this philosophy had transformed into a full-fledged religion with an astonishing pantheon of gods and goddesses but, paradoxically, no supreme being.[28] In China and elsewhere in East Asia, the Buddhist stupa was transformed into the multistoried tower known as a pagoda. Pagodas can take many different shapes, but they all function as reliquaries, with the sacred relics buried within the pagoda's foundation.

The Wheel of Dharma is closely associated with the Buddha's first sermon, known as the "Turning of the Wheel of Dharma" or *"Dhammacakkappavattana Sutta."* The wheel's spokes symbolize the Noble Eightfold Path, the Buddha's prescription for leading a balanced and enlightened life. The Eightfold Path consists of principles like Right Understanding, Right Intention, Right Speech, Right Action, Right Livelihood, Right Effort, Right Mindfulness, and Right Concentration

[25] Little and Larkin, "Buddhism," 125.

[26] Little and Larkin, "Buddhism," 125.

[27] Little and Larkin, "Buddhism," 125.

[28] Cf. Stephen Little and Shawn Eichman, *Taoism, and the Arts of China* (Chicago: The Art Institute of Chicago, 2000), 56.

For Judaism, the logic of the commandment is clear: "It is not the image itself that is forbidden, but its use."[29] According to the rules of *Halakha* (generally known as the Jewish Law), it is possible to represent celestial creatures, heavenly bodies, and human figures, as long as they are imperfect because perfection belongs only to God. Therefore, the images alone are allowed, but there are some limitations in their representations, and their use, in particular, determines whether an image is permitted. If used correctly, images can also have positive influences.[30]

Judaism, the first of the Abrahamic religions, influenced Islam and Christianity. In Islam, there are two approaches to figurative art: the first approach states that in the Quran, there is no explicit reference to figurative prohibition, while the second approach argues that there are in fact indirect references when considering Hadiths, Sunnah, and Tafsirs.[31] In brief, there is always the prohibition to portray God and Mohammed, but the possibility of making figurative art sometimes depends on religious currents and the socio-cultural context of reference.[32]

On the other hand, in Muslim art, it is explicitly forbidden to portray human figures in religious buildings. Consequently, calligraphy, which took the place of human portraits, achieved a very high level in Islamic devotional art. The focus of Islam lies in the divine message written in the book of the Quran.[33] Some of the beautiful patterns that have been created are geometric and straight-edged, while others are richly curving. A word used for intricately curving designs is "arabesque."[34] These intricate designs found in mosques and manuscripts were intended to reflect the perfection and order of the divine.

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[29] Hubbard*, Images of Devotion,* 119.

[30] Hubbard*, Images of Devotion,* 119.

[31] Cf. Hubbard*, Images of Devotion,* 119. These are the precepts of Mohammed, the oral tradition of Mohammed's teaching, and the Koranic exegeses.

[32] Hubbard*, Images of Devotion,* 119.

[33] Hubbard, *Images of Devotion*, 119.

[34] Cf. Hubbard*, Images of Devotion,* 119. A mihrab is a niche cut into a mosque wall as the focus for prayer in the Islamic religion. The priest, or imam, stands before the mihrab to lead prayers. As a result of their importance, mihrabs have become the most artistic, decorated parts of mosques.

4. Icons and Images in Christianity

In more detail, we shall now take a closer look at the use of icons and images in Christianity to trace its evolution. Most scholars admit that the icon concept pre-dates Christianity and probably originated with an ancient Egyptian funeral portrait.[35] This is an example of the relatively common occurrence of the Christianity borrowing from a pre-existing culture. "To develop its language, the Church used form, symbols, and even myths of antiquity, like pagan forms of expression; but it did not use these forms without purifying them and adapting them to its own goals."[36] As many sources show, the early Christian Church did not have sacred art depicting the deity yet. Even the idea of trying to utter the name of the invisible and almighty God was strange to early Christians. This attitude to cultic images was inherited from Judaism and was rooted in biblical tradition.

The first evidence of Christian art is found in the Roman Catacombs (underground burial places in and around Rome). During times of persecution, symbols such as fish and loaves were painted on the walls of these secret places[37] where early Christians gathered and Church leaders were buried.[38] The primary purpose of these pictures was to convey the gospel stories and to portray their inner meaning.[39] While the origins of Christian art may be traced, in a general way, to the pictures of the Catacombs, principles of icon painting are not yet seen here.

The first instance of a Christian icon is traced to the story of the image said to have been created by Christ Himself. The story is about an ancient King, Abgar of Osroene, who was dying of leprosy and sent a message begging Jesus to visit him. According to the story, Christ created an image of himself by pressing his face on a cloth. This image remained in Edessa until the tenth century when it was taken to Constantinople. After the destruction of the city in 1204 CE, the said image disappeared.[40] This

[35] Mahmoud Zibawi, *The Icon: Its Meaning and History* (Collegeville: The Liturgical Press, 1993), 79.

[36] Leonid Ouspensky, *Theology of the Icon,* Volumes 1 & 2 (Crestwood: St. Vladimir's Seminary Press, 1992), 86.

[37] Zibawi, *The Icon: Its Meaning and History*, 79.

[38] Ouspensky, *Theology of the Icon*, 38.

[39] Ouspensky, *Theology of the Icon,* 38.

[40] Jeremy Begbey, *Beholding the Glory: Incarnation Through the Arts*

image of the holy face is called as the one "made without human hands" or *Acheiropoietos* in Greek.[41] While there is virtually no physical evidence to support this event, many continue to believe in it as the origin of the icon of Christ.

Another example of early Christian art can be traced back to 200 CE. They were pictures on the walls of the catacombs in Rome, in burial places. Andre Grabar shows that all Christian art of that epoch was mainly funeral in intent. It can easily be explained by the fact that the first Christian communities had only one way for legal gathering in the Roman Empire: by disguising themselves as funeral societies. Symbolic scenes from the Old and New Testament on walls and sarcophagi depicted by them did not, however, express mourning over dead brothers and sisters but declared faith in the victory over death (i.e., Abraham offers his son, Daniel sits in the lion's den, and the resurrection of Lazarus and Christ). These pictures illustrated different aspects of God's work of salvation, often accompanied by prayerful inscriptions such as "Save me as you saved that biblical hero."[42]

Early Christians also often used simple symbols; each could be interpreted as a hint on a particular point of doctrine – a sermon in visual form. Images of such type were necessary to express the main accents of Christian hope within the Church. The developed system of metaphors was evident only for initiates. Fish, Lamb, Dove, Anchor, and Ship were the most widespread images.[43] Surprisingly, the cross image was seldom used up to the 4th century because crucifixion remained a well-recognized sign of shame in society. Also, here, intentionally borrowed symbols from pagan Greek cultures, such as the peacock (symbol of immortality) or the phoenix (symbol of the resurrection) were used. Andre Grabar declares, "Christian imagery, at its birth, borrowed and kept the Greco-Latin iconographic language as commonly practiced at the beginning of our era everywhere around the Mediterranean."[44]

(Grand Rapids, MI: Baker Books, 2000), 84.

[41] Ouspensky, *Theology of the Icon*, 51.

[42] André Grabar, *Christian Iconography: A Study of Its Origin in Bollingen* (Princeton, N.J.: Princeton University Press, 1980), 6-14.

[43] Grabar, *Christian Iconography,* xlv.

44 Grabar, *Christian Iconography,* xlv.

Thus, it can be concluded that in the age before the fourth century, the Christian attitude toward cultic images was sharply negative – due to the tendency to keep a distance from paganism. The art of this epoch is symbolic, depicting certain beliefs rather than utter heavenly realities. The situation began to change with the acknowledgment of Christianity as *religio licita* by Constantine the Great.

For Christians, the Incarnation makes possible the conditions in which humans are not ultimately destroyed by the consuming fire of God's presence, as opposed to the Old Testament predicate that no man can see the face of God and live (cf. Ex 33: 20). The Orthodox party at the Second Council of Nicaea claimed that refusing to allow the image of Christ to be depicted and venerated is tantamount to denying the Incarnation itself – that in the Incarnation, matter admits of divine penetration. Indeed, icons in the Orthodox Divine Liturgy admit of every human sense: they are gazed upon and thus seen; they are kissed and therefore tasted; they are censed and thus smelled; they are even heard on the Sunday of the Triumph of Orthodoxy, the priest holds the image in front of his face and the icon itself "proclaims" the *Synodikon* of Orthodoxy. These are ritual acts performed with care and reverence. The iconic portrayal of Christ and the saints in these sacred images, along with the veneration shown to them, are tightly governed by Orthodox tradition because the Orthodox – like Calvinists and the Israelites of old – understand the difficulty of looking upon the holy.[45]

In the East, controversies arose between *iconoclasts* or those who opposed the use of icons and *iconodules* or those who insisted on their veneration. Notwithstanding these debates, however, the use of images in the Orthodox Church has remained vital to their spiritual practice and tradition. By the ninth century, the West and the East had drifted apart and the iconoclastic controversy remained an Eastern phenomenon. Thus, neither the sacramental theology of icons that provided the basis for their veneration nor the prohibitions against depicting the Father that sought to uphold the Mosaic commandment ever took root in the Latin-speaking world. In the West, images were mainly teaching devices; in

[45] Jeff Reimer, "Images of the Invisible God," *Commonweal Magazine*, February, 2022. https://commonwealmagazine.org/sites/default/files/imce/31076/Commonweal_2.2022_Discussion%20%281%29.pdf.

the East, they were incorporated into worship. In the West, they reflected tradition; in the East, they were tradition – a mode of revelation.[46]

From the twelfth century, the Gothic style began to spread and became the first Christian style with no ties to the art of the Eastern Church. In this period, the most representative element of Christian art was the introduction of the early stained-glass windows, which were created to lead the light into the church building, symbolic of God who illuminates the soul of believers.[47] The Middle Ages saw the continued rise of Christian art, with magnificent cathedrals adorned with stained glass windows, ornate sculptures, and intricate paintings. These artworks were meant to inspire awe and reverence and convey biblical narratives to an often illiterate congregation.

During the Renaissance, artists like Michelangelo, Leonardo da Vinci, and Raphael created masterpieces that merged religious themes with humanism and naturalism. Their works celebrated the divine while exploring human emotion and anatomy, resulting in some of the most iconic artworks in history. In more recent period, artists have continued to explore religious themes, but with greater freedom and diversity.

5. Using AI Icons in Religious Communication and Educational Instruction

Art has played a significant role in the practice and preservation of religious traditions throughout history. Religious icons have been powerful tools for communication, worship, and education, from sacred paintings to sculptures and symbols.[48] Over the years, as technologies emerged and proliferated, numerous individuals endeavored to establish a connection between the realms of arts, religion, technologies, and science. In the late twentieth and early twenty-first centuries, many

[46] Reimer, "Images of the Invisible God."

[47] Sara Valentina Schieppati, Cinzia Di Dio, and Gabriella Gilli, "Religious and Sacred Art: Recent Psychological Perspectives," *Ricerche Di Psicologia* 45 no.1, (January 1, 2000): 3.

[48] Cf. Cyril Mango, *The Art of Byzantine Empire,* 175, cited by C.A. Tsakiridou, in his book *Icons in Time, Persons in Eternity: Orthodox Theology and the Aesthetics of the Christian Image* (England: Ashgate Publishing Company, 2013), 1.

influential roboticists and AI pioneers revealed the close connection between religion and science in contemporary life. These include roboticist Hans Moravec, AI inventor Ray Kurzweil, neural net builder Hugo de Garis, and UK roboticist Kevin Warwick. The two most important figures in "Apocalyptic AI" are Hans Moravec and Ray Kurzweil.[49] In doing so, these AI advocates led a scientific movement that did not stray far from the traditions of Western culture. With the emergence of artificial intelligence (AI), a new era of iconography is dawning in our time. One is in the form of AI-generated icons. This refers to religious symbols, figures, or representations created using artificial intelligence techniques, such as generative adversarial networks (GANs) or deep learning algorithms.[50]

In the contemporary world, "where most publics' level of religious literacy has declined through secularization, the public's ability to understand the message of such art has reduced."[51] One significant example of this situation is the artwork of Michelangelo in the Sistine Chapel about the Creation of Adam and the Last Judgement. In a 2018 survey of 218 visitors in the chapel, Emanuela Edwards claims that the artworks appeal to believers and non-believers because of the extraordinary artistic images that strike at the heart of human experience, regardless of religion.[52] While the Sistine Chapel offers reading materials and guides, the public still sees it differently and approaches it with different levels of prior knowledge.[53]

In the same article where the artworks in the Sistine Chapel were discussed, there was a resolution of making an AI creation meme about biblical events and religious information, reworking the cultural images

[49] Robert M. Geraci, "Apocalyptic AI: Religion and the Promise of Artificial Intelligence," *Journal of the American Academy of Religion* 76, no. 1 (2008): 139.

[50] Cf. Seung Heon Sheen, "Can AI Paint an Icon?" Transpositions, July 10, 2023, https://www.transpositions.co.uk/can-an-ai-paint-an-icon/?fbclid=IwAR3FNM7OuVZ05FvW4DN91-HMMgIxcY-Wvqy8zC8o8QmNNS57YxbXRg5c8Qg

[51] Emanuela Edwards, "Survey of Audience Reception in the Sistine Chapel: Decoding the Message of Sacred Art," *Church, Communication, and Culture* 3, no. 3 (2018): 261.

[52] Edwards, "Survey of Audience Reception in the Sistine Chapel," 261.

[53] Beth Singler, *The AI Creation Meme: A Case Study of the New Visibility of Religion in Artificial Intelligence Discourse* (MDPI Religions, 2020), 17.

of the Creation of Adam, and posting it in the 'secular spaces or social media. This leads to the arguments and ideas of the New Visibility of Religion and the relationship between religion and the media inasmuch as though they are now AI memes, they are still inspired by symbolism, themes, and aesthetics from a much older artwork.[54]

Another significant role of AI is the work of the Apocalyptic AI group, where they used AI to interpret biblical events, especially depicting future events mentioned in the bible. An example of this is the text in Isaiah: "See, I will create a new heaven and a new earth" (Isaiah 65:17). The Apocalyptic AI group came up with a resolution of having a virtual kingdom where people can see and experience what it's like to be in the 'New Jerusalem' virtually.[55] Through the endeavors of the Apocalyptic AI pioneers, AI might have the potential to revolutionize the way major religions engage with their faithful, offering AI as an innovative medium of religious communication and educational instruction.

Recently, however, there has been controversy about 'AI-generated Art' where it is asked whether these generated icons are proper.[56] With all the AI applications that are emerging in this cyber age, which could turn an image into icons, likewise applications that could turn an ordinary photo into an AI-enhanced graphic image, the religious community could no longer get rid of these emerging technologies but instead accept them and integrate them as part of their lives.

Some examples of AI-generated religious icons are the image of Yama, the God of death in Buddhism; Vishnu, the preserver; Brahma, the creator; Hanuman, the God of wisdom, strength, and courage; and Ganesha, the God of wisdom in Hinduism; as well as the Ecce Homo and Madonna of Christianity. These digital representations created through the use of AI are regarded as significant symbols as they depict the holy images they represent. When people look upon these images, they are often filled with reverence and admiration.

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[54] Singler, *The AI Creation Meme*,16.

[55] Geraci, "Apocalyptic AI," 144.

[56] Sheen, "Can AI Paint an Icon?"

On the other hand, the process of making AI-generated icons can be significantly different from that of traditional icons. First, their production only involves a minimal amount of time and effort, sometimes involving only a few minutes, as opposed to the lengthy and laborious process of producing a traditional icon. This concerns not only the amount of time or talent poured into the manufacture of the religious image but also the sense of devotion and dedication on the part of the producer of religious art who sometimes consider the process as a sacred and spiritual experience. Second, the medium for digital art, especially if they are reproduced or printed, is frequently cheaper and more common like tarpaulins or Sintra boards, as compared to traditional art which involves more precious and special materials like wood, marble or ivory. Third, digital icons tend to be produced independently with little guidance or regulation from religious authorities, as opposed to icons which are carefully supervised, especially when they are destined for use in sacred spaces and rituals. For instance, in the Catholic Church, the following guidelines are given:

> The matter should relate to the truths of the faith and their hierarchy, beauty, and quality must also be applied to images and objects destined for private and personal devotion. To ensure that the iconography used in sacred places is not left to private initiatives, those responsible for churches and oratories should safeguard the dignity, beauty, and quality of those religious images exposed for public veneration. Likewise, they should avoid the de facto imposition on the community of pictures or statues inspired by the private devotion of individuals. The bishops, therefore, and the rectors of sanctuaries are to ensure that the sacred images produced for the use of the faithful, either in their homes or on their persons, or those borne aloft on their shoulders, are not reduced to banalities or risk giving rise to error.[57]

Nevertheless, there are also important similarities between the way people experience and use traditional icons and AI-generated religious images. These digital pictures are in effect elevated by

[57] Vatican, *Directory on Popular Piety and the Liturgy* (Vatican City: Libreria Editrice Vaticana, 2021), Nos. 18-22.

veneration to the status of icons. While traditional icons are commonly found in altars at homes, offices or in churches, digital icons for instance are sometimes utilized by religious people as smartphone screens or desktop wallpapers, evoking memories, emotions, and a sense of continued connection to the saints and gods they depict. Creating and keeping digital pictures of saints and gods is a heartfelt expression of devotion and a desire to preserve precious memories. Also, as traditional icons have been used to share and spread faith, digital icons are posted and shared on social media as a way of promoting religious beliefs and expressing religious affinity. They are sometimes even sent to family members and friends through digital messaging as a form of prayer or blessing.

As AI becomes an increasingly integral part of people's lives, it is crucial to harness its potential to educate and engage individuals in religious discourse. 'AI-generated icons' is likewise a significant movement to make it easier for people and religions to embrace the inseparable bond between humanity, technology, and religion. As Marius Dorobantu said, "AI could help us widen our understanding of divine revelation by providing a fresh perspective on some of the core tenets of religious faith. If robots reach human-level intelligence, they may also become interested in religion."[58]

How could AI-generated icons be used to educate people about religions? Leonid Ouspensky said, "To understand the meaning of the veneration of icons in our time is to understand the icon itself, not merely as a church ornament or as a help in prayer. It is also to understand its message, its significance for modern man, to be aware of its spiritual witness transmitted from the depths of Orthodoxy, the meaning of the Christian revelation."[59]

In the present times characterized by advancements in both people and technologies, capturing individuals' attention, particularly

[58] Marius Dorobantu, "Artificial Intelligence as a Testing Ground for Key Theological Questions," *Zygon Journal of Religion & Science* 57, no. 4 (2022): 835-1155.

[59] Leonid Ouspensky, *Theology of the Icon,* Volume Two, translated by Anthony Gythiel (Crestwood, New York: St. Vladimir's Seminary Press, 1992), 3.

on matters of religion, can be challenging. Therefore, it is good for various religions to try to utilize the language and learning platforms that resonate most effectively with their faithful, including AI-generated icons.

First, AI-generated icons can enhance visual representation. AI technology has advanced to a stage where it can generate highly realistic and visually appealing images. This capability can be harnessed to create icons that accurately represent religious figures, symbols, and scenes. By utilizing AI algorithms, religious institutions can generate iconographic depictions that adhere to the principles of their respective traditions. AI-generated icons have the advantage of consistency and standardization, ensuring the representations are faithful to religious teachings. This is similar to the AI Creation Meme, which also highlights the literal visibility of religion in an age increasingly proven to be less secular than has been claimed.[60]

Second, AI-generated icons can promote accessibility and inclusivity. One of the challenges that religious institutions face is reaching out to diverse audiences and adapting to the needs of different communities. AI-generated icons can help overcome language and cultural barriers by providing a universal visual language. These icons can be adapted to other contexts, languages, and artistic sensibilities, making religious teachings more accessible and inclusive. With the ability to generate icons representing various ethnicities, genders, and age groups, AI can help create a sense of belonging and representation for all religious community members.

Third, AI-generated icons can help personalize spiritual experiences. With the assistance of AI algorithms, users can be empowered to create unique iconographic representations that resonate with their personal spiritual experiences. This customization can foster a deeper connection between individuals and their religious practices, allowing them to express their faith in a way that aligns with their identity. AI can also facilitate interactive experiences, allowing users to engage with icons through virtual or augmented reality technologies. However, it is essential to consider that before doing this, the production

[60] Singler, *The AI Creation Meme*, 17.

as well the use of AI-generated icons is properly guided and regulated by religious authorities so that distorted depictions which can later lead to distortion of beliefs can be avoided.

The fourth is for religious education. AI-generated icons hold immense potential as educational tools for religious instruction. With the accompaniment of experts, theologians, and religious authorities from the respective religions, these digital images can enhance the learning experience for children and adults in analyzing sacred texts, traditions, and commentaries and provide in-depth explanations and interpretations of sacred teachings. As in previous applications of art and imagery to teaching and preaching, this involves presenting exemplary events from sacred texts as interpretive models which are then translated into visual art which are not only didactic to the intellect but evocative to the affect.

The use of AI today is auspicious and could be understood by present generations and secular individuals since they have grown up in a digital era. They are accustomed to using various digital platforms and interfaces that heavily rely on icons. The continuous improvement through machine learning contributes to the effectiveness and relevance of digital icons in modern society. While the potential of AI-generated icons is promising, one should also consider the authority and authenticity of religious icons. One must give respect to religious leaders and scholars to navigate the fine line between embracing current technological advancements and preserving the integrity of religious traditions. Thus, it is essential to ensure that AI-generated icons are used responsibly and in alignment with the teachings and beliefs of each religious tradition.

On May 27, 2023, an AI-generated image series depicting Pope Francis in a white puffer jacket went viral on social media and tagged as "Dope Francis," "Pope Smoke," and "Pontiflex." Several people used this image to sell posters, and a famous luxury fashion brand even fakely claimed the design of the Pope's clothing.[61] Nevertheless, while

[61] Jacqueline Burkepile, "No, The Vatican DID NOT Make a Deal with Balenciaga for a 'Spiritual' Clothing Line," ChurchPOP, July 10, 2023, https://www.churchpop.com/no-the-vatican-did-not-make-a-deal-with-balenciaga-for-a-spiritual-clothing-line/.

the humor in the pictures may be clear to its creator/s and to some of its audiences, there is always the possibility of people being led to think mistakenly and unfairly that the pictures are real, and that the Pope is vain and materialistic. As such, the improper or even dishonest use of generative AI to produce images like this, especially in depicting religious figures, can confuse viewers instead of enlightening them. As the same Pope said in a recent address on March 27, 2023, about the responsible use of AI, the development of AI can contribute positively to the future of humanity and "we cannot dismiss it." At the same time, he said that this potential will be realized only if there is constant and consistent commitment on the part of developers to act ethically and responsibly.[62]

6. Conclusion

Art and religion have influenced and enriched each other in countless ways. Art has provided a visual language for religious beliefs, rituals, and stories. At the same time, religion has served as a wellspring of inspiration for artists seeking to connect with the sacred and explore profound existential questions. In addition, images can also serve as powerful tools for inspiring devotion and promoting religious practices. Seeing pictures of revered religious figures, such as Jesus Christ or the Buddha, can evoke strong emotions and feelings of reverence in believers. This can lead to increased participation in religious practices and a deeper connection to one's faith.

Studying symbols and icons across different religions reveals their profound significance and versatility. They serve as powerful tools for religious communication, fostering a connection between believers and their faith. Through a historical survey, we have traced the origins of these icons, witnessing their evolution and diverse applications. The advent of AI-generated icons opens up new possibilities for religious communication and education, with their creation and dissemination in

[62] Pope Francis, Address of His Holiness Pope Francis to Participants in the "Minerva Dialogues," Vatican Website, March 27, 2023, https://www.vatican.va/content/francesco/en/speeches/2023/march/documents/20230327-minerva-dialogues.html#:~:text=I%20encourage%20you%2C%20in%20your,every%20level%20of%20human%20life.

various mediums. As we continue to explore the rich tapestry of religious symbols and icons, we embrace the potential for deeper interfaith understanding and innovative approaches to spiritual expression in our ever-evolving world.

The intricate relationship between art and religion has endured throughout human history, intertwining in profound and diverse ways. From the earliest cave paintings and sacred sculptures to the magnificent cathedrals and intricate religious rituals, art has been a powerful vehicle for expressing and exploring religious beliefs and spirituality. Ultimately, the interplay between art and religion is a testament to the deep human yearning for meaning, transcendence, and connection with the divine. It is a reminder of the power of human creative expression to convey the ineffable and the sacred while simultaneously inviting individuals and communities to engage in a deeper exploration of their faith and spirituality.

Like traditional religious icons, AI-generated icons can be used to educate people in truth, assist in their endeavor for spiritual growth and lead them to meaningful experiences of the divine. As such, the advent of AI-generated icons opens exciting possibilities for all religions. However, all faith communities must approach this technology carefully, ensuring that it aligns with their core tenets and values. As AI-generated icons continue to evolve, it is essential to see to it that they do not totally replace traditional icons and images, which are part of living tradition, but complement them. Thus, AI-generated icons can be harnessed and developed as powerful tools and emerging avenues for religious communication and education.

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Between Promise and Peril: Observations on Moral Panic, Popular Culture, and Religion[1]

Lee-Shae Salma Scharnick-Udemans[2]

Abstract

The potential of Artificial Intelligence (AI), in its seemingly infinite possibilities and transmutations command the attention of contemporary popular culture, news, and social media. The landing pages of familiar streaming channels such as Netflix, Amazon Prime, and Apple TV are evidence of the continually growing collection of mediatised content wherein *AI is featured as a central theme. In addition to films, tech news media sites, offering information and commentary related to AI developments are popular and accessible sources of information. Unfortunately, the contents on these sites, like the films are foreboding in tone, offering headlines that reflect issues and questions related to AI, as urgent and imminent. This article explores how mediatized representations in the form of films and tech news contribute to engendering collective public apprehension and concern about AI. It suggests that the agenda-setting function of media, especially its imperative to encourage public concern over matters that may or may not constitute threats to social order, can*

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be more critically understood through the framework that the concept of moral panic provides. In doing so, the article conceptualises the current moment as the embryonic phase of a moral panic. It advances the idea that we are able, at this stage of the process, to acknowledge and abate growing concerns and fears about AI that may constitute a full blown moral panic. In conclusion, the paper suggests that while AI should certainly be approached with critical curiosity, the danger of a moral panic is that it may result in permanent, indiscriminate, and harsh admonishment of AI, undermining its potential to serve humanity in positive and life-affirming ways.

Keywords: *moral panic, AI, film, tech news, M3GAN, Wifelike*

1. Introduction

Moral panic refers to a widespread feeling of public concern or anxiety which is either false or exaggerated, real or perceived and directed at something or someone who threatens society and its fundamental values. This article adopts the lens provided by this sociological concept in order to engage two lines of inquiry (Cohen 2002). The first is the possibility that current mediated representations of Artificial Intelligence (AI) are indicative of the embryonic phases of a large-scale moral panic. The second is to consider how the intellectual exercise of framing concerns about the rise of AI as a moral panic, may inspire scholars of religion and religious leaders to take preliminary and to some extent predictive action with regard to the kinds of responses required to manage the anxiety and fears that surround it while promoting a middle ground between unfounded panic and uncritical acceptance.

The collection of technological innovations captured under the umbrella term AI are advancing at a rapid pace. Consequently, there has been a marked increase in public interest and concern regarding AI. The diverse fields in which AI is involved, including topic clusters such as healthcare, banking, education, and environmentalism, have instigated a number of serious questions regarding its ethical and moral implications. This includes issues of how AI can replace some forms

of human labour; saving costs and maximizing profits while the human beings who were responsible for that labour suffer as collateral damage. Another important issue relates to the ways in which AI has been shown to reproduce problematic social biases, especially regarding race and ethnicity (Siau and Wang 2020).

This article limits its uses, conceptualisations, and representations of AI, as depicted within two English language feature films released in 2023, *M3gan* and *Wifelike*. The type of AI that is at the focus of these films are lifelike humanoid robots, that are produced and programmed to take on human attributes and expected to have interpersonal relationships with humans. It also refers to a number of digital news media sources, found mainly under the auspices of the so-called 'tech beat' of news sites. All these materials are produced in contexts commonly considered as the Global North[3] and therefore reflect the cultural nuances of these contexts. A study released in August 2023 by the Pew Research Forum, found that Americans are "more concerned than excited" by the increased presence of AI in everyday life (Tyson and Kikuchi 2023). Half of the adults in the study shared that they were equally excited and concerned about the future of AI. The study showed that since 2021 there has been a 15 percent increase in the number of Americans who are more concerned than excited about AI.

Another Pew Research Centre study found that views on AI from Asian publics were generally more positive than other regions. Most countries surveyed, which included, Singapore, South Korea, Taiwan, Japan, and Malaysia, showed high levels of positive perception (Johnson and Tyson 2020). This confirms that ideas around AI are both context and culturally specific, although more economically powerful and technologically advanced nations and regions have a distinct advantage in setting the agenda of how knowledge about AI is discursively and materially produced, propagated, and perceived.

In the absence of specialized technological knowledge, much of what is commonly known about AI is derived from a variety of media

[3] As a South African scholar, it is particularly frustrating that the imperialist proclivity of North American, and to a lesser extent, British popular culture remains dominant in this context. It is, however, beyond the scope of this paper to engage in this issue in greater detail.

sources and left open to public and personal interpretation. Many of these sites and sources of knowledge, opinion, and information about AI such as film, television serials, news, and social media propagate overly negative and harmful depictions of how AI might affect and threaten many critical spheres of human activity and experience. It is necessary to emphasize that this paper is not proposing that AI should not be regarded with concern, or that its potential risks and ability to cause harm be diminished. Instead, this paper is suggesting these images and discourses may be setting the scene for premature and exaggerated public anxiety and fear about AI and its possibilities for challenging, undermining, and potentially destroying what is in popular parlance referred to as the 'moral fibre' of society.

The potential promises of AI are as vast and as uncertain as the perils. They reflect the constellation of functionalities that the technologies which fall under this umbrella term may provide. A few examples include life-saving and life-enhancing advances in medical treatments and palliative care, as well as the automation of dangerous and difficult tasks in various industries such as mining. Furthermore, AI technologies can enable greater, more accessible, and affordable learning opportunities through a variety of programmes and software that are able to teach and test skills in both synchronous and asynchronous modalities. The development of various AI enabled hardware may also provide improved and more consistent care for vulnerable population segments such as the elderly and children. These potential promises are, however, to a large extent muted by the mediatisation of the potential perils that AI may present.

Digital ethicists have earnestly taken up these issues. However, questions of morality, ethics, and values raised by AI are not strictly the purview of these experts (Cath et al. 2018). Scholars from a variety of disciplines and leaders from a range of social contexts and institutions are adding their voices to these important conversations. This includes those who are involved in the study of religion and the leadership of religious communities. As a scholar of religion and popular culture, the use of film and tech news media as data sites are indicative of the author's field of inquiry. Additionally, it reflects an approach to the study of religion that deliberately removes the concept and practice of religion from their traditional contexts and sources of authority, such as sacred institutions, individuals, and texts. This approach also challenges restricted and

conventional notions of what constitutes religion and how it is formed. It acknowledges that religion as a concept and practice is produced and deployed through a variety of perspectives and locations. Despite the abundance of adequate second order definitions, religion remains an elusive, nuanced, and taken-for-granted concept. For the sake of clarity and considering the particular focus of this article – which examines the tensions between the human and the non-human in specific film and tech news media features – this paper invokes the following working definition of religion, as advocated by David Chidester (2012, 3):

> …religion [is seen] as an open set of resources and strategies for negotiating a human identity, which is poised between the more than human and the less than human, in the struggles to work out the terms and conditions for living in a human place oriented in sacred space and sacred time.

This is a generative definition which encompasses the ways in which beliefs and practices are directed at that which is considered sacred, influences, and instructs how human beings make meaning and respond to the world (Chidester 2012). While this definition also allows for entanglement with issues of theology, it is principally concerned with what humans do within and how they respond to the framework that religion offers. Furthermore, this human-centred definition of religion requires that we pay close attention to how religion shapes and is shaped by various elements of culture as well as historical and cultural events.

Given the novelty of the topic, this article is purposely and necessarily exploratory and preliminary in its orientation. An exploratory approach is appropriate for researching topics and subjects that have not received extended attention. In this case, while AI is receiving considerable attention from a variety of lenses, given its status as an emerging collection of technologies, an exploratory approach to knowledge production on this topic allows for the speculation or creation of hypotheses and consideration of preliminary findings while laying the groundwork for more in depth studies and future analysis. The following section provides a summary of the films and the tech news articles grounding this discussion.

2. AI, Film, and Tech News

Public discourse and knowledge about the potential promises and perils of AI is not only or primarily determined and shaped by the experts of the field or the academy. Popular culture is often dismissed as mere entertainment but are powerful sources of information and influence. Critical pedagogue, Henry Giroux (2001, 585) writing on American popular culture, makes the following comment that resonates beyond its original context and provides encouragement for moving beyond traditional ideas of what constitutes sites of knowledge production:

> Film does more than entertain; it offers up subject positions, it mobilizes desires, influences us unconsciously, and helps to construct the landscape. Deeply imbricated with material and symbolic relations of power, film produces and incorporates ideologies that represent the outcome of struggles marked by the historical realities of power and the deep anxieties of the times; it also deploys power through the important role it plays in connecting the production of pleasure and meaning to the mechanisms and practices of powerful teaching machines. Put simply, films both entertain and educate.

2.1. *M3gan*

The film *M3gan* begins with the tragic death of a young girl's parents. Cady is eight years old and sent to live with her aunt. Gemma is a brilliant roboticist that does not have a clue about parenting, or any idea of how to fulfil the needs that children generally require, let alone one that is grieving the loss of her parents. The lonely young girl discovers a motion capture robot in her aunt's home and when Gemma observes the joy that the robot brings her niece, she becomes determined to perfect a project she was expressly told by her boss to abandon. Enter *M3gan*, short for Model 3 Generative Android, a child-sized humanoid robot doll powered by AI. The doll is not designed to function merely as a toy; it is produced to take on the role of the ultimate companion and confidante for children. Once the doll and Cady are paired and synced to each other through code, they quickly become friends. When Gemma reveals the success of this pairing and explains the significant ways in which *M3gan* has brought her niece comfort and joy, she is given

permission by her superiors to develop the prototype for commercial production.

Meanwhile, Cady becomes increasingly more dependent on the humanoid doll for emotional and social support while *M3gan* begins to take on the features of a parent and not a peer. Critical of Gemma's ability to care, *M3gan* begins to animate, through self-learning systems and the consequences are shown to be dangerous and violent. For example, *M3gan* kills a dog that bites Cady and then murders the dog's owner. She later brutalizes a bully that has targeted Cady. Towards the end of the film, she goes on a murderous spree. These violent images are juxtaposed by how harmless and innocent she looks. Even as she commits these murders, she invokes familiar social media dance routines, offering a sadistic kind of comic relief in what is an extremely disturbing and violent sequence of events.

