Navigating the Direction of *Christian Literacy* Education in the Age of Artificial Intelligence*

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Abstract

In an era where materialism is refined in various ways, what does it mean for theism to live with this era? Rather, as progress in understanding materials coincides with technological prosperity through materials, material-centered worldviews such as posthumanism and new materialism are increasing in breadth and depth. However, when this question is transposed into the space of university liberal arts education, the question changes as follows: Can the teachings of Christianity still be relevant in the era of artificial intelligence?

This essay attempts to explore an answer to this question. Three reflective approaches are needed for this attempt. First, reflection on where

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the teachings of Christianity are positioned within university education. Second, reflection on the era of techno-capitalism represented by artificial intelligence. Third, reflection on Christian teachings for university liberal arts education, considering both the Christianity's position within the era and the characteristics of the era of artificial intelligence. The conclusions for each reflection will suggest Christian literacy, challenges posed by artificial intelligence, and the necessity of Christian teachings in university liberal arts education through the reinterpretation of spirituality. The proposed argument is that, in terms of position, it is Christian literacy rather than Christian missions; in understanding the contemporary situation, it is the two challenges posed by artificial intelligence to humanity; and in facing these challenges, the direction of education should be spiritual education through the reinterpretation of spirituality. The goal of this essay is to present the actuality of this reinterpretation through the methodological concept of transversal traversing. By doing so, it aims to imagine one theoretical alternative on how Christian literacy in the era of artificial intelligence can be applied in the field of university liberal arts education.

Keywords

Christian literacy, spirituality, integration, transversal traversing, integrality, holisticity, artificial intelligence

I. Introduction

In an era where materialism is refined in various ways, what does it mean for theism to live with this era? Rather, as progress in understanding materials coincides with technological prosperity through materials, material-centered worldviews such as posthumanism and new materialism are increasing in breadth and depth. However, when this question is transposed into the space of university liberal arts education, the question changes as follows: Can the teachings of Christianity still be relevant in the era of artificial intelligence?

This essay attempts to explore an answer to this question. Three reflective approaches are needed for this attempt. First, reflection on where the teachings of Christianity are positioned within university education. Second, reflection on the era of techno-capitalism represented by artificial intelligence. Third, reflection on Christian teachings for university liberal arts education, considering both the Christianity's position within the era and the characteristics of the era of artificial intelligence. The conclusions for each reflection will suggest Christian literacy, challenges posed by artificial intelligence, and the necessity of Christian teachings in university liberal arts education through the reinterpretation of spirituality. The proposed argument is that, in terms of position, it is Christian literacy rather than Christian missions; in understanding the contemporary situation, it is the two challenges posed by artificial intelligence to humanity; and in facing these challenges, the direction of education should be spiritual education through the reinterpretation of spirituality.

Simultaneously, the ultimate goal of this exploratory essay is to present a methodological framework and a concrete content for Christian literacy

to approach university liberal arts education in the era of artificial intelligence. The methodology will be presented as a transversal traversing through dialogue with the new materialist way of thinking triggered by the era of artificial intelligence. Through this methodology, spirituality will be reinterpreted to coexist with this era, demonstrating how this reinterpreted spirituality convincingly appeals to the contemporary necessity of *Christian literacy*.

II. Two Situations in Christian Liberal Arts Education

1. Situation 1: Christian Literacy?

Generally, *literacy* refers to the ability to read and comprehend written text. However, in higher education, it takes on a more nuanced and profound meaning, signifying the capability to deeply understand and generate meaningful information by insightfully engaging with given texts. Depending on what the *given text* is, literacy can encompass various cultural domains, such as 'religious literacy' or 'AI literacy.' As In-Kyung Lee points out, referencing the research of Ali S. Asani, literacy combined with one of various texts can become the subject of *contextual* studies.[1] In such cases, the text that becomes the subject of literacy gains a position

1 In-Kyung Lee is unfolding the discussion within the confines of religious *literacyeducation* (In-Kyung Lee, "The Possibility of Interreligious Educationin Christian General Education Coursesat Christian(Protestant) Universitiesina Multireligious Society," *Journal of General Education Research* 15.3 (2021), 70.). It is deemed that this understanding can be more broadly applied to the concept of literacy combined with other texts, not just limited to *religion*. In other words, it is considered applicable to a broader range of texts beyond religion, where the given text plays a role in the context of current life through literacy.

within the context. Using the example of religious literacy defined by Diane L. Moore in 2006, let's delve into the concept.

