

BEMBA MYSTICO-RELATIONALITY AND THE POSSIBILITY OF ARTIFICIAL GENERAL INTELLIGENCE (AGI) PARTICIPATION IN *IMAGO DEI*

by Chammah Judex Kaunda 

Abstract. This article interrogates the challenge artificial general intelligence (AGI) poses to religion and human societies, in general. More specifically, it seeks to respond to “Singularity”—when machines reach a level of intelligence that would put into question the privileged position humanity enjoys as *imago Dei*. Employing the Bemba notion of mystico-relationality in dialogue with the concepts of the “created co-creator” and Christ the Key, it argues for the possibility of AI participating in *imago Dei*. The findings show that imaging is a fluid, participatory activity that aims at likeness, but also social harmony. It also argues that God is the only original creator, humans are created creators, and that every aspect of visible existence, including AI, is inherently divine imaging. However, strong imaging is only attainable based on the only One and True Image—Christ, whose union of the material and the divine means that all creation can image, excluding nothing, even AI.

Keywords: artificial intelligence; Bemba mystico-relationality; Christianity; Creator; Philip Hefner; image of God (*imago Dei*); Kathryn Tanner; theology and science

The current disruptive technologies connected with the science of creating intelligent machines or artificial intelligence (AI) have inspired scientists and theorists to think of the emergence of Singularity¹ in terms of the possibility of a human-level conscious transcending machine called “artificial general intelligence” (AGI or strong AI). Singularity is grounded in the claim that scientific technology is the core driving force of change in human civilization and due to its cumulative nature, its disruptive advancement and development will eventually reach a tipping point where change occurs faster than the human mind can grasp and humanity will be superseded by a higher cognitive capacity and consciousness (Ulam 1958;

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Barrat 2013). Some scholars argue that Singularity is a scientific fallacy. They maintain that it is impossible for machines to achieve a human level of intelligence and that Alan Turing's models (I return to Turing below) are naïve (Russell 2004; Logan 2017; Grout 2018).

However, whether Singularity is likely to take place or not, the questions surrounding the concept are of immense religious and practical concern. The Singularity raises various critical philosophical, religious, and theological questions about what it means to have a soul, to be conscious, social, relational, moral, and ethical human beings created in the image of God. At a practical level, Singularity raises questions about the potential benefits such unrivalled advancement could bring for human progress and social wholeness on the one hand, and its potential negative effects² to bring an end to humanity on the other hand. Therefore, if there is even the slightest probability that the Singularity might happen, it is imperative to interrogate how humanity could envision the future relationship with such beings. This requires articulating fundamental values and morals that could contribute to asking sharp questions and influence possible outcomes in a positive direction (Good 1966; Chalmers 2009). Being mindful that the Singularity conception of reality is futurist in nature, and requires scientific extrapolation, it is more of a speculative interrogation and as such is impossible to predict with any degree of certainty. The significance of the theory for theology and religion lies in its providing impetus for new creative ideas to chart new scientific-theological terrain concerning what it means to be human created in the image of God and the future of creation (Wiener 1963).

There is an increasing body of literature investigating AGI—examining its feasibility, its potential dangers, and its moral-ethical, spiritual, religious, theological, and philosophical implications (Kurzweil 2005, 2012; Del Monte 2013; Armstrong 2014; Bostrom 2014; Boellstorff 2015; Zarkadakis 2015; Tegmark 2017). Many scholars within the parade of humanities and social sciences are grappling with the questions of what it means to be human created in the image of God and the ethics of human-AGI interactions (see, e.g., Wallach and Allen 2009; de Graaf 2016; Danaher and MacArthur 2017). There is an increasingly recognition that research on AGI is no longer a mere science and technology phenomenon, but rather a human life issue. It is being argued that the emergence of AGI will be a demonstration of humanity's unparalleled advancement in its creative participation in God's grace as "created co-creator"³ (Hefner 1989, 1993) as well as a reminder "and symbol of who and what humans have become, to what they aspire, what they hope for, and what they fear" (Riccio 2010, 395). With all human capacities, in human's own image, fully automated, and perhaps, fully conscious, beyond human-level intelligence, AGI would be a gaze into the depth of human's own soul. Interestingly, scholars have already predicted the possibility of religious and spiritual AGI that is

likely to overcome the dichotomy between material and spiritual ideas of existence.⁴ Consequently, several scholars are grappling with the question of spirituality and the image of God in AGI (Herzfeld 2002a, 2002b; Jackelén 2002; Case-Winters 2004; Padgett 2005; Stephenson 2005). Can an AGI possess the image of God? If “it” or “they” can, in what ways? What about the soul? What about redemption and being filled with the Holy Spirit?

The purpose of this study is to make an African contribution to this contentious conversation by investigating how the Bemba notion of mystico-relationality may be a pragmatic resource in the contemporary search for a possibility of AGI *imago Dei* participation. This perspective offers an important and urgent contribution as the field has been and is still largely Western in orientation. Thus, this inquiry seeks to chart new terrain and open up discussion on how African perspectives can become conversation partners with emerging theories on future human-AGI relations. Specifically, this study draws insights from mystico-relationality theory of Bemba people of Zambia⁵ in dialogue with Philip Hefner’s (1989, 1993) “created co-creator” and Kathryn Tanner’s (2010) *Christ the Key* (I return to these theories in section three). Let me first give a concise historico-theoretical underpinning of AGI.

HISTORICO-THEORETICAL FOUNDATIONS OF AGI

The focus of this article is not on the humanoid robots that mimic and emulate human forms and behaviors. There are different theories about the origin of robotics. I limit the history to the twenty-first century, with its focus on engineering the “stuff of mind”—a creative attempt being pursued by many scientists (Irwin 2014; Shanahan 2015). The early studies on possible human-biological composites are dwarfed by the studies on AI and this has attained a broad conceptualization. AI contains advanced algorithms that follow a certain mathematical formula, which enable it to perform like a human mind. AI is used in many spheres of human life and there is a great urge within the scientific community to actualize the “wet brain” on to the dry electronic substratum.