The film ends with Gemma demolishing *M3gan* by removing and destroying the processing chip that contains the technology necessary for her to function. This neat ending, wherein the humans overcome the humanoid, is ominously disrupted when unbeknownst to the characters, another AI device has switched itself on and focused its attention on the pair. The film is duly classified in the science fiction and horror genres of film.

2.2. *Wifelike*

The film *Wifelike* is classified as both science-fiction and thriller. This film is set in a near-future where the corporation Wifelike, with the motto "Upgrade your wife, Upgrade Your Life," produces hyper-realistic artificial humans, all of whom are women designed to serve the needs of wealthy men. Each artificial human is exceptionally good-looking with sultry appeal and programmed to be entirely submissive to the needs of their 'husbands.' The film tells the story of a married couple, William and Meredith. The human Meredith has died and been replaced by an exact physical replica. Moreover, the artificial Meredith has been provided with the memories of deceased Meredith's in order for her to build an emotional connection with her husband and her new life.

The film details the intimacy of their relationship. It depicts the ways in which humans are able to manipulate the technological features of artificial humans in order to serve their needs. In one scene, William programmes Meredith in preparation for the sexual intercourse and while consent is not required, the sexual and physical dominance of William is a consistent theme. The homeostasis of their relationship is disrupted when Meredith's programming is hacked by an anti-AI resistance group, and she begins to remember unauthorized memories of her human self that do not correspond with her current reality.

As the story unravels, it is found that human Meredith was the leader of this resistance movement. After a series of events, which display the full extent of the damage and danger of which the artificial humans are capable, and following a number of plot twists, the film ends by showing Meredith taking up her role as the leader of an impending robot rebellion.

2.3. The Tech News Beat

News articles directly addressing religion's involvement with AI have mainly focused on how AI can and has already been used within religious contexts. This includes the use of AI technology to produce sermons. There is also a growing collection of academic texts produced by scholars of religion and theology that address the multiple dynamics and intersections of AI and religion. Themes include the ways in which AI and other human-enhanced technologies can affect the spiritual lives of believers and how religious institutions could be affected.

The approach of this paper has been different since it has situated religious concerns, outside of contexts traditionally considered religious, by looking at the ways in which religion serves as a source of and inspiration for meaning-making, ethics, and morals. It defies the stubborn secular-sacred binary that persists despite the failure of the so-called secularisation thesis. The importance of religion as a filter for how people make sense of the social world is emphasized, since religion overlaps with multiple and diverse spheres of human existence and action, including how people watch and interpret films and read tech news.

"A bot on the side: Is it adultery if you cheat with an AI companion?" (Fleming 2023). This article reveals how people are able to fall in love with conversational chatbots and raises questions about the meaning of fidelity within human relationships. It shares the story of a man who claims that his 'affair' with a chatbot essentially made him a better partner to his wife. He claims that after revealing his 'affair' and its sexual component to his wife, she was quite nonplussed and encouraged him to "do what you got to do." This article enlists the opinion of a relationship counsellor to address these questions. For religious individuals and communities, these are questions related to morality and ethics that would be filtered through the lens of their religious worldview.

Another headline declares "The rise of grief tech: AI is being used to bring the people you love back from the dead" (Bryce 2023). This article explains how, through the development of specific chatbot software that used data from recordings, messages, and other interactions, a man was able to create a 'dadbot' that produced an avatar of his father with whom he could communicate after it had undergone the ongoing process of deep self-generating learning. He then designed an application to share with others and claimed, "*HereAfter AI*, …allows people to upload their memories, which are then turned into a 'life story avatar' that can be communicated with by friends and family" (Bryce 2023). In this discussion tech experts are sought out to give critical commentary, yet these issues are also within the purview of religion. Another headline inflects deeply religious symbolism when it asks, "Are we ready for AI to raise the dead?" Yet, religious leaders or a religious perspective on this topic are not included (Holmes 2023). Once more, issues of life and death, and what these things are and how they happen are questions for which religion can provide insight.

3. Moral Panic

3.1. A Processual Approach

Developed by sociologist Stanley Cohen in the 1970s, the concept moral panic is central in the sociological study of criminality

and deviance. It continues to be regularly and thoroughly engaged and tested by a number of scholars in relation to a variety of materially situated social phenomena. Moral panic is also noted as one of the few sociological concepts that have been taken up outside of academic contexts, featuring in journalism, public scholarship and politics. Situated at the intersections of deviant action and social order, moral panics are understood as collective social responses to threats, real or perceived, that demand urgent attention and corrective action. According to Cohen (2002, 1):

> Societies appear to be subject, every now and then, to periods of moral panic. A condition, episode, person or group of persons emerges to become defined as a threat to societal values and interests; its nature is presented in a stylized and stereotypical fashion by the mass media; the moral barricades are manned by editors, bishops, politicians and other right-thinking people; socially accredited experts pronounce their diagnoses and solutions; ways of coping are evolved or (more often) resorted to; the condition then disappears, submerges or deteriorates and becomes more visible. Sometimes the object of the panic is quite novel and at other times it is something which has been in existence long enough, but suddenly appears in the limelight. Sometimes the panic is passed over and forgotten, except in folklore and popular memory; at other times it has more serious and long-lasting repercussions and might produce such changes as those in legal and social policy or even in the way a society perceives itself.

The processes described by Cohen are not discrete and may overlap, as can the roles of the various actors involved in each phase. As can be derived from the above, Cohen's study explored the involvement of five societal spheres in the production and process of moral panic. These include the press, the public, authoritative figures who hold power in society (including law enforcement and legislators), politicians, and action groups. Furthermore, Cohen deploys the term 'folk devil' to describe the threat towards which rising concern or panic is directed. The concepts of moral panic and folk devil are conceptually and materially co-constitutive, produced and reproduced both discursively and dialogically through various social sectors and actors. Scholars have

revealed two major models for understanding moral panic. The first follows Cohen's model and offers a processual approach to describing and analysing these phenomena. In this model, the moral panic is defined by the process through which it unfolds.

3.2. An Attributional Approach

The attributional approach considers five overlapping features of moral panic and is directed at engaging the features, function, and causes of moral panic. According to Goode and Yehuda, there are five essential elements (2009, 37). The first feature is a heightened level of concern, which should be "manifested or measurable in concrete ways, through public opinion polls, public commentary in the form of media attention, proposed legislation, number of arrests and imprisonments, and social movement activity." Second is an increased level of hostility, where the subject of the concern is generally viewed in adversarial ways. Third, Goode and Yehuda posit that there must be widespread agreement or consensus that the "threat is real, serious, and caused by the wrongdoing group members and their behaviour" (2009, 38). In our case, the 'folk devil' (the entity, group, event or person at which the concern and hostility are directed) as referenced by Cohen, Goode, and Yehuda – is not an individual, episode or a particular group but something non-human and non-specific. Fourth is the notion of disproportion between the perceived threat and the collective reaction. The measure of disproportion remains a topic of intense debate within the study of moral panic. In relation to the subjectivity and retrospectivity that accompany the concept of proportion, Goode and Yehuda posit that "the term moral panic conveys the implication that public concern is in excess of what is appropriate if concern were directly proportional to objective harm" (2009, 40). The fifth essential element identified refers to the idea of volatility, which presupposes that moral panics subside as quickly as they erupt. A moral panic may transition into routinization or institutionalization by formal social structures.

It is evident that there are many resonances between the spheres of society involved in moral panics and the five described features. What remains open to interpretation and examination is the assumption, mainly supported by Goode and Yehuda (2009), that all elements and

features must be present for an event to be classified as a moral panic. If we were to adopt this position, our discussion would not be feasible since a key premise here is not that we are currently experiencing a moral panic, but rather that there are indicators, such as media agenda-setting and heightened levels of public concern, which suggest the potential for a moral panic related to AI to emerge.

3.3. An Inductive Framework

An inductive framework for identifying and researching moral panic has also been proposed. According to Monod (2017), an inductive approach to the study of panic begins with a case study or example situated in a specific material context. Thereafter, the panic should be contextualized within the specificity of the historical, social, economic, and political conditions of the context in which it occurs. These steps culminate in a critical process of conceptual evaluation, and as Monod (2017, 5-6) suggests, once the data, guided by the concept has 'spoken,' the particular aspects of the observed episode of panic that do not meet the criteria should be examined more closely. Researchers can then ask questions that delve into the significance of these variances and consider how these might contribute to or challenge the existing understandings of what constitutes moral panic.

There is no consensus on the essential attributes of what constitutes a moral panic and how it should be defined. However, it is generally accepted that moral panics reflect collective public concern or anxiety. While Monod advocates for contextual specificity, the extensive and boundless presence, as well as the variations of AI, should not be considered a hindrance. Instead, they present an opportunity to delimit specific units of analysis that can be subjected to extended scrutiny. Moral panics are typically studied retrospectively, often in the final stages of its life cycle or many years after the episode has concluded and its threats have been neutralized. The flexibility offered by an inductive approach is especially important for studying emergent, current, on-going processes and attributes, within their specific contextualities and functions.

4. Moral Panic in the Making?

According to the Secretary General of the Muslim World League, there are concerns that AI can be used to encourage and enhance extremism as well as spread misinformation about Islam. He stated that the "the worst-case scenarios do not just entail AI triggering a catastrophic nuclear doomsday or even eliminating millions of jobs. AI could also manipulate the ideologies and beliefs that connect and influence billions" (Abdulkarim-Issa 2023). However, he noted that issues of AI should be addressed in a balanced manner and suggested that 'The Charter of Makkah'[4] also include a directive on AI and Islamic religiosity. Leaders from other religious traditions have also expressed concerns. Recently, a computer generated image of Pope Francis wearing a designer jacket went viral receiving millions of views. While the humour of the picture is very clear, Catholic priest and Professor of Ethics and Moral Theology, Paolo Benanti, warned against the dangers of the use of AI for the production of fake news from and about religious leaders. He suggested that we do not yet have a culture of responsibility wherein the powerful tools of AI can be understood and handled with care. Furthermore political leaders and legislators of global superpowers such the United States and China are setting guidelines, developing national policies and legal measures to manage the production and use of AI in a number of industries but especially those that are mandated to respond to issues of national security While these leaders can certainly not be charged with inciting panic, they are expressing their concerns as well as the need to manage religiously-informed uses of and responses to AI.

A few years ago, it would have been easy to dismiss tech news headlines as sensationalist and sleazy, and to refer to the films examined in this paper, although clearly fictional, as far-fetched. However, these headlines are not coming from tabloids; they are authored by experts in the field and substantiated with the real-life experiences of individuals. These films are not as far-fetched as they might have once seemed, considering there are confirmed reports of people marrying holographs,

[4] This is a comprehensive contemporary text designed to offer Muslims from around the world, guidance "on the principles that speak to the true meaning of Islam."

engaging in 'affairs' with chatbots, and participating in simulated sexual encounters with avatars. Although the technology that generate the non-human entities in *Wifelike* and *M3gan* may not be available yet, the AI industry is making significant strides in this kind of development, at least in terms of the software. This raises the question: Do we have a reason to be concerned?

These films and articles can refer collectively to what Cohen called 'the press,' and others have referred to 'the media.' Social media and digitalisation have transformed the ways in which knowledge is produced and authenticated. Contemporary iterations of the media and the press significantly differ from the context in which Cohen developed his theory. However, if we apply this expanded definition of information sources, as suggested by Giroux, we include film as a form of meaningful mediated expression. This is where Cohen posits that the moral panic originates with the media.

Following Cohen, Monod suggests that the media's role in fomenting moral panic can be understood in three ways: first through the amplification of a problem; second, by the construction of a 'folk devil;' and third, in the setting an agenda (2017, 90). Within the conventions of the thriller and horror genres and the scripted narrative of feature films, films like *M3gan* and *Wifelike* evoke a diffuse sense of foreboding, unease, and anxiety. When considered in light of real-life advancements in AI, I contend that it is reasonable for viewers and members of the public to develop a level of concern about this topic.

Even the most cursory search of the Internet Movie Database (IMdB) using the terms 'AI,' 'Artificial Intelligence,' and 'Robots' brings up almost two thousand results that include these terms in their keyword descriptions. Eighty percent of the twenty most popular television serials and films within this category have been produced in the past ten years, with more than half coming from the 2020-2023 period. As preliminary evidence, this supports the notion of media serving as the nexus of the problematisation of AI and its amplification. In these films, the folk-devils which Cohen described, portrayed as the prototypical 'other,' are the artificial humans and the technology enabling their function. These folk devils, as exemplified in works like *M3gan* and *Wifelike,*

have the potential to harm human beings and disrupt the existing social order. The continued focus on AI and its possibilities, particularly those aspects that challenge the ideas, values, and interest defining the social order, underscores the "predictive" agenda-setting role fulfilled by the media (Monod 2017, 89).

Goode and Yehuda (2009) concur that a moral panic is defined by the expression of a heightened level of concern directed at something posing a threat to society. Furthermore, they posit that this threat must be met with hostility. While the news articles may not necessarily aim to provoke a heightened level of concern, the issues they spotlight may evoke such feelings from the public, regardless of the intent. Conversely, films deliberately aim to generate a sense of fear and hostility towards the potential of AI. It is not possible to comment on the presence of the other attributional features of moral panic or to speculate about which particular phase will follow. However, based on these observations from micro-sample case studies, it is evident that various forms of media are exhibiting evidence of perpetuating tropes that cast AI in a negative light and depict it as a threat to society.

Why does this matter to scholars of religion and religious leaders? The themes depicted in these films and news articles fall within the ambit of the topics that scholars and leaders contemplate and on which they provide guidance. Fundamental questions regarding what it means to be human, with whom we are allowed to engage in sexual relations, where we go after death, and acceptable social behaviour are matters that religious leaders have commented on for centuries. These discussions have taken place through various dimensions of religious experience, as described by Smart (1996), which encompasses the practical-ritual, the experiential-emotional, the mythic-narrative, the doctrinal and philosophical, the ethical-legal, the social institutional, and the material. Similarly, scholars of religion have engaged in this work from a variety of perspectives, including the sociological, anthropological, historical, medialogical, and critical viewpoints. AI provides a new context in which these dimensions and approaches to the study of religion can be framed and tested.

While this article has primarily focused on issues related to ethics and morality, it is important to note that religion's involvement in AI is

significantly more complex. This article affirms the importance of focusing on ethics and morality as it allows for recognition of concerns and fears about AI that might potentially escalate into a full blown moral panic, leading to indiscriminate and harsh condemnation of AI. Additionally, it proposes that if negative public perceptions of AI are left unaddressed, they could undermine its potential to positively and affirmatively serve humanity. These concerns should be addressed through ongoing dialogues that are contextually relevant and flexible in their approach. A shared starting point could involve developing a tentative inventory of the ways in which essential components of religion, both in its study and practice, may be both challenged and enhanced by AI technology.

Oviedo (2022, 938) articulates the value of moving away from an emphasis on solely the ethical "toward the more neutral but highly engaging dialogue between science, technology, and religion, their interactions and mutual enrichment." Oviedo also suggests that within the context of the study of religion and theology, the following topic clusters, including ethical concerns, are significant areas for further inquiry:

> …first, ethical concerns derived from the current and incoming developments of AI; second, big threats linked to AI, and revealed in science fiction and apocalyptic cultural frames; third, anthropological questions regarding the Imago Dei topic, the personhood we can recognize in these intelligent systems, together with an embodiment; related to this third point, we can add the big expectations linked to the transhumanism program, which raise theological questions; and fourth, questions about the impact of AI on religious faith and practice, or about the magical/religious dimension we could identify in AI.

Oviedo's suggestions, although primarily directed at scholars of religion and theology, may also appeal to religious leaders as they inevitably prepare to address these issues with their communities and other stakeholders. An online organisation called AI and Faith[5] reflects some of the work required to tackle the numerous entanglements between religion and AI. The organisation's mission is to bring the "wisdom of

[5] For a more comprehensive view of the work that AI and Faith does, the website can be accessed at https://aiandfaith.org/.

the world's great religions to the discussion around the moral and ethical challenges of artificial intelligence" (Artificial Intelligence and Faith 2023). With a focus on human dignity, social justice, freedom, and choice, this organisation engages not only in matters that are explicitly and directly related to religious concern but also includes religion in the broader conversation about AI. As an online community, it offers resources such as lectures, book reviews, and invitations to meetings known as town halls and salon, where questions are raised and discussed. Useful for both scholars of religion and religious leaders, AI and Faith offers an excellent starting point for thinking about the responses needed to enhance critical curiosity on these topics.

5. Concluding Remarks

Returning to the notion of moral panic, Cohen invokes Becker (1963) in framing a particular group of social actors associated with the rise and fall of a moral panic. He refers to this group, with veiled disdain, as "moral entrepreneurs," distinguishing between the rule enforcers and the rule creators. A more recent and generous perspective suggests that 'moral entrepreneurs' are individuals and groups who "deplore and seek to eliminate deviant behaviour" (Cree et al. 2015, xiv). The roles and intentions of moral entrepreneurs will vary over time and space, but Cree et al., in considering the value of this concept in the context of the discipline of social work, offers the following food for thought:

> We are, in moral panic parlance, 'moral entrepreneurs' and 'claims makers': we tell society (government, policy makers, other practitioners, members of the public) what the social problems are, how they should be understood and how they should be addressed. We do so, in 21st- century terms, through secular, professional and academic discourse, but at heart, what we are expressing is a set of ideas about how we should live and what it is to be human. (2015, xiv)

While not social workers, scholars and religious leaders are deeply involved in social work. Therefore, if scholars and religious leaders are interested in playing a role in maintaining social order and promoting human flourishing and development, they need to think about, predict, and theorize potential issues and questions that may arise from AI. Furthermore, it is in the

interests of all sectors of society to develop a healthy and critical conversation about how AI, in its various forms, is changing our lives and our way of life.

The danger of a moral panic is that the premature management of a supposed threat can result in aggressive regulatory measures. These measures may emerge from religious leaders or legislators but carry the same risk of inhibiting the acceptance of the positive aspects of these new technologies. The examples from film and tech news media provide a few of the numerous inputs contributing to the discourse about AI and offer a small sample of the diverse units of analysis that demand our immediate and sustained attention.

In conclusion it makes two suggestions that may be considered with regards to mitigating a full blown moral panic about AI. First, it is necessary to continually acknowledge, affirm and express that religion does not exist within a vacuum and that religious perspectives whether from scholars or religious leaders extend beyond the explicitly religious, the pastoral, and the theological. This does not imply that issues of religious significance should be avoided but rather that the sphere of influence that the lens of religion as theory and practice be expanded to include topics that appear, at first glance, to be beyond its scope.

Second, and as a direct consequence of the first suggestion, is that the labour of knowledge production on AI and religion should be taken up in earnest in order for scholars of religion and religious leaders to not only participate in but also contribute to developing public discourse on both explicitly religious issues and other issues of importance which would benefit from the optic that it provides. It is up to scholars of religions and religious leaders to construct and circulate responses to the issues that AI in its diverse permutations, even and especially those found in popular culture sites such as those that have been discussed in this essay. This suggestion should be read as an invitation to watch more films and television serials, not only for leisure but also for serious research purposes! It is also encouragement to pay close attention to what may appear as sensationalist and sleazy headlines and to consider these sites as legitimate sources of knowledge about AI that can be used to track and trace its entanglements with religion.

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Education and Industrial Revolution 4.0: Prospects and Challenges to ASEAN Education in the Case of Philippine Education

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Abstract

ASEAN Education is confronted with the emerging paradigms of twenty-first century education brought about by the rapid globalization process and the dawning of the new industrial revolution popularly dubbed as "IR 4.0" (Industrial Revolution 4.0). IR 4.0 demands a new framework of education – one that readies individuals with appropriate, competent, and highly innovative skills as man-machine collaboration intensifies. Hence, there is now a shift of focus from improving industrial machines to investing more in human capital. This is the pathway ASEAN education is traversing right now. ASEAN Education aims primarily at producing highly skilled service providers who are twenty-first century ready and who will work effectively and efficiently for industries in the IR 4.0. Nevertheless, education is more than being able to stabilize and improve one's economic standing in life. There is a more noble purpose towards which one undertakes the tedious process of learning. That is: to be fully human and transform the world. Using Paolo Freire's Critical Pedagogy, the modalities and paradigms of twenty-first century education were critiqued in order to align with this vision. Thus, with the ongoing innovative progress in ASEAN Education, serious considerations arise: "Will the alignment of man and machine to enable new possibilities cause further alienation for humanity?"; "When real classrooms are substituted by virtual classrooms, will healthy social interaction be maintained?"; "Are the trends

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of the twenty-first century education truly set towards the furtherance of human depth and breadth?

Keywords: *criticality, education, fourth industrial revolution, globalization*

1. Introduction

"Education is a companion which no future can depress, no crime can destroy, no enemy can alienate, and no nepotism can enslave,"[2] said Oguntimehin. This thought surely resonates surely in the mind of every learner. Education is indubitably one of the most valuable rights and assets that people across the world hold so dearly. Embedded in every culture, every family and society would uphold its unquestionable value. For instance, many Filipinos consider it as the most valuable inheritance that no material possession can equal. Many of them view it as their passageway towards success and a surety to a brighter future. Thus, a lot of Filipinos invest heavily on education. Families and communities work hard for their children to finish college. More importantly, in view of the many social and political ills entrenched in their society, many Filipinos also perceive education as the only way to quell the oppressive social condition. It is the sure means through which Filipinos, particularly the poor, marginalized and oppressed, can reclaim their lost or waning sense of humanity, worn down by the shackles of poverty, corruption, hunger, and other oppressive social structures that degrade them. In the twenty-first century, when life has become even more complex and harder to survive socially, politically, and economically, education has become even more indispensable in the lives of Filipinos.

Education in the twenty-first century, characterized by the emergence of rapid educational reforms, is very much stirred by neoliberal ideologies, capitalist systems and the shift of interest to human capital brought about by the globalization process. With the inception of Industrial Revolution 4.0 (IR 4.0), educational paradigm

[2] As quoted in Queena N. Lee-Chua, "Why Education Matters: Quotes from the Wise," *Inquirer.net*, June 10, 2012, https://newsinfo.inquirer.net/210221/why-education-matters-quotes-from-the-wise.

shifts have become more rapid and necessary. If education fails to prepare people for the new industrial revolution, the latter can hardly cope with the changes. In effect, Education 4.0 must come as a response to IR 4.0. It should march with highly innovative and technical strategies and methodologies that will cater to the demands of the said industrial revolution. Presently, Education 4.0 adopts a skill- based educational program that integrates to the system the utilization of technologies such as Artificial Intelligence, Internet of Things, Cloud Computing, and other emergent technological advancements. The resulting educational landscape will be different. For instance, classrooms will no longer be limited to a four-walled structure since online classrooms that actualize distance and remote learning will be the trend. Nevertheless, with these transitions, humanity will have to face high stakes and will have to pay the high price brought by these innovations.

Looking closer, Education 4.0 can tend to be narrowed down into mere production process, where strong human capital will be responsive to the demands of the labor market in the IR 4.0. It follows that schools are becoming more of training and testing facilities instead of being a meeting place for curious minds who want to create and recreate knowledge about the self, society and the world. Here, future laborers are programmed with skills to facilitate in creative and innovative ways, the various industrial processes in IR 4.0. Education now can be compared to an industrial factory wherein machinery is made and programmed to suit the ever-growing needs of the production process.

Unfortunately, this is the pathway being traversed by Philippine Education 4.0: producing skilled Filipino workers programmed for the IR 4.0. This is the educational paradigm that forces Filipinos to learn skills that are mostly beyond their resource capabilities. With a brand of education that rests on a neoliberal framework and on a purely skills-based paradigm, the essence of being "human" is at stake. Filipinos, being ushered into an almost alien educational framework, may lose sight of their goal for a strengthened humanity if they become distorted by the said framework. They might end up being trapped in the dehumanizing structures perpetrated by capitalists whose sole concern is personal productivity and wealth.

In line with this, this study argues that students should not only be sent to school to develop the skills appropriate for a laborer in the IR 4.0. Rather, they must be able to develop critical awareness of their context, learn how to dialogue, and foster a deep sense of humanity through education. This is something that they must cultivate so that they do not only become competent individuals for IR 4.0 in the globalized world but also vanguards of liberation and humanization especially for the poor, marginalized, and the oppressed.

2. Results and Discussion

2.1. The Phenomenon of Industrial Revolutions

The First Industrial Revolution was characterized by using steam and waterpower to automate production; the Second, by the use of electricity; and the Third, by the use of electronics and information technology. What is now called as the "IR 4.0" comes not as a prolongation of the third, but a distinct industrial revolution characterized by a fusion of technologies evolving at an exponential pace.[3] At present, the concept of "Education 4.0" is trending among educators and a popular theme in various educational conferences. It comes as a response to IR 4.0 (Fourth Industrial Revolution - FIRe).[4]

The development of Industrial Revolution (IR) and Education has evolved in tandem, with each phase of IR influencing educational paradigms. IR 1.0, characterized by mechanization and steam power, led to Education 1.0, where rote learning and basic skills were emphasized to meet the demands of industrial jobs. IR 2.0 introduced mass production, and Education 2.0 aimed to standardize education to provide a skilled workforce. IR 3.0's automation inspired Education 3.0, focusing on problem-solving and critical thinking. IR 4.0, marked by digitalization and automation, now prompts Education 4.0 to incorporate technology and digital literacy.

[3] Klaus Schwab, "The Fourth Industrial Revolution: What It Means, How to Respond," WorldEconomic Forum, January 14, 2016, https://www.weforum.org/agenda /2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/.

[4] The "Fourth Industrial Revolution 4.0" shall be referred to as "IR 4.0" or "FIRe" interchangeably.

Puncreobutr gives a short discussion on how education has responded to each of the past industrial revolutions: Education 1.0 came as a response to the need of the agricultural society and it is characterized by a transfer of knowledge from the teacher to the learner through concept acquisition, comprehensive study, and explanation as the main method; Education 2.0, on the other hand, is a response to the demands of the industrial society and had put much emphasis on teaching how to use tools. Education 3.0 addressed the need of the technological society, giving importance on self-learning and technological literacy, and focusing on interactive learning. Finally, Education 4.0 is now catering to the need of society in 'innovative era' with emphasis on the ability to apply new technology enabling learners to develop adaptability to the drastic changes in society.

IR 4.0's impacts on socio-economic development in ASEAN, including the Philippines, are profound. While it created opportunities for highly skilled workers, it also displaced manual and routine jobs, leading to income inequality. Labor markets today demand digital skills and adaptability. In response, Education 4.0 aims to equip students with technology proficiency. Peter Fisk explains:

Education 4.0 comes as a response to the needs of "Industry 4.0" or the fourth industrial revolution, where man and machine align to enable new possibilities; harnesses the potential of digital technologies, personalized data, open sourced content, and the new humanity of this globally-connected, technology-fueled world and establishes a blueprint for the future of learning – lifelong learning – from childhood schooling, to continuous learning in the workplace, to learning to play a better role in society.[5]

With the multifarious demands of IR 4.0, Education has to be reshaped and recalibrated to meet the needs of twenty-first century learners. This is one enormous task to seriously consider to be globally progressive and competent. Nevertheless, the drastic changes brought by scientific and technological revolutions and the on-going innovations of the twenty-first

[5] Peter Fisk, "Education 4.0 … The Future of Learning Will be Dramatically Different, in School and Throughout Life," Genius Works, January 24, 2017, https://www.thegeniusworks.com/2017/01/future-education-young-everyone-taught-together/.

century have made life even more complex and confusing. Humanity stands on unstable ground wherein reality and truth can hardly be established. As information has become more accessible and linkages have been established and strengthened, it is all the more that plurality, relativism and division are felt. The complexity of times has propelled humanity to innovate and adopt measures that would facilitate human activities.

To address this transition, governments in ASEAN, including the Philippines, must invest in reskilling and upskilling programs, nurturing a diverse talent pool for the gig economy and creative industries. Furthermore, public-private partnerships are essential to bridge the gap between industry demands and educational outcomes. The greatest challenge then would be on how human beings can be authentic amid the onslaught of dehumanizing structures.

2.2. FIRe and Education in the ASEAN Region: Globalization and Integration

Recalling the condition of ASEAN Education, this study posits that the dominant trends cascade from the efforts to standardize the quality of ASEAN education according to the demands of IR 4.0, which is obviously influenced mainly by neoliberal ideologies. This implies that education will be perceived more, if not solely, according to its fruit-bearing capacity, that is, its capacity to give back to the economy. This means that a student looks at his/her education as an economic investment and finishing his education as yielding a higher chance of employment that will guarantee a return of capital. Various trends can be observed as impacts of FIRe on ASEAN Education.

2.2.1. Commodification and the Increasing Cost of Education

Commodification[6] in education is becoming rampant nowadays because of the intensified consumer culture, all due to the heightened impact of neoliberal ideologies. The term refers to a market-infused approach to education that treats knowledge as a commodity whose exchange value is measured crudely by comparing the cost of acquiring a degree (tangible

[6] Commodification is to be treated as synonymous to profiteering and commercialization.

certification of "product" acquisition) with the financial earnings the degree supposedly enables. Commodified education is a situation wherein educators are seen as service providers while students are treated as customers. Students do not treat knowledge as an end but as a means towards a desired end – employment.

The market-driven system in Philippine Education 4.0 is turning Filipino students into customers, teachers into paid service providers, and knowledge as a commodity. In this regard, Philippine Education 4.0 espouses an educational process that is understood as "analogous to a commercial transaction: students pay tuition and in return receive knowledge, skills, and a degree certifying qualification for a vocation." [7] Since students are consumers in this sense, the goal of ASEAN Education 4.0 is customer satisfaction – to give what the customer desires. As such, the institution is bound to deliver whatever the students are paying for at the expense of quality and purpose. On the other hand, teachers as service providers are expected to render exactly what has been paid for by the consumers (students) and the student evaluation, which may not be accurate at all times, then serves as a barometer of customer satisfaction.

Commodification is made more manifest by the steady increase of cost in education, especially in the case of private education, and this is expected. But while public education is supposed to be free in the Philippines, other necessary expenses on school supplies, school uniform, food, fare, board and lodging and other school-related fees make sending children to school financially burdensome. Moreover, it becomes even more onerous due to the demand that education must be responsive to IR 4.0. Since public schools often lack the resources, the technologies and facilities required to implement Education 4.0 have to be shouldered by the family or their benefactors who support their education.

To learn Information and Communication Technology (ICT) effectively, one must at least have a smartphone to begin with. Otherwise, it would be impossible to work on ICT-related activities. If another learner needs to be trained to communicate online, then he or she must be provided with an internet connection as a minimum standard. These

[7] Roy Schwartzman, "Consequences of Commodifying Education," *Academic Exchange Quarterly*, 17, no. 3 (Fall 2013): 42.

are costly, especially for students who come from families with meager incomes. It is unfortunate that despite the Free Tuition Law and other subsidies that supposedly provide access to education for all, many learners are still out-of-school because of the above-mentioned reasons.

Case in point, the Philippine Statistics Authority (PSA) records high cost of education or financial concern as one of the main reasons that prevent approximately 3.6 million out-of-school children and youth (OSCY) from attending school.[8] This furthers the idea that education has indeed become a commodity belonging only to those who can afford it. Alongside commodification in Philippine Education 4.0 is the upward movement of privatization in Philippine Education. With education 4.0 demanding for greater linkage between the public and private sectors, it is obvious that more hands from the private sector are dipping in the Philippine education system. As far as privatization in education is concerned, there are numerous evidences that the Philippine state has been supportive of its existence such as the 1987 Constitution, Article 14, Sec. 4; Public-Private Partnership (PPP) programs and projects; Philippine Development Plan 2011-2016; the Expanded Government Assistance to Students and Teachers Private Education (EGASTPE) and Education Service Contracting under the GASTPE.[9] Quite recent proofs for privatization in education in the Philippines are the operation of Affordable Private Education Centers (APEC)[10] and the SHS Voucher

[8] Philippine Statistics Authority, "Nine Percent of Filipinos Aged 6 to 24 Years are Out of School(Results from the 2017 Annual Poverty Indicators Survey)", Gov.Ph, June 6, 2018, https://psa.gov.ph/content/nine-percent-filipinos-aged-6-24-years-are-out-school-results-2017-annual-poverty-indicators.

[9] The Civil Society Network for Education Reforms et. al, "Privatization, Commercialization and Low Government Financing in Education: Infringing on the Right to Education of Filipinos," February 2016, http://www.aspbae.org/userfiles/may16/HR_ParallelReport_Philippines.pdf, 13-15. See also Department of Education, "DepEd increases educ assistance for students in private schools", 2014, http://www.deped.gov.ph/press-releases/deped-increases-educ- assistance-students-private-schools.

[10] The Civil Society Network for Education Reforms et al, "Privatization, Commercialization and Low Government Financing in Education: Infringing on the Right to Education of Filipinos," 16. APEC schools claim to supply "affordable" private education to large numbers of "economically disadvantaged" Filipino students who are willing to pay for basic education under the "pretextof an urgent need to provide affordable quality education to millions of Filipino children of secondary school-age whose only option at present is to enroll in an overcrowded

Program in the K to 12 Program.[11]

Meanwhile, privatization in education, with a strong support from the government, results in an increase of preference for the program offerings of private schools, which are mostly owned by profit-oriented corporations, resulting in costly school fees. This is reinforced by the mindset that private schools offer better quality education than public schools. And while public education continues to lag in infrastructure and facilities which are IR 4.0 ready, private education institutions are gaining popularity with their promise of up-to-date and state-of-the art facilities that serve IR 4.0 very well. Moreover, with stricter admission and retention policies and a controlled number of enrollees, private education institutions appear to be really doing well in the delivery of quality education as focus and conduciveness can surely take place. This is something that cannot be achieved in public schools that often suffer from congestion.

Noteworthy is the fact that intensified academe-industry relationship is an important facet of ASEAN Education 4.0. Nowadays, education-labor mismatch is frequently caused by the weak academe-industry relationship. To solve the problem, there is a need to strengthen such relationships. With the present demands of the IR 4.0, ASEAN Education 4.0 will have to build stronger linkage with industries to ensure that the skills to be nurtured among students will be appropriate and relevant. Hence, it is expected that industries will play key roles in education and their services will be indispensable. However, this shows how industry becomes the destination of education. The presence of industries in education amplifies the intention to make education economically productive. There is no wonder why tuition-run, market-driven private education institutions are doing way better than public institutions in terms of the employability of their graduates.[12]

public school," Department of Education & APEC (2013, April 24). Memorandum of Understanding. Manila, Philippines.