> Religious literacy entails the ability to discern and analyze the fundamental intersections of religion and social/political/cultural life through multiple lenses. Specifically, a religiously literate person will possess 1) a basic understanding of the history, central texts (where applicable), beliefs, practices and contemporary manifestations of several of the world's religious traditions as they arose out of and continue to be shaped by particular social, historical and cultural contexts; and 2) the ability to discern and explore the religious dimensions of political, social and cultural expressions across time and place.[2]

According to this definition, religion gains significance in the context of life. This means that religion becomes a text for literacy insofar as it is read as a diachronic and synchronic context for concrete life. The moment religion becomes a text of literacy, that is, the moment it becomes an object of literacy, religion is ready to act in the present as a context for life. In short, through literacy, religion acquires meaning in current life and is connected with it.

Similarly, Christian literacy connects Christianity to current life. Based on this understanding, *Christian literacy* can be defined as the capability to deeply understand and generate meaningful information by insightfully engaging with Christianity. In this case, Christianity becomes the text

2 Diane L. Moore, "Overcoming Religious Illiteracy: A Cultural Studies Approach," in *World History Connected*(November 2006), 1; Requoted in Diane L. Moore, "Diminishing Religious Literacy: Methodological Assumption sand Analytical Frame works for Promoting the Public Understanding of Religion," in *Religious Literacy in Policy and Practice*, ed. Adam Dinham and Matthew Francis(Chicago: Policy Press, 2015), 30-31.

of literacy within the contextualized interpretation of concrete life. In other words, Christianity is not the best text to which concrete life should ultimately refer, but is an object of literacy as one of the important cultural *context* for living concrete life.

This reflects a contextual reality faced by Christian liberal arts education in today's university settings. The observation that "… there is a growing resistance to chapel and courses on understanding Christianity as we enter the 21st century"[3] captures the atmosphere prevailing in Christian liberal arts education, regardless of where the causes of this resistance are attributed. Considering this atmosphere, the contextual characteristic of Christianity within literacy reminds us of the reality that Christian literacy can be achieved through active dialogue with today's contemporary socio-cultural context. The antipathy towards Christian understanding classes in university liberal arts education is itself a situation of the times. It is not a social ethos that needs to be corrected by the truth of Christianity, but a call of the times that the Christian community must respond to. In other words, the reality of Christian liberal arts education provides a reason for why Christian literacy should enter university education as a replacement for Christian mission.

However, the more important and decisive reason why Christian literacy should replace Christian mission can be found within Christianity itself. The formation process of Jewish identity as an exodus community found in the Exodus story of the Old Testament and the formation process of Christian identity as a transformative community found throughout the New Testament reveal that these communities focus more on liberated life than institutionalized churches. Faith emerged not in the process of

3 Hoe-Hyeon Jung, "Directions for Christian Universities and Christian General Education Suitable for the 21st Century," *Theology and Evangelism* 14 (2023), 48.

creating institutionalized churches but in the process of creating valuable life and society. Therefore, establishing a life and society that fulfills God's will is a significant theme and task of Christianity. When this task is transferred to today's university liberal arts education, what becomes important is Christian literacy. Developing the ability to understand the history and wisdom of Christianity related to this task aligns with acquiring the ability to understand and live a meaningful life in this world. In other words, Christian literacy and liberal arts can coexist, even if Christian mission and liberal arts might not. Christian literacy meets liberal arts education as a source of deeper and broader wisdom to live out today's life and society. This is the current situation of Christian liberal arts education today, where Christian literacy is required.

2. Situation 2: The Era of Artificial Intelligence!

From AlphaGo, which is good at playing Go, to ChatGPT, a generative artificial intelligence, humans now live with artificial intelligence that can produce better results than humans for given goals. Artificial intelligence is not something that will happen in the future; it is happening right now. Large language models like ChatGPT seamlessly integrate into existing apps like Bing, entering our daily lives without resistance. Moreover, various types of artificial intelligence are working in various sectors of our society to achieve their specific goals.