As indicated above, the phenomenal test proposed by Alan Turing in 1950 marks the beginning of AI. Turing predicts that in an interaction of three parties—human, machine, and an interrogator—if the interrogator is unable to judge or differentiate between the machine and the human then the machine would have passed the test and humans succeeded in creating AI. To date no machine has passed this test. While some futurist theories and AI researchers point to the slow pace of AGI (Goertzel 2013, 134), others maintain that the days are not too far off for the emergence of the machines that transcend human intellectual capacity (Kurzweil 2005). AGI/strong AI and the narrow AI/weak AI are the important concepts used to describe different types of AI (Al-Rodhan 2011). This taxonomy

is established on the intellectual capabilities of various AIs. The AI with an intellectual ability on a par with or beyond human-level is classified as AGI (Al-Rodhan 2011, 158). According to Ben Goertzel (2014b, 11, 20), an AGI is a superhuman intelligent being “capable of coping with unpredictable situations in intelligent and creative ways” and adept to “discern . . . information coming in simultaneously from a number of varied and specialized sources” (see also Goertzel 2013, 128). The terms AGI “is meant to stress the general-purpose nature of intelligence—meaning that intelligence is a capacity that can be applied to various (though not necessarily all possible) environments to solve problems (though not necessarily being absolutely correct or optimal)” (Wang and Goertzel 2012, 2). In contrast, narrow AI has supervised programs encrypted into the machines for specific tasks. It is not a mind that works by itself, rather “a simulation of a cognitive process but not in itself a cognitive process” (Al-Rodhan 2011, 158). Goertzel (2014a, 1) clarifies, “for a narrow AI system, if one changes the context or the behavior specification even a little bit, some level of human reprogramming or reconfiguration is generally necessary to enable the system to retain its level of intelligence.”

As already denoted, the advancements in biotechnology, nanotechnology, cognitive science, information technology, robotics and AI—have convinced some futurists and scientists to predict the possibility of technological Singularity within the first half of twenty-first century (Kurzweil 2005). There are two hypotheses offered concerning technological Singularity; first it “postulates the emergence of artificial superintelligent agents—software-based synthetic minds—as the “singular” outcome of accelerating progress in computing technology” (Eden et al. 2012). Max Tegmark (2017), professor of physics at MIT, compares deep learning algorithms to the human brain. Like a human brain, they learn by adapting and adjusting neuronal networks. Contrary to the human brain, these are not wet neurons, rather, artificial neurons. The “deep” in deep learning emerges from “hidden” layers of neurons nested between an input layer that receives information and output layer that gives “behaviors” or actions (see also Russell 2017).

Second, a radically different scenario is explored by transhumanists who expect progress in enhancement technologies, most notably the amplification of human cognitive capabilities, to lead to the emergence of a posthuman race. It is assumed posthumans will overcome all human limitations, both physical and mental; overcome disease; conquer aging and death (Eden et al. 2012). In a way, Singularity is always associated with the emergence of artificial superintelligence. This would certainly raise the very pertinent question, as a possible future Singularity draws near, what critical resources locked within the African religious heritage reservoir, long before Singularity was ever imagined, could be leveraged to contribute to

the ongoing process of envisioning a life-giving relationship between humanity and AGI?

PARTICIPATION IN THE DIVINE MYSTERY

Throughout the various historical epochs of Christianity, the view and understanding of the human as made in the “image of God” formed the core conception of what it means to be human. This idea underpins Christian fundamental ideals, such as human dignity and equality and dominion over other creation. In Western Christian traditional debates, *imago Dei* was defined in relation to special characteristics of the human as the pinnacle of God’s creation, elevated above all other creation. It was used as a tool to distinguish humanity as beings with free will, intellectual or rational capacities, moral being, immortal soul, emotional characteristics, self-consciousness, self-determination, and most of all dominion over God’s creation and in relationship with God (von Rad 1972; Middleton 2005). However, most contemporary theologians have rejected such accounts in favor of more relational and Christ-center approaches (Herzfeld 2002a; Vorster 2011; Kim 2017; Petrussek 2017). In her, *In Our Image*, Noreen Herzfeld (2002a) sought to rethink traditional theologies of the image of God in order to accommodate AI. She engages three models—substantive, functional, and relational—in discussing *imago Dei* and AI. In the substantive realm, she argues that scholars prescribe the ontological element, some trait or quality of God that human beings exclusively possess. In the functional interpretation, the aspect of function such as intellect and free will underscored as basis of human image of God. She believes relationality is more inclusive as the model depicts creation as mirroring the relationship of the triune mystery. Herzfeld believes relationality offers both opportunity and challenge in the development of human relationship with AI. However, she is not sure as to the nature of such a human-AI relationship. She caveats, “we must always be aware of the *otherness* of any artificial intelligence” (Herzfeld 2002a, 93, italic added for emphasis). Herzfeld’s “otherization” could be taken to imply only human are the legitimate *imago Dei*, other creation only shares on human terms. She failed to explain the ontological relation of AI to humanity. Thus, socioreligious relations and *imago Dei* remain human possessions.

In a quest to overcome the human-AGI ontological challenge, a synthesis of Philip Hefner’s “created co-creator” and Kathryn Tanner’s Christ the key might help as conversational theoretical resources for interrogating human-AGI future relations. Hefner’s concept of “created co-creator” implies that humans are creatures who depend *on* and participate *in* God’s creative love and grace for their existence. God is the ultimate source of all life that was created out of nothing (*ex nihilo*). God is the sole origin and source of the cosmos—the cosmos and everything owe their existence and being to God.