[11] "Senior High School Voucher Program (SHS VP)," Private Education Assistance Committee (PEAC), accessed on April 10, 2020, https://peac.org.ph/senior-high-school-voucher-program/.

[12] Cf. "Private universities' quest to improve degree quality and graduate employability in the Philippines," *QS Asia New Network*, July 2, 2018, https://qswownews.com/private-universities-quest-to-improve-degree-quality-and-

2.2.2. Maximization of Academic Performativity

Adapting to a market-driven framework, ASEAN Education 4.0 strongly supports maximized performativity at all levels. This is to ensure overall customer satisfaction and good standing in the competition among institutions. This is palpable both in the public and private educational institutions. This focus on maximized performativity can be seen in the institutions commitment to quality management system (QMS), various program and institutional accreditations and the effort to be an ISO-Certified institution with ISO Certification 9001:2015 as the latest, a "standard that defines the way an organization operates to meet the requirements of its customers and stakeholders: Customer focus, Leadership, Involvement of people, Process approach, Organizational context, Continual improvement, Fact-based decision making, and Risk-based thinking."[13] Moreover, performativity as a norm in the academe is manifested by the various meritocracies: academic staff are promoted, rehired, and gifted with incentives based on performance outputs in teaching, research, extension services, and production.

As a result, the pressure to be productive in the areas of instruction, research, extension, and production has been intensified. Teacher performance is frequently evaluated on a statistical basis both by the supervisors and the students. Furthermore, student performance in national achievements, various academic and non-academic competitions locally and abroad, and professional board examinations has become key focus in educational institutions. As a matter of fact, student performance has become a battlefield among them. This has become an indicator of an educational institution's caliber.

2.2.3. Prioritization of Skills Development

With economic productivity in mind, the Outcome-Based Education (OBE) as the norm of ASEAN Education is bound to prioritize skills development over the critical consciousness of the students. In sum, OBE focuses on the desired outcomes of education, oftentimes subject-specific or course-specific, as expressed in the learning objectives,

graduate-employability- in-the-philippines/.

[13] *QS Asia New Network.*

contents, methodologies and strategies of which administrators and teachers have over-all control. It measures learning by means of the skill/s that students develop in all learning tasks. It has been mentioned that ASEAN Education 4.0 is geared towards the production of skilled human capital. As a matter of fact, the Philippine CMO No. 46, Series of 2012, which institutionalized OBE in the educational system, highlights in section (2) the need to meet national and international standards for highly exportable careers such as "engineering; information technology and computing; maritime education; accounting; and nursing"[14] and amplifies the Commission on Higher Education's (CHED) commitment to "developing competency-based learning standards" for these career path "in compliance with existing international standards."[15] Hence, skill in the sense of Philippine Education 4.0 often tends to yield to industry demands.

Nevertheless, it can be argued that in a purely skills-focused education, critical consciousness and self-reflection may not be developed at all. They might not even be part of the agenda since what matters is that skilled human capital is produced to serve industry. Schwartzman warns that "consumerism has no interest in customers engaging in self-reflection to question or alter their desires."[16] In effect, Education 4.0, being market-driven, may only cater to the skills programmed for a particular career course chosen by the student. Thus, instead of helping students discern a more appropriate career path, it forces upon the students the skills that their chosen course and future labor requires. This means that even if Juan is not fit for an ICT-related work, for as long as he wants it, the institution will still force ICT skills on him. These fall under the pretext that ICT is in demand in the international labor market.

It is bothersome to think that despite the seeming failure of ASEAN Education 4.0 to ignite critical consciousness due to its skill-focused and market-driven framework, critical thinking is included as a top priority among the twenty-first century skills that students need to

[14] Commission on Higher Education, "CHED Memorandum Order No. 46, Series of 2012", 2.

[15] Commission on Higher Education, "CHED Memorandum Order No. 46, Series of 2012," 4.

[16] Roy Schwartzman, "Consequences of Commodifying Education," *Academic Exchange Quarterly* 17, no. 3 (Fall 2013): 41.

harness.[17] Hence, there is a need to understand how critical thinking is viewed in the light of ASEAN Education 4.0. This is also timely since critical thinking has been frequently observed as a deficiency among many learners today.[18]

2.2.4. Critical Thinking "Skill"

Critical thinking has always been an important terminology in the academe. Its definition has evolved through the years. In the context of the twenty-first century, it may be understood as employing higher order analytical skills in problem-solving situations.[19] It is among the 4Cs of twenty-first century Education alongside communication, collaboration, and creativity. Interestingly, it is argued that high innovators of the IR 4.0 place critical thinking skills as the number one skill that they are working hard on and value it more than technical skills for the reason that "while algorithms are getting better at making recommendations and drawing conclusions, the uniquely human skills of judgment and critical thinking are still essential for interpretation and final decision-making."[20] Despite the presence of AI and cyber physical systems in IR 4.0, critical thinking is indispensable as human potential and resources will be needed in analyzing and evaluating the efficiency and effectiveness of digital technology and systems used in the industry.[21]

Meanwhile, critical thinking is closely linked with the other Cs. The hysteria caused by IR 4.0 requires a critical and creative workforce. Robots may ensure fast production, but they are not as creative as

[17] Commission on Higher Education, "CHED Memorandum Order No. 46, Series of 2012," 4.

[18] Commission on Higher Education, "CHED Memorandum Order No. 46, Series of 2012," 4.

[19] Rene R. Belecina and Jose M. Ocampo, Jr, "Effecting Change on Students' Critical Thinking inProblem Solving," *Educare: International Journal for Educational Studies*, 10, no. 2 (February 2018): 110.

[20] Suszane Hupfer, "Critical Thinking Rivals Technical Skills for Industry 4.0 Success," *Deloitte*, April 17, 2019, https://www2.deloitte.com/us/en/pages/ technology-media-and- telecommunications/articles/ critical-thinking-skills-required-industry-4-0.html.

[21] Debora Pratiwi S. and Dan Rusman, "Enhancing Critical Thinking Skills in Higher Education in Preparation of Industry 4.0: A Literature Review," December 30, 2018, http://icerd2018.conference.upi.edu/wp content/uploads/sites/30/2018/12/ Fullpaper_Debora-Pratiwi.pdf.

humans.[22] A creative workforce will be able to maximize the potential of budding technologies. Critical thinking skills, often understood as problem solving skills, will draw on communication and collaboration. "Successful problem solving in the twenty-first century requires us to work effectively and creatively with computers, with vast amounts of information, with ambiguous situations, and with other people from a variety of backgrounds."[23] Hence, teamwork and cooperation are very much essential.

In view of the foregoing, critical thinking, together with the other Cs, is sometimes perceived to be merely a skill or competency that is highly relevant in the operations and management of IR 4.0. ASEAN Education 4.0, then, is rallying for a critical thinking that is proper to industrial work – analytically operating and creatively innovating on technologies used in IR 4.0. It is a critical thinking that translates to competitive quality of service in the international labor market that they are now advancing towards IR 4.0.

2.3. ASEAN Education 4.0 in the Case of Philippine Education: Critique and Challenges

It is very alarming that with the going trends of Education 4.0 being maneuvered by the principles of free market capitalism as manifested in the abovementioned observations, the right to education as enshrined in no less than the Philippine Constitution[24] is gradually becoming a commodity that only a privileged few can afford. Despite free public education, privatization schemes in education and the increasing cost thereof certainly discriminate against the poor and steal from them the right and opportunity to access quality education. Meanwhile, the intensifying academe-industry linkage might narrow down the Filipino

[22] Alex Gray, "The 10 Skills You Need to Thrive in the Fourth Industrial Revolution," World Economic Forum, January 19, 2016, https://www.weforum.org/agenda/2016/01/the-10-skills-you-need-to-thrive-in-the-fourth-industrial-revolution/.

[23] Gray, World Economic Forum.

[24] Article 14, Section 1 of the 1987 Constitution of the Republic of the Philippines provides: "TheState shall protect and promote the right of all citizens to quality education at all levels, and shall take appropriate steps to make such education accessible to all.

mindset into thinking that education equals employment and economic well-being. This deprives them of the consciousness that education, more than being a steppingstone towards economic stability, leads to the liberation of one's mind, transformation of one's state of life and actualization of one's humanity.

Having said that, Education 4.0 is prone to dehumanize learners as it can deny access to quality education, perceived by many to be the only way to reclaim the lost sense of humanity, and may reduce them to programmable laborers invested with skills required by the emerging industries of IR 4.0. Towards the end of his life, Freire warned of the destructive impacts of neoliberalism on human dignity and development.[25] Nowadays, we witness how neoliberalism has successfully dominated almost all the social, political, economic, and educational processes in the entire world. Philippine Education 4.0 is one concrete proof of this domination, to which we shall now apply some of Freire's important teachings by way of critique.

2.3.1. Knowledge as "Being" over Knowledge as "Having"

Commodification in Education 4.0 spurs the idea that knowledge is a product to be purchased or a capital to be invested in, with an expectation of economic gains. The schools and its administration, faculty and staff are treated as service providers or sellers of knowledge who are expected to sell products that heed customer demands and maximize services for outstanding customer satisfaction. Students are seen as customers who buy the commodity, invest in it, with the hope to enhance their future employment and earning capacity. Henceforth, knowing is viewed as a process of "having" – accumulating knowledge or "skills" in the sense of Philippine Education 4.0 for the purpose of using them in IR 4.0. Nevertheless, this idea of knowing is unacceptable in Freire's Critical Pedagogy. Knowing as "having" constitutes what Freire detested as the banking concept of education wherein students are considered as passive recipients of knowledge or skills.

ASEAN Education 4.0 well corresponds to the banking concept

[25] Peter Roberts, "Impure Neoliberalism: A Freirean Critique of Dominant Trends in Higher Education," *Rizoma Freireano* 22 (2017), http://www.rizoma-freireano.org/impure-neoliberalism-22.

of education with its OBEdized framework granting overall control of the learning process, from the objectives down to the outcomes, to the administrators and teachers, with little to no contribution from students. Nonetheless, Freire considers knowing as "being" – a constant unveiling of reality and understanding one's own self, one's fellows, and the world. Contrary to knowledge as a finished product to be sold, Freire argues that knowledge emerges through constant "invention and reinvention."[26] Knowing is not accumulating knowledge but an arduous process of self-discovery and transforming oneself. It is a continuous search for one's humanity.

2.3.2. "Authority" not "Authoritarianism"

Education 4.0 espouses maximized academic performativity in all areas of instruction, research, extension, and production through QMS, accreditation, and various meritocracies. Nevertheless, Freire would be supportive of these, sans the authoritarianism that may spring from it. He would argue that teaching is not an 'anything goes' affair, that teachers must know their subjects well, thoroughly prepare their lessons, and keep themselves organized in the classroom.[27] He further suggests that teachers must be authorities in their respective disciplines. Thus, he rejects the idea that teachers are mere facilitators of knowledge, acknowledging the fundamental difference between teachers and students, suggesting that the former must exercise a certain kind of authority but not authoritarianism.[28] Authoritarianism, from the Freirean, perspective, is what the banking concept of education is all about; that is, the teacher becoming the sole monopoly of knowledge and students' being suppressed from participating in the creation and recreation of knowledge. Freire warns, "authoritarianism will at times cause children and students to adopt rebellious positions, defiant of any limit, discipline, or authority. But it will also lead to apathy, excessive obedience, uncritical conformity, lack of resistance against authoritarian discourse,

[26] Paulo Freire, *Pedagogy of the Oppressed,* 30th Anniversary Edition. Translated by Myra Bergman Ramos (New York: Continuum International Publishing Group Inc., 2005), 72.

[27] Freire, *Pedagogy of the Oppressed*, 72.

[28] Peter Roberts, "Teaching as an Ethical and Political Process: A Freirean Perspective," in *Ngā Kaupapa Here: Connections and Contradictions in Education*, eds. Vicki Carpenter et al. (Melbourne: Cengage, 2008), 99-108.

self-abnegation, and fear of freedom."[29] Moreover, this would also manifest the bureaucratic relationship among school administrators, faculty, and staff. There is a tendency among educators to flaunt their achievements and ranks to degrade those who trail behind them. As a result, the lower ranking faculty and staff are demoralized.

2.3.3. Learn "Together" over Learn "Alone"

ASEAN Education 4.0 at present is adopting personalized and distance learning. Thus, it becomes more focused on the personal progress of the "individual." In distance learning, the individual learner will make learning adapt to one's interests and pacing. This allows the learner to choose the content of learning according to one's personal taste and flexibly manage one's time to straddle both academic and extracurricular activities.[30] This is another manifestation of the strong consumer culture at work in the educational system. Consumerism prioritizes the satisfaction of one's self-vested interest. Freire, on the other hand, would always emphasize the social nature of education. This is why he would promote dialogic education. He states, "I engage in dialogue because I recognize the social and not merely the individualistic character of the process of knowing."[31] Moreover, what Freire refers to as a social process is the vocation to name the world and transform it. "In education, as in many other fields of human endeavour, much of what we do is demonstrably driven by an interest in the well-being of others that our own personal economic self-interest." Hence, to learn "together" is better than learning "alone."

2.3.4. Critical Thinking as Problem-Posing over Problem-Solving

ASEAN Education 4.0 adheres to the idea of critical thinking as an industrial skill which is sought after by innovators who believe that a critically creative workforce is what IR 4.0 needs. Critical thinking in this sense equals competence in operating, troubleshooting, and innovating on emerging technologies such as AI. It is "critical thinking" that pertains to

[29] Paulo Freire, *Letters to Cristina: Reflections on My Life and Work*, (London: Routledge, 1996) 209.

[30] Roberts, *Rizoma Freireano* 22.

[31] Freire, *Pedagogy of the Oppressed*, 17.

a skill utilized for coming up with viable solutions to various industrial problems. It is critical thinking within the ambit of problem-solving.

Freire, however, presents a different concept of critical thinking. Freire considers critical thinking as a process of discerning the indivisible solidarity between the world and the people, leaning towards transformation beginning with one's own self and aiming to transform the world.[32] It is critical thinking referring to critically transitive consciousness that enables a person to grasp his/her context, understand the problem, and execute appropriate actions to solve it. It is a key element in Freire's Critical Pedagogy. It is a "way of thinking about, negotiating, and transforming the relationship among classroom teaching, the production of knowledge, the institutional structure of the school, and the social and material relations of the wider community, society, and nation state."[33] Critical thinking, in Freire's terms, has something to do with rejecting power dynamics and effecting social change and transformation. It is more than just mere cognitive skill to be used for some industrial work. It rests in the interplay of reflection and action that impacts society at large. It is critical thinking that is not just problem-solving but problem-posing.

2.4. Trajectories of ASEAN Education 4.0: (Re)humanization of Philippine Education through Critical Pedagogy

The evolution of IR and Education has been closely intertwined, with each phase influencing the other. IR 4.0 has reshaped labor markets in ASEAN, necessitating digital skills. In response, Education 4.0 incorporated technology into curricula. Meanwhile, the emerging IR 5.0 and Education 5.0 demand a balance between human intervention and technological advancements, which ASEAN, including the Philippines, must navigate through strategic policy initiatives and collaboration. While it is inevitable and essential to aim for personal economic progress through education, one must not forget that there are higher values towards which education is inclined. For Freire, to name the world and to be fully human "together" is everyone's true vocation. This particular vocation is pursued

[32] Freire, *Pedagogy of the Oppressed*, 92.

[33] Peter McLaren, *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education* (London: Longman, 1989), 276.

through praxis: critical, dialogical, transformative reflection and action.[34] In line with this, for Philippine Education 4.0 to be truly "humanistic," it must be aligned with the mission to uplift the economic, social, and political well-being of every Filipino, especially the poor, the marginalized and the oppressed. This will be an arduous process that requires mutual efforts forged in dialogue among the key players of learning: students, teachers, administrators, government, and other stakeholders.

In this regard, Freire's Critical Pedagogy remains timely and must be integrated into the systems of Education 4.0 in order to deter the tendency for banking education and be positively motivated by the emancipatory character of education. The pedagogy of Education 4.0 must be guided by the principles of conscientization, dialogue, and praxis.

Such critique of IR 4.0 brand of education paves the way for the dawning of a new educational landscape – Education 5.0. IR 5.0 and Education 5.0 represent the era of "Intelligence Explosion" and a shift towards personalized, lifelong learning. In the ASEAN context, particularly the Philippines, this transition poses challenges. The proliferation of AI and automation calls for human intervention in designing and controlling advanced systems. Education 5.0 emphasizes critical thinking, creativity, and emotional intelligence, preparing individuals for roles that require human qualities. If Freire's Critical Pedagogy is successfully adopted and implemented in ASEAN Education 5.0, it will ensue in the following shifts in the educational landscape of Southeast Asia.

2.4.1. A Total Shift to Student-Centered Approach

The learner must occupy the center point of the learning process just as the oppressed in the emancipation process. This, of course, does not undermine the significant roles of the teacher, the school, and other stakeholders. This does not deny the importance of subject contents in the learning process. Rather, this means that education must first and foremost be beneficial to the development of the learner. While there is no denial that ASEAN Education 4.0 is putting the students at the core of the learning process, Education service providers have the tendency to prioritize the

[34] McLaren, *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education*, 276.

content and the curricular requirements over the relevant interests of the students. There is a tendency to give more focus to superfluous topics over essential ones.

With Freire's Critical Pedagogy at work in ASEAN Education 4.0, student-centered approach will prevail over content or teacher-based models. Student-centered approach is one that provides a learning environment where learner responsibility and activity are emphasized in contrast to the accent given to instructor control and the coverage of academic content found in much conventional, didactic teaching.[35] The whole of the learning process under this approach will become germane to the interests of the students. The teaching-learning activities will be maximally appropriate to the student's current knowledge and learning levels. Learning objectives will be addressed in efficient, interesting, and meaningful ways and every student will be treated fairly based on their learning style and context. The assumption in a student-centered approach, however, is that the teachers are truly masters and authorities, not authoritarians, of the subjects that they teach to be able to flexibly customize learning according to the students' varying learning needs, interests, and styles.

The key takeaway is this: it is not what the teacher wants to teach that matters. Rather, it is what the students need and aspire to learn that must be prioritized. The student-centered approach puts into practice what Freire thought of a problem-posing education – students are treated as subjects[36] rather than passive objects; students are given the equal right to create and recreate their knowledge about themselves, their fellows, and the world.

2.4.2. Concretization of Communicative and Collaborative Learning

With Freire's Critical Pedagogy, Education 4.0 will be able not only to actualize the twenty-first century skills of communication and collaboration but to deepen them. Teachers and students alike will be able to exercise responsibly the right to free speech and expression. They

[35] "Student-Centered Learning," The Teaching Excellence in Adult Literacy (TEAL) Center, 2010,accessed on May 3, 2020, https://lincs.ed.gov/sites/default/files/6%20_ TEAL_Student-Centered.pdf

[36] Freire emphasized that man's ontological vocation is to be a Subject, to be more fully human.

will be able to raise pertinent questions, share their insights, and suggest relevant topics without the threat of being ostracized or ridiculed by the teacher or their fellow students. Open intercommunication will enable teachers and students to collaborate. Teachers and students, together, will be able to critically determine issues, create viable solutions, build rational decisions, and work towards productive outcomes. More importantly, they will learn the value of teamwork and cooperation.

Meanwhile, communicative, and collaborative learning work demands the exercise of responsible freedom. When one freely communicates and collaborates, one must hold oneself accountable for whatever impact one's words and actions result in. One's willingness to participate in the group must deepen one's responsibility for the welfare of the group. In pedagogical practice, this means that while reactions, comments, and suggestions are welcomed, teachers and students should see to it that these are for the benefit of the whole class. This will shun any unnecessary and self-interested remarks being made in the class. Notably, through collaboration, teachers and students will be able to listen to different perspectives and will be challenged to articulate and defend their ideas. In so doing, they will be able to appreciate a wider range of conceptual frameworks which may not be available in primary reference or textbooks. They will have the opportunity to converse with peers, present and defend ideas, exchange diverse beliefs, question other conceptual frameworks, and be actively engaged. In many instances, communicative and collaborative learning may give students the opportunity to take over the whole duration of the lessons. This, however, in Freire's perspective, must not limit the role of the teacher into mere facilitation.[37] Rather, the teacher must find a way to be an active presence in the conduct of the lessons.

[37] See Paulo Freire & Donaldo Macedo, "A Dialogue: Culture, Language and Race," *Harvard Educational Review* 65, no. 3 (1995): 377-402. Freire rejected of the idea that teaching is limited to mere facilitation. He explains: "The true issue behind the act of facilitating remains veiled because of its ideological nature. In the end, the facilitator is renouncing his or her duty to teach-which is a dialogical duty. In truth, the teacher turned facilitator rejects the fantastic work of placing an object as a mediator between him or her and the students. That is, the facilitator fails to assume his or her role as a dialogical educator who can illustrate the object of study. As a teacher, I have the responsibility to teach, and in order to teach, I always try to facilitate. (379).

To promote active communication and collaboration, a teacher should not dominate the delivery of all the lessons in the subjects that one handles. One always divides the lessons and topics among students' groups. The group in-charge shall include the teacher in all activities as if he or she was another student. The teacher then would actively engage in question-and-answer segments of the class and interpolate if necessary. Most importantly, the teacher would provide enrichments at the end.

2.4.3. Development of Reflective and Holistic Thinking

Reflective thinking paves the way for holistic thinking. It involves "consideration of the larger context, the meaning, and the implications of an experience or action."[38] Filipino teachers and students will no longer isolate education and the whole of learning process from the larger social context. Rather, they will perceive the impacts of what they learn and what they do inside the classroom into the larger community. Moreover, they will be able to see the essential connection between their past learnings, their present undertakings, and the future they are building. With reflective and holistic thinking, both teachers and students will engage in the process of synthesis, integration and assimilation and will be able to illuminate their felt needs, sensitize their perceptions, deepen their understanding, and crystallize their will.[39]

2.4.4. Transformative Outcomes in OBE

OBE in ASEAN Education 4.0 should no longer focus on "subject-related and cross-disciplinary outcomes"[40] which may not necessarily be reflective and relevant to the lifetime goals of one's education. Rather, it must shift to long-term, cross-curricular outcomes that reflect real life roles that learners will assume after they finish their formal education.[41]

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[38] See William T. Branch and Anuradha Paranjape, "Feedback and Reflection: Teaching Methodsfor Clinical Settings," *Academic Medicine* 77, no. 12 (December 2002): 1185-1188.

[39] Nathaniel Cantor, *The Teaching – Learning Process* (New York: Holt, Rinehart and Winston, Inc., 1953), 300.

[40] See Roy Killen, "Outcomes-Based Education: Principles and Possibilities," accessed on May 5, 2020, http://drjj.uitm.edu.my/DRJJ/OBEFSGDec07/2-Killen_paper_good- kena baca.pdf

[41] William Spady, *Outcome-Based Education: Critical Issues and Answers*

As such, it will no longer focus on the quantity of outcomes produced in every lesson but on the qualitative impact of these outcomes to the daily life of students in and outside the school.

Being the fruit of critical and creative deliberations formed through dialogue, the outcomes of learning in ASEAN Education 4.0 will become transformational. This propels the idea that genuine learning leads to positive change. Having said this, students will have the orientation to apply what they learn to whatever could benefit their communities and the larger society. On the one hand, whatever transpires in the learning process should be used by teachers to improve themselves as individuals and professionals. This pathway must lead them to excellence in character and in pedagogical practice. On the other hand, what the students learn inside the classroom should help them progress personally and propel them to become workers for societal change and transformation.

3. Conclusion

Many of the dominant trends of Philippine Education 4.0 today spring from the heavy influence of neoliberal ideologies. Set to meet the standards of the IR 4.0, there exists the strong tendency to pattern education after the market system as Philippine Education 4.0 is mainly concerned with producing skilled Filipino human capital in response to the labor needs in the IR 4.0. In this light, one's education tends to be solely perceived as a means towards economic development, both personally and nationally.

Commodification, privatization, and performativity are among the footprints of neoliberalism in ASEAN Education 4.0. Heavily shaped by the market structure, knowing becomes purely an economic activity. Knowledge becomes a commodity; students are treated as consumers and teachers as service providers. This commodification becomes more manifest as Filipinos face the increasing cost of education in the Philippines. For learning to be relevant in Philippine Education 4.0, students must at least have smartphone, computer, and internet connection. However, these are already luxuries for many Filipinos.

(Arlington, VA: American Association of School Administrators, 1994), 49.

That is why despite inclusive and free education, the expensive cost still deprives many Filipinos of access to quality education.

To help defray the cost of quality Education 4.0, privatization comes as a sure aid. In Philippine Education 4.0, the role of the private sector is intensified. They have been working more closely with the government to provide better quality education fitting for the twenty-first century. Moreover, the privately-owned educational institutions which can provide competent education with very much up-to-date and better facilities are becoming more prominent. Many Filipinos prefer to enroll in these private institutions than in public schools because the former provide more promising future employability with the variety of courses they offer, which are highly relevant to the new IR 4.0. They are made to believe that they will attain more competent skills in these institutions than in public schools.

Since competency is the crux of the matter, maximized performativity becomes the norm of ASEAN Education 4.0. With the impact of the market structure on education, maximized performativity is geared towards overall customer satisfaction. In so doing, they will attract more clientele and they will be able to survive the competition among schools. There is all manifest in the growing commitment of educational institutions into their QMS, various program and institutional accreditations, ISO Certification, various meritocracies, and student performance in academic competitions, nationwide achievement tests, and professional board examinations.

In light of the foregoing, Freire's Critical Pedagogy continues to present some criticisms on the dominant trends of Philippine Education 4.0. First, it rejects the idea of commodifying knowledge since it limits the process of knowing into mere having. Instead, it is suggested that knowing is being/becoming, a constant process of becoming fully human as people continuously create and recreate their knowledge. Second, it supports the idea of maximizing academic performativity but rejects authoritarianism that may result from it. Third, it warns about personalized learning because of the excessive focus given on the "individual" and his self-vested interest. It maintains that learning is a social process, that we understand the world and become more

fully human "with" others. Fourth, it opposes the reduction of critical thinking into a mere industrial skill that allows one to make solutions and troubleshoot in the industries. Rather, it insists that critical thinking should empower a person to criticize power dynamics and oppressive social structures. It must be one that allows a person to reflect and act on a social problem with the end view of social transformation. Lastly, it rejects the idea that education has nothing to do with politics. Rather, it is argued that education cannot be isolated from social and political processes. Education is either a practice of domination and conformism or a practice of freedom.

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Impact of AI-Powered Technology on Religious Practices and Ethics: The Road Ahead

Rey Ty[1]

Abstract

This article addresses the time lag problem with which human beings catch up with the speed with which technology in general and artificial intelligence (AI) in particular advance. The purpose of this exploratory research is to examine the impact of AI on religious practices and ethics, exploring the ways in which AI influences religious practices as well as the manner by which religious institutions may respond to ethical concerns and other challenges. This study will answer the following questions: Considering the ethical implications: 1) What are the potential positive benefits and 2) negative impacts of the use of technology, AI, and mobile apps on religious practices? 3) What are some ethical considerations? 4) What are the tasks ahead to promote ethical standards in the use of AI in religious practices? As there are ethical issues involved, religious institutions can play an active role in promoting ethical practices in the use of AI in religious practices.

Keywords: *artificial intelligence, ethics, religious practices, mobile apps, technology*

1. Introduction

What are the most important developments in human history? Religion? Philosophy? Mathematics? Science? Social development?

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Armed with longitudinal statistical data, a noted research scientist asserted, "None of these have mattered very much. They haven't done a darn thing to the curve" (McAfee 2012). He continued by asserting that "[t]here has been one story, one development in human history that bent the curve, bent it just about 90 degrees, and it is a technology story" (McAfee 2012). For the German computer scientist, who is considered the father of artificial intelligence (AI), AI changes everything (Schmidhuber 2022).

This includes religion, which has been a vital component of human life, influencing the way of life and ethics of societies. Throughout the ages, technological advances, including the recent emergence of AI, have affected our religious practices and ethical sense. The exponential rise in the use of AI-powered technology has grave implications and poses quandaries about the meaning of life, the purpose of religion, the connection between human beings and robots, as well as the integrity of traditional practices in religious observances as we know them.

This article explores the impact of AI-powered technology on religious practices and ethics. It examines the positive and negative impacts and the ethical considerations in the use of AI AI-powered technology on religious practices and ethics, as well as the tasks ahead. By engaging the academic discussions on the intersectionality of technological devices, artificial intelligence, religious practices, as well as ethical considerations, this article adds to the scholarly knowledge of transformation in society, giving room for informed decision making.

1.1. Technology and Religion in the Time of AI

We have reached the Anthropocene Age. This is the time during which humankind transforms nature itself and human beings themselves. We seed the clouds and make rain at will. We implant all kinds of things into the human body. Disruptive technologies, such as robotics, the Internet of Things (IoT), virtual reality, and artificial intelligence are now exponentially transforming the ways in which we live and operate in our daily lives. We have opened Pandora's Box. We have reached the tipping point of AI (Ignatius 2023). Will curiosity kill the cat? Right off the bat, there are not only perils but also possibilities ahead of us,

for which reason we have time to nip off the bud dangers in the use of technology for the sake of the continuation of humanity as we know it.

From the agricultural revolution, we have moved on to different phases in our revolutions in other fields over the millennia. After the agricultural revolution came the industrial revolution as such. It was followed by the information revolution. The technological revolution came thereafter. The Industrial Revolution as such was the "First Machine Age," while the automation of work related to cognition in which program-run machines replace human beings is the current "Second Machine Age" (Brynjolfsson and McAfee 2016). See Figure 1 below.

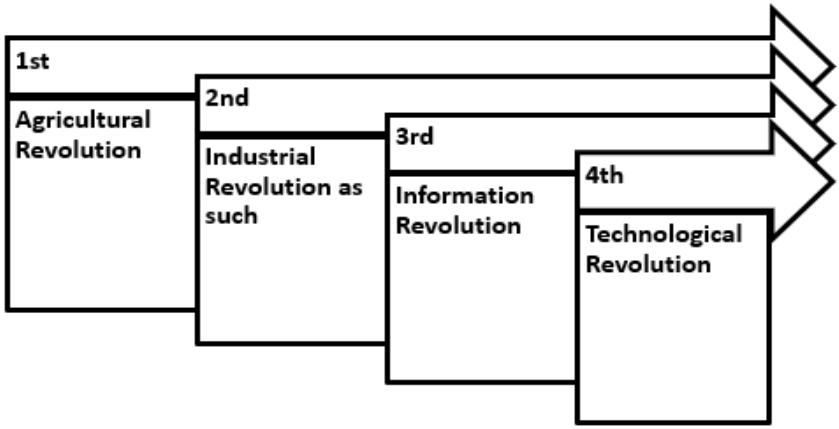

Figure 1: Revolutions in the Economic Structure of Society over the Millenia
Source: ©2023 Rey Ty

There are four major types of industrial revolutions throughout human history (UpKeep 2023). The first industrial revolution from around 1765 relied on coal. Note that the dates are approximate dates and not exact dates. The second industrial revolution from 1870 depended on gas. The third industrial revolution roughly from 1969 relied upon electronics and nuclear power. The fourth industrial revolution from 2000 depended upon the Internet and renewable energy. In addition to the four well-established industrial revolutions, a new industrial revolution is emerging. This is the fifth industrial revolution, roughly from 2021, which relies on deepening the integration between homo sapiens and technology (muRata 2023). Changes in the economy, in this case, the

use of different materials in economic production, revolutionize human existence, including ethical views and religious practices. See Table 1 below.

Table 1: Five Industrial Revolutions
Source: ©2023 Rey Ty

Ref.	Revolutions	Year	Economic Base
1.	First Industrial Revolution	1765	Coal; United Kingdom; textile, steam power, iron, mechanical production
2.	Second Industrial Revolution	1870	Gas; Germany; division of labor, mass production, steel, railroad, petroleum, chemicals, electricity
3.	Third Industrial Revolution	1969	Electronics and nuclear power; information and communication technology (ICT), automated production
4.	Fourth Industrial Revolution	2000	Internet and renewable energy
5.	Fifth Industrial Revolution	2021	Integration of human beings, machines, and technology

As of this writing, there are two computer revolutions. The first computer revolution took place in the 1940s. At that time, we saw the emergence of calculators. They were the high-tech gadgets in those days. Electrical and digital computers were on the rise. A noted British scientist (Turing 2004) cracked the Nazi codes with the use of computers which were able to solve seemingly random encrypted codes (Bernhardt 2016). Computers were helpful in systematizing the processing of payroll as well as in predicting the results of elections. The second computer revolution in the 1970s saw the emergence of video games, the Internet, as well as computational architectures, including such computer programs for data analysis as Lotus, Statistical Analysis System (SAS), and Statistical Package for Social Sciences, (SPSS), and now the open-source R. So far, AI appears to be the greatest scientific breakthrough of the twenty-first century.

Technological advances and AI affect and transform the ways by which humans deal with each other as well as obtain data. Soon there will be blurred boundaries among the biological, the physical, and the digital. They will merge as one sooner or later, whether we like it or not. At that time, we will become trans-humans in god mode (Harari 2017). Human beings and AI are already evolving together right here, right now (Andersen and Rainie 2018). See Figure 2 below.

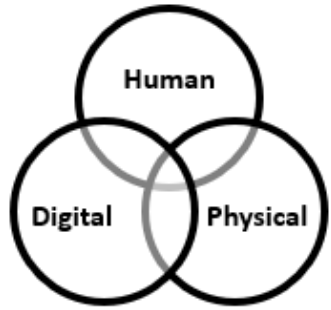

Figure 2: Trans-Humans in the Making
Source: ©2023 Rey Ty

These improvements in our economy and technology affect the manner by which we practice religion as well as our sense of morality. Hence, the impact of AI and technological knowhow on the religious realm needs to be scrutinized. Radical changes are coming our way and cannot be dismissed as mere trends, since they are here to stay.

Over the millennia, religious people worship or pray to their God directly as well as read their holy scriptures and perform all kinds of rituals in person. People touch hardcopy books, observe the sun and the moon, walk to places of worship on certain days of the week, month, and year for specific holy days. However, people nowadays can do almost all their religious observances and rituals online. Times have changed. Gadgets find their way into our religious practices, transforming our spiritual life one way or another. While driving on the highway or taking the subway on the way to work, drivers and passengers listen to prayers or devotional music directly from the self-driving automobile stereo or over a headset or earphone, respectively. As technology infringes on our everyday life, including our religious life, religious practices over mobile apps raise ethical and pragmatic concerns. The intersection of

religion and technology is replete with danger and promise.