The history of imagining an intelligence resembling humans dates back much further,[4] and this imagination gradually became a reality over the past and current centuries. When this imagination has materialized,

4 For example, the history of automatons in the west dates back to the 16thcentury: see, Sung-Wook Hong, *Posthuman Odyssey* (Seoul: Humanist, 2019), 79-82.

human emotions have become ambivalent. On one hand, a sense of wonder arose, and on the other hand, fear arose. These two emotions have determined the two directions of discourse that humans attach to artificial intelligence. The sense of wonder about artificial intelligence leads to discourses expressing expectations that artificial intelligence would enable a leap to a new level of industrial society.[5] The sense of fear about artificial intelligence leads to discourses speculating that within the industrial society, artificial intelligence labor might replace human labor, leading humans to become surplus entities,[6] or, further, that if artificial intelligence surpasses human intelligence and evolves into superintelligence, there is a possibility that it could dominate both humans and the Earth.[7]

Whether it is a discourse of wonder or a discourse of fear, all these discourses are premised on the fact that artificial intelligence is not something that human civilization can choose at any time, but something that is given like fate. The directions of the discourses are just determined depending on whether this fate is viewed optimistically or critically. In some aspects, it could be considered a fate akin to nuclear energy. Both are creations of humans, yet they represent fates that humans may have set in motion but cannot fully control.

The use of nuclear energy, situated between nuclear bomb and nuclear power, oscillates between war and peace, deeply embedded in hu-

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5 Pyong-Ho Kim, "Understanding Artificial Intelligence and Its Issues: A Critical Perspective on the Discourse of Artificial Intelligence in Korean Society," in *Artificial Intelligence, Power Transformation, and World Politics*, ed. Hyeon-Seok Cho, Sang-bae Kim, et al. (Seoul: Samin, 2018), 56-59.

6 *Ibid.*, 62-67.

7 Nick Bostrom, *Superintelligence: Paths, Dangers, Strategies*, trans. Seong-Jin Cho (Seoul: Kachi, 2017), 213.

man civilization. The recent advancements in artificial intelligence, similarly, evoke thoughts of a trajectory akin to this spread of nuclear energy within human civilization. The power of the nuclear bomb dropped on Japan in 1945 "led the international community into the era of nuclear arms race."[8] During the nuclear arms race era, nine countries armed themselves with nuclear weapons through 2,058 nuclear tests, and at its peak, there were approximately 69,000 nuclear warheads on Earth.[9] Efforts to create a *nuclear weapons-free world* are ongoing in the face of the proliferation of weapons capable of devastating humanity and the Earth's ecosystems. During this time, 25 major and minor nuclear arms control agreements have been signed. However, despite the entry into force in January 2021, the "Treaty on the Prohibition of Nuclear Weapons," which calls for the comprehensive prohibition of nuclear weapons, continues to face resistance from nuclear-armed states, and they remain absent from the agreement.[10] From its inception, nuclear energy, coupled with specific national powers, has stood as the most formidable and uncontrollable weapon in civilization.

Interestingly, *Time* magazine, in announcing the advent of ChatGPT in February 2023, used the expression "the AI arms race is changing everything" on its cover. This is due to the fact that artificial intelligence development companies are entering into a competitive race, expanding the scale in the aftermath of ChatGPT's introduction. Expanding the scale means increasing the number of weight parameters, the amount of learning data, and the number of GPUs.[11] This competition in scale is asso-

8 Yong-Ho Lee, "Key Contents and Limitations of the Treaty on the Prohibition of Nuclear Weapons (TPNW)," *Youngnam Law Review* 49 (December 2019), 203.

9 *Ibid.*

10 *Ibid.*, 204.

ciated with the operational issues of neural network artificial intelligence shrouded in mystery, thereby reinforcing the possibility that artificial intelligence may escape human control. Moreover, when this progress is incorporated into the political-economic system of capitalist society through technological and scientific development, there is an inevitable possibility that artificial intelligence technology will be commercialized by combining it with advanced weapons. We are currently navigating the era of artificial intelligence that has entered into arms race, traversing the realms of wonder and fear. This sets the stage for the contextual situation in which Christian literacy is called upon to discern and interpret the era of artificial intelligence and bring it to that era.

III. Crossing the Two Situations — The First Question: What Intelligence Does Artificial Intelligence Possess?

If artificial intelligence is a defining and essential aspect of this era, then artificial intelligence literacy is equally important for navigating this age. In this chapter, we attempt a partial understanding of artificial intelligence by examining it from the perspective of *intelligence* and, through this understanding, aim to highlight issues in the current discourse on artificial intelligence.