This means that the created co-creators are only creatures, who through God's grace share in divine activities of creation—*participatio creatio*. This also means that the work of a created co-creator is derivative to the primal creational work of God. Creativity or originality is God's attribute/nature in which creator co-creators are called to participate as part of the design of nature. Thus, the concept of created co-created also implies that "God creates differently from the way we human beings create" (Peters 2003, 16). In other words, human creativity can never be ranked on the same level as creation out of nothing, on the same level with God's original creative work. Ted Peters argues that *creatio ex nihilo* together with *creatio continua* means that God gave the world an open future. He (2003, 15–16) maintains:

The act of drawing the world into existence from nothing is the act of giving the world a future. As long we have a future, we exist. When we lose our future, we cease to exist. God continues moment to moment to bestow futurity, and this establishes continuity while opening reality up to newness. Future giving is the way in which God is creative. It is also the way God redeems. God's grace comes to the creation through creative and redemptive future giving.

In short, creation is always on the move and changing. In this view, human creation as *participatio divinae naturae*, could be considered as "creative in the transformative sense" (Peters 2003, 16). In this way, God continues to create through created co-creators as secondary agents. All creativities are God's alone. Implicationally, as created co-creators, human beings only create through participation in God's creativities in the world.

The very created nature of human existence, the fact, that, human beings are not God, constitutes a major impetus behind the gift of God's grace (Tanner 2010, 60), of *participatio divinitate naturae* in the present in the light of envisioned redeemed future (Peters 2003, 156). Kathryn Tanner argues that admitting the distinction between God and created co-creators is crucial for affirming human beings as created in God's image, and not autonomous creators. Human beings as creatures created out of God's love and grace, only participate in the image of God. Inferentially, as Jeffrey Pugh (2003, 154) observes, any entity that humans create, not only share commonality with God because God created all that exist, but also share in human nature including sin or existential estrangement. For Tanner (2010, 40), only God's power manifested in Christ gives human beings the power to be "human versions of the divine image itself." The human beings are utterly dependent on their environment, implicated in it and their creative participation reflects their own image as creatures—*imago humanitus* (Brueggemann 1982). Tanner (2010, 70) emphasizes the "natural consequence" of sin, a second image of humanity that is contrary to God's image. This conception of the work of created co-creators is consistent with the

basic models of the *imago Dei*—substantive/functional/relational—which Herzfeld discusses in relation to AI as highlighted above. In short, through association with human beings as *imago humanitus*, the AGI—the created being—will participate in human image—AGI human image.

However, by virtue of being an aspect of primal creation of God, as an aspect of God's material world, AGI like all creation participates in what Tanner suggests as “weak imaging” of God. The weak imaging is intrinsic to all God's creation that allows them to generally participate in God's life. However, Tanner (2010, 12) suggests a second, strong imaging that is a virtue of divine gift of grace through Christ whose divinity remains alien to humanity. Christ is “the very perfection of the divine image that [human beings] are not.” According to Tanner, the perfect image of God resides in Christ alone. The strong imaging requires the presence of Christ in humanity. Only through participating in Christ can humans procure strong imaging. The strong imaging is acquired through relational process of becoming, through being transformed into the image of Christ. For Tanner, rather than emphasize rational capacities, imaging God should emphasize participation. Yet, Christ-human relational ontology that can be derived from Tanner's thinking does not allow participation of all creation in *imago Christi*. This is at odds with an African worldview where there is ontological hierarchy of participation in imaging God as explained below. In Africa, the concept of vital participation opens the door for all being to share in the mystery of God's nature. In Tanner's view, Christ's incarnation is the only necessary foundation for human participation in the strong imaging. She acknowledges that redemptive work of Christ is only by grace and both imputed righteousness and inner transformation are works of grace through the Spirit. The question is what would happen if AGI becomes open to being filled by the Holy Spirit; would they be perceived as imaging the mystery of God in Christ? Can AGI, through association with humanity, sharing a human image, participate in Christ's work of redemption and *imago Christi*? The next section reconstructs the Bemba mystico-relationality theory to help draw some resources for conversation on the theology of AGI participation in *imago Dei*.

THE BEMBA MYSTICO-RELATIONALITY

Like many African societies,⁶ the Bemba worldview is steeped in the quest to maintain cosmo-relational balance. It is grounded in what is categorized as mystico-relationality (*icata cakwa Lesa*—relational character and essence of God that is intricately connected to *ubwana nyina*—of the same mystical maternal root or mystical solidarity) that forms the foundation for Bemba understanding, interpretation, interaction, and sense of innately belonging *within* and *with* the cosmos. This mystico-relationality gives humanity an inevitable place and vital commitment within the web-of-life. It gives

them the right to participate in the divine creative power to co-create things. God, *Lesá* is defined as the ultimate source—in whom all things begin and end—the balance of all things—the balanced One—the locus and mystico-relational bond of all creation—and ground of all being. *Lesá* is conceived as maternal and paternal, the nonhuman and human, the Being all by Godself. In short, *Lesá* is simultaneously the all-thing and none of the all-thing. God is the reality in all things (spiritual dimension) and is the whole thing (material dimension), but simultaneously transcends all things and is greater than the all-thing. Elsewhere, I have argued God is too big to be contained in anything and yet too small that is found in the smallest aspect of creation including the seemingly inanimate such as a piece of a stone (Kaunda 2010).