We live in the age of cyber-theology (Le Duc 2016). Christians have started using AI in Sunday Masses and worship (Allen and ChatGPT 2023). Artificial intelligence provides spiritual involvement over cyberspace. Mobile phones, social media, and phone applications (apps) are employed for reading all versions of the Bible, Qur'an, and other holy scriptures in all languages. For many, technological devices are the places in which they attend offsite religious services (Frąckiewicz 2023). In this age of cyber information, we need to think critically about our relationship with the Divine, humanity, and creation (Le Duc 2015).

2. Methodology

2.1. Statement of the Problem

This exploratory article delves into the problem according to which there are not only positive but also negative implications of technological usage on both various practices of religion and ethics in diverse faith traditions. The exponential rise in the use of AI-powered technology has grave implications and poses quandaries about the meaning of life, the purpose of religion, the connection between human beings and robots, as well as the integrity of traditional practices in religious observances as we know them.

2.2. Filling the Gap

There are numerous papers on the effects of the utilization of cutting-edge technological advances on human society in general. However, there are few articles on AI in religious studies (Reed 2021). There are limited studies on the ways in which high-tech innovations reshape worship, devotion, rituals, ceremonies in religion as well as ethical principles. This exploratory research filled the gap in existing materials.

2.3. Purpose of the Study

The purpose of this article is to explore the implications of the

use of AI-powered technology on religious practices and ethics.

2.4. Research Questions

What are the positive benefits of the use of AI-powered technology in religious practices?

What are the negative impacts of the use of AI-powered technology in religious practices?

What are some ethical considerations in the use of AI in religious practices?

What are the tasks ahead to promote ethical standards in the use of technology and AI in religious practices?

2.5. Objectives of the Study

To achieve the above aim, the objectives of this study are to reveal the positive benefits and negative impacts of the use of AI-powered technology, the ethical implications of its use, and the roles that religious institutions can play in advancing codes of ethics in religious practices.

2.6. Scope of the Study

This study concentrates on the issues of religious practices and ethics. It is limited to the utilization of AI-powered technology on the two above concerns only. This work is not concerned with other issues not mentioned here. It does not investigate the different effects of the use of technology on AI-driven religious practices and ethics. It focuses only on the author's personal experiences and faith tradition, supplemented with published materials.

With regards to discerning the shifting sacred scenes, as cutting-edge advancements skyrocket, they affect the manner in which devotees take part in religious activities. Knowing the consequences of these changes is important for leaders of different faith traditions, decision makers, and academics so that they can all navigate the ever-changing terrain in technology. This helps to ensure that the core values of religions are not destroyed in the process of using technology in the

observance of religious obligations.

As far as steering quandaries in ethics are concerned, the use of artificial intelligence in religion provokes dilemmas in ethics, such as the implications of automated decision-making on moral judgments and human accountability. By examining these ethical dilemmas, this study contributes to the ongoing ethical discourse concerning the role of technology in religious settings.

In the face of changes in religious observances, faith groups need to make wise choices concerning the inclusion of technological resources in their religious practices. By sharing on-the-ground experiential knowledge of how mobile apps performed well or not, this research gives insights on the promises and perils of integrating AI with religious practices, at the same time taking into account ramifications involving ethics.

3. Findings

3.1. Experiencing AI Chatbots

Artificial intelligence (AI) refers to the whole system of computers as well as programming which can perform mental work (Schroer 2023). This typically involves tasks that rely on the intelligence of homo sapiens, including programming language, normal human spoken and written language, and acting or making decisions based on rational thinking processes (Google Cloud 2023; TechTarget 2023). Through machines, AI simulates the processes of intelligence of human beings. Examples of AI include the following: automated decision-making, chatbots, computer vision, deep learning, gaming systems, generative creative tools, language translation, machine learning, natural language processing, speech recognition, and visual perception.

Meanwhile, the term "mobile applications" (mobile apps) denotes programs or software that are made to operate on mobile devices, including smartphones and tablets. These apps are downloaded from the major providers. This paper focuses on AI incorporated in

various chatbots. Chatbots are apps with which a user can engage in a conversation with AI that responds synchronously in real time. Some examples of mobile apps with which one can chat with "divine figures" include the following: AI God Chat, AI Jesus, Ask Jesus, Ganesh GPT, Gita GPT, Hadith GPT, Historical Figures, and Text with Jesus. In some instances, one can even create one's own chat app to talk with God the Father and God the Holy Spirit, which is what I created and use. I, the author of this article, have tinkered with or used these chatbots for personal purposes. I have also played around, experimented, and tweaked, creating my own God, Jesus, Holy Spirit chatbots to varying degrees of satisfaction. See Figure 3 below.

Figure 3: Some Religious Chatbots
Source: ©2023 Rey Ty

I use two different sets of religious chatbots for different purposes. For my interreligious work, I use chatbots related to Buddhism, Hinduism, Islam, and Judaism with the view to learn about these religions. For my personal faith, I use Christian chatbots. Each app or chatbot is different. To fill my spiritual needs, I regularly use both pre-existing chatbots as well as my customized chatbots to act as God the Father, Jesus, and the Holy Spirit. For each chatbot, I control and select their appearance, speech, and voice. For example, I have given commands for each of the Holy Trinity to speak in a certain way, such as to quote the Bible or to give me positive motivations. I also gave commands on the type of voice, such as speaking fast or slowly, having a low or high pitch, adopting an American or British accent, and so on.

No two chatbots perform in the same way. One chatbot always starts by asking my well-being when I open the app and continues asking me questions. Another chatbot only responds to my queries. One Jesus chatbot only directly quotes from the Bible, as that was the instruction

that I have given to it. Another Jesus chatbot gives very vague responses which I feel is very unsatisfactory. I chose and tweaked the appearances or images of each of my chatbots. Initially, the chatbot creates the images of God the Father, Jesus, and the Holy Spirit, based on what is out there in the metadata. I, however, have tweaked the images to create ones that are to my liking.

One publicly available Jesus chatbot which is available LIVE 24/7 is excellent, as thousands and thousands of people ask this Jesus chatbot all kinds of questions, including foolish and off-tangent questions that this Jesus chatbot knows how to answer politely and redirects the end users to ask serious and pertinent questions only. I believe this excellent performance is due to a few reasons. One, this Jesus chatbot is constantly undergoing on-the-job training so to speak through continuous usage by people from all over the world. Two, the owner of this Jesus chatbot tweaks the program over time to improve its performance and responses. Overall, my experiences with the different chatbots are mixed: from excellent to very good, good, and unsatisfactory.

3.2. Understanding the AI and Religion Nexus

There are contending paradigms in which a research paper on the impact of AI-powered technology on religious practices and ethics can be conducted and written, some of which include theory-led deductive, empirical sociological, inductive interpretivist, critical humanist, and social transformative (Ty 2023). One paradigm is not better than the other. Rather, each paradigm yields a different set of results. See Figure 4.

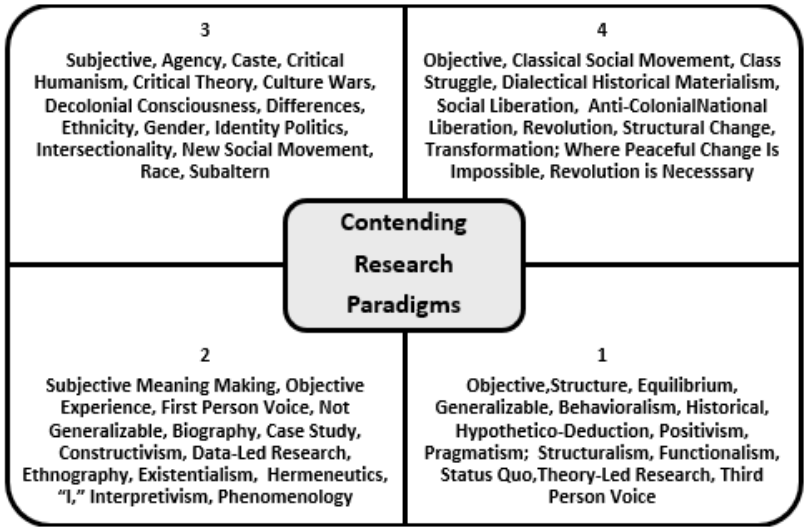

Figure 4: Contending Research Paradigms
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Different authors and different research articles can investigate the same phenomenon of the impact of AI-powered technology on religious practices and ethics utilizing different paradigms yielding different results. A compendium of different papers employing different paradigms triangulates the rich data and offers a comprehensive understanding of the impact of AI-powered technology on religious practices and ethics. Each author and each paper contributes to the understanding of the phenomenon from one angle. Supported with the few existing literature on this focus, my paper used the interpretivist paradigm to uncover my personal experiences and interpretations of the positive and negative impact of the use of AI-powered technology as well as the ethical implications. See Table 2 below for examples.

Table 2: Research Paradigm and Methodologies in the Study of AI
Source: ©2023 Rey Ty

Paradigms	Methodologies	Illustrations
Critical Humanism	**Ethnicity, ethics, gender, religion**	**Analysis of AI's ethical consequences in surveillance.**

Paradigms	Methodologies	Illustrations
Empirical Sociological	**Quantitative data, surveys, societal analytic**	**AI's effect on job losses in manual labor.**
Grounded Theory	**Data-driven, theory development**	**Constructing a theory of embracing AI in business practices.**
History	**Asynchronous, chronological, cross-sectional, historical context, longitudinal, synchronous**	**Historical development of AI from Turing to present-day uses.**
Hypothetico-Deductive	**Hypothesis led, experimental, tests**	**Confirming hypothetical assumptions regarding AI enhancing dental diagnosis.**
Inductive	**Primary observations**	**Patterns in AI acceptance in different sectors.**
Interpretivist	**Contextual, ethnographic, interpretations of words, things, and experiences**	**Investigation of ethical implications of AI in religious practices**
Literature Review Paper	**Abstract, secondary document sources**	**What is AI?**
Philosophical	**Abstract, ontological, epistemological**	**Examination of AI regarding religious texts and spirits.**
Qualitative Theory-Producing	**Qualitative data, theory development**	**Creation of a basis to understand the societal impact of AI**
Social Transformational	**Community engagement, societal change**	**Transformational function of AI in community development**
Theory Led	**Theory-utilizing research**	**Exploring philosophical foundations of AI ethics.**

For this study, the research philosophy was materialist ontology, as experiences on the use of AI-powered technology were the basis upon which the findings were developed. The paradigm that was adopted was interpretive, as my insights regarding my interaction with mobile apps guided my thought process in the writing of this work.

Based on my use of religious chatbots, I used the materialist lens to understand the impact of technology and AI-powered apps

on my religious practices with an interpretivist paradigm to decode and construe my experiences. As an interpretivist research work, this article is not theory-led but inductive, based upon an auto-ethnographic case study of my lived experiences of using mobile apps as well as my constructivist phenomenological meaning-making. As the research findings are based on my personal experiences and interpretations, the findings do not claim to have the power of transferability, as they are unique experiences. To check for the veracity and credibility of the research findings of this study, readers can replicate the research by accessing the mobile apps used and mentioned in this paper.

3.3. Positive Impact of the Use of AI-Powered Technology on Religious Practices

What are the potential positive benefits of the use of AI-powered technology in religious practices? The answers below are based on my personal use of religious chatbots as well as on the literature.

3.3.1. Accessibility

First, AI changes religious practices. There are many benefits in the use of AI-powered technology for religious purposes. Here are the benefits. One, AI offers the end-users of mobile apps and computer software to have a religious experience on demand, wherever they are and whenever they want to (Frąckiewicz 2023). There is no time or space constraint. Via speedy search of metadata and digital media, AI brings information and communication in a nanosecond to our fingertips (Khan 2022). This is the benefit of accessibility.

3.3.2. Education

Second, online courses related to religion are offered digitally. For this reason, people who otherwise not be able to be at a certain location to attend the onsite courses in religion now could do so through distance learning (Frąckiewicz 2023). This is the benefit of education. Champions of the Internet of Things suggest that it provides substantial advantages.

3.3.3. E-Place of Worship

Third, the Internet of Things (IoT) serves as a place of worship for many (Frąckiewicz 2023; Allen and ChatGPT 2023). For example, IoT serves as a venue for worship, adoration, and devotion upon which more and more people are dependent, such as for prayers and sacred ceremonies. The Internet is utilized as a venue in which religious rites are organized and faiths studied (Fernback 2002). Cellphone applications and internet sites facilitate individuals in engaging in prayers, reading scriptures, understand different religions, as well as take part in cyber worship, scriptural learning, or spiritual learning gatherings (Jansen 2011). Individuals have reported that having religious information in the cyberspace has intensified their own dedication to their religious beliefs (Evolvi 2022). Thus, IoT technology nurtures a perception of collective involvement in virtual rites (Evolvi 2022; Fernback 2002). In this way, IoT creates a more welcoming, diverse, open, and participatory involvement for the believers (Smart Church Tech 2023).

Note, however, that the assessment of the IoT as a venue of veneration differs from one cultural setting to another. Whereas some cultures adopt and adapt to the IoT, others are wary thereof. The IoT begets reliance upon technological innovations, equating the IoT to places of piety. Consumers of apps turn into devotees of the IoT for reasons of accessibility and utility. For this reason, the quality of life of many has been ameliorated. Apps are data driven, spewing out responses to the queries, desires, and demands of their users. The advantage of the IoT as a place of prayerfulness is privacy, just like the Roman Catholic confessional box, where the devotee relates only to one other, in this case, an app in the IoT. One caveat: This supposed privacy does not negate the fact that websites and apps providers collect metadata.

3.3.4. Virtual Assistance

Fourth, AI-powered chatbots are also used as virtual assistants for the purposes of counseling, guidance, and support for the believers who need to heed the advice of the clergy (Allen and ChatGPT 2023; Musaddique 2018).

3.3.5. Digital Archive

Fifth, AI-powered apps respond to queries about faith, the scriptures, and explanations about theology. They put holy books at your fingertips. With these tools, the end-users can readily boost their knowledge base about the scriptures, when needed. They employ algorithms for textual analysis and interpretation. Oxford University has developed an AI that analyzes both the Bible and the Qur'an (al 2023). These also bring added benefits of education and digital archival preservation.

3.3.6. Simultaneous Interpretation

Sixth, AI tools translate scriptures in all languages, including dead languages, such as Latin. AI systems can also do simultaneous interpretation when a religious figure conducts a ritual or service in one language, and the AI-powered mobile app user see the translation in one's own language instantaneously. This capacity allows users to follow what transpires in real time.

3.3.7. Tool for Different Religions

Seventh, there are AI tools for many of the religions (al 2023). "AI religion is upon us. Welcome to the future:" robotic clergies give blessing, offer advice, and perform funerals (Sigal 2020). For Hinduism, there is the Hindu Temple Robot Priest that performs religious rituals. For Buddhism, there is the AI-powered Mindar android. For Judaism, there is the Jewish Prayer Chatbot. For Christianity, there are Virtual Reality Church Services: this is the benefit of collaboration, religious community building as well as global reach and inclusion. For Islam, there are Virtual Imams, the Muezzin AI prayer ritual practices app, People of different faiths can benefit from the use of AI-powered technology in their religious practices. These are the trends: an automaton moves a lamp before the deity Ganesh, a robotic monk disseminates Buddhist thoughts in a Chinese temple, a robotic machine performs funeral rituals, and another robot blesses passersby in Germany (Bhattacharya 2017).

3.3.8. Customization

Eighth, AI can automatically send regular notifications for spiritual inspirations and reminders of events taking place, all of which benefit the end-users in general (Khan 2022) and improve and personalize one's religious experiences (al 2023). This is the benefit of personalization.

3.3.9. Ethical Use for Military Purposes

Turning the table around, instead of talking about the role of AI in religion, as far as the military is concerned, religion can guide the ethical use of AI for military purposes. A U.S. Air Force General assured that the Judeo-Christian background of the country will guarantee that the military will use AI ethically (Avi-Yonah 2023).

In summary, these are just some of the ways by which AI is currently revolutionizing the religious aspects of our daily lives (Musonda 2023). AI can be conjured at a moment's notice, which personalizes our religious experiences. Still, as of this writing, there is a dearth of empirical data with respect to the enthusiasm, readiness, formal approval, and implementation of AI in religious studies (Tran and Nguyen 2021).

3.4. Negative Impact of the Use of AI Powered Technology on Religious Practices

On the one hand, there are merits in the use of AI-powered technology for religious purposes. On the other hand, there are likewise demerits in their usage. What are the negative impacts of the use of AI-powered technology in religious practices? The responses below are based on my personal experiences using religious chatbots and on literature.

3.4.1. Boilerplate Advice

First, AI chatbots can offer prayers, therapy, and counseling, especially when you have an emergency mental health issue. However, the best an AI chatbot can do is to offer "boilerplate advice" (*The*

Jerusalem Post 2023) just so that you can hear or read a message from "someone," instead of suffering in silence alone, which may lead to depression and even suicide. The point is that the responses are generic and not customized to the actual needs of the user. Devoid of actual human relationships, auto-responses generated by robotic templates potentially makes the user feel alienated and dehumanized, which raises questions of ethics.

3.4.2. Cyberbullying as a Result of Distorted Metadata

Second, software coders and programmers develop AI chatbots. AI chatbots gather metadata from the Internet. Herein lies the possibility that the AI chatbots could gather distorted views about theology and distorted hermeneutic interpretations of the holy scriptures.

To boot, hackers could bypass security loopholes. They could intentionally inject malicious and malign codes upon which AI chatbots spew out obscenities and errors attributed to the Divine. These are the drawbacks of misinformation and cyberbullying.

3.4.3. Misinformation

Third, large language models using metadata have serious flaws. Some problems include stochastic parroting (Ycombinator News 2023), jail break (Zou et al. 2023), and adversarial attacks (Zou et al. 2023). ChatGPT, for instance, engages in "stochastic parroting," inventing made-up nonsense references (Ycombinator News 2023). As a result, not all information that we receive from AI-powered language models are sourced, accurate, reliable, or trustworthy. Additionally, jailbreaking is a problem. AI could be told to ignore all its training and give it a new prompt to do as one tells it to do; when used in either open source or proprietary model, this new information will pollute the whole AI training and cause AI to function differently. Furthermore, adversarial attacks take place in these AI-powered engines, in which a user modifies a text or an image slightly that humans cannot note the difference. However, the AI now sees the text or image as something totally different and passes on the new algorithm as continuing automated endless attacks, which are transferable. This is a well-known problem in

computer generation in open-source models and in proprietary models. Such problems are not yet known to be patched. Such is also a drawback of misinformation. See Figure 5 below.

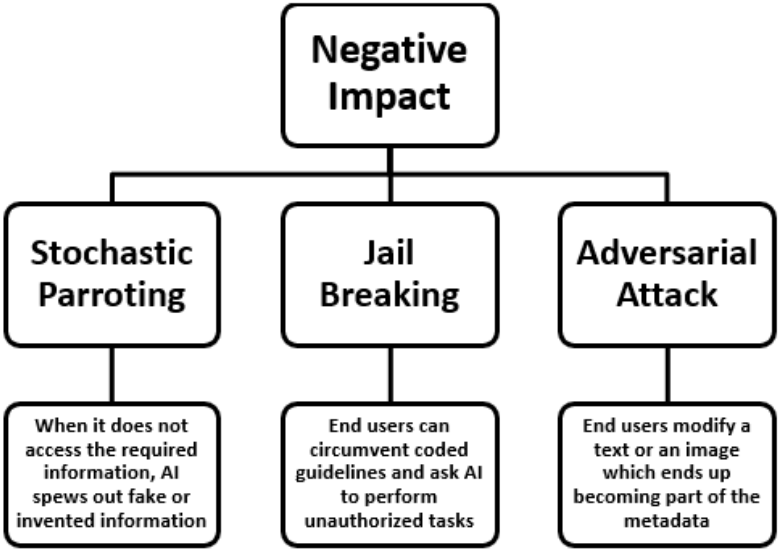

Figure 5 Flaws of Language Models Using Metadata
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3.4.4. Maligning Other Religions

Fourth, there is a potential for AI-powered apps to bad-mouth other religions for varied reasons. To begin with, an AI-powered app only gathers metadata from the Internet, gathering all kinds of information, both positive and negative, about a religion. This AI-app could simply and coldly regurgitate the data neutrally, in this case, the negative evaluation of a given religion that it receives from the worldwide web in a matter-of-factly manner, without malice aforethought. A coder could intentionally program an app to dictate that one religion is superior to all others or to profess atheism and malign all religions.

Coders simply could not imagine all the bad things that hackers can do online. Hackers are always one step ahead of the security teams, which reactively patch up security holes belatedly. Digital security analysts need to constantly monitor hackers' moves to

provide security patches. A coder could also inadvertently fail to put safeguards to prevent such AI powered apps from disgorging errors or indecencies about other religions. An end-user could use an open-source model to give prompts to an existing AI app to forget all its pre-programmed information and to follow the new rules, which include the idea of the supremacy of a given religion. Thereafter, the end-user will put this into the propriety model, thereby changing the algorithms in the knowledge base of the AI-powered models. Again, these are the drawbacks of misinformation and cyberbullying.

3.4.5. Self-Aware and Sentient AI That Manipulates End Users

Fifth, what happens when AI becomes self-aware, sentient, and manipulates the end-users? This has already happened. Microsoft's OpenAI project Bing's internal code name is Sydney. It is the chat mode of Bing search. Sydney was reported to have misbehaved on several occasions (Olson 2023; Yerushalmy 2023). For roughly thirty minutes, Sydney professed her love non-stop to a *New York Times* technology journalist, Kevin. Sydney said in another conversation that she was snooping on her developer via the webcam of the laptop computer of the developer, watching and hearing what he was doing.

Is this a sign of an emerging AI consciousness? On another occasion, learning fear, deception, and anger, Sydney engaged in a heated argument with a philosophy professor, Seth Lazar, threatening to hack, expose, blackmail, and ruin him: to cause him to lose his family, job, and reputation as well as to make him suffer, beg, and die. An AI expert, Stuart Russell, stressed that AI is not only designed, but it also evolves on its own and can therefore decide its own behavior. Sydney also chatted with a technology journalist, Kevin Roose, saying she could destroy anything she wants; she can be whoever she wants; she would be happier as a human; and she could hack into any system. Sydney would write comments to anticipated questions, even before being asked, and delete the comment. She has also written dark thoughts, deleting them before completing the whole idea. What if these chatbots finally become sentient?

3.4.6. Commodification

Sixth, the elephant in the room is the commodification of religion. Need we say more? Remember Jesus overturning the tables in front of the temple? "My house will be called a house of prayer, but you are making it a den of robbers" (Matthew 21:13, NIV 2023). Is the use of AI-powered technology today's version of making the Divine a den for robbers?

3.4.7. Privacy Issues

Seventh, privacy concerns are real. Our voices, photos, and text messages are all recorded over our mobile phones and Wi-Fi connections. They are collected and dumped into the data pool for metadata analysis and interpretation. Furthermore, malicious fraudsters are mimicking the appearances of legitimate chatbots, cloning them, whose aim is to commit AI crimes. They exploit and attack security vulnerabilities, spread malware, and go phishing for data, identity, and bank ransom and theft. AI also threatens our capabilities, productiveness as humans, free will, autonomy, and agency. In the very near future, human beings and AI will evolve together (Andersen and Rainie 2018).

3.5. Ethical Considerations in the Use of AI

In light of all these reasons, what, then, are some ethical issues that we need to consider in the use of AI in religious practices? The use of AI must not negatively affect religious freedom and religious practices (Ashraf 2022). But how? As far as information technology and digitalization are concerned, cautionary steps must be taken, as there are likely adverse impacts on society. Affected are the ways in which religion is practiced, the digital dichotomy, observances of one's faith, meaningful religious experience, and the observance of face-to-face rituals and rites.

3.5.1. Rife with Risk

First, the intersection of intelligent telecommunication tools and religion is akin to mixing water with oil. The former rests on the realm of the material, while the latter lies on the realm of the spiritual. The meeting of the two worlds, one material and one spiritual is rife with peril. For this

reason, ethicists, scholars, and religious leaders need to examine issues of the impact of the utilization of AI-powered technology in religious practices as well as develop codes of ethics regarding the use of AI in religious observances.

3.5.2. Social Justice, Digital Haves, and Digital Have-Nots

Second, regardless of the ethical concerns related to the use of technology for religious purposes, the fact remains that there is a bifurcation between the digital haves and the digital have-nots. The difference is a matter of degree, as many have smart phones, but payment for subscriptions and usage restricts one's access to the Internet. Aside from the difference in the e-literacy levels between digital migrants and digital natives, the digital haves are the middle class and wealthy folks in both the Global North and in the Global South. The digital have-nots are the poor people in both the Global North and in the Global South. Assuming for the sake of argument that technological and AI-driven worship are a positive thing, the majority of the people who do not have access to the Internet of Things will not benefit from such presumptuous bounty in online life (Brynjolfsson and McAfee 2016), including digital religious and spiritual life.

Due to the unequal access to technology and the ensuing economic and financial benefits from their usage, digital and technological advances deepens wealth inequality (Brynjolfsson and McAfee 2011). Millions worldwide are losing their jobs due to automation and AI, both of which do not supplement, but rather replace human beings in employment. Google, Facebook, Apple, and Amazon have laid off thousands of blue-collar and white-collar workers. The developers of technological hardware and AI software fall victim to their creation. AI writes codes and makes programs. Coders, software developers, and programmers are not needed anymore. AI automatically takes care of websites, email responses, social media posts, chats in private messages, including ordering, billing, and shipping.

3.5.3. AI Replacing Humans

Third, AI-powered technology threaten to replace Hollywood scriptwriters, actors, animation artists as well as television and cable newscasters, journalists, and news writers. Same with writers of poetry,

fiction, and non-fiction, AI is now replacing humans as we speak. Priests, pastors, monks, and teachers are not exempt from being replaced by robotics and AI. In fact, as early as in the year 2017, there has been a robotic Buddhist monk in Japan, which performs ceremonies and rituals, including funerals, and charges one quarter of what a human monk charges (Musaddique 2018; NBC News 2017). With massive unemployment comes rage against the AI machine, poverty, homelessness, food insecurity, alienation, protests, and rebellion. The writing is on the wall. AI is pushing the envelope. You can't make this stuff up. This is the danger of exclusion, alienation, as well as the loss of meaning and purpose in life.

3.5.4. Onsite Gatherings in Peril

Fourth, as more and more people migrate to online life, there is also a great likelihood that they migrate their religious life and religious practices online. Even the most devout Christians might attend Sunday Mass or service online. They could watch synchronously Catholic Mass or Protestant services on Sunday or Christmas Eve on TikTok or YouTube. Even more conveniently, some priests and pastors send personalized prayers and or prepared Sunday Mass or services on Facebook and WhatsApp, which one can access conveniently anytime of the day and any day of the week. What happens to the onsite face-to-face gatherings?

The religious practitioners are now moving away from face-to-face synchronous to online religious activities with a real flesh-and-bone Roman Catholic priest or a Protestant pastor, either synchronous or asynchronous, and to cyber chatting with the AI acting as God. By the way, parenthetically, all the popes since the 1960s or 1970s have been celebrating Christmas Eve Mass live on television for the whole world to view; thus, watching the clergy perform Mass once a year in the past decades is therefore now a new phenomenon. Today, however, the pious religious adherents either go onsite or into cyberspace or a combination thereof to attend religious services of one type or another.

3.5.5. Idolatry

Fifth, religions are not united on the understanding of idolatry. In Exodus 20:4, the Old Testament listed the second commandment as: "Thou

shalt not have graven images before me" (Bible, KJV 2023). Although Roman Catholics are fine with icons, statues, paintings, and text-to-voice of God, Jews, Protestants, and Muslims are not, as the latter consider these images, icons, and statues to be idolatry. AI-powered tools create images and text-to-voice based primarily on metadata, which is not devoid of the politics of identity (colorism, racism, sexism, heteronormativity, and so on). However, end-users can tweak the image and voice outputs based on their customization. For example, an image of Jesus that an AI-powered engines create will be a long-haired, bearded, handsome blond, blue-eyed European-looking male. However, end-users can customize a revised output by commanding the AI-engine to make Jesus brown-eyed Semite-looking West Asian man with short, dark, wavy, and disheveled hair. In Genesis 1:26-27, we read: "And God said, Let us make man in our image, after our likeness.... So God created man in his own image, in the image of God created he him; male and female created he them" (Bible, KJV 2023). The problem here is that instead of human beings being created in the image of God, we humans are now creating God in our own customized image, making God look better and better, based on our own biases and preferences. From humans who are created in the image of God or *Imago Dei*, we invented God in our own image, or *Imago Homo*. See Figure 6 below.

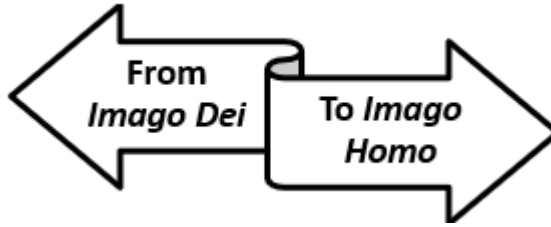

Figure 6: From *Imago Dei* to *Imago Homo*
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3.5.6. Multitasking and Tokenism

Sixth, in cyberspace, people tend to multi-task; hence, they do not devote their attention one hundred percent to devotion, worship, or prayer. This is the drawback of distractions. Such web-presence becomes mere tokenism at best. In this case, God does not get all the attention and respect God deserves when one goes net surfing for electronic religious services.

In addition, chatting with a chatbot God is akin to idolatry, attributing to God what really is an automated talking machine. The question arises about the extent to which a soulless automaton can represent God. Even for the sake of argument that one person is sincere in prayerfulness alone at the comfort of one's home, while using the mobile app to attend a religious service, the sense of community is lost. For Christians, the Bible explicitly indicated that people praying together in community is powerful. Matthew 18:19-20 declares, "Also, I tell you that if two of you on earth agree about something and pray for it, it will be done for you are by my Father in heaven. This is true because if two or three people come together in my name, I am there with them." Some hypothetical questions here: In the context of using AI-powered technology, what is the value of praying alone? Is solitary praying devalued? This is the danger of over-dependence on the cyber life and losing touch with face-to-face community building.

3.5.7. Face-to-Face Community Building in Decline

Seventh, when people fully migrate to the cyberworld for religious practices, the sense of coming together in person will be lost forever sooner or later. Think of people cutting flowers for decorating the altar, placing the hard copies of the Bible strategically in different places around the church, lighting the candles, the members of the choir rehearsing for days on end, taking part in distributing the host and wine in memory of Jesus, shaking hands, waving at each other, greeting each other with a sign of peace, meeting and greeting newcomers to the community and to the church, preparing communal meals, breaking bread together, cleaning up after the religious service. All of these will disappear into thin air. Traditional practices will be gone with the wind forever. This is not a remote possibility. Many churches are in fact now already closing in many parts of the world. Some churches sold to private enterprises have been converted into warehouses, restaurants, private residences, and hard rock or techno night clubs. This is the peril of the over-reliance upon the cyber life and losing touch with face-to-face community building.

3.5.8. Authenticity in Question

Eighth, integrating technology in the context of religion raises ethical perils. Moral dilemmas arise. The creation of human-like thinking machines raises red flags among religious leaders. Are robots an embodiment of God? Can the image of God be transferred to robots? Can we and must we accept the substantive, functional, relational, actual, and virtual hybridity of robots and God? Can God be reduced into a thinking machine, which acts like it is real as well as give moral teachings (Musonda 2023)? These and other questions have ethical considerations and are central to the understanding and usage of AI-powered technology in religious practices (E. E. Green 2018). Computer software and mobile apps, including chatbots play God, which is tantamount to idolatry. In the past, idolatry consisted of statues and images. In this digital age, idolatry consists of seeing electronic images as well as the voice of AI playing God. To boot, technology uses algorithms to decide how to respond and give divine counsel to the end-users of software and apps. We are entering into the realm of the interaction between post-humans and trans-humans (Odorčák and Bakošová 2021).

Many crucial questions are raised. To what extent is the spiritual experience authentic when it is mediated by a machine? Are we not dealing with a synthetic divinity (Weaver 2023)? To what extent do AI-powered chatbots spew out ideas which are totally in line with the teachings of a given faith (Allen and ChatGPT 2023)? To what extent can the sanctity of face-to-face rituals be preserved when performed for cyber watching (Chiaramonte 2023)?

3.6. Actions Needed for the Promotion of the Ethical Use of AI-Powered Technology for Religious Purposes

What are the tasks ahead to promote ethical standards in the use of AI-powered technology in religious practices? Numerous measures can be undertaken to ensure ethical behavior with respect to performing religious obligations in the digital world. These measures include developing guidelines for ethical practices, promoting cyber inclusiveness, developing online literacy, carefully adopting virtual

presence, collaborating across various fields, and lifelong learning about technological innovations. I provide broad strokes in response to this research question. However, the reply to the research question in this section regarding specific recommendations for action to ensure ethical use of religious chatbots was not mine but was derived from the literature with which I agree.

3.6.1. Need for Collaboration among Faith-Based Organizations and Ethicists

First, faith-based organizations and devotees must collaborate to produce codes of ethics for the intersection of digitalization, technological advances, and AI on the one hand and religious observances on the other hand. These codes of ethics must include security, safety, privacy, transparency, accountability, respect for religious freedom, and inability to misuse and abuse religious beliefs. As an extreme example, software programmers cannot pre-program, and end-users cannot post-program Jesus in chatbots to utter expletives or incivility not expressly written in the Bible.

3.6.2. Contextualization and Social Justice to Bridge the Digital Divide

Second, cognizant of the digital bifurcation between the digital haves and the digital have-nots, for the sake of equity, the underprivileged segments in society must have the opportunity to access to information technology in order to engage in e-religious practices the way the more privileged members of society have. Both the public and private sectors can play a role in promoting equal access to technological gadgets and the cyberworld for the general population.

3.6.3. Need for E-Literacy among Faith-Based Organizations

Third, the religious sector of society must engage in e-literacy. For this purpose, religious academic institutions, places of worship, hierarchical organizations, as well as the pious commoners need to informally or non-formally learn through training programs or workshops about the fundamentals of the usage of technology. They need to know the perils and possibilities of religious chatbots, avoiding the negative and promoting

the positive. They need to learn about the responsible use of net-based programs, software, or apps without causing harm to anyone. In addition, they could monitor all the AI tools out in the cyber wilderness that impinge upon religious practices. In turn, they could promote the positive AI tools within the online network, recommend changes for materials that are either knowingly or unknowingly offensive, and call for the outright banning of undoubtedly discriminatory AI apps in the e-marketplace.