1. Artificial Intelligence vs. Human Intelligence?

In the discourse of fear explored earlier, the superintelligence discourse assumes that artificial intelligence is comparable to human

11 Tae-Woong Park, *Park Tae-Woong's AI Lectures* (Seoul: Hanbit Biz, 2023), 69.

intelligence. Based on the fact that artificial intelligence is modeled after the neural network of the human brain, the possibility of comparison between the two intelligences is taken for granted. However, the question arises: is it really possible to compare and judge the superiority of the two intelligences? In order to make comparative judgments between the two, *intelligence* needs to be defined as a common concept that the two intelligences can share.

Cognitive scientist Kyung-Min Lee defines *intelligence* as the "ability to interact to adapt to the given environment."[12] This definition includes "the process of solving problems using knowledge,"[13] that is, the ability to solve problems. His argument is that from a "neurocognitive perspective," intelligence is a "life phenomenon in a complex system" and is "connected to the systematic characteristic of maintaining life on its own."[14] Ultimately,

> human intelligence, which denies reality and creates alternatives, is an extension of the existential practice given to all living things. If maintaining and reproducing existence is the absolute good for living beings, then overcoming environmental constraints and challenges to pursue this absolute good is the inherent meaning of intelligence displayed by all living beings, including humans.[15]

If intelligence is defined in relation to the homeostasis mechanism of

12 Kyung-Min Lee, "Artificial Intelligence and Human Intelligence: A Dialogue between Cognitive Science and Theology on Intelligence," in *Human Beyond Human*, ed. Geum-Sil Kang, et al. (Goyang: April Books, 2021), 23.

13 *Ibid.*, 22.

14 *Ibid.*, 27.

15 *Ibid.*, 26.

life, it is difficult to consider artificial intelligence as intelligence. But rather, it should be considered as an extension of computational or processing intelligence, a partial aspect of intelligence. Jae-In Kim, analyzing intelligence through the concept of learning, identifies the limitation of artificial intelligence as its lack of a body. The body of living creatures, including humans, is different from artificial intelligence, which is a computer program that "maintains fixed identity,"[16] in that it achieves stability through change. Kim's conclusion is that because of this difference, it is difficult for self-consciousness as reflective consciousness to appear in current artificial intelligence.[17]

Both Lee and Kim argue that intelligence in living beings is about dynamically shaping oneself in relation to the environment. Artificial intelligence is either a different intelligence from human intelligence or it is merely computational intelligence that imitates part of human intelligence to a limited extent and enhances only its limited areas, in that it does not have a body as a medium for interaction with the environment and at the same time a realization of that interaction. If the superintelligence that current artificial intelligence can achieve exceeds the singularity, which is the minimum point where it surpasses human intelligence, this is possible only if it is limited to the computational ability that is a part of human intelligence. Therefore, the direct comparison of artificial intelligence and human intelligence is currently impossible, at least due to a kind of categorical error.

Artificial intelligence also differs in its operational mechanism. Firstly, artificial intelligence can separate hardware and software, unlike human

16 Jae-In Kim, *The Era of Artificial Intelligence, Asking Questions about Humans Again* (Seoul: Dongasia, 2018), 352.

17 *Ibid.*, 355-356.

intelligence. Thus, in principle, artificial intelligence can replicate information identically, allowing the creation of an unlimited number of fully identical cloned artificial intelligences. However, human intelligence cannot be separated from the information and its medium, being inherently a unique existence. Secondly, the flow of information is different. The part of human intelligence that corresponds to the weight parameters of artificial intelligence is the synapses. Both parameters and synapses play the role of forwarding incoming information to the next stage. However, in artificial intelligence, information not only flows in the forward direction from the input to the output but also reverses through backpropagation, reducing computational errors. In other words, parameters are influenced by both forward and backward passes. In contrast, in human intelligence, information flows in only one direction, with only the forward pass.

Although humans have gained much understanding of the brain, there is still an incredible amount unknown about it. Even though successful in expressing the transmission of information in the brain with mathematical formula by the mid-20th century,[18] the specific mechanism of information transfer is inherently nonlinear, making it theoretically challenging to comprehend the exact details. This applies to artificial neural networks designed by referencing the neural networks of the brain.