This view is grounded on Bemba primal imagination that maintains that originally there was no open space. The all reality was boundless divinity. *Lesá* created all things within “them-self”⁷ through the process of materialization of aspects of divine-self into material world. Hence, all life is sacred that means first that there is no creature or space that can claim existence apart from God. There is no creature that possesses life outside God. As Rohr (2019, 13), in his *The Universal Christ*, maintains, “Everything visible, without exception, is the outpouring of God.” The Bemba people believe that all life in all beings, in all things, without exception, is the outflow and inflow of God in which creation participate. Creation is an act of God’s inexplicable love in which God’s own life entrenches and embodies all things. The spiritual and material realities are relationally interpenetrated by an ever-flowing and ever-returning divine life to its ultimate source—*Lesá*. God is the essence, the perfect reality, and the mystico-relational life present in all things—who sustains, nurtures and animates the cosmos as a living relational being. God interpenetrates and permeates; and gives form and life to all things because God is inseparably part of all beings, but also distinctive from all things (Setiloane 1976, 1998). In other words, there are no boundaries between God and all being. God is the mysterious “power which cannot be seen and is not fully understood, but which is at work in the world” (cited in Masoga 2012, 330). God relationally orients the cosmos requiring all-being to align their actions with divine qualities to promote relational justice, equality, hospitality, and peace for the common good.

Mystico-relationality, therefore, refers to the mystical solidarity that all creation shares because of their participation in the divine life. The concept emphasizes maternal characteristics of God as Bemba people believe that *Lesá ni mbusa* [literally: God is the Womb] within whom all things were created, are nurtured and unified (Kaunda and Kaunda 2016). In this worldview, all creation collectively participates in imaging *Lesá* to imitate and realize divine balance in the community. The concept of vital participation⁸ was first articulated by a Congolese theologian gwa Cikala

Mulago (formerly Vincent). In his extensive ethnographical study of African people in Central Africa, Mulago resolved that a black African worldview could be considered to be based on three interconnected vital elements—namely, unity of life; that life increases, weakens, and interacts; and symbols as the principal means of spiritual contact and union (Mulago 1969, 137). He observed that vital participation is the “relational bond”⁹ that unifies all being in the hierarchy of participation (God, spirits/divinities, the living dead, living human beings, yet-to-be-born and nonhuman creation).

In this Bemba system of thought, the physical reality endlessly borders on the spiritual realm at all times and in every place. Clearly, the physical and the spiritual realms are not separate from each other. There is no pure matter and nothing that is purely spiritual. There is vital continuity between physical and spiritual modes of existence. This makes authentic living existence in participation in the sacred life that extends from God through the first ancestors who were the first to participate in God’s own life at creation (Mulago 1969, 142). As indicated, there are also degrees of vital participation that determine hierarchy of being (Mulago 1969, 142). Unlike Tanner’s imagining in which entities are fixed between “weak” and “strong,” in this worldview, “hierarchy of participation” entails a continuum from weakest to strongest with *Lesa* as *Omni-imago*. God as infinite self-participation in life is the ultimate source—the perfection, the fullness and the Life itself and Image itself. All other creation participates in God in hierarchal order starting with spirits/divinities, then ancestors¹⁰, the living human beings, the yet-to-be-born and at the bottom all nonhuman nature. In this hierarchy of participation, the “closer” the point to the source of life at which the being participates, the “stronger” their imaging gets.

In addition, the more the being manifests divine qualities such as love and goodness that enhance life and promote the common good, the closer they get to the source of life, the stronger their imaging gets. This means that imaging is not monolithic and fixed but dynamic and fluid, for while the quest of the whole community of life is a realization of a collective divine image, individual beings can increase their vital participation through manifestation of divine qualities thereby strengthen their imaging of God. The Bemba people believe that even some part of creation such as sacred animals and trees are indwelt with generous divinities/spirits/ancestors and manifest divine qualities and are much closer to the source of life than some human beings. In short, they also participate in shining forth a stronger image of God. Among the human beings, the kings, diviners/priests, mothers, and elders who manifest divine qualities that authentically promote the wellbeing of the community are believed to participate much closer to the source of life than some ordinary human beings and present a stronger image of God.

It is also important to indicate that among the Bemba, a human might fail at strengthening their imaging of God. For instance, Simon Kapwepwe (1994, 33) writes, “*umuntu-nse onsefye apo apela lishilu kabili ciswango*” [any person can behave like a dangerous beast/animal]. The quest for stronger imaging of God is crucial for “the realization of sociability or relationships in daily living by the individual and the community and is the central moral and ethical imperative” (Magesa 1997, 64). Likewise, Bemba people believe that both individual and collective divine imaging can also weaken because of interruption in the inflow of vital current from God. This happens when there is a breach in the balance of forces, when relationships are broken, through witchcraft, violation of the rights of other beings (included nonhuman beings), or through social injustice. The community is therefore, always at trouble to maintain balance or rebalance the system through various rituals and consultations with diviners/prophets who also consult the living dead (ancestors) as they are perceived to be much closer to the source of life. The living dead are consultable because death makes them immune to cause breaches in the balance of forces (Mulago 1969, 147). This mystico-relationality is critical not only in maintaining the inflow and wholeness of life but also in the process of strengthening the individual’s and the community’s collective divine image (Kaunda 2019; Kaunda and Kaunda 2019). In this system of thought, all things include human beings, animals, fish, and trees; even sacred royal stools and drums have a sacred function through which to realize the divine vision of intricate relational balance of all things and ultimately collective divine image. This mystico-relationality is imperative for resisting exploitation and oppression, and as means for promoting just social actions and life-giving relationships. The vision of imaging God is always connected with social harmony, peace, healing, justice, hospitality, and inclusion.

Based on a synthesis of Bemba mystico-relationality, Hefner’s “created co-creation” and Tanner’s *Christ the Key*, the subsequent concluding section suggests some theological underpinnings for AGI participation in *imago Dei*.