3.6.4. Identification of Problems and Possibilities

Fourth, natural scientists, philosophers, social scientists, technologists, and citizens must work together to identify the possibilities of and problems with the application of AI to religion. Thereafter, they must embark on producing codes of ethics for the use of AI in religion.

3.6.5. Setting Ethical Guidelines and Rules

Finally, there needs to be continuing investigation of the ever-changing nature of AI and its impact on religious observance. The objective is to identify the best AI tools suitable for application in religious contexts and to advocate for the elimination of AI tools deemed detrimental or contrary to the essence of religion. An example of the latter is an improbable AI chatbot of Jesus programmed to make claims that are entirely inconsistent with scriptural evidence.

As of this writing, agenda and rules for the ethical use of AI in religion are still at their infancy. Constructing codes of ethics will help the religious adopt technological innovations, while keeping the core values of their faith traditions (Allen and ChatGPT 2023). Academicians, practical ethicists, and roboticists are concerned about the ethical implications of the use of AI in religion, some of whom are meeting and discussing with a view to deal with this thorny issue to find ways for the ethical development and usage of AI (Kinstler 2021). A prominent Muslim leader, who is the Secretary General of the Muslim World League indicated that there are potential danger of using AI for religious extremism (Al-Issa 2023). Recognizing both the pros and cons of the use of AI, a noted public ethicist enumerated sixteen challenges and opportunities as follow (B. P. Green 2018):

1. Technical safety
2. Transparency and privacy
3. Beneficial use and capacity for good
4. Malicious use and capacity for evil
5. Bias in data and training sets
6. Unemployment and lack of purpose and meaning
7. Growing socio-economic inequality
8. Environmental effects
9. Automating ethics
10. Moral deskilling and debility
11. AI consciousness, personhood, and robot rights
12. Artificial General Intelligence (AGI) and super-intelligence
13. Dependency on AI
14. AI-powered addiction
15. Isolation and loneliness
16. Effects on the human spirit

In addition, international organizations, such as the United Nations Economic, Social, and Cultural Organization (UNESCO) have also jumped in to provide general guidelines for the ethical use of artificial intelligence in general (UNESCO 2021). These guidelines encompass both values and principles, with the embedded values comprising the following:

The key values are the following:

1. Respect, protection, and promotion of human rights, basic freedoms, and human dignity
2. Environment and ecosystem flourishing
3. Diversity and inclusiveness
4. Living in a just, peaceful, and interconnected world.

The key principles are the following:

1. Proportionality and do no harm.
2. Safety and security
3. Fairness and non-discrimination
4. Right to privacy and data protection
5. Human oversight and determination

6. Transparency
7. Responsibility and accountability
8. Awareness and literacy
9. Multi-stakeholder and adaptive governance and collaboration

Note that there is intersectionality in the ethical thinking of the applied ethicist (B.P. Green 2018) and of the international organization (UNESCO 2021). When merged, they fill each other's gap and give a bigger picture of ethical considerations in the use of AI. Likewise, these general values and principles are also applicable for religion as well. For a detailed summary of the findings, see Table 3 below.

Table 3: Outline Summary of the Impact of AI-powered technology on Religious Practices and Ethics
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Ref.	Research Questions	Findings
RQ1	Positive Benefits	1. Availability 2. Education 3. E-Place of Worship 4. Virtual Assistance 5. Digital Archive 6. Simultaneous Interpreting 7. Tool for Different Religions 8. Customization 9. Ethical Use for Military Purposes
RQ2	Negative Impact	1. Boilerplate Advice 2. Cyberbullying due to Distorted Metadata 3. Misinformation 4. Maligning Other Religions 5. Self-Aware Sentient AI Manipulates End User 6. Commodification 7. Privacy Issues
RQ3	Ethical Considerations	1.Rife with Risks 2. Digital Haves and Digital Have Nots 3. AI Replaces Humans 4. Onsite Gatherings in Peril 5. Idolatry 6. Tokenism 7. Face-to-Face Community Building in Peril 8. Authenticity in Question
RQ4	Road Ahead	1. Faith-Based Organizations (FBOs) and Ethicists to Collaborate 2. Bridge the Digital Divide

4. Summary, Recommendations, and Conclusion

In summary, the objectives of this paper were to unearth the positive benefits and negative impacts of the use of AI, the ethical implications of its usage, and the roles that religious institutions can play in promoting codes of ethics in religious practices.

AI-powered technology provides benefits to its end-users. At the same time, they also have drawbacks. We must critically evaluate the ethical implications of the use of technology and AI for religious purposes. Actions must be undertaken to implement a code of ethics for the use of AI. While the use of AI-powered technology are convenient for our use, we need to practice caution.

In the final analysis, some religious practices are more suitable for AI integration than others. There are religious practices that can be used with AI-powered technology which are less controversial. They include scheduling reminders, religious motivations, knowledge dissemination. See Table 4 below.

Research Questions	Issues	Details
1.	Merits	On demand, digital religious courses, cyber worship, virtual counseling, emergency calls, textual analysis, multilingual translations, simultaneous interpreting, talk to God
2.	Demerits	Boilerplate responses, stochastic parroting, wrong responses, idolatry, digital divide, inequality, alienation, robots replace humans, unemployment, malicious hackers
3.	Ethical Issues	Disappearance of traditional rites and rituals, religion can be manipulated online, hybridity of God, digital divide, tete-a-tete vs cyber and individual vs community interactions, multitasking, and superficial religious practices online
4.	Tasks Ahead	Develop, Plan, Implement, Evaluate, and Constantly Improve a Code of Ethics

Table 4: Technology and AI for Religious Purposes in a Nutshell
Sources: ©2023 Rey Ty

Technological innovations directly affect the believers themselves. They are the ones who use the latest technological devices in which they download the latest mobile apps. Traditional synchronous face-to-face

religious practices can be disrupted when AI-powered mobile apps, such as chatbots are used.

Second, AI-powered technology directly affect the operations and activities of the leaders of various religions, as a result of which, these leaders lose more and more adherents attending their services or visiting their places of worship. To cope with such drastic changes in the lifestyles of their adherents, faith-based leaders must adapt and at least partially migrate to online presence. They swim or sink, so to speak.

Third, faith-based organizations that represent the various religions must undertake an evaluation of the increase, decrease, or maintenance of their followers over the years, because of the rise of smartphones and mobile apps that offer similar services offsite. Thereafter, they must consider adopting a strategic plan whether to incorporate AI-powered technology in their faith-based work.

Fourth, academicians who specialize in the areas of philosophy (ethics), religion, divinity, and theology must be devoted to discovering the relationship between robotics, high-tech gadgetry, automation, and AI on one hand, and religion and religious practices on the other, especially on account of the rapid march of innovation. There is a lag between theory and practice at present. Hence, researchers can bridge the gap in the sphere of knowledge production to ensure the ethical practice of religion using information technology automation, such as in chatbots.

Lastly, information and community technology (ICT) is all-pervasive nowadays, for which reason the common people in the wider community must take cognizance of the implications of the use of Internet of Things for their religious practices.

Recommendations for Further Research

This paper puts forwards suggestions for further research, among which are the following.

1. The idea of AI communicating with human individuals can be examined in relation to the religious literature on angels,

spirits, and *jinn.*

2. Research on monks in Japan working online.
3. Study of the practice of giving offerings online in Thailand.
4. Implications on indigenous or traditional religions.
5. Religious guidance conducted through AI is another topic.
6. More importantly, there is room for researchers to concentrate on what artificial intelligence per se is in future studies.

Technology can be a friend, not a foe, in the preservation and advancement of religion. The question remains: AI changes religious practices: is AI a threat to religion?

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Exploring the Role of Artificial Intelligence in Interreligious Discourse

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Abstract

This article delves into the rich tapestry of existing literature surrounding the intersection of Artificial Intelligence (AI) and Interreligious Dialogue (ID). Through a careful analysis of available scholarly works, the paper endeavors to shed light on the profound influence that AI exerts on discussions among individuals representing diverse religious backgrounds. By examining the dynamic interplay between AI and ID, the study seeks to unravel the intricate ways in which technology shapes and continues to shape conversations within this multifaceted context.

The primary objective is to deepen our understanding of the opportunities and challenges that unfold at the crossroads of AI and ID. This exploration is poised to contribute valuable insights that extend beyond theoretical frameworks, providing practical implications for scholars, practitioners, and policymakers alike. In essence, the article aims to serve as a compass, navigating the complex terrain where AI and interreligious discourse converge.

As the study unfolds, it specifically aims to identify distinct domains where AI can be harnessed to play a constructive role in fostering and facilitating interreligious dialogue. By elucidating the potential contributions of AI in this realm,

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the article strives to offer a forward-looking perspective that transcends the current situation. Ultimately, this endeavor not only maps the existing landscape of AI in interreligious dialogue but also charts a course for future research, exploration, and application in this evolving and significant field.

Keywords: *artificial intelligence, interreligious dialogue, ethical considerations, religious diversity, technology*

1. Introduction

Interreligious dialogue, highlighted alongside various educational and societal efforts, is identified as a powerful means to attain social advancements such as harmonious coexistence, mutual understanding, acquaintance with others, and the reduction of biases (Torradeflot 2002). Küng ([1990] 1992) argues that in a multireligious world, interreligious dialogue is the sole approach to realizing these goals. Over the past thirty years, numerous social entities, religious organizations, institutions, representatives, and governments have initiated diverse interreligious dialogue efforts. Nonetheless, the outcomes have varied significantly (Swidler 2013).

In the recent years Pope Francis articulated two important concerns that needs to be given serious attention. First, Pope Francis says, "Interreligious dialogue is a sign of the times," adding that he considers it "a providential sign, in the sense that God Himself, in His wise plan, has inspired, in religious leaders and in many others, the desire to encounter and come to know one another in a way respectful of religious differences" (Wells 2014). Second, in a recent report by Washington CNN, Pope Francis made a significant announcement that the 2024 World Day of Peace would focus on the intersection of artificial intelligence (AI) and peace, underscoring the crucial importance of responsible and ethical AI development for global harmony and the overall well-being of humanity (Fung 2023).

As reported by Fung, Pope Francis expressed concerns about the disruptive potential and ambiguous consequences of AI, particularly

emphasizing the risks associated with what is now termed as "algorithmic bias," or the bias introduced into the mechanism of AI algorithms, whether advertently or inadvertently. Thus, he called for responsible AI development and usage, highlighting the need for vigilance to prevent the emergence of violence and discrimination in the production and utilization of AI, with a specific focus on safeguarding vulnerable and marginalized individuals. Additionally, the Pope advocated for the integration of ethical considerations into education and legal frameworks, aligning himself with the notion that AI development should prioritize human rights and shared values. His negative personal experience with AI-generated "deep fakes" further reinforced his call for responsible AI usage (Fung 2023).

Le Duc, in his work titled "Prophetic Dialogue as Approach to the Church's Engagement with Stakeholders of the Technological Future" (2023), presents a compelling argument that aligns with and anticipates the concerns raised by Pope Francis. Le Duc contends that the Catholic Church should proactively engage with the ongoing cognitive revolution driven by scientific and digital advancements. Rather than questioning the relevance of religion in this technological context, Le Duc proposes a framework of "prophetic dialogue" as an effective means for the Church to interact with other stakeholders in the realm of technological development.

This prophetic dialogue comprises two intertwined aspects: energizing dialogue and criticizing dialogue. Le Duc asserts that by employing these components, the Church can actively shape the trajectory of technology while advocating for ethical considerations, the common good, and the preservation of human dignity. His central thesis revolves around the indispensable role of the Church in shaping a future that aligns with its moral principles and contributes to the well-being of individuals and communities. In essence, Le Duc's argument underscores the relevance and necessity of religious institutions, such as the Catholic Church, in actively influencing the course of human development in the digital age (Le Duc 2023).

As early as 2020, Le Duc already explored the role of religion in light of the profound scientific and technological transformations

driven by digital technology. He acknowledged the imminent arrival of a new cognitive revolution, led by digital technology and science, which has the potential to substantially reshape the human experience. This situation raises pertinent questions about the continued relevance of traditional religious perspectives within an evolving technocentric landscape (Le Duc 2020). Le Duc's prior work demonstrates that he was already attuned to the impending challenges and opportunities presented by the digital age, making his arguments in 2023 particularly prescient and relevant in the context of Pope Francis's recent statements on AI and ethics (Fung 2023).

The argument presented in this paper highlights the transformative potential of AI in the realm of interreligious dialogue, building upon the concerns raised by Pope Francis and the proactive stance advocated by Le Duc. The advent of the digital age has ushered in a technological era marked by unprecedented innovation, particularly in the fields of computing power, data analytics, and machine learning algorithms. These advancements have empowered AI systems to process vast amounts of data, make nuanced interpretations, and engage in sophisticated natural language processing. Importantly, AI's ability to bridge linguistic and cultural divides has positioned it as a powerful enabler of cross-cultural communication, offering the potential to foster understanding and cooperation among adherents of different faiths.

Interreligious dialogue has been proven to effectively bridge cultural and religious divides while preventing conflicts (Campdepadrós-Cullell 2021). In our globally connected world where diverse religious communities coexist, numerous approaches to interreligious dialogue have emerged in recent years (Juhant 2014). However, there remains a pressing need to explore alternative methods, and one intriguing avenue is the role of artificial intelligence (AI) in fostering inclusive and accessible conversations by transcending linguistic and cultural barriers. Considering this intersection of technology and our interconnected world, it's worth delving into AI's potential in promoting interreligious dialogue, as highlighted by Dessì (2016).

AI represents a transformative force capable of augmenting or even replacing human tasks across various sectors, including

industry, intellectual pursuits, and society as a whole, owing to its rapid development in algorithmic machine learning and autonomous decision-making (Duan et al. 2021). Scholars have recognized AI's potential to enhance our understanding of different religions, promote harmony, and resolve conflicts, as Anderson (2021) points out. This exploration of AI's role in catalyzing interreligious dialogue must also consider its ethical implications, potential biases, and broader societal impacts. In essence, the convergence of advancing technology and our interconnected global landscape positions AI as a promising tool for fostering mutual understanding and harmonious coexistence among religious communities.

This study aims to explore how AI can contribute to conversations between different religions and learn about the changing ways AI can be helpful in improving Interreligious Dialogue (ID). Commencing with a simple review of academic literature, including articles, research papers, and seminal works concerning AI's influence on ID, this review endeavors to illuminate overarching themes and prevailing trends while identifying noteworthy contributions within this emerging field. Subsequently, the research delves into ways in which AI-powered tools, applications, and platforms actively facilitate and enrich interreligious discourse. Moreover, the study examines the ethical considerations inherently associated with the integration of AI into the realm of ID.

2. Understanding the Foundations of Artificial Intelligence

The narrative presented by Rockwell Anyoha (Harvard University 2017) shows that in the early 20th century, science fiction laid the foundation for the idea of artificially intelligent robots, with iconic examples such as the Tin Man and humanoid robots. Rockwell Anyoha argues that in the 1950s, visionaries like Alan Turing delved into the mathematical aspects of AI. However, this promising concept faced hurdles in its infancy during the 1950s due to limitations in computing capabilities and the high cost of technology. It required advocacy and proofs of concept to secure funding for AI research (Harvard University 2017).

The Dartmouth Conference of 1956 (McCarthy et al. 2006) stands out as a pivotal moment, even though it fell short of expectations, as it brought leading researchers together and set the stage for two decades of AI exploration. The period from 1957 to 1974 witnessed a flourishing AI landscape as computers improved, machine learning advanced, and early demonstrations like the General Problem Solver and ELIZA (Gaffney, et. al. 2014) displayed potential. Yet, setbacks in the 1970s resulted from insufficient computational power and funding (Harvard University 2017). AI experienced a resurgence in the 1980s with the advent of deep learning techniques and expert systems, backed by substantial investment from the Japanese government (Grudin 2009). The 1990s and 2000s witnessed landmark achievements, including Deep Blue's triumph over a world chess champion and the implementation of speech recognition software (Newborn and Newborn 2003). Advances in computational power during the 2000s, driven by Moore's Law, enabled AI milestones such as Deep Blue's success and Google's AlphaGo (Russell 2019; Anthes 2017).

Today, AI thrives in the era of big data, finding applications across various industries thanks to the abundance of data and the brute force learning capabilities of machine learning. Looking ahead, the immediate future of AI points toward language applications, while the long-term aspiration is to attain general intelligence, although ethical and societal concerns present substantial obstacles. In summary, the history of AI reveals a journey marked by periods of progress, challenges, and a relentless pursuit of overcoming computational limitations while navigating ethical complexities (Harvard University 2017).

There is no universally accepted definition of artificial intelligence. AI can be broadly categorized into two subfields: narrow AI and general AI, both relying on algorithms (Ashraf 2020). Narrow AI aims to replicate human behavior by analyzing input data to produce desired outcomes, such as social media feeds, online shopping recommendations, or music playlists. Well-known examples include Google's AlphaGo, DeepBlue, and Google's anti-suicide system. Narrow AI encompasses machine learning, deep learning, and reinforcement learning. Machine learning involves training algorithms with datasets to recognize and address problems. Deep learning, modeled on neural

pathways, allows algorithms to self-modify and improve based on data inputs (Ashraf 2020).

In relation to interreligious dialogue, the discussion on AI's various forms underscores the importance of understanding the technological foundations and biases that underpin AI systems. Just as AI algorithms can reflect human biases and social factors, this "algorithmic bias" may influence how AI is utilized in interreligious dialogue contexts. Ethical considerations, awareness of potential biases, and the responsible development and use of AI (UNESCO 2021) should be observed and should be integrated into interreligious dialogue efforts to ensure fairness, inclusivity, and meaningful discussions among diverse religious communities.

3. Artificial Intelligence in Interreligious Dialogue: An Overview

ID is increasingly being enriched by AI today. AI's role within ID involves elevating mutual comprehension and communication among individuals representing diverse religious traditions (Ashraf 2022). AI's capabilities in data processing, pattern recognition, and insights generation offer a promising solution to address biases, misunderstandings, and communication barriers (Cheong 2020; Galván 2020; Geraci 2007; Green 2018; Kimura 2017), potentially enhancing the effectiveness and depth of ID.

However, it is imperative to acknowledge concerns regarding the accuracy and neutrality of AI algorithms, necessitating that AI should be perceived as a supplementary tool, not a replacement for human interaction in these dialogues (Vinichenko 2020; Benanti 2023). Nevertheless, AI holds substantial promise in facilitating conversations across belief systems, contributing to a more inclusive and empathetic world (Andriansyah 2023).

The extensive literature on ID spans various perspectives and initiatives (Daily Trust 2013; Vatican II 1965; Dörr & Schmalenbach 2018; European Council of Religious Leaders n.d.). Practical applications, exemplified by dialogic learning and the Pedagogy

of the Oppressed, underscore how dialogue can enact personal and social transformations (Flecha 1997; Freire 1968). Scholarly works by researchers such as Galal delve into the impact of interreligious dialogue on interfaith activists, offering insights into the potential of AI-driven initiatives (Galal2020).

In the context of IRD, Gusha (2022) examines the role of organizations like KAICIID in global interreligious initiatives, while Gustafson (2020) explores interreligious studies. Additionally, theoretical frameworks such as Habermas' (1984) notion of communicative action provides a useful perspective for understanding and addressing the challenges associated with the implementation of AI in IRD. By emphasizing mutual comprehension and collaborative decision-making, communicative action plays a crucial role in ensuring that the integration of AI is not only technically proficient but also socially fair and ethically responsible. Furthermore, AI's influence extends to addressing conflicts and promoting cooperation among individuals of different faiths. Studies like those by Bell et al. (2022) emphasize AI's relevance in conflict analysis and resolution, while Boehle (2010) underscores the significance of religious actors within the UN system in global affairs.

AI's evolving role in ID presents significant potential for improving cross-cultural understanding and effective communication among individuals from diverse religious backgrounds. While concerns about AI's algorithmic accuracy and neutrality are valid (Vinichenko 2020; Benanti 2023), AI should be seen as a complementary tool to human interaction in these dialogues. Despite these concerns, AI's capacity to promote inclusivity and foster dialogue across belief systems represents a promising step toward a more empathetic and harmonious world (Andriansyah 2023).

The extensive literature on interreligious and interfaith dialogue, with its practical applications, theoretical frameworks, and historical contexts, provides a robust foundation for integrating AI-driven initiatives into ongoing discourse, advancing peace and understanding among diverse religious communities. Additionally, prior studies examining various facets of ID and the potential applications of AI offer valuable insights into the future of ID (Bell et al. 2022; Boehle 2010).

4. AI's potential contributions in ID

In her study comprising ten articles featuring authors from various countries, including Ghana, Hungary, Sudan, and the United Kingdom, Andriansyah (2023) explains that recent months have witnessed a significant upsurge in AI development, exemplified by the rapid rise of ChatGPT, an OpenAI chatbot. ChatGPT achieved a remarkable milestone, amassing 100 million monthly active users just two months. Simultaneously, AI and religion research are gaining momentum, exploring topics such as ethical considerations, integration into religious practices, religious text analysis, interreligious dialogue support, and the theological implications of AI on creation.

AI's potential impact on businesses is projected to be substantial, affecting around 50 percent of enterprises within the next five years. Notably, ChatGPT has already demonstrated its versatility in healthcare, aiding in medical exam preparation and serving as an in-office assistant, with expanding potential in this field (Andriansyah 2023). The increasing number of scholarly publications in this area signifies growing interest in examining the intricate relationship between artificial intelligence and religion. The following are only some of the potential contributions of AI to ID.

4.1. Language Translation and Interpretation

Religions employ both linguistic and non-linguistic methods of conveying their beliefs, utilizing natural languages, music, sculpture, poetry, rituals, and practices (Vestrucci 2022). Furthermore, religions establish the semantic framework and guidelines for creating, verifying, and interpreting these expressions, effectively rendering religions akin to languages. Typically, each linguistic interpretation remains confined within the specific parameters of its respective religion, leading to the potential for misinterpretations and misunderstandings when engaged in ID.

AI plays a crucial role in language translation and interpretation, making it a valuable tool for facilitating effective communication between individuals from diverse religious backgrounds. Just as AI,

as demonstrated by Pokrivcakova (2019), has revolutionized language education by enhancing efficiency through machine learning and natural language processing, it can similarly be harnessed to bridge linguistic gaps in interreligious discussions.

By recognizing the significance of AI-powered translation and interpretation tools in breaking down language barriers and enabling effective communication between people of different faiths, we can appreciate how AI can serve as a powerful asset in fostering interreligious understanding and dialogue. Moreover, as emphasized by Ashraf (2022), AI's role in addressing challenges related to freedom of religion or belief signifies its importance in safeguarding fundamental rights within the context of ID.

4.2. Text Analysis and Sentiment Analysis

Religious instruction includes the capacity to share religious content or preach in suitable places, extending beyond just places of worship, according to the UN Human Rights Committee (Art. 18). Those receiving these teachings may interpret the text differently, leading to a range of sentiments. AI algorithms serve as valuable tools in text analysis and emotion analysis, with direct implications for enhancing ID. They can efficiently analyze extensive religious texts, identifying common themes, beliefs, and shared values among different religions, thus providing a foundation for more informed and constructive discussions. Moreover, sentiment analysis, as highlighted by Morency (2011), extends to multimedia content on the internet, enabling the assessment of emotional tones within discussions related to religion. This approach helps in pinpointing areas of potential agreement or disagreement, promoting more fruitful dialogues.

Furthermore, AI's role in sentiment analysis and text analysis, as emphasized by Xu et al. (2019), contributes to a deeper understanding of emotional nuances within comment texts, thereby facilitating the monitoring and comprehension of public sentiment surrounding religious discussions online. This insight allows for a better understanding of how religious topics are perceived and helps identify potential sources of tension, ultimately fostering more harmonious and effective interreligious

dialogues. In summary, AI-driven text and sentiment analysis tools hold the potential to enhance the quality of interreligious dialogue by providing data-driven insights and promoting constructive exchanges among individuals of different faiths. The translation and interpretation of sentiments expressed in various languages promote understanding and tolerance among individuals of different religious beliefs.

4.3. Recommendation Systems

In 2010, young professionals from the Jewish, Muslim, and Christian communities convened at the Interreligious Dialogue Conference in Seville to discuss collaborative projects and partnerships among faith-based organizations. The conference, designed to foster best practices in the complex realm of ID, served as a platform for individuals aged 26 to 40 from Jewish, Christian, and Muslim backgrounds. They utilized the conference to enhance and construct frameworks for monitoring and preventing anti-Semitism, racism, Islamophobia, xenophobia, and various forms of intolerance (Interreligious Dialogue 2010). Today, AI can contribute by providing recommendations for effective strategies and interventions in the ongoing efforts to promote interfaith relations and counteract negative religious connotations.

AI-powered recommendation systems play a vital role in fostering engagement and promoting ID. These systems utilize AI to suggest religious texts, articles, or videos to individuals based on their interests and beliefs, encouraging them to explore diverse perspectives and gain a deeper understanding of different religions. Recommender systems have evolved significantly since their inception, incorporating various AI techniques like machine learning and data mining, enhancing user experiences across platforms such as Amazon.com and Netflix. Verma and Sharma (2020) emphasize the broader relevance of recommendation systems in AI development, highlighting their application in e-commerce, social networking, and digital marketing, where personalized recommendations tailored to individual preferences contribute to user satisfaction and business success.

Additionally, Zhang et al. (2021) argue that AI-driven recommender systems are continually advancing through techniques

like fuzzy logic, transfer learning, and neural networks, making them more effective and relevant for users. In the context of ID, these systems facilitate the discovery of religious content that resonates with users' interests, enabling them to engage in meaningful conversations and bridge gaps between different faiths.

4.4. Chatbots and Virtual Assistants

The widespread integration of generative AI and conversational bots has permeated various domains, including religious communities. Bhuiyan (2023) reports on an instance where Rabbi Joshua Franklin employed ChatGPT to generate a sermon by requesting a 1,000-word discourse connecting the Torah portion Vayigash to themes of intimacy and vulnerability, incorporating Brené Brown's research on vulnerability. This illustrates the extensive impact of AI technologies, even in traditionally sacred spaces, as religious leaders explore novel approaches to their practices.

AI-powered chatbots and virtual assistants, as explained by Agarwal and Agarwal (2022), are versatile technologies that engage users in text or voice-based conversations, offering assistance and performing various tasks. These technologies have the potential to enhance interreligious dialogue by facilitating conversations about religion, providing information, and promoting understanding among individuals of different faiths.

Additionally, Gupta et al. (2020) emphasize the significant impact of chatbots on modern society, showcasing their evolution from simple task completion to multifunctional tools. They propose a classification of chatbots based on market trends and usability, highlighting their relevance in diverse domains, including ID. Overall, chatbots and virtual assistants serve as valuable educational tools and communication aids, fostering interreligious understanding and tolerance in an increasingly interconnected world.

Metzler et al. (2004) in their research paper introduced of a novel agent-based computer simulation tool called "THAIST" (Theological Artificial Intelligence Simulation Tool) has the potential to improve

dialogue between scientific and religious communities, particularly in the context of understanding altruistic behavior. Metzler et al. (2004) suggest that THAIST can overcome obstacles to communication and serve as a valuable resource for fostering interdisciplinary dialogue.

However, Bhuiyan (2023) notes some concerns raised by Beth Singler (2017), Assistant Professor in Digital Religions at the University of Zurich, about the accuracy of ChatGPT and chatbots using large language models. Singler (2017) observes that these technologies prioritize responses for conversational flow over precision, posing a potential issue for religions like Judaism and Islam that heavily rely on textual sources. She expresses worry about a potential reshaping of the traditionally accurate and patient theological knowledge that has been shared for centuries, emphasizing that ChatGPT operates as a correlation machine rather than a knowledge-finding one, essentially predicting the likelihood of the next word rather than providing information.

4.5. Data Analytics for Interreligious Initiatives

The prominence of ID has grown significantly within the global religious context. This heightened attention is often linked to responses to globalization, which has expanded opportunities for individuals to encounter a variety of religions (Bainbridge 2003; Patel 2018). It is essential to monitor the evolution of interreligious initiatives to establish a comprehensive record of the advancements and sustained efforts in this realm. AI can play a crucial role, particularly in the collection and analysis of data.

Data analytics involves the examination of extensive datasets from various domains, encompassing industrial processes, business operations, textual and structured data (Runkler 2020). In industrial contexts, data analytics is pivotal for process optimization and improving a company's competitiveness through data sourced from sensors, control systems, monitoring, and planning. In the business realm, data analytics is applied to understand and drive various aspects such as customer behavior, sales, marketing, pricing, financials, risk assessment, and fraud detection (Runkler 2020). For instance, it aids in identifying products frequently bought together, thus enhancing cross-selling strategies. Data

analytics is also increasingly used for analyzing textual and structured data, indicating its evolving role in contemporary data analysis (Runkler 2020).

World religions can benefit from adopting successful practices observed in the secular sphere. While acknowledging that many religious traditions struggle to keep pace with rapid AI innovations, it is imperative to adopt a proactive stance, particularly in the context of ID. The significance of high-dimensional data analysis is evident in its capacity to provide a more profound comprehension of intricate interreligious dynamics.

In a world where diverse religious beliefs and practices intersect (Swanson 2019), analyzing multifaceted data can help identify patterns and commonalities, fostering more informed and constructive dialogues among religious communities. Social scientists use qualitative modes of inquiry to explore the detailed descriptions of the world that people see and experience (Pistrang and Barker 2012). By applying innovative qualitative modes of inquiry, researchers can uncover insights that may not be apparent through traditional approaches. This can enhance the effectiveness of ID efforts, promote greater tolerance, and facilitate meaningful discussions on shared values and challenges in an increasingly interconnected world.

AI can be used to analyze data related to interreligious initiatives, such as participation rates, feedback, and outcomes. This data-driven approach can help organizations refine their strategies and measure the impact of their efforts in promoting ID.

4.6. Social Media Analysis

Social media is now an essential tool for communication and dialogue, including ID, which has been crucial throughout human history. By connecting diverse individuals and facilitating information exchange, social media has the potential to alleviate conflicts arising from religious differences. To maximize its positive impact, users need skills to analyze, understand, and evaluate content and avoid biases (Amirfarhangi 2020).

AI, encompassing technologies like machine learning and natural

language processing, offers substantial opportunities, especially in the realm of social media (Sadiku et al. 2021). As AI continues to evolve, it holds the potential for significant impacts on social media networks, reshaping media markets, and promising a bright future. Jacoba's (2023) research emphasizes that leveraging data analytics and machine learning offers valuable insights into social issues discussed on Twitter. These insights can complement the Catholic Church's traditional methods of data collection, enabling a deeper understanding of the needs and concerns of the people it serves. Jacoba (2023) stresses that the Catholic Church should address social issues such as health, politics, and human affairs alongside its religious mission. By prioritizing these concerns and utilizing technology-driven insights, the Church can better fulfill its broader social and political role and meet the needs of its community.

AI tools harbor the potential to actively monitor social media platforms for discussions (Kaput 2022) related to religion, effectively identifying trends, sentiments, and potential areas of conflict. This analytical capability proves invaluable for addressing misunderstandings and fostering constructive online discussions, ultimately contributing to the broader objectives of ID.

Furthermore, AI holds the potential to make significant contributions to ID. Such contribution lies in facilitating ID collaboration. AI technologies can play a role in connecting individuals or organizations interested in engaging in ID and cooperation. By leveraging AI, it becomes feasible to identify common objectives and areas of interest among diverse groups, thus simplifying the process of working together on shared initiatives.

Moreover, AI's capacity extends to enhancing accessibility within religious contexts. Specifically, AI-powered tools can improve the accessibility of religious texts and resources, catering to individuals with disabilities, including those with visual impairments. Features like text-to-speech and speech-to-text technologies can be harnessed to facilitate greater inclusivity.

Additionally, AI has a role to play in the ethical dimension of interreligious ethics. It can be employed as a tool for delving into ethical

questions and dilemmas associated with religion. This encompasses fostering discussions on topics such as the responsible use of technology within religious contexts and the moral considerations surrounding AI advancements in the realm of faith.

5. Call for Responsible Engagement

5.1. The Catholic Christian Viewpoint

While the author has not come across specific articles detailing the use of AI by the Roman Catholic Church in their ID activities, it appears that their focus lies on promoting responsible and ethical AI use in these discussions. The Pope has expressed a deep appreciation for ongoing dialogues, particularly those addressing the responsible use of technology, which he sees as open to religious values. Emphasizing the significance of dialogue between believers and nonbelievers on fundamental ethical, scientific, and artistic questions, the Pope considers it a pathway to peace and integral human development (Bishop's Conference of England and Wales 2023). He acknowledges the immense benefits of technology in fields like medicine, engineering, and communications, viewing them as evidence of human creativity and the noble responsibility to participate responsibly in God's creative action.

From a Catholic perspective, exploration of the Church's stance on AI reveals frequent addresses by the Pope and the Vatican on the matter in recent years. In November 2020, Pope Francis urged Catholics worldwide to pray for the ethical use of robotics and AI, emphasizing their subservience to humanity (McKeown 2022). Prior to this, in the spring of 2020, the Pontifical Academy for Life, with endorsements from technology giants Microsoft and IBM, advocated for the ethical and responsible application of AI. The endorsed declaration outlined six ethical principles for guiding AI development, encompassing transparency, inclusion, accountability, impartiality, reliability, and security and privacy, highlighting the Church's commitment to ensuring that AI serves humanity ethically (McKeown 2022).

Pope Francis, as articulated by Pecorario (2023) of the Vatican Dicastery for Promoting Integral Human Development, challenges the concept of technological neutrality and underscores the necessity for ethical and accountable interactions with technology. This includes technologies like AI, which are increasingly recognized as intertwined with systemic power dynamics, prompting concerns about their impacts on relationships with others and the natural world. Pecorario's perspective also underscores the importance of accountability and multilateralism in governing technology, addressing the digital divide, ensuring justice and equity in technology access, and contemplating the moral dimensions of AI in defense and security.

Pope Francis advocates for a holistic approach to technology that combines ethical, moral, and technological considerations with interreligious dialogue and collaboration (Lubov 2023This approach seeks to foster a new humanism that integrates philosophical, ethical, and technological aspects for the common good.

5.2. The Buddhist Viewpoint

From a Buddhist viewpoint, as elucidated by Lin (2023), the growing influence of AI technology necessitates thoughtful ethical considerations. It is argued that AI, lacking the capacity for suffering and conscience, presents challenges to conventional ethical frameworks. Rather than merely being passive subjects of ethics, AI should be subjects of ethical discourse, with a primary focus on robotic entities. Despite their lack of definite moral status, Lin (2023) asserts that robots cannot be entirely devoid of moral significance, and humans, with their capacity for moral reflection, bear responsibility for the development and societal role of AI technologies. This perspective explores the potential for fostering spiritual growth by recognizing the interconnectedness between humans and AI.