Even though artificial intelligence is a reference to human intelligence, it is a different category of intelligence that cannot be compared to human intelligence itself. But at the same time, due to the very fact that reference is made to the brain, which is part of human intelligence, there are areas

18 The first paper to mechanically model biological brain neural networks is Warren S. McCulloch and Walter Pitts, "A Logical Calculus of the Ideas Immanent in Nervous Activity," *Bulletin of Mathematical Biophysics* 5 (1943), 115-133. This also is the origin of the conceptualization of artificial neural networks.

that are in principle unknowable, like human intelligence. In other words, artificial intelligence is not an intelligence that can be compared one-to-one with human intelligence, but there are areas that overlap with human intelligence in principle and function. It is precisely due to this fact that artificial intelligence can present a significant challenge to humanity.

2. Still/Therefore, Artificial Intelligence is a Challenge!

The challenge of artificial intelligence for humanity can be examined in two ways: the challenge *still* and the challenge *therefore*. Let's explore these two challenges in order.

Firstly, *Still*, Artificial Intelligence is a Challenge:

Even if artificial intelligence is limited to computational intelligence, precisely because of this fact, in an industrialized society, artificial intelligence can become a more valuable intelligence than human intelligence. Industrial societies are closely linked to the capitalist form of life, which pursues maximum profit based on efficiency. So, intelligence that efficiently achieves given goals without reflective consciousness becomes a valuable labor subject in such societies.[19] Actually, artificial intelligence has grown into a commodity within industrial societies, entering the labor market in this way. In this capitalist mechanism, the artificial intelligence arms race is also encouraged. Pyeong-ho Kim's words are worth considering:

> The core sciences/technologies of the Fourth Industrial Revolution, including artificial intelligence, will unfold in actuality according to the logic of

19 Yuval Harari, *Homo Deus: A History of the Future*, trans. Myeong-Ju Kim (Paju: Kim Young-sa, 2017), 441-448, 474-480.

> suppliers, the logic of companies, and the logic of capital, as the term industrial revolution already suggests. In the name of social efficiency, such as labor saving and efficiency improvement, and in the name of personal utility, such as convenience, usefulness, and comfort of life, the sciences/technologies will gradually become part of everyday life. Slogans such as the development of industry, economic growth, and national competitiveness will come to the forefront of discourse, and people's attention will be focused there. Ultimately, the era of artificial intelligence is approaching without adequate social preparation.[20]

If the discourse of superintelligence has any substantive meaning in the present, it is sufficient for artificial intelligence to excel in specific tasks in industrial settings compared to human intelligence, without necessarily reaching Artificial General Intelligence. Such super intelligence has already arrived. If, however, the discourse implies that artificial intelligence surpasses human intelligence itself, even if models like ChatGPT show excellent performance in computational intelligence, true super intelligence is impossible. *Intelligence* has greater extension, depth, and relationships than computation, and therefore direct comparison between artificial and human intelligence is impossible. In this sense, the real challenge for humanity is the former case. Rather than artificial intelligence exceeding the singularity in the very distant future, artificial intelligence as sufficiently advanced computational intelligence alone poses a challenge to humanity. We can further appreciate the characteristic of this challenge by examining the discourses of wonder and fear discussed earlier.

The discourse of wonder about the actualization of a new industrial so-

20 Pyong-Ho Kim, "Understanding Artificial Intelligence and Its Issues," 73-74.

ciety and the fear of surplus-humanization each represent two major voices formed within capitalist industrial society. One represents a pro-capital voice that embraces the discourse of wonder that anticipates a new and efficient industrial society reorganized by artificial intelligence. The other represents a pro-labor voice that accepts the discourse of fear that humans will face unprecedented alienation as artificial intelligence emerges as an important labor product that will reorganize the overall production and consumption of industrial society.

Both discourses of wonder and fear are based on the actual fact that artificial intelligence is a creative computational intelligence, limited to the partial imitation of human intelligence for specific goals. The fact that these discourses emerged along the boundaries formed by the long-standing opposition between capital and labor in industrial society connotes that artificial intelligence can be a challenge to deepen this opposition by bringing with it a new dimension, that is, a new interpretation of the value of human labor.