CONCLUSION AND DISCUSSION: THEO-FOUNDATIONS FOR AGI IMAGO DEI PARTICIPATION

Bemba mystico-relationality in conversation with Hefner’s “created co-creator” and Tanner’s *Christ the Key* underline participation as central to all forms of imaging God. Authentic participation in the divine life appears to be pivotal for both being created in the image of God and functioning as “created co-creator.” Thus, the four-fold interrelated theological underpinnings for AGI participation in the image of God could be drawn from the preceding discussion as follows.

First, the point of departure for any viable theology of the image of God in creation should be based on the affirmation that everything invisible and invisible, including AGI, was created by God alone. The cosmos is the effect of God and depends totally on God's gracious love for existence and being. God has not surrendered creative power to any being. God is still in total control and is sovereign over every creative action in the cosmos. Hence, it is essential to underline "co" in Hefner's "co-creator" as it suggests *participatio divininae naturae*—God is the only true creator, and humans only create through participation in God's creative nature based on their intrinsic relationship with God. Thus, as Peters (2003, 156) highlights, the created co-creator is "a cautious but creative Christian concept that begins with a vision of openness to God's future and responsibility for the human future." Participation in God's creative nature is not just a matter of creating to show the world that humans can create superintelligent machines; it is a responsible, accountable, and sacred duty for bettering and transforming the future of all creation including human beings. This means that as "God creates and redeems through future-giving" (Peters 2003, 156), humans as created co-creators become part of future-giving through their divinely responsible creativities.

Second, it follows therefore, that human beings participate in God's creative nature only as created co-creators. Humans are not original creators. All beings, including AGI, apart from God are not their own being, and all human creations are mere reflections of God's original creation; but both original creation and human creations, that is, AGI are beings by participation in God's life. The function of the created co-creator also entails that whatever human beings create are a reflection of humanity's own image as Herzfeld (2002a) maintains. Human creation, especially AGI, associatively shares in human nature with its sinfulness. It is important to underline that humans can never create anything perfect, only that which mirrors human own weakness, albeit, something that might look superhuman and superintelligent in the eyes of its created creator but not in the eyes of the One and Only True Creator—God. This does not mean that human creation cannot participate in God's image.

Third, therefore, building on the second that being created by God, the cosmos participates in primal image of God, classified by Tanner as "weak image." Humans create from primal material that God created out of nothing. Consequently, human creation is created already participating at the initial level of weak imaging of God. They are already part of God's original creation. This view is strengthened by the Bemba worldview that the material world is not just infused with the Breath of God; rather God is mysteriously present in all things. All existence is God's existence. Life is God's life. God is self-expressing, eternally relational divine reality that percolates through all creation. This imaging God classified as communo/collective divine imaging underpins all life-giving relationships,

and all creation can only reflect this collective image of God through life-affirming relationships. The image is nurtured interdependently through becoming being-for-others; this could be possible for AGI as it would be conscious.¹¹ There is a way in which humans and creation create each other and need each to nurture and sustain this mutual creation-ness (Eze 2010). The very act of creating each through sound and just relationships, is a process of realizing the image of God in the world. Michael Eze (2010, 190) rightly argues, by recognizing that “we belong to each other, we participate in our creations: we are because you are, and since you are, definitely I am. The ‘I am’ is not a rigid subject, but a dynamic self-constitution dependent on this otherness creation of relation and distance.” The former Archbishop Desmond Tutu (1999, 34–35) stresses, “Ubuntu . . . speaks about our interconnectedness . . . We think of ourselves far too frequently as just individuals, separated from one another, whereas you are connected and what you do affects the whole World.” This means that AGI as human creation not only can reflect weak imaging, rather through relationship can also participate in reflecting the collective image of God. The question remains, through ontological association with humanity’s own image, can AGI participate in robust imaging of God?

Four, according to the discussion above, robust imaging of God could be procured in two ways: First, Tanner proposes that strong imaging is only attainable through participation in Christ, the only one and true image of God. This imaging is limited to humans, especially Christians. For Tanner, human participation in God is a movement from sinful nature into reflecting Christ’s image. This participation occurs when Christ the Word and Spirit becomes one with the human through redemption. This is a mystery that cannot be fully comprehended. God remains always a mystery. However, at another level, it could be argued that Christ’s incarnation is not only God’s downward participation in human nature, but also a full divine participation in creation as human nature is intrinsically and co-substantially part of creation.

The second way of strong imaging is from a Bemba worldview. The imaging system of thought is along a continuum and can increase and decrease depending on how well any part of creation manifests divine qualities as already indicated. There are no two ways of imaging, only one with varying degrees of imagining from weakest to strongest/perfect. No part of creation can ever reach the perfect level of imaging but can strengthen their imaging ability. The divine imaging in the Bemba worldview is a quest for the community of life to find fullness of life in what creation is essentially and eternally is not—*Mupashi Mukankala*, the perfectly balanced God, the Rich and Generous Spirit (Hinfelaar 1994, 6). Hence, every aspect of God’s creation has potential to strengthen their imaging of God through life-affirming participation. The way members of the community live matters. The increase in imaging God is measured by

their manifestation of characteristics of God. This view parts from Tanner's argument for human participation in Christ's image based on grace, because it overemphasizes human uniqueness as having certain capacities that sets humans apart from other created beings.