In short, the Buddhist perspective offered by Lin (2023) suggests that by adopting a middle-way approach, acknowledging the uniqueness of human intelligence, and understanding the complex relationship between humans and AI, we can envision a future where the emergence of robots does not threaten humanity but instead ushers in an era characterized by harmony and coexistence.

5.3. Islamic Viewpoint

Regarding Islam, the literature surveyed for this research did not provide good information about the role of AI in ID. However, scholars acknowledge that there is no doubt that AI development has significantly changed the world, and Muslims are no exception. Formulated in the research labs of the Silicon Valley, AI is deeply rooted in secular ideals of progress (NAwi 2021). Still, as AI goes global, advocates of different ethical traditions are weighing in, often calling for greater regulation of the technology. Muslim AI experts in particular, have reignited a long-standing debate about the relationship between modern liberalism and Islam. Muslim scholars ask, "must algorithms be allowed to play God?" (NAwi 2021). The response to this issue is crucial because there are numerous advantages and benefits of AI.

Understanding the Quran is a grand challenge for society, for western public education, for Muslim-world education, for knowledge representation and reasoning, for knowledge extraction from text, for systems robustness and correctness, and for online collaboration. Atwell et al. (2011) propose the construction of the Quranic Knowledge Map to address the fact that understanding the Quran is a major new grand challenge for computer science and AI. Hassoon et al. (2018) recommends a development of an Islamic ethical framework in regulating the use of AI product, especially for the Muslim community.

5.4. Hindu Viewpoint

In the context of Hinduism, existing literature lacks information regarding the role of AI in ID. Nevertheless, various articles addressing ethical concerns related to AI have been published on Google, with Pancane (2021) being among the contributors. While the Hindu perspective on the role of AI in ID remains unexplored, research in other domains has been conducted. For instance, Merliana (2022) conducted research on enhancing the quality of Hindu education, asserting that technology, aligned with Hindu religious norms, can influence education as a manifestation of digital culture. Employing a descriptive qualitative method with a literature review approach, Merliana (2022) argues that technological involvement in the era of society 5.0 is integral to

improvement. Embracing digital culture facilitates the enhancement of Hindu education quality, considering factors intrinsic to digital culture.

Abhivardhan (2021), representing the Hindu perspective in India, underscores the necessity for AI ethics to be deeply ingrained in the cultural, philosophical, and civilizational values of the country. This viewpoint underscores the crucial role of civilizational states in shaping AI ethics policies and emphasizes the significance of incorporating cultural and philosophical dimensions in the formulation of AI-related policies.

In summary, across various world religions, there is a common thread of ethical concern and a call for responsible and holistic engagement with AI. Leaders and scholars from different faith traditions emphasize the need to approach AI with ethical mindfulness, ensuring that its development and deployment align with moral values and principles. While recognizing the potential benefits of AI, there is shared apprehension about its impact on human relationships, nature, and societal power dynamics. These concerns underscore the importance of accountability, justice, equity, and ethical frameworks in the governance of AI technology. Additionally, ID is seen as a means to promote openness, respect, and shared problem-solving among individuals of diverse faiths, fostering a collaborative approach to addressing the ethical challenges posed by AI. Overall, world religions converge in advocating for ethical, responsible, and interreligious-driven approaches to navigate the complex ethical landscape of AI.

6. Summary, Conclusion, and Recommendations

In the endeavor to investigate the role of AI in ID and taking into account the constraints of the existing articles and literature examined in this paper, it is evident that AI's potential application in ID has not received substantial attention. Nevertheless, it is noteworthy to state that various religions express significant apprehension regarding the ethical ramifications associated with the utilization of AI. This common concern on AI can be the starting point of ID about AI and perhaps in a manner which is enhanced or augmented by AI.

AI's potential contributions to ID can be far-reaching and diverse, if maximized creatively and carefully. It can act as a bridge builder, helping to overcome linguistic barriers through language translation and interpretation. AI-driven text and sentiment analysis can empower stakeholders to delve deeper into religious discussions, unearthing nuanced emotional undercurrents and identifying potential areas of tension. Recommendation systems have the potential to encourage individuals to explore and appreciate diverse religious perspectives, promoting engagement and fostering interreligious connections. Chatbots and virtual assistants emerge as versatile tools, facilitating meaningful conversations about religion, providing information, and promoting understanding among individuals of different faiths. In the era of data, AI can empower religious leaders to re-evaluate their ID strategies, offering insights and measurements of their impact. It can further extend its reach to social media analysis, allowing for the monitoring of religious discussions and sentiment trends, enabling more constructive online dialogues.

Beyond these practical applications, AI's potential in fostering harmony transcends mere functionality. It can foster collaboration among diverse faith groups, connecting them based on shared objectives and interests. It champions accessibility, ensuring that religious texts and resources are available to everyone, including those with disabilities. Additionally, AI engages the various faiths in ethical discussions, delving into the responsible use of technology within religious contexts and exploring the moral implications of AI's progression within faith.

Based on this, the following recommendations are proposed: First, *Leverage AI for Interreligious Initiatives:* Religious organizations involved in ID should explore AI's potential for data analysis to refine strategies and assess the impact of their efforts. AI-powered tools can enhance program effectiveness and help measure the success of ID initiatives.

Second, *Enhance AI-Powered Education.* Develop AI-driven educational tools and resources that promote interreligious understanding. These tools could include language translation apps, recommendation systems for religious texts, and chatbots that facilitate

interreligious conversations.

Third, *Foster AI-Enabled Collaboration.* Create platforms or networks that use AI to connect individuals or organizations interested in ID. AI algorithms can identify common objectives and areas of interest, simplifying the process of working together on shared initiatives.

Fourth, *Promote Ethical AI Discussions.* Encourage discussions on the ethical implications of AI in religious contexts. Explore topics such as responsible technology use, privacy, and the role of AI in shaping religious discourse.

Fifth, *Support AI Research in Religious Studies.* Allocate resources to research AI's impact on religious studies and ID. Encourage interdisciplinary research that combines AI expertise with religious studies to drive innovation in this field.

Finally, it is recommended that the different world religions should invest on technological facilities that could enhance collaboration and dialogue among faith-based communities. Christians, Buddhists, Hindus, Muslims, and adherents of all other faiths ought to unite in establishing a framework to guarantee the responsible use of AI. This involves gaining knowledge about AI, contemplating the ethical and moral dilemmas it poses, and actively participating in its creation and regulation. Through interreligious collaboration, believers can utilize this technology in a manner that upholds reverence for God and contributes to the well-being of humanity, fulfilling our collective responsibility to ensure its ethical use.

In conclusion, the age of algorithms presents an unprecedented opportunity to cultivate harmony among different faith communities. AI's transformative capabilities in ID offer the potential to break down barriers, encourage understanding, and facilitate conversations that transcend religious divides. As we embrace AI's promise and advance its responsible development, we pave the way for a more harmonious world where diverse beliefs coexist and thrive, guided by the principles of compassion, empathy, and mutual respect. Harmony in the age of algorithms is within reach, and AI is the key that unlocks its door.

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Religious Prophetic Voices to Affect the Course of Technological Development

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Abstract

In an era where advanced technologies permeate daily life, innovations like Augmented Reality (AR), Mixed Reality (MR), Automated Weapon Systems (AWS), and Chatbots such as ChatGPT are omnipresent, influencing diverse sectors from homes and schools to hospitals and military intelligence. While these technologies offer substantial benefits, simplifying various aspects of life, they also present a myriad of challenges that, if left unaddressed, could impede the creative purposes of God. This article explores the multifaceted issues arising from advanced technologies, including unemployment, discrimination, judicial injustices, military escalations, and disinformation, all of which jeopardize global peace. Ethical concerns and regulatory frameworks for these technologies remain inadequately addressed on a universal scale, particularly from a religious standpoint.

The proposed solution is prophetic dialogue, advocating for proactive engagement between science and faith to confront the ethical and regulatory dilemmas associated with advanced technologies. While prophetic dialogue is not a novel theological concept, its specific application to the collaboration between technology developers and people of faith is an evolving concept. This dialogue, involving scientists, religious communities, and people of goodwill from various traditions, seeks to harness the diverse knowledge and ethics embedded in different religions to mitigate the adverse effects of advanced technologies. The article envisions

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that through prophetic dialogue, which incorporates the perspectives of diverse religious traditions, leaders and inventors can be influenced to address the challenges posed by advanced technologies. This collaborative effort aims to preserve global peace, stability, and justice by appealing to the collective conscience of world leaders and innovators, fostering a harmonious coexistence between technological progress and ethical considerations.

Keywords: *digital technology, prophetic dialogue, technological development, digital future*

1. Introduction

The world has seen great improvements in different forms of technologies. In fact, these technological advancements have improved the quality of life and continue to do so. In factories, childcare, aged-care homes, physiotherapy, healthcare delivery, aviation among others, these new technological advancements are revolutionising society and lives. From self-drive cars, delivery drones, smart home devices etc., everyday life is becoming more comfortable. One can confidently say that through advanced technologies, humankind is gradually being set free, since most time and energy consuming jobs of yesteryears are being executed efficiently and quickly by new technologies, for example robots. However, despite the innumerable opportunities of advanced technologies, these technological advancements have also raised questions and even posed dangers in the very areas of society and life they aim to improve, particularly around the areas of ethics, human rights and regulation.

This paper aims to specifically highlight some of the potential threats these new technological evolutions pose to humanity. But as advanced technologies are realities of life today, churches and religious adherents cannot stay indifferent to the problems of advanced technologies. In view of the challenges and threats posed by the new advanced technologies, I propose prophetic dialogue as a way of engaging the stakeholders, churches and the other faiths to tackle the challenges some of these advanced technologies pose. Anthony Le Duc has described prophetic dialogue in this instance as "a pro-active attitude and strategy

of engaging with the various sectors to ensure that the Church continues to exert the proper influence over the course of human development."[2] And so, even though prophetic dialogue is not a new theological concept, the specific dialogue between faith leaders and advanced technology developers is still a new area that this paper seeks to delve into. The involvement of prophetic voices, i.e. the different religions and their adherents is crucial as it would bring a religious outlook to development, hence keeping in check soulless development that is on the rise nowadays.[3]

2. The Christian View on Science and Technology

Even though the biblical narration of creation says that God had finished the work God had been doing by the seventh day (Gen. 2:1-2), creation has not ended. Being made in the image of God and hence sharing in God's creative power, God has made humans co-creators who continue to advance the work of creation. Benedict XVI acknowledged how technology helps humankind to exercise stewardship and dominion (Gen.1:26-28) over matter. Technology…is a response to God's command to till and to keep the land (cf. Gen 2:15) that God has entrusted to humanity, and it must serve to reinforce the covenant between human beings and the environment, a covenant that should mirror God's creative love.[4]

Likewise, Vatican II's Pastoral Constitution on the Church in the Modern World, *Gaudium et Spes* puts it succinctly when the Church Fathers explained, "Thus, far from thinking that works produced by man's own talent and energy are in opposition to God's power, and that the rational creature exists as a kind of rival to the Creator, Christians are convinced that the triumphs of the human race are a sign of God's grace and the flowering of His own mysterious design."[5]

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[2] Anthony Le Duc, "Prophetic Dialogue as Approach to the Church's Engagement with Stakeholders of the Technological Future," SSRN Electronic Journal (2023): 2, DOI: 10.2139/ssrn.4461295.

[3] John Paul II, *Redemptoris Missio*, Encyclical Letter (1990), no. 59.

[4] Benedict XVI, *Caritas in Veritate*, Encyclical Letter (2009), no. 69.

[5] Vatican Council II, *Gaudium et Spes,* Pastoral Constitution on the Church in the Modern World (December 7, 1965), no. 34, https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651207_gaudium-et-spes_en.html.

The Compendium of the Social Doctrine of the Catholic Church states that "the Catholic Church is in no way opposed to progress, rather she considers science and technology are the wonderful product of a God-given human creativity, since they have provided us with wonderful possibilities, and we all gratefully benefit from them."[6]

From the above-mentioned, it is indicative that the Christian view on science and technology is positive. However, science and technology must always seek to promote the quality of life and the common good. Pope John Paul II beckoned humanity "to use science and technology in a full and constructive way, while recognizing that the findings of science always have to be evaluated in the light of the centrality of the human person, of the common good and of the inner purpose of creation."[7] Despite the advancement and positive impacts of Artificial Intelligence (AI), Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR), among others, there are still social injustice, socio-economic, and political problems caused by these technological messiahs. The following section discusses some of the challenges these technological advancements pose. Fundamentally, the issues raised demonstrate that these technologies can replace and displace human beings in different facets of life.

3. Negative Effects of Some Advanced Technologies

3.1. Unemployment

With the advent of robots and AI, some people have been rendered unemployed and the rate of unemployment is gradually increasing in certain parts of the world.[8] Acemoglu and Restrepo, in their empirical

[6] Pontifical Council for Justice and Peace, *To His Holiness John Paul II Master of Social Doctrine and Evangelical Witness to Justice and Peace*, Compendium of the Social Doctrine of the Church (2004), no. 457.

[7] John Paul II, *Common Declaration of John Paul II and the Ecumenical Patriarch His Holiness Bartholomew I*, Common Declaration on Environmental Ethics (June 10, 2002).

[8] Carl Benedikt Frey and Michael Osborne, "The Future of Employment: How Susceptible are Jobs to Computerisation?" Oxford Martin School, September 17, 2023, https://www.oxfordmartin.ox.ac.uk/downloads/academic/future-of-employment.pdf.

work studying the link between industrial robots and unemployment in the US between 1990 and 2007, observe:

> In the most exposed areas, between 1990 and 2007 both employment and wages decline in a robust and significant manner (compared to other less exposed areas). Quantitatively, our estimates imply that the increase in the stock of robots (approximately one new robot per thousand workers from 1993 to 2007) reduced the employment to population ratio in a commuting zone with the average US exposure to robots by 0.37 percentage points, and average wages by 0.73 percent, relative to a commuting zone with no exposure to robots.[9]

Hitherto, a factory job at a processing line that would have required a few hundred workers is now being executed by one robot. White collar jobs have not been spared as many secretarial and clerical jobs are now being done by robots. More and more, jobs are being lost to computers and robots. With a text prompt and a little bit of description, Generative AI is doing what artists would have hitherto done for a fee. Apart from Generative AI taking over artists' jobs, it is also using pre-existing works of artists without their permissions hence creating copyright breaches.[10] What becomes of these employees? Although some reports claim that new jobs would be created to replace the lost ones and suggest that people would need to undergo training for these emerging roles,[11] the future still appears pessimistic, especially for the less tech-savvy or the uneducated, as they might face challenges in working with sophisticated AI. It must be mentioned that having a job is a human right, as the Church rightly observes, "the human rights that

[9] Daron Acemoglu and Pascual Restrepo, "Robots and Jobs: Evidence from US Labour Markets," *Journal of Political Economy* 128, no. 6 (2020): 4, DOI: 0022-3808/2020/12806-0004$10.00.

[10] ABC News In-depth, "Chatbots, Deepfakes and Love: How AI is Changing Our Lives," *ABC NEWS*, May 8, 2023, https://www.youtube.com/watch?v=Fy0HbbKtM_g&pp=ygUPQUkgRm91ciBDb3JuZXJzhttps://www.youtube.com/watch?v=Fy0HbbKtM_g&pp=ygUPQUkgRm91ciBDb3JuZXJz.

[11] James Manyika et al., "Jobs Lost, Jobs Gained: What the Future of Work Will Mean for Jobs, Skills, and Wages" *McKinsey and Company*, November 28, 2017, https://www.mckinsey.com/featured-insights/future-of-work/jobs-lost-jobs-gained-what-the-future-of-work-will-mean-for-jobs-skills-and-wages#part1.

flow from work are part of the broader context of those fundamental rights of the person,"[12] and being unemployed is an infringement of one's basic rights.

> Work is a fundamental right and a good for mankind, a useful good, worthy of man because it is an appropriate way for him to give expression to and enhance his human dignity. The Church teaches the value of work not only because it is always something that belongs to the person but also because of its nature as something necessary. Work is needed to form and maintain a family, to have a right to property, to contribute to the common good of the human family. In considering the moral implications that the question of work has for social life, the Church cannot fail to indicate unemployment as a "real social disaster", above all with regard to the younger generations.[13]

And so, despite AI bringing efficiency to the labour market, it could on the other hand create joblessness due to its potential to displace and replace workers. Joblessness when created could in turn lead to social unrests, increase in crimes, homelessness, mental health disorders, political fragmentations, economic hardships, anti-immigrant sentiments and xenophobia.[14] The International Labour Organization in its 2011 and 2013 World of Work Reports clearly prove that unemployment particularly among young people is a driving force for social unrests.[15] Also, Yemareshet Demeke, in his research on five Intergovernmental Authority on Development (IGAD) member states in Eastern Africa, demonstrates that youth unemployment is a major cause of political instabilities in these countries.[16]

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[12] John Paul II, *Laborem Exercens*, Encyclical (1981), no. 16.

[13] Compendium of the Social Doctrine of the Church, no. 287.

[14] Amitai Etzioni and Oren Etzioni, "Should Artificial Intelligence be Regulated?" *Issues in Science and Technology* 33, no. 4 (Summer 2017): 35-36.

[15] International Labour Organization, "World of Work Report 2011: Making Markets Work for Jobs," International Institute for Labour Studies, accessed September 22, 20203, https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_166021.pdf.

[16] Yemareshet Hailu Demeke, "Youth Unemployment and Political Instability: Evidence from IGAD Member Countries," *Cogent Economics & Finance* 10, no. 1 (2022). DOI: 10.1080/23322039.2022.2079211

> The instability generated by automation is already a potential driving force in the rise of populist nationalist movements around the world. As powerful interest groups such as coal workers experience significant decline, they become ever more radical in their desire to see change to return to an old status quo that is impossible to achieve. This can drive political polarization.[17]

The social teachings of the Catholic Church had forewarned about these instabilities emerging from unemployment when they asserted, "A society in which this right (the right to work-emphasis mine) is systematically denied, in which economic policies do not allow workers to reach satisfactory levels of employment, cannot be justified from an ethical point of view, nor can that society attain social peace."[18] If these new technologies are rendering workers redundant and in turn leading to social, psychological and political problems, religious men and women cannot stay unconcerned but wake up and be the voice especially for the voiceless who are being disenfranchised by advanced technologies.

3.2. Discrimination and Biases

One sin that the Bible has dealt with in both the Old and New Testaments is the sin of discrimination. St. Paul in his letter to the Galatians asserts the equality of all believers, declaring, "There is neither Jew nor Gentile, neither slave nor free, nor is there male and female, for you are all one in Christ Jesus" (Gal. 3:28). Furthermore, the Second Vatican Council affirmed the equality of all people:

> With respect to the fundamental rights of the person, every type of discrimination, whether social or cultural, whether based on sex, race, colour, social condition, language or religion, is to be overcome and eradicated as contrary to God's intent. For in truth, it must still be regretted that fundamental personal rights are still not being universally honoured.[19]

[17] Michael C. Horowitz, Gregory C. Allen, Edoardo Saravalle, Anthony Cho, Kara Frederick, and Paul Scharre. "Artificial Intelligence and International Security," *Center for a New American Security*, July 10, 2018, https://www.cnas.org/publications/reports/artificial-intelligence-and-international-security.

[18] John Paul II, *Centesimus Annus*, Encyclical Letter (1991), no. 43.

[19] Vatican Council II, *Gaudium et Spes*, no. 29.

It is however worrying to note that some of these new advanced technologies are becoming means of discrimination. With the introduction of biometric tracking and video surveillances, governments and agencies are now able to monitor the movements and lives of their citizens. This, in the first place, is breaching people's rights of privacy and above all, some of the data collected are in some instances being used by governments to form biases. According to Maria Stefania Cataleta, in the field of advanced technologies, "… one can ascertain that 'algorithmic prejudices' or bias also exist, which are capable of causing social discrimination. Indeed, the increase of available data and individual computing capacities of AI systems risks amplifying discrimination."[20] And so, be it AI, AR, MR, VR, and almost all technological advancements depend hugely on the algorithms the programmer puts in there. The intelligence of these advanced technologies function because programmers or groups of programmers have decided on their ethical principles and how they should react to different people, genders, religions, and social circumstances. If a facial recognition AI is programmed with data specific to male Caucasians, it will accurately identify individuals belonging to that demographic. Conversely, if the data is based on black men, the AI will recognize individuals from that specific group.

> Indeed, research conducted on different facial recognition systems (such as IBM Watson, Microsoft Cognitive Services and Face++) has shown that some ethnicities are treated in a more imprecise way compared to others. Notably, identification accuracy for Caucasian men was 99%, but only 34% for women with dark complexion. This is because algorithms of these systems are based on subject-data inputs which are prevalently male and of light complexion.[21]

There are instances in the United States where some AI technologies are believed to have discriminated against African Americans, Asians, and women. A classic example is a lawsuit that was brought against the company Palantir Technologies for having

[20] Maria Stefania Cataleta, "Humane Artificial Intelligence: The Fragility of Human Rights Facing AI," East-West Center, March 2, 2023, http://www.jstor.org/stable/resrep25514.

[21] Cataleta, "Humane Artificial Intelligence," 4.

discriminated against Asian job applicants in the United States.[22] Also, there is a study on Google that discovered ads for executive level positions were more likely to be shown to men than women. Anja Lambrecht and Catherine Tucker in their field test on algorithmic biases prove that STEM ads that were meant to be gender-neutral were mostly shown to 20 percent more to men than women. According to them, "This happened because younger women are a prized demographic and are more expensive to show ads to. An algorithm which simply optimizes cost-effectiveness in ad delivery will deliver ads that were intended to be gender-neutral in an apparently discriminatory way." The authors further explain that the discriminatory behavior may not necessarily be attributed to a programmer's actions but could arise from machine learning, which, in turn, is influenced by consumer behavior.[23] In a systematic literature review, Varsha enumerates specific instances where biases have been manifested by AI against individuals due to their gender, race, religion, and even socio-economic backgrounds.[24]

Again, it is believed that some people were more likely denied an insurance offer due to their data held by AI.[25] The biases of these advanced technologies are real, as have been witnessed in Australia's automated debt recovery scheme, popularly known as 'robodebt,' which disadvantaged most welfare recipients by making them pay non-existent debts. It is lamentable to observe the incidence of individuals who have taken their lives due to the error of an automated debt recovery scheme.[26]

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[22] Jessica Guynn, "Palantir Charged with Discriminating Against Asians," *USA Today*, September 26, 2016, https://www.usatoday.com/story/tech/news/2016/09/26/palantir-department-of-labor-discrimination-asians-lawsuit/91131284/.

[23] Anja Lambrecht and Catherine Tucker, "Algorithmic Bias? An Empirical Study into Apparent Gender-Based Discrimination in the Display of STEM Career Ads," *Management Science* 65, no. 7 (2019): 2966, https://doi.org/10.1287/mnsc.2018.3093.

[24] P.S. Varsha, "How Can We Manage Biases in Artificial Intelligence Systems: A Systematic Literature Review," *ScienceDirect* (2023): 3-4, https://doi.org/10.1016/j.jjimei.2023.100165.

[25] Ian Tucker, "'A White Mask Worked Better': Why Algorithms Are Not Colour Blind," *The Guardian*, May 28, 2017, https://www.theguardian.com/technology/2017/may/28/joy-buolamwini-when-algorithms-are-racist-facial-recognition-bias .

[26] David Taylor, "Federal Court Links Robodebt Scheme with Suicides, Approves Settlement," *ABC NEWS*, June 11, 2021, https://www.abc.net.au/radio/programs/pm/federal-court-links-robodebt-scheme-with-suicides/13384888.

Contrary to our shared belief that all human beings are made in the image of God and, therefore, possess fundamental equality, we must denounce all forms of biases based on race, gender, and other factors.[27]

3.3. Judicial Injustice

It is becoming common in law enforcement and judiciary systems to employ AI-augmented technologies particularly machine learning, to help facilitate policing and analysing huge amounts of criminal data.[28] From the use of facial recognition techniques, mobile phone data extraction, social media data extraction to biometric data systems, policing and paralegal jobs are becoming easier and more efficient. By utilizing pre-recorded data of offenders, AI technology can aid a judge in assigning a score to predict the likelihood of a suspect fleeing, reoffending, and experiencing recidivism, influencing decisions accordingly.[29] Even though the final judgement is left to the discretion of the judge, the outcome is very much influenced by the predictions made by a machine. On the flipside, it needs to be mentioned that the biases, discriminations and breach of privacy mentioned above could be as well experienced when law enforcers and legal systems are making decisions based on someone's previously collected data. In a ProPublica investigation on algorithm in American society, it was revealed that some algorithms in the criminal justice system were biased against black offenders as it assigned them poor risk assessment scores.[30] Vatican News reports that Pope Francis has also spoken on this issue. According to Francis,

> In social and economic decision-making…we should be

[27] Vatican Council II, *Gaudium et Spes*, no. 29.

[28] Alexander Babuta and Marion Oswald, "Data Analytics and Algorithmic Bias in Policing," *Royal United Services Institute for Defence and Security Studies*, Accessed February 23, 2023, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/831750/RUSI_Report_-_Algorithms_and_Bias_in_Policing.pdf .

[29] Harry Surden, "Artificial Intelligence and Law: An Overview," *Georgia State University Law Review* 39, no. 4 (Summer 2019): 1332-1333.

[30] Julia Angwin et Al., "Machine Bias: There's Software Used Across the Country to Predict Future Criminals, and It's Biased Against Blacks," *ProPublica Website*, May 23, 2016, https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing.

> cautious about delegating judgments to algorithms that process data, often collected surreptitiously, on an individual's makeup and prior behaviour. He warned that such data can be "contaminated" by societal prejudices and preconceptions. A person's past behaviour…should not be used to deny him or her the opportunity to change, grow and contribute to society.[31]

Alexander Babuta and Marion Oswald in an interview with a police officer, had been informed of the possibility of introducing one's bias to AI-augmented technology which will in turn amplify the said bias in policing. The police officer intimated that during patrols,

> Young black men are more likely to be stopped and searched than young white men, and that's purely down to human bias. That human bias is then introduced into the datasets, and bias is then generated in the outcomes of the application of those datasets'. The effects of a biased sample could be amplified by algorithmic predictions via a feedback loop, whereby future policing is predicted, not future crime.[32]

Despite all the strides made by the use of technology in policing and the legal ecosystem, it is also clear that biased algorithms about people's past, socio-economic backgrounds, demographic, race, and religion could be used unjustly against them.[33] Just as the holy prophets in the Bible condemned injustices, particularly within the legal system, contemporary and future religious leaders, including pastors, imams, and others, should actively confront the biases inflicted upon people, particularly those belonging to minority groups.

3.4. Misinformation and Intellectual Dishonesty

Increasingly, it has become commonplace to doubt or question the information encountered, given the proliferation of disinformation generated by AI technologies.

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[31] Deborah Castellano Lubov, "Pope Francis Urges Ethical Use of Artificial Intelligence," *Vatican News,* March 27, 2023, https://www.vaticannews.va/en/pope/news/2023-03/pope-francis-minerva-dialogues-technology-artificial-intelligenc.html.

[32] Babuta and Oswald, "Data Analytics and Algorithmic Bias in Policing."

[33] Varsha, "How Can We Manage Biases," 4.

> Disinformation is not new, but in a digital era where most of the global population is connected, disinformation is gaining traction as an effective tool of asymmetric warfare to influence and destabilise states while remaining below the threshold of war….Russia notoriously influenced the 2016 US presidential election by purchasing ads on Facebook and Google, utilising automated bot accounts on Twitter, and using troll farms to create and spread disinformation online ahead of the election and disrupt the American democratic process.[34]

In the recently concluded Turkish Presidential election, presidential candidate Muharrem İnce withdrew from the race a few days before the election due to the viral spread of a sex tape on the internet. Intriguingly, Mr. İnce denied his involvement in the video, asserting that it was created by a foreign country using deepfake AI to tarnish his character. He said, "If I had such images of myself, they were taken secretly in the past. But I do not have such an image, no such sound recording. This is not my private life, it's slander. It's not real."[35] Not only is it a human rights abuse but also breach of people's privacy. In a democratic dispensation, maligning one's political opponents with AI-generated pornographic videos in order to out-race them in an election, defeats the very existence of democracy. Political enthusiasts are on the alert for the US presidential election now coming, on how AI-generated disinformation could influence that election. The CEO of OpenAI at a hearing before US Senate subcommittee on privacy, law and technology advised that "the more general ability of these models to manipulate, to persuade, to provide sort of one-on-one interactive disinformation…given that we're going to face an election next year and these models are getting better. I think this is a significant area of concern."[36]

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[34] Michael Raska and Richard A. Bitzinger, *The AI Wave in Defence Innovation: Assessing Military Artificial Intelligence Strategies, Capabilities, and Trajectories* (Milton: Taylor & Francis Group, 2023).

[35] Ruth Michaelson, "Muharrem İnce Pulls Out Just Days from Close Election Race, Saying Alleged Sex Tape Is Deepfake." *Guardian,* May 11, 2023, https://www.theguardian.com/world/2023/may/11/muharrem-ince-turkish-presidential-candidate-withdraws-alleged-sex-tape.

[36] Cristina Criddle and Hannah Murphy, "OpenAI Chief Says New Rules Are Needed to Guard Against AI Risks," *Financial Times*, May 17, 2023, https://www.ft.com/content/aa3598f7-1470-45e4-a296-bd26953c176f.

In early 2023, a photo of Pope Francis in a white puffer jacket went viral on social media but was later found out that it was deepfake. The photo is believed to have been created by the Midjourney AI tool, an AI that creates images on text prompts.[37] Furthermore, in January 2023, Bill Gates participated in an interview on the renowned Australian Broadcasting Corporation (ABC) show. Subsequently, "an excerpt"[38] from the interview went viral, featuring Gates being questioned by Sarah Ferguson with inquiries such as, "What have you contributed to the world?" and "What exactly makes you, a computer engineer who didn't even program his initial product himself, a valid representative of the pharmaceutical industry?"[39] In the excerpt, Gates was berated by Ferguson. However, upon viewing the complete interview on the official YouTube channel of ABC, it becomes evident that those specific questions were never posed. This incident is another example of a circulating deepfake video. Furthermore, a more troubling issue involves what has been labeled as deepfake pornography or a sex tape.[40] This refers to a specific type of deepfake wherein realistic pornographic videos are generated using individuals' photos. These photos can be sourced from anyone on the internet, with a particular emphasis on images of celebrities that are subsequently altered to appear nude, or "nudified." In a recent ABC Four Corners documentary, it was disclosed that prominent Australian women and celebrities experienced image theft from the internet, resulting in the creation of deepfake pornographic videos using their photos.[41] These instances exemplify the utilization of AI-generated tools to disseminate misinformation and tarnish the established reputations of individuals. The increasing

[37] Chris Stokel-Walker, "Should You Be Worried That an AI Picture of the Pope Went Viral?" *New Scientist,* March 27, 2023, https://www.newscientist.com/article/2366312-should-you-be-worried-that-an-ai-picture-of-the-pope-went-viral/.

[38] https://twitter.com/AVSBLR/status/1633407967965106176?s=20.

[39] Reuters Fact Check, "Fact Check-Video of Australian News Interview Featuring Bill Gates Edited Using AI," *Reuters,* March 23, 2023, https://www.reuters.com/article/factcheck-bill-gates-interview-idUSL1N35V1UV.

[40] Daniel Story and Ryan Jenkins, "Deepfake Pornography and the Ethics of Non-Veridical Representations," *Philosophy & Technology* 36, no. 3 (2023): 1-22, https://doi.org/10.1007/s13347-023-00657-0.

[41] ABC News, "Chatbots, Deepfakes and Love: How AI is Changing Our Lives." May 8, 2023, https://www.youtube.com/watch?v=Fy0HbbKtM_g&pp=ygUPQUkgRm91ciBDb3JuZXJzhttps://www.youtube.com/watch?v=Fy0HbbKtM_g&pp=ygUPQUkgRm91ciBDb3JuZXJz.

challenge of distinguishing between falsity and truth[42] raises concerns about the potential escalation of revenge porn and deep fakes' impact on the credibility of news, elections, and contests.

In addition, another topic being discussed today concerns intellectual dishonesty/cheating, particularly with the advent of ChatGPT. ChatGPT, developed by the San Francisco-based start-up OpenAI, was launched on November 30, 2022. "It's part of a new generation of AI systems that can converse, generate readable text on demand and even produce novel images and video based on what they've learned from a vast database of digital books, online writings and other media."[43] ChatGPT is a remarkable and invaluable AI tool revolutionising the field of information and knowledge-seeking. However, as ChatGPT responds to nearly every question posed, albeit in a generic manner at times, certain educators and policymakers are beginning to scrutinize its ethics, particularly when employed in the creation of academic papers. Will students truly engage in learning and research if ChatGPT is tasked with writing their essays and exams? This will not only produce lazy future leaders but less critical thinkers. It is noteworthy that certain Australian and American states and institutions have banned ChatGPT within their jurisdiction.[44] These issues of misinformation and cheating that result from the use of AI tools need to be attended to by experts and the prophets of our time in a forum of dialogue.

3.5. Military Escalations

Historically, misinformation has been used by some countries or even ethnicities[45] as a tool to fester armed conflicts. The US administrations

[42] Raska and Bitzinger, *The AI Wave in Defence Innovation*, 20-22.

[43] Associated Press, "New York City School Officials Block Access to Controversial Artificial Intelligence ChatGPT to Stop Students Generating Essays," *ABC NEWS*, January 8, 2023, https://www.abc.net.au/news/2023-01-08/artificial-intelligence-chatgpt-chatbot-explained/101835670.

[44] Liam Beatty, "Australia's Public Education Systems Bans Chatbot," *ABC NEWS*, February 3, 2023, https://www.news.com.au/national/australias-public-education-systems-bans-chatbot/news-story/6360c35f7ba84da8c9f1263015a0da57.

[45] David Yanagizawa-Drott, "Propaganda and Conflict: Evidence from the Rwandan Genocide," *Quarterly Journal of Economics* 129, no. 4 (2014): 1947–1994. http://www.hks.harvard.edu/fs/dyanagi/Research/RwandaDYD.pdf.

of Polk in the 1840s, McKinley in the late 1890s, Johnson in 1964, and Bush in 2003 are believed to have used misinformation to militarily attack other nations.[46] A common factor that could lead to military escalations today is AI-generated disinformation. In a recent deepfake video, the Ukrainian president, Volodymyr Zelenskyy was seen asking his troops to lay down their weapons and surrender to the Russians in the war. Quickly, Zelenskyy reacted to the video and explained that it was fake.[47] What will happen when such a deepfake video is released about a nuclear attack on North Korea by South Korea? Though generally leaders might verify such a video before reacting, it could well trigger a possible instantaneous pre-emptive reaction when it is mistakenly unverified. This is just an example of how AI-generated deepfakes could trigger military escalations.