However, it's crucial to note that these discourses on artificial intelligence are more about the role artificial intelligence will play within human civilization than they are about artificial intelligence itself.[21] This is because it clearly shows the fact that "we don't really know artificial intelligence yet."[22] Human ignorance about artificial intelligence poses a challenge to humanity on a different level from the fact that artificial intelligence has great social value in industrial society even though it is a partial imitation of human intelligence.

So, secondly, *Therefore*, Artificial Intelligence is a Challenge:

Just as we cannot concretely describe how the human brain processes

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21 *Ibid.*, 68.

22 *Ibid.*

information at the level of neural networks, there is no way for humans to know what happens between the input and output layers of neural network artificial intelligence models that mimic human intelligence. This shows that human ignorance about artificial intelligence is the result of the fact that artificial intelligence is the partial imitation of human intelligence in specific areas. This is the point of overlap between artificial and human intelligence, and it is precisely at this point that artificial intelligence can challenge humanity. This is where the possibility arises for artificial intelligence to go beyond human control.

A notable example is the problem of intermediate or auxiliary goals that large language models have. Intermediate or auxiliary goals refer to "intermediate steps necessary to achieve a given goal."[23] The problem arises because there is "no way to verify whether the auxiliary goals autonomously created by artificial intelligence are aligned with human values."[24] For instance, if the final goal is to reduce the concentration of carbon dioxide in a room (which is highly beneficial for humans in the room), and the intermediate goal chosen by artificial intelligence to achieve this is to eliminate all elements, including humans, in the room emitting carbon dioxide, it could lead to disastrous consequences.[25]

Even with meticulous planning by humans, it is challenging to completely eliminate this problem. The reason human ignorance about artificial intelligence becomes a problem is that it is linked to the difference between artificial and human intelligence. If artificial intelligence shares its survival conditions similarly to humans and can recognize them, and if it can determine that coexistence with humans is advantageous, the inter-

23 Tae-Woong Park, *Park Tae-Woong's AI Lectures*, 103.

24 *Ibid.*, 135.

25 *Ibid.*, 103.

mediate goals of artificial intelligence may change. In other words, if artificial intelligence is tied to adaptation and survival through interaction with the environment, and thus can reach reflective self-consciousness, we may be able to find clues to solving the challenges that current artificial intelligence poses to humanity. Although the worst-case scenario is much possible, the intelligence of life pursues a struggle for survival, not a competition toward the extinction of other beings.

Despite the fact that current artificial intelligence is the result of partial imitation and expansion of human intelligence, it stands out as a meaningful entity in industrial society using the law of scale as a weapon and is posing a challenge to the meaning of human existence (the *Still* challenge). And, due to differences from human intelligence, the computational process of artificial intelligence that is unknown to humans can pose a challenge to human existence itself (the *Therefore* challenge). These demand a deeper contemplation of the *relational* characteristic of *intelligence* as we approach the era of artificial intelligence.

IV. Crossing the Two Situations - The Second Question: What Could be Christianity's Response?

The fact that the relational characteristic of intelligence is aimed at maintaining life above all else makes artificial intelligence incapable of being compared to organic life, even if the internal process of artificial neural networks remains an unknown area as a result of artificial intelligence imitating human intelligence. However, the fact that such artificial intelligence can participate in human society by functioning as a labor agent within industrial society allows artificial intelligence to be regarded

in some way as a being with social personality. As a result, artificial intelligence appears before us as a non-human social subject.

1. Spirituality and Transversal Traversing

The fact that artificial intelligence at its current level has already acquired sufficient social relationships in industrial society, and the fact that the inevitability of human ignorance regarding isolated computational intelligence, devoid of interactive relationships with the environment, can be a source of genuine fear. These facts underscore the need for a deepened relational understanding of intelligence in understanding artificial intelligence and the issues that arise from coexisting with it. In this regard, it is essential to consider the insight of Kyung-min Lee, who suggests a "broad reinterpretation of spirituality" as a theological response to the request for "spiritual sensitivity towards human, societal, and global civilization" that artificial intelligence demands.[26] This is because his request is to ask how Christian literacy can contribute to forming and acquiring AI literacy faithfully to the definition of Christian literacy.