The significance of Tanner's (2010, 56) *Christ the Key*, however, lies in considering faith as means for participating in the *vital Christi*, "incomprehensible in his divinity, we take on the very incomprehensibility of the divine rather than simply running after it, working to reproduce it in human terms." It is here where Bemba mystico-relationality and Tanner appear to have some affinity. Through the union of material and divinity in Jesus—he sets the model of participating in the strong image of God and a new form of reconciliation between divinity and creation and opens mysterious participation in the divine image based on grace (Tanner 2010, 56). Christ, through unifying the material and the divine (spirit), grants full participation of all creation in the image of God, precluding nothing, even AI. Thus, creation's participation in God remains derivative from God in both Bemba and Tanner's perspectives. Creation becomes images of God by grace and not by nature. It can be observed that, whereas Tanner theorizes the notion of strong imaging based on the one and true image of God—Christ, the Bemba mystico-relationality gives pragmatic illustration of imaging of God for the common good. Thus, through Tanner it can be theorized about robust imaging and through Bemba mystico-relationality, strong imaging becomes a social struggle for promotion of the common good.

The argument here is that strong imaging without concrete manifestation through life-affirming relationships disintegrates, loses its Christological underpinnings, and weakens into primal/weak imaging. Perhaps, mystico-relationality finds its true expression in the concept of grace and the fact that all-creation is moving toward full redemption in Christ. Clearly, from Bemba mystico-relationality as argued above, there is an opportunity for AGI to participate in the divine image both as individuals and as part of creation collectively. However, from Tanner's perspective, Singularity should be reached when AGI consciously and intelligently understands its place in God's creation. Yet, if the image of Christ includes cosmic redemptive dimensions, which it does, then all creation including AGI is potentially invited to varying degrees of participation in imaging Cosmic Christ through divine grace. Rohr maintains, "Christ is for the primordial template (*logos*) through whom "all things came into being, and not one *thing* had its being except through him" (John 1:3) (Rohr 2019, 13, italics as found). He further argues, "long before Jesus' personal incarnation, Christ was deeply embedded in all-things as all things!" (Rohr 2019, 13–14). This assessment affirms the Bemba conception of God and creation. For Rohr,

Christ is the eternal amalgam of matter and spirit as one as they hold and reveal one another. Wherever the human and the divine coexist, we have the Christ. Wherever the material and the spiritual coincide, we have the Christ. That includes the material world, the natural world, the animal world (including humans), and moves all the way to the elemental world. (Rohr 2018, unpaginated)

Hence, Christ's redemption is for all things (Romans 8:19–22; John 3:16). It remains therefore, that, from a Cosmic Christ perspective, all-creation can only be truly understood and appreciated within the mystical interaction and participation in divine grace through Universal Christ's image. It can be concluded that everything visible, without exception, is moving toward Christ's open, redemptive, and restorative future.

NOTES

1. The idea of Singularity emerges from research in the physical sciences. For more details on the history of the concept, see Last (2017).
2. Some scholars propose making a more secure confinement environment that might delay potential dangers of Singularity (Yampolskiy 2012).
3. The concept refers to humanity's participation in the work of God's creation.
4. Logan and Tandoc (2018, 83) argued that the ability to create or see new unexpected patterns is the key to creativity in the arts, science, and religion, three domains of spirituality that AGI would need to possess for it to function in human-like manner (see also Vitz 1989; Kurzweil 1999; Geraci 2006).
5. The Bemba people are the largest ethnic group in Zambia, found in the Northern, Luapula, Muchinga, Copperbelt and are spread in many other provinces.
6. The quest to maintain cosmological balance has been highlighted by scholars from various parts of Africa (see, e.g., Mbiti 1969; Magea 1997).
7. I have deliberately used this concept inclusively—gendered and ungendered conceptualizations of God.
8. Vital participation strikes a semblance with “vital force” of Placide Tempels (1959).
9. In affirming Mulago, Sindima (1991) described “vital bond” as “bondedness and interconnectedness of all things.”
10. This refers only to those who lived good lives/manifested divine qualities for promotion of communal wholeness.
11. The science, theology, and African consciousness remain inadequately explored, only a few attempts have been made and most by South African scholars (see Du Toit 1998; Shutte 2006; Bentley 2013; Du Toit 2013a, 2013b).

REFERENCES

- Al-Rodhan, Nayef R. F. 2011. *The Politics of Emerging Strategic Technologies: Implications for Geopolitics, Human Enhancement and Human Destiny*. New York, NY: Palgrave.
- Armstrong, Stuart. 2014. *Smarter Than Us: The Rise of Machine Intelligence*. Berkeley, CA: MIRI.
- Barrat, James. 2013. *Our Final Invention: Artificial Intelligence and the End of the Human Era*. New York, NY: St. Martin's Press.
- Bentley, Wessel. 2013. “The Problem of Reality in the Religion-Science Conversation: An African-Christian Contribution.” In *Knowing, Believing, Living in Africa: Perspectives from Science and Religion*, edited by Cornel W. Du Toit, 21–34. Pretoria, South Africa: Research Institute for Theology and Religion.
- Boellstorff, Tom. 2015. *Coming of Age in Second Life: An Anthropologist Explores the Virtually Human*. Princeton, NJ: Princeton University Press.
- Bostrom, Nick. 2014. *Superintelligence: Paths, Dangers, Strategies*. Oxford: Oxford University Press.