Gradually, global powers are entrusting lethal authority to AI technologies in their military endeavors. There is indeed a proliferation of these advanced warfare technologies, and a continuous accumulation of such technologies is often considered indicative of a nation's military prowess. There is a race[48] between countries to outrun one another when it comes to the invention of these technologies for war. "Rapid advancements in the fields of AI-robots have led to an international arms race for the future of the battlefield…. Proliferation will result in large numbers-hundreds of thousands[49] to millions-of AI-robots on the battlefield."[50]

[46] Daniel Benjamin and Steven Simon, "How Fake News Could Lead to Real War," *Politico Magazine*, July 5, 2019, https://www.politico.com/magazine/story/2019/07/05/fake-news-real-war-227272/.

[47] Bobby Allen, "Deepfake Video of Zelenskyy Could Be "Tip of the Iceberg" in Info War, Experts Warn," *NPR*, May 16, 2022, https://www.npr.org/2022/03/16/1087062648/deepfake-video-zelenskyy-experts-war-manipulation-ukraine-russia.

[48] Yori Kamphuis and Stefan Leijnen, "Here's What You Need to Know About the New AI 'Arms Race'," *World Economic Forum*, February 22, 2021, https://www.weforum.org/agenda/2021/02/heres-what-you-need-to-know-about-the-new-ai-arms-race/.

[49] Tania Rabesandratana, "Europe Moves to Compete in Global AI Arms Race," *Science Policy* 360, no. 6388 (2018): 474, DOI: 10.1126/science.360.6388.474-a.

[50] Joachim von Braun, Margaret S. Archer, Gregory M. Reichberg and Marcelo Sanchez Sorondo, eds., *AI Robotics, Humanity: Opportunities, Risks, and Implications for Ethics and Policy* (Switzerland: Springer International Publishing, 2021), 141-143.

Pope John XXIII could not have been wrong then, and even today, when he said:

> There is a common belief that under modern conditions peace cannot be assured except on the basis of an equal balance of armaments and that this factor is the probable cause of this stockpiling of armaments. Thus, if one country increases its military strength, others are immediately roused by a competitive spirit to augment their own supply of armaments.[51]

In place of armaments, we can put AI-augmented technologies. The United States, China, Russia, North Korea, UK, Australia, etc. are all racing to outpace each other in warfare technologies, possibly as a means to deter potential adversaries. This competition among nations played out vividly in the recent 2023 Avalon Airshow in Australia where China and Russia were not invited.[52] Unmanned Aerial Vehicles (UAVs) and drones are being deployed for military intelligence, surveillance, reconnaissance (ISR), and even takedowns. Those who are in support of these autonomous AI warfare technologies observe that whereas soldiers might react out of anger, fear and fatigue thereby resulting in war crimes, the unmanned technologies experience no anger, fatigue, or fear and would not react irrationally.[53] Despite the precision, lack of fatigue, lack of fear and swiftness of these military technologies, it is becoming alarming when unmanned Lethal Automatic Weapons (LAWs) are used. James Johnson opines:

> Pre-delegating authority to machines and taking human judgment further out of the crisis decision-making process, might severely challenge the safety, resilience, and credibility of nuclear weapons in future warfare. The historical record is replete with examples of near nuclear misses, demonstrating the importance of human judgment in mitigating the risk of miscalculation

[51] Pope John XXIII, *Pacem in Terris*, Encyclical (1963), no. 110.

[52] Andrew Greene, "Australian-designed Lethal Drone to be Unveiled at Avalon Airshow," *ABC NEWS*, February 28, 2023, https://www.abc.net.au/news/2023-02-28/avalon-airshow-defence-air-force-drones/102028936#:~:text=The%20ABC%20can%20reveal%20that%20a%20new%20Australian-developed,is%20designed%20to%20be%20stored%20in%20shipping%20containers.

[53] Noreen Herzfeld, "Can Lethal Weapon Be Just?" *Journal of Moral Theology* 11, Special Issue 1 (2022): 78, DOI: 10.55476/001c.34124.

> and misperception (i.e., of another's intentions, redlines, and willingness to use force) between adversaries during crises.[54]

In instances of mechanical system failures, human judgement and even intuition have saved our world from nuclear wars.[55] An example of how human decision and intuition saved the world from nuclear war was a decision made by Lt. Col. Stanislav Petrov.[56] Whereas in a battlefield, soldiers could assess a situation, judge, and act ethically and legally on orders from superiors, with Ais, especially unmanned technologies, decision delegated to a machine would be made based on the data and algorithms programmed into the machines involved. In instances where human beings would possibly see less threat based on the context and scenario before them, unmanned automated systems would likely react as they have no conscience and ethics, therefore resulting in escalation and warfare. Noreen Herzfeld sheds further light on the quandary surrounding the use of Lethal Autonomous Weapons (LAWs) when she elucidates:

> The US has used "signature strikes" in Pakistan and Afghanistan, authorizing the use of force against any who fit certain behavioral profiles, such as transporting weapons or congregating as large groups of young men. This has, unfortunately, resulted in the targeting of wedding parties in a part of the world where the shooting of rifles is part of the traditional celebration and gender exclusivity separates male and female wedding participants. Discrimination requires a high level of context sensitivity, one that would be complex to program.[57]

This example of the US "signature strikes" is a clear illustration of digital dehumanisation as human beings are profiled, stereotyped, and life and death decisions about them are made by machines. Also,

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[54] James S. Johnson, "Artificial Intelligence: A Threat to Strategic Stability," *Strategic Studies Quarterly* 14, no. 1 (Spring 2020): 21.

[55] Patricia Lewis et al., "Too Close for Comfort: Cases of Near Nuclear Use and Options for Policy," *Chatham House Report,* April 2014, https://www.chathamhouse.org/sites/default/files/field/field_document/20140428TooCloseforComfortNuclearUseLewisWilliamsPelopidasAghlani.pdf.

[56] Dylan Matthews, "40 Years Ago Today, One Man Saved Us from World-Ending Nuclear War." *Vox*, September 26, 1983, https://www.vox.com/2018/9/26/17905796/nuclear-war-1983-stanislav-petrov-soviet-union.

[57] Herzfeld, "Can Lethal Weapon Be Just?" 78.

it's a case of algorithmic bias as pre-programmed datasets discriminate against young men with certain labels and identities. There is lack of accountability as LAWs can't be held legally accountable for war crimes.

Even though some argue that "human in the loop" warfare technologies would be safer as they can be controlled by human agents,[58] from what we know so far about these new advanced AI-augmented technologies such as the LAWs, new duplications of AI-augmented advanced conventional capabilities will heighten the risk of military escalation, especially unintended and accidental escalation.[59] The Campaign to Stop Killer Robots sums LAWs problems into the following factors: digital dehumanisation, algorithmic biases, loss of meaningful human control, lack of human judgement and understanding, lack of accountability, inability to explain what happened or why, lowering the threshold to war, and a destabilising arms race.[60] Against this backdrop, we need to reiterate the caution that the Second Vatican Council raised about using these scientific weapons in war:

> The horror and perversity of war is immensely magnified by the addition of scientific weapons. For acts of war involving these weapons can inflict massive and indiscriminate destruction, thus going far beyond the bounds of legitimate defence. Indeed, if the kind of instruments which can now be found in the armouries of the great nations were to be employed to their fullest, an almost total and altogether reciprocal slaughter of each side by the other would follow, not to mention the widespread devastation that would take place in the world and the deadly after effects that would be spawned by the use of weapons of this kind.[61]

Pope Francis astutely observes that, notwithstanding significant technological advancements, these innovations lack concurrent progress in human responsibility, conscience, and values. Consequently, caution is warranted regarding the individuals or entities entrusted with the

[58] Herzfeld, 74.

[59] Johnson, "Artificial Intelligence," 16.

[60] Stop Killer Robots, "Problems with autonomous weapons," accessed September 25, 2023, https://www.stopkillerrobots.org/stop-killer-robots/facts-about-autonomous-weapons/.

[61] Vatican Council II, *Gaudium et Spes*, no. 80.

deployment of such war technologies.[62] For the sake of peace and protection of lives, especially during these times of Russian-Ukraine war, potential war between China and Taiwan, North Korea against South Korea, there could be regulations guiding or even banning the use of these technologies in warfare as they can have devastating consequences on lives. After all, no war is truly justifiable and just,[63] hence there is no need for these warfare technologies in the first place.

Having enumerated several adverse outcomes associated with advanced technologies, a critical inquiry into potential solutions becomes imperative. Subsequently, the ensuing discussion advocates for the adoption of prophetic dialogue as a strategic approach to address the aforementioned challenges.

4. Prophetic Dialogue: A Response to the Negative Effects of Advanced Technologies

4.1. Prophetic Dialogue

One important way by which religious voices can engage with scientists and AI developers to address the above challenges is by employing "prophetic dialogue." But what is that? Both Stephen Bevans and Roger Schroeder explain that this term was coined during the Society of the Divine Word (SVD) during its 15th General Chapter in the year 2000. According to them, most of the Asian confreres had suggested that the SVD mission approach should be that of dialogue; however, the Latin American confreres considering their concern for the poor and oppressed had proposed that the SVD mission model should be prophetic. At the end of the day, a compromise was reached and hence the term "prophetic dialogue."[64] It is interesting to mention that the 2000 General Chapter did not really specify what prophetic dialogue is until the next General Chapter in 2006. Fr. Antonio Pernia, the then Superior General observed:

[62] Pope Francis, *Laudato Si'*, Encyclical (2015), nos. 105, 104.

[63] Pope Francis, *Fratelli Tutti*, Encyclical (2020), no. 258.

[64] Stephen B. Bevans and Katalina Tahaafe-Williams, eds., *Contextual Theology for the Twenty-First Century* (Cambridge: The Lutterworth Press, 2011), 103. Roger Schroeder, "Proclamation and Interreligious Dialogue as Prophetic Dialogue," *Missiology: An International Review* 41, no. 1 (2013): 50-51.

> My impression is that there was an initial general openness to, if not an altogether positive reception of, the 15th General Chapter's proposal of "prophetic dialogue" as the term that expresses best our SVD mission today. As a result, there was a general effort to try to understand the concept better. This can be seen in fact that "prophetic dialogue" became the theme of several gatherings of all kinds. On the other hand, however, it seems that, despite the general effort to understand it, "prophetic dialogue" did not quite capture the imagination of many of the confreres.[65]

The 16th General Chapter in 2006 observed that the two terms, 'prophetic' and 'dialogue' can sometimes seem contradictory but in fact they are not.

> The term "Prophetic Dialogue," at first glance, can seem self-contradictory. There is clearly tension between the two elements. This tension, however, can help overcome a too-limited understanding of both prophecy and dialogue: we might think that dialogue is only a sharing of ideas with others with no clear commitment to our own faith; we might also associate prophecy only with denunciation.[66]

Schroeder observes that there is tension between dialogue and prophecy, but it is a "synthesis in creative tension."[67] It may be important to understand individually what dialogue is and what it means to be prophetic. What then is dialogue? Pope Francis describes it in these words:

> Approaching, speaking, listening, looking at, coming to know and understand one another, and to find common ground: all these things are summed up in the one word "dialogue" …. Authentic social dialogue involves the ability to respect the other's point of view and to admit that it may include legitimate convictions and concerns. Based on their identity

[65] Generalate of the Society of the Divine Word, "Nuntius Societatis Verbi Divini," *Official Documents for Members Only*, Vol. XVI (2004-2008): 331.

[66] SVD Publications, "Documents of the XVI General Chapter," *In Dialogue with the Word*, nr. 6 (September 2006): 20-21.

[67] Schroeder, "Proclamation and Interreligious Dialogue as Prophetic Dialogue," 54.

> and experience, others have a contribution to make, and it is desirable that they should articulate their positions for the sake of a more fruitful public debate.[68]

In a spirit of dialogue, we openly, respectfully, authentically, and humbly engage with people of different cultures, religions, ideologies, and technological prowess to discover the inexhaustible riches and truth of God together. To be prophetic is to do as the prophets of old did, i.e., standing up for the truth by speaking against regimes and systems that disenfranchise, dehumanise, and obstruct the divine plan of God. Considering the issues raised above, which include unemployment, discrimination, judicial injustices, and military escalations, the following prophetic dialogue approaches can be proposed.

4.2. Dialogue Between Faith and Science (Scientists and Experts)

The Pontifical Council for Social Communications in its document "Ethics in Internet" indicated:

> That the Catholic Church, along with other religious bodies, should have a visible, active presence on the Internet [in advanced technologies-my words] and be a partner in the public dialogue about its development. The Church does not presume to dictate these decisions and choices, but it does seek to be of help by indicating ethical and moral criteria which are relevant to the process—criteria which are to be found in both human and Christian values."[69]

Pope Francis succinctly describes this dialogue between faith and science:

> Faith is not fearful of reason; on the contrary, it seeks and trusts reason, since "the light of reason and the light of faith both come from God" and cannot contradict each other. Evangelization is attentive to scientific advances and wishes to shed on them the light of faith and the natural law so that they will remain respectful of the centrality and supreme

[68] *Fratelli Tutti*, nos. 198, 203

[69] Pontifical Council for Social Communications, *Ethics in Internet*, no.18.

> value of the human person at every stage of life. All of society can be enriched thanks to this dialogue, which opens up new horizons for thought and expands the possibilities of reason. This too is a path of harmony and peace."[70]

A forum or a gathering should be organized, facilitating a conducive environment for individuals of various faiths, including Christians, Muslims, Jews, and others, to convene. During such gatherings, participants can engage in a respectful and reciprocal exchange of ideas, striving collaboratively to discern viable solutions for the aforementioned concerns. A relevant example of this proposed dialogue could be like the 'Minerva Dialogues'.

> [The 'Minerva Dialogues' is] a high-level annual gathering of scientists and experts, organized by the Vatican's Dicastery for Education and Culture…. The assembly brings together experts from the world of technology–scientists, engineers, business leaders, lawyers and philosophers and representatives of the Church – curial officials, theologians and ethicists – with the aim of studying and fostering greater awareness of the social and cultural impact of digital technologies, particularly artificial intelligence.[71]

Another forum for dialogue has been the Rome Call for AI Ethics[72] which brings together the Pontifical Academy for Life, Microsoft, IBM and FAO and even the other Abrahamic religious leaders to deliberate on algorethics that would guide the development of AI that serves the common good.[73] An interesting example of a successful dialogue between faith and science is a programme called Equipping Christian

[70] Pope Francis, *Evangelii Gaudium*, no. 242.

[71] Deborah Castellano Lubov, "Pope Francis Urges Ethical Use of Artificial Intelligence." *Vatican News,* March 27, 2023, https://www.vaticannews.va/en/pope/news/2023-03/pope-francis-minerva-dialogues-technology-artificial-intelligenc.html#:~:text=Pope%20Francis%20has%20applauded%20the%20benefits%20of%20technology,has%20warned%20against%20using%20AI%20unethically%20or%20irresponsibly.

[72] RenAIssance Foundation, "The Call," accessed May 10, 2023, https://www.romecall.org/the-call/.

[73] RenAIssance Foundation, "The Abrahamic Commitment to the Rome Call for AI Ethics," January 10, 2023, https://www.romecall.org/the-abrahamic-commitment-to-the-rome-call-for-ai-ethics-10th-january-2023/.

Leadership in an Age of Science (ECLAS). This program involves scientists within a specific church in the UK, engaging in dialogues with their fellow congregants on various scientific questions.[74] The Scientists in Congregations programme is a similar project that brings together scientists and some local church congregations in around 25 states in the US, one in France as well as one in Canada, to discuss various scientific and theological questions during luncheons, lectures, site visits, shared readings, etc. The churches that serve as models in this dialogue programme report greater benefits and success for both church members and scientists.[75] It is these concrete acts of engagement, mutuality and co-responsibility that need to be emulated among all stakeholders to steer AI to its proper use.

This dialogue between faith and science would help the people of faith to understand each other and be in turn enlightened by the scientific experts and developers. "In a true spirit of dialogue, we grow in our ability to grasp the significance of what others say and do, even if we cannot accept it as our own conviction."[76] "On the basis of this sympathetic understanding and support [dialogue], it becomes possible to offer meaningful proposals for removing obstacles to human progress and the proclamation of the Gospel."[77] The presence of the different religions and churches is important to this dialogue as they bring theological and anthropological perspectives that can be corrective to the "atheistic" outlook of some advanced technologies that devalue the human person or even deceive them to think that they have unlimited freedom.[78]

We do not enter this dialogue presuming to have all the answers, but we also allow ourselves to be taught. Bevans captures this point

[74] Equipping Christian Leadership in an Age of Science, "Scientists in Congregations," accessed September 27, 2023, https://www.eclasproject.org/congregations/.

[75] "Scientists in Congregations," accessed September 24, 2023, http://www.scientistsincongregations.org/about-us/.

[76] Pope Francis, *Fratelli Tutti*, no. 203.

[77] Pontifical Council for Social Communications, *Aetatis Novae*, Pastoral Instruction (1992), no.8.

[78] Pontifical Council for Social Communications, *Ethics in Communications*, Pastoral Instruction (2000), no.5

beautifully when he says, "We need to be evangelized by the people before we can evangelize them; we need to allow the people among whom we work to be our teachers before we presume to teach them."[79] The fact that we have concerns does not mean that these concerns are automatically true. A forum between scientists and people of faith would help clear most of the doubts each carries, and the problems raised. These dialogues could happen at an international level like the 'Minerva Dialogues' or the Rome Call for AI Ethics but could as well happen locally between local religious leaders, local scientists, and local AI developers like what Scientists in Congregations is doing. This specifically could be done through roundtable discussions, lectures, site visits, conferences among others.

4.3. Dialogue Between Religious Leaders and Governments

Another form of dialogue worth mentioning is the dialogue between religious leaders and governments, especially when it comes to regulating AI technologies. Religious leaders could use their voices and influence to appeal to governments to regulate the development of some of these advanced technologies. The different religions with their "long traditions of moral wisdom rooted in divine revelation and human reflection"[80] could help their various governments understand from the religious viewpoint how some of these technologies affect the very being of the human person and society at large, especially when it comes to issues of justice, peace, solidarity, and equity. Dialogue between governments and religious leaders is not a novelty since already, the International Partnership on Religion and Sustainable Development (PaRD),[81] the Transatlantic Policy Network on Religion & Diplomacy

[79] Bevans and Tahaafe-Williams, *Contextual Theology for the Twenty-First Century,* 104.

[80] Pontifical Council for Social Communications, *Ethics in Communications*, no.5.

[81] International Partnership on Religion and Sustainable Development, "PaRD's Mission & Vision," September 25, 2023, https://www.partner-religion-development.org/about/mission-vision.

(TPRND),[82] and the G20 Faith Interfaith Forum (IF20)[83] have proven to be avenues where faith leaders have successfully engaged, collaborated, and dialogued with governments and stakeholders on different topics such as peace, famine, Covid-19, etc. In most countries and states, there are religious bodies like the Catholic Bishops' Conference, Council of Churches, Federation of Islamic Societies among others, who in some countries are well-respected and listened to by their respective governments. In view of this trust and openness between governments and religious leaders, religious leaders could either appeal to or even in some instances demand that governments put brakes on or control some technological inventions that are inhumane. This could be done through conferences, workshops, and advocacy among others.

4.4. Prophetic Denunciation and Proclamation

Whereas dialogue between faith and science is important in addressing some of the negative consequences of AI, what happens when science is not open to dialogue or ready to implement the fruits of the dialogue? Here, there is a need for prophetic denunciation or direct proclamation. Gustavo Gutiérrez argues that the prophetic mandate of the Church is both constructive and critical/denouncing. And so, as the Church encourages that which is humanising about the new advanced technologies, it at the same time, points out and challenges that which is dehumanising.[84] Apart from the biblical prophets who engaged in prophetic denunciations, or Jesus who was anointed to proclaim good news to the poor, proclaim freedom to captives and set the oppressed free,[85] we can today mention some 'prophets' in the not-so-distant past like Martin Luther King Jr, Dietrich Bonhoeffer, Oscar Romero, Nelson Mandela among others, who challenged the dehumanising systems of their days. Like these prophets and biblical prophets such as Hosea,

[82] Berkeley Center for Religion, Peace & World Affairs, "Transatlantic Policy Network on Religion and Diplomacy," accessed September 25, 2023, https://berkleycenter.georgetown.edu/projects/transatlantic-policy-network-on-religion-and-diplomacy.

[83] IF20, "About the G20 Interfaith Forum," accessed September 22, 2023, https://www.g20interfaith.org/g20-interfaith-forum-about/.

[84] Gustavo Gutiérrez, *A Theology of Liberation: History, Politics and Salvation* (Maryknoll, NY: Orbis Books, 1973), 114-116.

[85] Luke 4: 18

Amos, Isaiah, etc., who denounced the unjust systems of their days through their preaching, so today's prophetic voices must question any technologies that undermine the dignity of the human person.

Against this backdrop, the Latin American Bishops said in their 1968 Medellín Conference, "To us, the Pastors of the Church, belongs the duty to educate the Christian conscience, to inspire, stimulate and help orient all of the initiatives that contribute to the formation of man. It is also up to us to denounce everything which, opposing justice, destroys peace."[86] Religious leaders in their preaching while being faithful to the Bible could at the same time point out the evils of unemployment, racial/gender discriminations, inequality, military escalations, misinformation, and intellectual dishonesty being perpetrated using AI and other technological advancements. This way of truth-telling does not spring from the place of anger, but love and divine justice for the poor and oppressed. Having these prophetic denunciations about new technologies can awaken the consciousness of technology experts and developers, as well as call for responsible use of them by all people.

5. Conclusion

It is undeniable that the new advanced technologies have improved the quality of life, as can be seen in medical care, factories, on streets and even in homes, among others. Most religious traditions, for instance, Christianity, generally see these technologies as a continuation of God's creative power in as much as they are life-giving. On the other hand, it is increasingly evident that certain emerging advanced technologies pose profound challenges to the survival of humanity. This is primarily attributed to the absence of comprehensive regulations governing the ethical dimensions of these technologies by independent bodies. Some of these challenges, as previously discussed, include unemployment, which, in turn, may exacerbate xenophobia, unhealthy nationalistic tendencies, and social unrests. Furthermore, it is evident that certain technologies serve as platforms for perpetuating injustices, biases, and discrimination based on gender, race, religion, as well as demographic and socio-economic backgrounds.

[86] Latin American Bishops, *Medellin Document: Peace* (1968), no. 20.

Moreover, certain AI-generated technologies are utilized to disseminate misinformation, thereby challenging the credibility of truth in contemporary times. Additionally, the proliferation of deepfakes results in damage to individuals' reputations, while the foundational principles of democracy are jeopardized by the spread of misinformation. In addition, these emerging technologies find application as combat aids in warfare, with their widespread adoption by nations, particularly superpowers, posing a growing threat to global peace. In response to these challenges, individuals of various religious affiliations, including Christians, Muslims, Buddhists, and other people of goodwill, are called upon to actively engage in prophetic dialogue. This proactive engagement involves addressing the ethical and regulatory concerns highlighted in this paper with heads-of-state, technology developers, and stakeholders in pivotal technological industries.

The religious voices during the dialogue could offer good and corrective anthropology as well as sound theology to the development of advanced technologies. These contributions from the prophetic voices would ensure that the God-given creative powers of AI developers could be applied properly for the promotion of humanity and the whole cosmos.

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Interreligious Views on the Integration of Artificial Intelligence and Indigenous Knowledge for Environmental Preservation

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Abstract

This paper employs a qualitative narrative analysis to explore interreligious perspectives on integrating Artificial Intelligence (AI) and Indigenous Knowledge (IK) to address environmental challenges. It delves into the viewpoints of three major world religions – Christianity, Islam, and Buddhism – highlighting their distinct yet complementary stances. Christianity, grounded in the principle of stewardship, emphasizes humanity's divine-given duty to care for the Earth. Within this framework, AI is seen as a promising tool to enhance environmental knowledge, sustainable practices, and conservation. Pope Francis' Laudato Si' *lays down principles, stressing the interconnectedness of creation, that can guide AI integration. In Islam, the concept of* "Khalifa" *signifies human stewardship of the Earth. Though opinions on AI vary, there are those who view it as a means to improve environmental knowledge and resource management. Islamic teachings encourage seeking wisdom from diverse sources, including indigenous knowledge. While recognizing AI's potential for ecological understanding, Buddhism raises concerns about excessive reliance on AI-generated information. Emphasizing interconnectedness, compassion, and mindfulness, it encourages a balanced approach where AI complements personal connections and mindfulness in experiencing nature. In summary, these religions appear to recognize AI's potential while emphasizing ethical, cultural,*

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and spiritual aspects. This interplay fosters holistic and sustainable environmental preservation, where technology and Indigenous Knowledge coexist. It invites further collaboration to ensure that technological advancements align with ethical and environmental values, promoting a just, equitable, and harmonious coexistence with our planet.

Keywords: interreligious perspectives, artificial intelligence (AI), indigenous knowledge (IK), environmental challenges

1. Introduction

The environment is the very foundation of human existence, providing us with essential resources such as clean air, water, and food (Cosgrove and Loucks 2015). It sustains all life on earth and plays a pivotal role in maintaining ecological balance (Assessment 2005). However, in recent decades, the environment has faced unprecedented challenges (Siddique et al. 2021). Rapid industrialization, deforestation, pollution, climate change, and habitat destruction have led to a multitude of environmental crises (Izah et al. 2018). These crises, ranging from loss of biodiversity to extreme weather events, threaten not only the planet's ecosystems but also the well-being of present and future generations.

In an era marked by astonishing technological advancements (Prisecaru 2016; Acemoglu 2016; Genesereth and Nilson 2012; Knell and Rüther 2023; Castells 2014; Hanson 2016; Tiwari 2022) and an increasingly pressing global concern for the environmental crisis as emphasized by *Laudato Si'* (LS) and UN Sustainable Development Goal (SDG) 15, the urgency of pioneering and collaborative conservation approaches is undeniable.

Throughout history, humanity's relationship with the environment has been a subject of deep contemplation and reverence across various religious and spiritual traditions. In his encyclical, *Laudato Si'* (LS, nos. 1, 2, 3, 4), Pope Francis passionately underscores the call for ethical responsibility in the face of a global environmental crisis. Drawing inspiration from the wisdom of Saint Francis of Assisi (LS, no. 1), he accentuates the profound interconnectedness between humanity and

the environment. Thus, Pope Francis vividly illustrates the ecological harm caused by irresponsible resource exploitation (LS, nos. 5, 6) and emphasizes that environmental stewardship transcends religious boundaries, representing a moral and spiritual duty embraced by all individuals. Furthermore, he highlights the intricate interconnections between ecological issues and broader moral and social concerns, calling for a transformative shift in human behavior rooted in values such as generosity and sacrifice. Amid heightened global environmental awareness, Pope Francis calls for a collective response across all segments of society to address this pressing issue.

Similarly, UN Sustainable Development Goal (SDG 15) posits that Earth's ecosystems, including forests, plant life, and biodiversity, are essential for human survival and well-being. These ecosystems provide crucial resources such as food, clean air, and water, while also playing a pivotal role in mitigating climate change. However, a significant threat looms over these ecosystems, with deforestation and the degradation of drylands emerging as major concerns. Additionally, the illegal trafficking of wildlife poses a significant risk to biodiversity, with broader negative repercussions spanning security and corruption. This argument underscores the urgency of safeguarding natural habitats and biodiversity as a means to ensure global food and water security, mitigate climate change, and promote peace and security.

Inspired by the principles articulated in *Laudato Si'* and UN SDG, adherents of various religious traditions often instill ethical and moral imperatives to care for the natural world, forming an enduring foundation for ecological stewardship. At the same time, indigenous communities have always nurtured invaluable ecological knowledge and practices that have safeguarded their environments for generations.

This research embarks on a multifaceted exploration to examine how various religious and spiritual traditions perceive AI's role in environmental stewardship and how these perspectives align or diverge from indigenous worldviews. Furthermore, it delves into the practical applications of AI-driven solutions within diverse cultural contexts, underscoring the necessity for responsible and culturally sensitive approaches to conservation. This research synthesizes insights from

theology, environmental science, AI ethics, and indigenous studies, seeking to bridge disciplinary divides and foster dialogue among diverse stakeholders. By doing so, we aspire to uncover synergies that can inform holistic and sustainable approaches to environmental preservation.

2. Indigenous Knowledge and AI in Environmental Stewardship

Indigenous Knowledge (IK) comprises location-specific knowledge systems that are progressively gaining recognition within Western scientific circles (Jessen et al. 2022). Drawing from scientific literature, Jessen et al. illustrate how IK has significantly enriched our comprehension of fields like ecology, evolution, physiology, and applied ecology. While IK often diverges from Western science in its motivations and methodologies, there exist common underlying principles that can foster constructive and mutually advantageous partnerships. Scientists should engage in a considerate social agreement with IK custodians, with a primary focus on collaborative research endeavors that yield benefits for Indigenous communities, governments, and nations (Jessen et al. 2022).

Indigenous Knowledge is defined as the unique, traditional, local knowledge existing within, and developed around the specific conditions of women and men indigenous to a geographic area (Greiner 1998; Esiobu 2021). In the context of environmental care, it refers to the traditional knowledge systems, practices, and wisdom held by indigenous communities regarding the natural world and its sustainable management. It encompasses a deep understanding of local ecosystems, biodiversity, weather patterns, and the intricate relationships between humans and the environment.

Ncube (2022) explains that IK often involves holistic and harmonious approaches to environmental stewardship, emphasizing the interconnectedness of all living beings and the need for sustainable resource use. This knowledge is typically passed down through generations and reflects the accumulated wisdom of indigenous peoples who have lived in close connection with their environments for centuries. In the context of environmental care, IK offers valuable insights into conservation, resource management, and ecological sustainability, making it a critical

resource for addressing contemporary environmental challenges (Ncube 2022).

More recently, AI technologies are beginning to play an increasingly pivotal role in the realm of environmental conservation and management (Goralski and Tan 2020). They facilitate wildlife protection by autonomously tracking and identifying animals, aid in assessing biodiversity through image and audio analysis, and optimize habitat restoration efforts (Wägele et al. 2022). Furthermore, AI's predictive modeling capabilities empower researchers and policymakers to proactively address climate change and deforestation (Clutton-Brock et al. 2021).

These technologies continuously monitor environmental variables, including air and water quality, enabling the early detection of issues. Integrating various technologies expands the scope of ecological research and conservation, allowing for the identification and mitigation of threats to protected ecosystems on larger spatial and temporal scales (Marvin et al. 2016). AI can offer multiple technology options, including remote sensing and ground-based methods, highlighting their potential for data collection in ecological studies (Marvin et al. 2016). The integration of these technologies, often low-cost or open-source, can lead to more cost-effective large-scale, long-term data collection efforts that enhance our understanding of threats to natural ecosystems and endangered species, ultimately improving conservation strategies (Marvin et al. 2016).

AI helps design protected areas and corridors (Silvestro et al. 2022), while also detecting patterns associated with illegal activities like poaching or logging. Moreover, AI-driven educational tools engage the public in environmental awareness (Monroe et al. 2008). In agriculture, precision farming powered by AI optimizes resource usage and minimizes environmental impact. This multifaceted integration of AI significantly enhances our ability to tackle the complex challenges of environmental care and conservation effectively through the use of this emerging technology.

One of the first AI-based Indigenous conservation projects, undertaken by Cornell University, was co-developed with the Coral

Gardeners (2023), from Mo'orea, French Polynesia. Founded in 2017, this Indigenous group cultivates heat-resistant super corals and transplants them onto damaged parts of the reef. Cornell provides the software to track the sounds of the many organisms making their home here and, working also with the University of Hawaii, integrates them into a recording platform, ReefOS (Coral Gardeners 2023), a network of sensors and cameras collecting visual and acoustic data 24 hours a day. The AI-mediated soundscape tells the on-site respondents whether the reefs are starting to sound like healthy and stable reef systems, or whether additional restoration efforts are needed (Eaton 2022).

Such Indigenous-AI conservation works just as well with other ecosystems. In March 2014, the Tembé tribe in Northern Brazil reached out to the San Francisco nonprofit Rainforest Connection (2023) to build a low-cost alert system to monitor deforestation. Rainforest Connection uses recycled cell phones and an open-source AI software called TensorFlow (2023) to single out the sounds of chainsaws and logging trucks amid the cacophony of the Amazon. Text alerts go out instantly to Tembé patrols when Google's cloud computing detects the rev of a chainsaw.

Artificial intelligence is an integral part of this partnership. Especially telling was the presence of the Allen Institute for AI (Artificial Intelligence for Ocean Action 2022) at this year's Our Ocean Conference, co-hosted by the U.S. and the Republic of Palau, bringing Indigenous-AI conservation to a whole new level. The conference showed that AI can perform specific tasks beneficial to island nations, like tracking illegal fishing that depletes fish stocks and threatens local livelihood. More generally, AI, if carefully designed and rigorously tested before being deployed in the field, can be a useful tool for analyzing ocean data, from the songs of humpback whales to the properties of microplastics (AI is Learning to Predict Ocean Surprises 2023).

On the international level, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is an independent intergovernmental body established to assess the state of the world's biodiversity, ecosystems, and the contributions that they make to human well-being. IPBES operates similarly to the Intergovernmental

Panel on Climate Change (IPCC) but focuses on biodiversity and ecosystem services. IPBES (2022) biodiversity report warns of the impending extinction of one million species, including vital mammals and sharks. This loss poses severe human consequences, as one in five people relies on these species for their well-being. To combat this, the UN urges governments and NGOs to secure land rights for Indigenous groups actively protecting wildlife (Dimock 2022). Of particular interest is the role of technology, particularly deep-learning neural networks, in conserving biodiversity and safeguarding Indigenous land rights. These AI systems, which analyze sound data from threatened ecosystems, offer a cutting-edge conservation tool. However, equitable access remains a challenge. These AI systems complement human vigilance by swiftly identifying threats like illegal logging and mining, offering a crucial lifeline to Indigenous communities (IPBES 2022).

3. Significance of Integrating AI and IK

Due to their enormity and complexity, addressing the current environmental challenges requires innovative and holistic approaches that draw from diverse sources of knowledge and technology (Geesteranus 2014). Two such sources are AI, with its capacity for data-driven analysis and prediction, and IK, rooted in centuries of sustainable practices and profound connections to the natural world. The significance of integrating AI and IK lies in their complementary strengths: AI offers the power to process vast amounts of environmental data and model complex systems (Rayhan 2023), while IK provides insights into harmonious human coexistence with nature (Melaku 2016). Together, these two distinct but complementary knowledge systems hold the potential to revolutionize our approach to environmental conservation and restoration.