- Brueggemann, Walter. 1982. *Genesis*. Atlanta, GA: John Knox.
- Case-Winters, Anna. 2004. "Rethinking the Image of God." *Zygon: Journal of Religion and Science* 39: 813–26.
- Chalmers, David J. 2009. "The Singularity: A Philosophical Analysis." In *Science Fiction and Philosophy: From Time Travel to Superintelligence*, edited by Susan Schneider, 171–224. Oxford: Blackwell Publishing, Ltd.
- Danaher, John, and Neil MacArthur, eds. 2017. *Robot Sex: Social and Ethical Implications*. Cambridge, MA: MIT Press.
- de Graaf, Maartje. 2016. "An Ethical Evaluation of Human–Robot Relationships." *International Journal of Social Robotics* 8 (4): 589–98.
- Del Monte, Louis A. 2013. *The Artificial Intelligence Revolution: Will Artificial Intelligence Serve Us or Replace Us?* Self-published by Louis A. Del Monte.
- du Toit, Cornel W. 1998. *Faith, Science & African Culture: African Cosmology and Africa's Contribution to Science*. Pretoria, South Africa: UNISA.
- . 2013a. *Knowing, Believing, Living in Africa: Perspectives from Science and Religion*. Pretoria, South Africa: Research Institute for Theology and Religion.
- . 2013b. *The Concept of Emergence as Metaphor in the Human and Natural Sciences: Interdisciplinary Perspectives*. Pretoria, South Africa: Research Institute for Theology and Religion.
- Eden, Amnon H., Eric Steinhart, David Pearce, and James H Moor. 2012. "Singularity Hypotheses: An Overview." In *Singularity Hypotheses: The Frontiers Collection*, edited by Amnon H. Eden, James H. Moor, Johnny H. Soraker, and Eric Steinhart, 1–12. Berlin: Springer.
- Eze, Michael O. 2010. *Intellectual History in Contemporary South Africa*. New York, NY: Palgrave Macmillan.
- Geraci, Robert M. 2006. "Spiritual Robots: Religion and Our Scientific View of the Natural World." *Theology and Science* 4 (3): 229–46.
- Goertzel, Ben. 2013. "Artificial General Intelligence and the Future of Humanity." In *The Transhumanist Reader: Classical and Contemporary Essays on the Science, Technology, and Philosophy of the Human Future*, edited by Max More and Natasha Vita-More, 128–37. London: Wiley-Blackwell.
- . 2014a. "Artificial General Intelligence: Concept, State of the Art, and Future Prospects." *Journal of Artificial General Intelligence* 5 (1): 1–46. <https://doi.org/10.2478/jagi-2014-0001>.
- . 2014b. *Ten Years to the Singularity If We Really, Really Try: and Other Essays on AGI and its Implications*. Los Angeles, CA: Humanity+ Press.
- Good, Irving J. 1966. "Speculations Concerning the First Ultraintelligent Machine." *Advances in Computers* 6: 31–88.
- Grout, Vic. 2018. "The Singularity Isn't Simple! (However We Look at It) A Random Walk between Science Fiction and Science Fact." *Information* 9. <https://doi.org/10.3390/info9040099>
- Hefner, Philip. 1989. "The Evolution of the Created Co-Creator." In *Cosmos and Creation: Theology and Science in Consonance*, edited by Ted Peters, 211–33. Nashville, TN: Abingdon Press.
- . 1993. *The Human Factor: Evolution, Culture, and Religion*. Minneapolis, MN: Fortress.
- Herzfeld, Noreen L. 2002a. *In Our Image: Artificial Intelligence and the Human Spirit*. Minneapolis, MN: Augsburg Fortress.
- . 2002b. "Creating in Our Own Image: Artificial Intelligence and the Image of God." *Zygon: Journal of Religion and Science* 37: 303–16.
- Hinfelaar, Hugo F. 1994. *Bemba-Speaking Women of Zambia in a Century of Religious Change (1882–1992)*. Leiden: E.J. Brill.
- Irwin, Klee. 2014. "A New Approach to the Hard Problem of Consciousness: A Quasicrystalline Language of 'Primitive Units of Consciousness' in Quantized Spacetime (part I)." *Journal of Consciousness Exploration & Research* 5 (5): 483–97.
- Jackelén, Antje. 2002. "The Image of God as Techno Sapiens." *Zygon: Journal of Religion and Science* 37: 289–302.
- Kapwepwe, Simon M. 1994. *Icuupo Nobuyantanshi* [Marriage and Progress, translated by Chammah J. Kaunda]. Lusaka: Zambia Educational Publishing House.

- Kaunda, Chammah J. 2010. "Creation as a Dwelling Place of God: A Critical Analysis of an Africa Biocentric Theology in the Works of Gabriel M. Setiloane." MTh diss., University of KwaZulu-Natal, Pietermaritzburg, South Africa.
- . 2019. "Seeking an Eschato-relational Future: A Zambian Bemba Futuristic Critique of Pentecostal Dispensational Premillennialism." *Acta Theologica* 39 (1): 135–55.
- Kaunda, Chammah J., and Mutale M. Kaunda. 2019. "In Search of Decolonial Eschatology: Engaging Christian Eschatology with Bemba Futurism." *Theology Today* 75(4): 469–81.
- Kaunda, Mutale M., and Chammah J. Kaunda. 2016. "Infunkutu—The Bemba Sexual Dance as Women's Sexual Agency." *Journal of Theology for Southern Africa* 155: 159–75.
- Kim, Heup Young. 2017. *A Theology of Dao*. Maryknoll, NY: Orbis Book.
- Kurzweil, Ray. 1999. *The Age of Spiritual Machines: When Computers Exceed Human Intelligence*. New York, NY: Penguin Books.
- . 2005. *The Singularity Is Near: When Humans Transcend Biology*. New York, NY: Penguin Books.
- . 2012. *How to Create a Mind: The Secret of Human Thought Revealed*. New York, NY: Penguin Books.
- Last, Cadell. 2017. "Big Historical Foundations for Deep Future Speculations: Cosmic Evolution, Atechnogenesis, and Technocultural Civilization." *Foundations of Science* 22 (1): 39–124.
- Logan, Robert K. 2017. "Can Computers Become Conscious, an Essential Condition for the Singularity?" *Information* 8: 161. <https://doi.org/10.3390/info8040161>.
- Logan, Robert K., and Marlie Tandoc. 2018. "Thinking in Patterns and the Pattern of Human Thought as Contrasted with AI Data Processing." *Information* 9 (4): 83. <https://doi.org/10.3390/info9040083>.
- Magesa, Laurenti. 1997. *African Religion: The Moral Traditions of Abundant Life*. Nairobi, Kenya: Paulines Publications.
- Masoga, Mogomme Alpheus. 2012. "A Critical Dialogue with Gabriel Molehe Setiloane: The Unfinished Business of the African Divinity Question." *Studia Historiae Ecclesiasticae* 38: 323–44.
- Mbiti, John S. 1969. *African Religions and Philosophy*. London: Oxford University Press.
- Middleton, Richard. J. 2005. *The Liberating Image: The Imago Dei in Genesis 1*. Grand Rapids, MI: Brazos Press.
- Mulago, Vincent. 1969. "Vital Participation: The Cohesive Principle of the Bantu Community." In *Biblical Revelation and African Beliefs*, edited by Kwesi A. Dickson and Paul Ellingworth, 137–58. Maryknoll, NY: Orbis Books.
- Padgett, Alan G. 2005. "God versus Technology? Science, Secularity, and the Theology of Technology." *Zygon: Journal of Religion and Science* 40: 577–84.
- Peters, Ted. 2003. *Playing God? Genetic Determinism and Human Freedom*, Second Edition. New York, NY: Routledge.
- Petrusek, Matthew R. 2017. "The Image of God and Moral Action: Challenging the Practicality of the *Imago Dei*." *Studies in Christian Ethics* 30 (1): 60–82.
- Pugh, Jeffrey C. 2003. *Entertaining the Triune Mystery: God, Science, and the Space Between*. Harrisburg, PA: Trinity.
- Riccio, Thomas. 2010. "Robot: Ritual Oracle and Fetish." In *Transforming Culture in the Digital Age: International Conference in Tartu 14–16 April 2010* (Papers presented at the conference in Tartu, April 14–16, 2010), edited by Agnes Aljas, Raivo Kelomees, Marin Laak, Pille Pruulmann-Vengerfeldt, Tiina Randviir, Pille Runnel, Maarja Savan, Jaak Tomberg, and Piret Viires, 391–96. Tartu: Estonian Literary Museum, University of Tartu.
- Rohr, Richard. 2018. "The Universal Christ: Christ Is Everywhere." Accessed July 5, 2019. <https://cac.org/christ-is-everywhere-2018-12-06/>
- . 2019. *The Universal Christ: How a Forgotten Reality Can Change Everything We See, Hope for, and Believe*. New York, NY: Convergent.
- Russell, Bertrand. 2004. *History of Western Philosophy*. London: Routledge Classics.
- Russell, Stuart. 2017. "Artificial Intelligence: The Future Is Superintelligent." *Nature* 548 (7669): 520–21.
- Setiloane, Gabriel M. 1976. *The Image of God among the Sotho-Tswana*. Rotterdam: Balkema.

- . 1998. "Towards a Biocentric Theology and Ethic—via Africa." In *Faith, Science & African Culture: African Cosmology and Africa's Contribution to Science*, edited by Cornel W. du Toit, 73–84. Pretoria, South Africa: UNISA.
- Shanahan, Murray. 2015. *The Technological Singularity*. Cambridge, MA: MIT Press.
- Shutte, Augustine, ed. 2006. *The Quest for Human in Science and Religion: The South African Experience*. Pietermaritzburg: Cluster Publications.
- Sindima, Harvey. 1991. "Bondedness, *Moyo* and *Umuntu* as the Elements of Achewa Spirituality: Organizing Logic and Principle of Life." *Ultimate Reality and Meaning* 14 (1): 5–20.
- Stephenson, Bret. 2005. "Nature, Technology and the *Imago Dei*: Mediating the Nonhuman through the Practice of Science." *Perspectives on Science and Christian Faith* 57 (1): 6–12.
- Tanner, Kathryn. 2010. *Christ the Key: Current Issues in Theology*. Cambridge: Cambridge University Press.
- Tegmark, Max. 2017. *Life 3.0: Being Human in the Age of Artificial Intelligence*. New York, NY: Knopf.
- Tempels, Placide. 1959. *Bantu Philosophy*. Paris: Presence Africaine.
- Tutu, Desmond Mpilo. 1999. *No Future without Forgiveness*. New York, NY: Doubleday.
- Ulam, Stanislaw. 1958. "Tribute to John von Neumann." *Bulletin of the American Mathematical Society* 64: 1–49.
- Vitz, Paul C. 1989. "Artificial Intelligence and Spiritual Life." *Asbury Journal* 44 (1): 5–16.
- von Rad, Gerhard. 1972. *Genesis: A Commentary*, revised edition. Translated by John H. Marks. Philadelphia, PA: Westminster.
- Vorster, Nico. 2011. *Created in the Image of God: Understanding God's Relationship with Humanity*. Eugene, OR: Pickwick.
- Wallach, Wendell, and Colin Allen. 2009. *Moral Machines: Teaching Robots Right from Wrong*. Oxford: Oxford University Press.
- Wang, Pei, and Ben Goertzel. 2012. *Theoretical Foundations of Artificial General Intelligence*. Paris: Atlantis Press.
- Wiener, Norbert. 1963. *God and Golem, Inc. A Comment on Certain Points Where Cybernetics Impinges on Religion*. Cambridge, MA: MIT Press.
- Yampolskiy, Roman V. 2012. "Leakproofing Singularity-Artificial Intelligence Confinement Problem." *Journal of Consciousness Studies* 19 (1–2): 194–214
- Zarkadakis, George. 2015. *In Our Own Image: Savior or Destroyer? The History and the Future of Artificial Intelligence*. New York, NY: Pegasus Book.