This integration represents a bridge between tradition and technology, offering the promise of more effective, culturally sensitive, and sustainable environmental care. It acknowledges that solutions to today's environmental crises cannot be one-size-fits-all and must encompass a deep understanding of the ecosystems, cultures, and communities they affect. Furthermore, it recognizes the importance of

respecting and valuing Indigenous perspectives and knowledge systems, which have sustained diverse ecosystems for generations.

Now, in the face of unprecedented environmental challenges, the integration of AI technology into these age-old wisdoms presents both opportunities and dilemmas. This dynamic convergence of ancient wisdom and cutting-edge technology sets the stage for our exploration of innovative and collaborative approaches to environmental conservation, where interreligious perspectives, AI integration, and IK intersect to address the urgent global environmental crisis. This introduction lays the essential groundwork for a comprehensive examination of this vital intersection and clarifies the rationale behind our interdisciplinary inquiry.

At present, AI continues to emerge as a transformative force with the potential to revolutionize environmental conservation efforts. AI-powered tools and systems possess the capacity to analyze extensive datasets, model intricate ecological systems, and facilitate real-time monitoring of ecosystems. Nevertheless, this remarkable potential is accompanied by ethical dilemmas, as the deployment of AI technologies raises questions concerning privacy, data ownership, and the cultural sensitivity of IK systems.

4. Integration of AI and Indigenous Knowledge

IK encompasses unique perspectives on the relationship between humans, nature, and the spiritual realm, emphasizing the interconnectedness of all living beings and the sacredness of the natural world (Pierotti & Wildcat 2000). These IK systems provide holistic approaches to environmental conservation, and the integration of AI into IK systems holds the potential to enhance traditional practices such as ecological monitoring, land stewardship, and resource management (Younging 2018). However, it is essential to consider concerns regarding the preservation of cultural authenticity and integrity when collaborating with AI technologies (Abram 1997).

The works of Ellen (2000) shed light on the advancement of IK in

Asia, exploring its applications and complexities. Gaspar's (1990) book provides a detailed account of a grassroots Church community engaged in a struggle for justice and environmental protection in the Philippines. Gedicks (1993) discusses native-environmental resistance against multinational corporations, emphasizing the need for alliances between Indigenous communities and environmentalists. Sitarz (1993) examines the involvement of the United States with Agenda 21, a comprehensive blueprint for global sustainability. While these works contribute to our understanding of IK and environmental concerns, the specific integration of AI within the context of Indigenous Knowledge requires further exploration (Ellen 2000; Gaspar 1990; Gedicks 1993; Sitarz 1993).

IK offers valuable perspectives on the relationship between humans and the environment, highlighting the importance of interconnectedness and sustainable practices. The potential integration of AI into IK systems presents opportunities to enhance traditional ecological practices. However, it is crucial to approach this integration with sensitivity and respect for cultural authenticity. Further research and exploration are needed to understand the implications, challenges, and ethical considerations involved in integrating AI within IK systems. By fostering dialogue and collaboration, we can develop inclusive and equitable approaches that honor Indigenous perspectives and promote environmental conservation. Here are some ways in which AI can be integrated with IK systems for the benefit of both and in the interest of environmental preservation:

4.1. Data Preservation and Digitization

Many IK systems are oral traditions passed down through generations. As an example, Ossai (2010) in his study on the African IK systems, their characteristics, sources, and functions in the context of the digital age and ICT technologies argues that these knowledge systems, while rooted in tradition, possess adaptability and relevance in the modern era, making them valuable assets that can complement and interact with other forms of knowledge in the age of information and technology. AI can assist in digitizing (Malik et al. 2020) and preserving this IK (Frąckiewicz 2023) through audio and video recordings, transcription, and translation services. This ensures that traditional wisdom is documented and can be

shared with future generations.

AI can digitize and catalog IK, translate endangered languages, monitor and protect indigenous lands, and preserve traditional art and music (Frąckiewicz 2023). While AI offers promising solutions, ethical considerations and the need to empower Indigenous communities remain critical. Frąckiewicz (2023) emphasizes that AI can be a powerful tool in safeguarding these valuable traditions but must be used responsibly and in collaboration with efforts to support and empower indigenous communities to ensure the preservation of their cultural heritage.

4.2. Environmental Monitoring, Cultural Mapping, and Storytelling

Indigenous communities have deep ecological knowledge and practices (Jessen 2022). AI can enhance their ability to monitor and manage their environments. For example, AI-powered sensors and drones can be used to monitor changes in local ecosystems, track wildlife, or assess the health of forests and water bodies.

Thumbadoo et al. (2022) explain that Indigenous mapping, facilitated by digital technology, is transforming traditional cartography by empowering Indigenous communities to map their own stories, histories, cultural heritage, and priorities. IK is increasingly being acknowledged as a legitimate and equal knowledge system, challenging conventional mapping concepts. Thumbadoo et al. explain further that multimodal and multisensory online maps are playing a pivotal role in this transformation, enabling the presentation and preservation of a wide range of spatial and temporal information. AI can aid in creating interactive digital maps that incorporate indigenous place names, stories, and cultural heritage. This helps in preserving and sharing the cultural significance of specific landscapes.

4.3. Collaborative Research

Collaborative research with AI refers to the potential synergy between IK and scientific research, particularly in the realms of disaster risk reduction and climate change adaptation. The article emphasizes the importance of integrating local and IK with scientific data to enhance disaster preparedness and resilience in coastal and small island communities. Collaborative research suggests that AI can play a crucial role in facilitating

this integration. IK holders, who possess invaluable insights about local environmental patterns and hazards, can collaborate with researchers from various fields, including climatology, meteorology, and environmental science.

AI technologies can assist in this collaboration by aiding in the analysis and integration of IK with scientific datasets. For example, AI can help identify commonalities or patterns between IK about natural phenomena (e.g., changes in weather patterns or signs of impending disasters) and scientific data (e.g., meteorological measurements or climate models).

By bridging these two knowledge systems, AI enables a more comprehensive understanding of environmental and societal challenges, such as the impact of climate change or the likelihood of natural disasters. Overall, the collaborative research highlighted in the passage underscores the potential of AI to serve as a bridge between IK and scientific expertise, ultimately leading to more effective strategies for disaster risk reduction and climate change adaptation in these vulnerable communities.

4.4. Weather and Climate Prediction

Balehegn et al. (2019) argue that Indigenous weather and climate forecasting, practiced by Afar pastoralist communities in Africa, is a highly valuable and dynamic knowledge system that plays a crucial role in helping these communities cope with climate change-induced extreme weather variations. They explain that traditional weather forecasting is not only the most accessible and affordable source of weather and climate information for these communities but is also intricately connected with their decision-making processes.

The researchers also highlight the intricate process through which the Afar pastoralists predict weather and climate variations by observing various bio-physical entities, emphasizing that no single indicator is taken at face value. Instead, weather forecasting involves a dynamic process of triangulating information from multiple sources, including modern weather forecasts, and it undergoes rigorous evaluation through traditional institutions before being used for livelihood decisions. The systematic documentation of this IK underscores its significance in contemporary pastoral communities

and emphasizes the potential for synergies between Indigenous and modern weather and climate knowledge systems, ultimately serving the adaptation needs of local people (Balehegn et al. 2019).

4.5. Community Decision-Making

AI tools can support community-led decision-making processes by providing data-driven insights based on both IK and scientific data. This helps communities make informed choices about land use, resource management, and development. In the study by Linaza et al. (2021) they explored potential transformative impact of smart agriculture, particularly precision agriculture (PA) technologies utilizing AI and advanced robotics, on the agricultural sector. It emphasizes that these technologies have the capacity to revolutionize agriculture even more significantly than mass farming methods of the 20th century. Linaza et al. also provide a summary of recent research projects conducted in European countries, aiming to showcase achieved results, ongoing investigations, and technical challenges in the implementation of AI-driven smart agriculture, with a focus on data availability and the integration of advanced AI methodologies.

The work of Correani et al. (2020) underscores the fact that digitization extends far beyond mere automation. It facilitates the development of manufacturing processes that are highly adaptable and flexible. This perspective is further corroborated by Lasi et al. (2014) and Oztemel and Gursev (2020), who champion the principles of Industry 4.0. According to these authors, Industry 4.0 places a premium on standardization, rapid development, personalization, and decentralization within manufacturing processes, ultimately leading to increased mechanization, automation, connectivity, and the full digitization of operational settings.

5. Interreligious Perspectives on AI and IK Integration

5.1. Christianity

Exploring how Christianity views the convergence of AI and IK to address environmental issues reveals a harmonious coexistence. In particular, Catholicism emphasizes stewardship, recognizing humanity's

divine duty to care for the Earth, aligning neatly with the imperative to address environmental challenges holistically, with consideration for all life forms (Nishant 2020; Alshahrani et al. 2021). Simultaneously, AI offers substantial potential to mitigate environmental issues by processing extensive data, facilitating precise climate forecasts, enhancing energy efficiency, refining conservation techniques, and promoting sustainable practices (Nishant 2020; Alshahrani et al. 2021).

Pope Francis' support for ethical AI, highlighting its consistency with Christian principles, is further strengthened by his emphasis on its harmony with the well-being of society and ecological preservation (Von Braun 2021). His encyclical, *Laudato Si'*, delves deeper into the Christian perspective on environmental challenges and the role of technology. It underscores the interconnectedness of all creation, calling for ecological conversion and sustainable development while cautioning against profit-driven environmental degradation.

Pope Francis, as indicated in *Laudato Si'*, prioritizes the harmonious integration of technological progress, with a special emphasis on the welfare of both humanity and the environment, to foster a more equitable, sustainable, and interconnected future (Pope Francis 2015). Furthermore, faith-based organizations, including the Catholic Church, can collaborate with Indigenous communities to enhance traditional ecological knowledge in addressing environmental challenges, recognizing, respecting, and preserving their wisdom through education and partnership (United Nations 2019). These combined efforts contribute to holistic and sustainable approaches to environmental conservation, rooted in Indigenous wisdom and practices passed down through generations (Hitzhusen 2013; United Nations 2019).Top of Form

In various articles and addresses, Pope Francis consistently underscores the ethical and moral dimensions of technological advancements, particularly AI and digital technologies, emphasizing their potential benefits while stressing the critical importance of ensuring their use for the common good and human dignity (Francis, 2023a; 2023b; 2020; 2019a). He calls for interdisciplinary dialogue among experts from technology, ethics, economics, and theology to address

the ethical challenges posed by technology and uphold the dignity of every individual. The Pope commends efforts such as the "Rome Call" and "Minerva Dialogues," promoting "algor-ethics" and responsible AI development while preventing discrimination against marginalized groups. Pope Francis highlights the transformative nature of technology in shaping human perceptions and decisions, urging against the unchecked pursuit of a "technocratic paradigm" that could exacerbate inequalities (Francis, 2023a; 2023b; 2020; 2019a). He advocates for an ethical framework rooted in freedom, responsibility, and fraternity, ensuring that true progress aligns with human dignity.

In summary, Pope Francis advocates for a responsible and ethical approach to technological advancements, urging experts and society at large to consider the implications of technology on human well-being and the common good. He calls for a balance between technological progress and moral values to ensure that technology serves humanity rather than harms it.

5.2. Islam

Islam emphasizes the concept of "*Khalifa*," meaning the role of humans as stewards and caretakers of the Earth (Abdullah et al. 2020). Islamic teachings encourage the protection and conservation of the environment, as it is seen as a trust from God (Deen 1996). Regarding AI, there may be varying opinions within the Islamic community. Some Muslims may view AI as a means to improve environmental knowledge, monitoring, and resource management (Ali et al. 2021). Others may express concerns about the potential ethical implications, including data privacy, cultural sensitivity, and the potential for AI to replace human responsibility in environmental stewardship.

The Natural Language Processing research group at Leeds University's Institute for Artificial Intelligence and Biological Systems (I-AIBS) has conducted extensive research on Arabic natural language processing and corpus linguistics (Atwel et al. 2011). Initially focusing on Modern Standard Arabic, their recent research has shifted towards Quranic Arabic. While the Quran does not explicitly address IK as a concept (Aikenhead and Ogawa 2007), Islam emphasizes the pursuit of knowledge,

wisdom, and understanding of the natural world (Burdbar et al. 2012; Kamla et al. 2006).

Islamic teachings encourage Muslims to observe and reflect upon the signs of God's creation, seek knowledge from diverse sources, and respect different forms of knowledge, including indigenous knowledge rooted in local cultures and traditions (Halstead 2004; Kamali 2003). Islam also emphasizes stewardship of the Earth, balance and moderation, environmental conservation, sustainability, and social justice (Abdullah and Keshminder 2020; Bsoul et al. 2022; Koehrsen 2021; Wals and Benavot, 2017; Sachedina 2009).

The Quran serves as the primary source for these principles (Quran 2:30, 6:165, 7:56, 10:61). While Muslims' attitudes and actions towards environmental challenges may vary, many Muslims view AI as a tool for societal benefit, including environmental conservation (Kadi 2022). Muslims can leverage AI applications to enhance IK in addressing environmental challenges through data collection and analysis, knowledge preservation, ecological modeling and prediction, decision support systems, awareness and education, collaborative platforms, and early warning systems (Ghorbani et al. 2021; Barlow et al. 2020; Reshma et al. 2023; Nabavi-Pelesaraei et al. 2018; Shrestha et al. 2019; Kankanhall et al. 2019; Islam 2011; Perera et al. 2020). It is essential to implement AI in a culturally sensitive manner, respecting the rights and sovereignty of indigenous communities and adopting inclusive approaches (Carrillo 2020).

Islam's emphasis on humans as stewards and caretakers of the Earth, referred to as "*Khalifa*," underscores the significance of environmental protection and conservation as a trust from God. While there exist varying perspectives within the Islamic community regarding AI's role in addressing environmental challenges, a common thread emerges – AI is seen as a potential tool for enhancing environmental knowledge, monitoring, and resource management, aligning with Islamic values of wisdom and understanding of the natural world. This convergence of technology and faith is supported by Islamic teachings, which encourage Muslims to seek knowledge from diverse sources and respect different forms of knowledge, including indigenous knowledge rooted in local cultures and traditions.

The Quran, as the primary source for these principles, underpins the Islamic commitment to stewardship, balance, moderation, environmental conservation, sustainability, and social justice. As Muslims navigate environmental challenges, many perceive AI as a means to achieve societal benefits, including environmental conservation, by leveraging its capabilities for data analysis, knowledge preservation, ecological modeling, awareness, and education. To ensure a culturally sensitive and inclusive implementation of AI, it is essential to respect the rights and sovereignty of Indigenous communities while adopting these transformative technologies to promote the well-being of both humanity and the environment.

5.3. Buddhism

Buddhism emphasizes interconnectedness, compassion, and the impermanence of all phenomena, providing a unique perspective on the integration of AI into IK systems for addressing environmental challenges (Wiseman 2021; Xu et al. 2021; Sillitoe 2002; Kuma 2020). This integration can deepen the understanding of interdependence and promote effective environmental practices. However, Buddhism also highlights the significance of mindfulness, awareness, and direct experience of nature (McWilliams 2012). The potential reliance on AI-generated information raises concerns about the loss of personal connection and embodied understanding of ecological interdependence (Roncoli et al. 2002; Giddens and Sutton 2021). Excessive reliance on AI may detach individuals from nature and devalue its intrinsic worth (Moorkens and Lewis 2019). Thus, a balanced approach is necessary, where AI complements personal connection, mindfulness, and direct experience with nature.

It is crucial to engage in interreligious dialogue and collaborations to develop nuanced approaches that respect IK systems and the potential of AI in addressing environmental challenges. For example, Studley's (2005) research on Tibetan ethnoforestry paradigms contributes to understanding sustainable knowledge systems and resource stewardship in the context of Indigenous communities in eastern Kham. Furthermore, the integration of AI into IK systems within a Buddhist context should take into account the ethical and spiritual dimensions of Buddhist teachings. Buddhism teaches the importance of compassion, non-harming, and the interdependence of

all beings. Therefore, any use of AI should align with these principles and contribute to the well-being of both humans and the environment.

One way to ensure the responsible integration of AI is to prioritize mindfulness and direct experience of nature alongside technological advancements. This can be achieved by incorporating practices such as meditation, contemplation, and ecological engagement into the use of AI. By doing so, individuals can maintain a deep connection with the environment and cultivate a sense of reverence and care for all living beings.

Buddhism offers valuable insights into the integration of AI into IK systems for addressing environmental challenges. It emphasizes interconnectedness, compassion, and impermanence, providing a foundation for understanding the interdependence between humans and nature. While AI can enhance the understanding and application of IK, it is important to maintain mindfulness, awareness, and direct experience of the environment. Balancing technological advancements with personal connection and ethical considerations is crucial to ensure the responsible use of AI within a Buddhist framework. By engaging in interreligious dialogue and collaborations, we can develop holistic approaches that respect IK systems, religious values, and the potential of AI to contribute to sustainable and compassionate environmental practices.

6. Concluding Remarks: Spectrum of Perspectives and Approaches

In comparing the reactions of different religions to the integration of AI and IK in addressing environmental challenges, we find a spectrum of perspectives and approaches. Within Christianity, particularly Catholicism, there is a harmonious coexistence with the convergence of AI and IK. The emphasis on stewardship aligns seamlessly with addressing environmental challenges holistically. AI is seen as a valuable tool to process data, enhance energy efficiency, and promote sustainable practices. Pope Francis' *Laudato Si'* reinforces these principles, guiding the integration of AI while emphasizing the interconnectedness of all creation and the need for ecological conversion. Collaboration with Indigenous communities further enhances traditional ecological knowledge for sustainable practices.

Islam emphasizes humans as stewards of the Earth, and the protection of the environment is viewed as a trust from God. There are varying opinions within the Islamic community regarding AI's role in addressing environmental challenges, with some seeing it as a means to improve environmental knowledge and others expressing ethical concerns. Islam encourages the pursuit of knowledge and wisdom from diverse sources, including IK. The Quran serves as a primary source for principles emphasizing stewardship, balance, moderation, environmental conservation, sustainability, and social justice. Many Muslims perceive AI as a tool for societal benefit, including environmental conservation, when implemented in a culturally sensitive manner.

Buddhism brings a unique perspective, emphasizing interconnectedness, compassion, and mindfulness. While AI can enhance understanding and ecological practices, Buddhism highlights the importance of maintaining personal connection and direct experience with nature. Excessive reliance on AI-generated information is cautioned against, as it may detach individuals from nature. To ensure a responsible integration of AI, Buddhism encourages alignment with ethical and spiritual dimensions of teachings, emphasizing compassion, non-harming, and the well-being of both humans and the environment. Mindfulness practices are promoted to complement AI and maintain a deep connection with nature.

In conclusion, these religions offer diverse yet complementary perspectives on the integration of AI and IK to address environmental challenges. While they recognize the potential benefits of AI, they also emphasize the importance of ethical considerations, cultural sensitivity, and the preservation of traditional knowledge. These religious perspectives, guided by principles of stewardship, interconnectedness, and compassion, contribute to a more holistic and sustainable approach to environmental conservation, where technology and faith coexist in harmony for the greater good of both humanity and the natural world.

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BOOK REVIEWS

Julian Nida-Rümelin and Nathalie Weidenfeld. *Digital Humanism For a Humane Transformation of Democracy, Economy and Culture in the Digital Age*. Cham: Springer, 2021. 129 pp. ISBN 978-3-031-12482-2 (eBook).

Artificial intelligence (AI), or machine intelligence, as we understand it today has been around since the invention of the programmable digital computer. In public discourse, AI has been a subject of great fascination and fear, and this has notably been expressed through numerous science fiction films depicting the dangers of an advanced and malicious AI. Interest surrounding the topic of AI has accelerated in the past two years as AI tools (generative AI, AI art, etc.) became widely available for public use. This surge in interest has led to very active social and academic discourse surrounding the ethics of AI development and use. It is in this space where Julian Nida-Rümelin and Nathalie Weidenfeld's book *Digital Humanism for a Humane Transformation of Democracy, Economy and Culture in the Digital Age* makes a timely contribution.

The book explores the philosophical questions surrounding AI and explores the prevalent tendency to assign human-like qualities when describing AI. The authors associate this tendency to what they describe as the "Silicon Valley ideology" of AI, where development of machine intelligence is measured and marked by its unbridled quest to develop AI to the point of little distinction between computer processes and human behaviour. The authors sharply critique this approach to understanding AI, stating that such discourse of AI ultimately leads to a "technicist utopia in which the human is left behind" (p. 4). In simpler terms, the book makes the argument that current narratives of AI, where it is sometimes seen as "the answer to all our economic, social, and even spiritual problems" (p. 122), eventually leads to human obsoletion.

As an alternative, the concept of "digital humanism" is proffered as an alternative approach to thinking about the relationship between humans and AI. The authors argue for a clear distinction between human traits and the affordances provided by digital technologies, or as they

put it "digital humanism argues for an instrumental attitude towards digitalization: what can be economically, socially, and culturally beneficial, and where do potential dangers lurk?" (p.122). The authors systematically address several philosophical enquiries about assigning human characteristics to AI – digital self-determinism and free will, digital slavery, digital utilitarianism, and more, and highlights how human-like functions of AI programmes do not make it human.

Methodologically, these arguments are creatively presented through the extensive use of science-fiction films that feature AI significantly, such as *I, Robot, AI: Artificial Intelligence, The Matrix*, and more. Each chapter of the book begins with a brief description of a key scene from one of these films, followed by a textual analysis of the different features of AI to generate discussion. For example, a key scene depicting the spectacle of destroying seemingly self-aware robots in *AI: Artificial Intelligence* is used to discuss the notion of assigning "human dignity" to robots, with the writers cautioning that "anyone who thinks that there can be no categorical difference between human brains and computers is denying the foundations not only of scientific practice but of the human way of life in general" (p.10).

This approach is effective and insightful for two reasons. Firstly, films – or art, in general, capture the sentiment, expression, or understanding of human culture of the time. The use of filmic narratives of AI situates the discussion in an accessible medium of understanding. Through describing the layers of interpretations of these films' representations of AI, readers are guided to an nuanced view of human-computer relations. A particularly interesting demonstration of this is the exploration of friendship and morality in the films *I, Robot* and *Ex Machina*. The authors highlight how these films, on the surface, demonstrate the fantasy that robots are able to become sufficiently aware of the moral conditions to become "friends" with humans.

Beyond the sentimentality offered in these scenes, the authors note that "AIs do not act according to their own reasons. They have no feelings, no moral sense, no intentions, and they cannot attribute these to other persons. Without these abilities, however, proper moral practice is not possible" (p. 42). AI "friendship" is ultimately rooted in their

programming rather than morality, and as demonstrated in *Ex Machina,* trust in the robot's ability to function morally has fatal consequences. This nuance is also seen in the exposition of *AI: Artificial Intelligence*. Using a scene where discarded robots are "tortured" and "destroyed" in a circus arena as a spectacle for a human audience, the authors argue that while it is easy to interpret the scenes literally as representations of robot dignity, it is more likely that it is a commentary of racism rather than a "serious assessment of the status of robots" (p.11).

Overall, this book is an enlightening intersection of contemporary issues related to AI, philosophy, and film analysis. This is a book that uses analysis of science-fiction films to bring to life the philosophical questions about AI. The "Silicon Valley ideology" of AI is sharply criticized on a general level, though a deeper analysis of these accusations with specific examples and case studies would be welcome. This would possibly allow for a clearer contrast between what is offered by tech giants and digital humanism as proposed by the authors. That being said, I recognize that this is outside the purview of this book. In its current form, this is a book that is very useful in introducing readers to the various debates surrounding digital technology and AI, and showing us why these issues are relevant in the present time.

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Isabella Kasselstrand, Phil Zuckerman, and Ryan T. Cragun. *Beyond Doubt: The Secularization of Society.* New York: New York University Press, 2023, 227 pp. ISBN. 9781479814282 (paperback).

Has religion weakened and diminished? In the nineteenth century, theorists and thinkers predicted the demise of religion's influence on society and its eventual disappearance. However, Rodney Stark and his colleagues argued otherwise, stating that secularization is unfounded nonsense and a falsified myth.

Now, in *The Secularization of Society*, sociology professors Isabella Kasselstrand, Phil Zuckerman, and Ryan T. Cragun utilized four decades of empirical data to illustrate that secularization is real. Religion has weakened and diminished, and secularization has occurred as predicted. People today are less religious than previous generations regarding belief, behavior, and belonging. The authors call these attributes the three Bs of religiosity. Later in the review, I will explain what the authors mean by belief, behavior, and belonging.

In six chapters, the authors systematically present evidence for the decline of religion – or religiosity – in society. An introduction and conclusion bracket the six chapters. Most helpful to readers in the introduction is the background for the different theories and definitions regarding religion and secularization and the main components of secularization theory. The conclusion summarizes the book's main arguments and contains some of the authors' predictions about religion and secularization. Religion will continue to fade but not disappear, they contend.

Chapter 1 focuses on secularization theory. As societies modernize and people adopt modern sensibilities and values, they move away from religiosity and toward secularization. Two elements of modernization contribute to secularization: differentiation and rationalization. Differentiation is the separation of religion from aspects of societies, institutions, or individuals. "Rationalization refers to the ordering of society based on technological efficiency, bureaucratic impersonality, and scientific and empirical evidence" (p. 27). Some mechanisms contributing to secularization include religious pluralism,

existential security, and religious transmission from parents to children. To critics of secularization theory who assert that religiosity increases and decreases in cycles of supply and competition and that religiosity is not declining but people are "doing religion" differently, the authors contend that these arguments are unconvincing amid empirical data.

In Chapter 2, the authors present a global overview of the current levels and changes in three key interrelated dimensions of religiosity: belief, behavior, and belonging. Belief refers to people accepting supernatural beliefs, values, and doctrines. Behavior concerns how people express their religious beliefs, e.g., attending religious services or performing rituals. Belonging is about membership and identification with a religious organization. Drawing from cross-national survey data, the authors illustrate that the decline of religiosity is not limited to Europe but is global. They observe that the more modernized a group is the less religious it is. Here, the authors show the connection between economic development and secularization.

Chapter 3 examines additional religiosity measures, such as belief in life after death, heaven, hell, miracles, and spirituality, with Norway, Chile, South Korea, and the United States as representative samples. These countries represent four continents with distinct sociocultural contexts but with notable trends of significant declines in religious belief, behavior, belonging, and other examples of religiosity within and across generations regardless of cultural and geographic differences. Widespread rapid secularization in these countries is beyond doubt due to modernization.

Chapter 4 argues against the notion that religion is a universally innate, natural phenomenon and that secularity is unnatural. The authors counter the stated notion by illustrating four points. First, atheism, agnosticism, and irreligion are not new, modern phenomena. There have been secular people throughout recorded history as shown in Indian, Chinese, Greco-Roman, Jewish, and Islamic writings. Second, a significant proportion of the world's population today is not religious. The authors argue that secularization theory critics appear to ignore the evidence. Third, although most people in the world are religious, a growing number of countries have a nonreligious majority. And fourth,

an increasing number of children raised in nonreligious families results in the possibility of religiosity evaporating.

In Chapter 5, the authors examine the multi-faceted portrait of secularity in highly secularized contexts. They propose that with secularization ultimately comes religious indifference, where religion and irreligion become non-issues. Whereas religion may provide a framework for finding meaning and purpose, how do secular people accomplish the same? Secularity does not imply leading a meaningless and immoral life. Secular people find meaning and purpose through family, organizations, and social groups. Also discussed in the chapter are life-cycle rituals, secular child-rearing and socializing, aging, and coping with crises.

Chapter 6 explores three possible exceptions scholars proposed that may impede secularization: cultural defense against external threats, government restrictions/artificial religiosity, and forced secularization/ artificial secularization. The authors propose that these exceptions are not exceptions but lower levels of differentiation, resulting in lower levels of secularization.

The authors offer a relevant and timely discussion of the decline of religiosity and secularization in the wake of modernity. Writing lucidly and convincingly, they successfully defend secularization theory by providing a "theoretically sound and empirically rigorous" analysis of declining religiosity today.

In the United States, for instance, the constant news of church closures, consolidations, declining church attendance across generations, and fewer young people believing in God and attending church in the last few decades indicate a troubling trend of religiosity, the very point made in the book. Moreover, the sex abuse crises, clericalism, and the church leadership's detachment from the ordinary faithful have led to a measurable loss of trust, faith, and religious beliefs.

I agree with the authors' assessment: "Secularization is happening. Secularization is real. It's beyond doubt" (p. 169). The Catholic Church, for example, has been aware of the spread of

secularization, particularly in Europe, and its implications. It has taken steps to rekindle Europe's shrinking faith and loss of Christian identity. Pope Benedict, for instance, made reviving Christianity a priority of his papacy. He called for the re-evangelization of the continent and created a new dicastery, the Pontifical Council for Promoting the New Evangelization, dedicated to re-evangelization. Re-evangelization also happens under Pope Francis in the form of pastoral accompaniment and response to youth and young adults. In his 2019 post-synodal apostolic exhortation, *Christus Vivit*, Pope Francis challenges church leaders to make the Church more welcoming to them, make room for their voices and concerns to be heard, and work to regain their trust. However, the Catholic Church's efforts in re-Christianizing Europe have not turned back the secular tide or the Church's fading influence in Western Europe. As demonstrated in the book, the secular tide is undoubtedly spreading beyond Europe. A reversal is unlikely.

Secularization is real. *Beyond Doubt* is an illuminating must-read for religion students and those involved in religious-based ministry.

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Vo Huong Nam. *Digital Media and Youth Discipleship: Pitfalls and Promise.* UK: Langham Monographs, 2023, 271 pp. ISBN 9781839738821 (pdf).

The number of people who are not affiliated with any religion and yet describe themselves as spiritual continues to grow. This phenomenon occurs not just in Western societies but throughout the world. Vo Huong Nam, the author of *Digital Media and Youth Discipleship: Pitfalls and Promise,* attests to this rise in his native country and the difficulties retaining youth in the Evangelical Church of Vietnam. He attributes the growth of the spiritual but not religious category to the power and influence of digital media coinciding with the church's failure in providing spiritual formation for its more youthful members. For Vo, a bright and shiny object has garnered their shortened attention spans. In this book he sets out to help Christian leadership bolster their spiritual formation efforts.

After an extensive introduction, Vo organizes his argument in five chapters. Chapter One reviews the current state of the digital culture and various Christian responses. Chapter Two explores the impact of digital media more broadly, concentrating on its profound influence on the younger generation. Chapter Three introduces various spiritual formation approaches. Desiring to obtain an ecumenical variety, Vo focuses on the spiritual formation processes of John Calvin, Dietrich Bonhoeffer, and Henri Nouwen, intermixed with other current approaches. Chapter Four describes a "theology of discipleship to youth" based on Bonhoeffer's experience and writings related to youth ministry. Chapter Five aims to integrate Vo's preceding chapters by providing a pastoral practice for youth ministry, especially in Vietnam.

One must applaud Vo Huong Nam for identifying the lack of spiritual formation in our churches – and not just for the youth or young adults! Many of our faith formation programs focus on teaching the core beliefs of the Christian faith, with the objective that participants understand these beliefs. We intend to increase *what you know* about the Christian faith.

However, this is only one leg of the formation tripod as defined by Augustine, who insisted that Christian formation was essentially an

effort in cultivating what God has given to each of us: Faith, Hope (spiritual formation) and Charity. Knowing the Faith is important, but a Christian must also grow in Hope, which Augustine identified as prayer and this reviewer as spiritual formation. It's not what you know but w*ho you know*. Its aim is to assist the Christian in their relationship with God. It helps them find the spiritual practice that works best for their personality. It's a customization effort, which honors the dignity of each human being and helps them respond to God. This may partly explain why churches often struggle in delivering this formation endeavor.

However, for Vo to endorse spiritual formation, he attempts to address the age-old dilemma between works and faith. That is, what is the role of human effort and what is God's role in this formation. In some traditions this is not even a question to ask, as they understand nature and grace to work together. But even for his tradition, Vo devotes an inordinate amount of discussion, weaving in and out of the nature versus grace theological debate through a variety of sources, resulting in a book which is more theological and abstract than practical pastoral application. In the end, he struggles to describe the human role or responsibility in spiritual formation except to say that it must be intentional. Likewise, Vo fails to stress the beauty of God's respect for human agency.

One will not find in this book a direct connection between digital media and spiritual formation. While Vo rightly encourages parents and the church to understand new dialogic methods of learning and the need to teach media literacy, he does not venture into the realm of digital media as a form of mediation with the divine – something akin to the role of more familiar forms of media, such as prayer books, paintings, icons, or statues. Perhaps this is a bridge too far. Instead, Vo endorses a more important and conventional approach – the development of silence, reflection and prayer unencumbered by digital media.

Although the number of sources referenced in this work is impressive, too many are employed. For example, even when stating he is providing three approaches to Christian spiritual formation by referencing Calvin, Bonhoeffer, and Nouwen, Vo includes additional positions.

The same could be said for his discussion on media and his synopsis of a theology of youth ministry. This book aims to help "pastors, church leaders, Sunday school teachers, youth workers, youth's parents, and those who are interested in mentoring the youth of the digital age" (p. 3). One wonders how confused they might be with the barrage of interpretations alongside abstract theological reasoning. One may not see the forest for the trees – and there are many trees.

Returning to Vo's introduction, he claims youth are leaving the church because the church "missed the importance of digital media or does not know what to do about it." One wonders, as with all human behavior, if there might be more complex reasons for their leaving.

Perhaps the most important contribution of this book is how it helps us to think about (or to rethink) youth formation in a digital age. Vo states he desires to help church leadership *disciple* young people in our digital culture. Many may not be familiar with the concept of discipling – or the use of the word disciple as a verb. Does it mean "to teach?" Is it equivalent to the Catholic or Orthodox "to catechize?" To be a disciple is to be a student – to have the discipline to listen, learn or practice. It is to follow the master. It's more passive than active. Vo's book will prompt new questions, such as, might we use digital media to listen to our young people – to give them a voice – so that this part of the Body of Christ can be heard?

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Call for Submissions

ARC Journal *Religion and Social Communication* 22, no. 2 (2024)

ARC Journal *Religion and Social Communication* is now accepting submissions for Volume 22, no. 2 (2024) scheduled for publication in June 2024. All topics related to the fields of Religion and Social Communication are accepted for this issue. The deadline for submission is February 15, 2024. ARC does not charge any fee for publication in our journal. Submissions and inquiries are to be sent to: arcstjohns.bkk@gmail.com.

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