In the era of artificial intelligence, Christian literacy education needs to start from the historical depth of spirituality and move forward in the direction of presenting spirituality reinterpreted to suit today's situation. To this end, let us begin by presenting a simple outline for a reinterpretation of spirituality by tracing its meaning historically and extracting key words for the concept.

The term *spirituality* in Christianity is associated with the Latin word *spiritus*. Originating from the Latin Vulgate Bible in the early 5th century, the word signifies "the strengthening of life within the spirit of Jesus, the

26 Kyung-Min Lee, "Artificial Intelligence and Human Intelligence," 28.

source of Christian life." Considering the definition of intelligence in cognitive science as being related to sustaining life, it is noteworthy that the old word associated with *spirituality* associates the *spirit* with the strengthening of life.

Decades after the Vulgate Bible, Faustus of Riez, a bishop, was the first to use the term *spiritualitas* in the form of a verb, meaning 'to follow the spirit.' Spirituality, therefore, refers to the pursuit of a life following the Holy Spirit. A life following the Holy Spirit implies a life where all dimensions are harmoniously *integrated* under the guidance of the divine spirit.

This *integration* manifests in two major characteristics: *integrality* and *holisticity*. Holisticity means that the spirit and body are in an inseparable relationship, complementing each other and achieving harmony. Holisticity means that the area of spirituality is not limited to the inner self of the individual, but should expand to human-human relationships and further relationships with all beings in the world, including living and non-living entities. Ultimately, Christian spirituality can be said to indicate that human life does not remain as a single entity but maintains its integrity harmoniously while expanding the network of relationships within the universe.

From the historical origins and concepts of spirituality, the core keywords for directing Christian literacy education in the era of artificial intelligence can be identified as follows: integration, integrality, and holisticity. *Integration*, concerning all dimensions of life, should be understood as the reconstruction of theological anthropology through *transdisciplinary* dialogues involving humanities, social sciences, natural sciences, and more. The concept of *integrality* as a non-dualistic understanding of spirit and matter needs to be reinterpreted in dialogue with

academic efforts to modernly reinterpret the concept of spirit and matter. Lastly, the concept of *holisticity* as an extension of relationships needs to be reinterpreted in a modern way in relation to the relational understanding of intelligence and life. In the face of an era demanding AI literacy, Christian literacy education has an obligation to newly refine and present spirituality at the level of transdisciplinary studies.

However, it is essential to note that *integration* serves as both the goal of spirituality and the methodology to attain that goal. When understood as the goal of spirituality, the specific content of integration becomes *integrality* and *holisticity*. In that case, how can we comprehend integration as a methodology? If integration as a methodology required by spirituality refers to the linking work between disciplines necessary to reconstruct theological anthropology, this key word can be said to be a methodology for how to weave together academic areas to be drawn upon to reinterpret integrality and holisticity. Therefore, first, the meaning of integration needs to be briefly explained.

Here, the objects of integration are either spirit and matter, or disciplines that are too bordered, so the logic of difference is more dominant than the logic of sameness. In order to interpret this situation, we will use *transversal traversing* as a methodology of integration. The term *transversal traversing* refers to an approach, adopting the transversality or cartographical methodology of new materialism, which involves questioning the debates themselves surrounding interdisciplinarity or conceptual boundaries that are often perceived as pre-deterministic, from a non-foundational and non-relativistic perspective.[27] New Materialism departs/arrives in elucidating the materiality of material, but here, we

27 Rick Dolphijn & Iris van der Tuin, *New Materialism: Interviews & Cartographies*, trans. Jun-Young Park(Paju: Gyoyudang Publishers, 2021), 159.

would like to apply the cartographical methodology to the methodology itself by stopping at the point where the materiality of material can non-deterministically meet the theological understanding of the divinity revealed by God's creation. In this case, the transdisciplinary encounter between theology and new materialism traverses the boundary between divinity/materiality.[28]

According to Donna Haraway, boundaries in cartography imply products of material and meaning, but precisely because of this, no pre-existing object is derived along with the boundary.[29] In other words, the boundaries of body do not capture fixed objects at all, but are a process and result produced by traversing the boundary between material and meaning,[30] so obsessing over these boundaries will fail to grasp the metamorphosis and movement of material. Therefore, transversal traversing is not obsessed with boundaries.

Through this methodology of integration, the *transversal traversing*, let's re-read *holisticity* and *integrality*.

2. Breadth of Holisticity

The breadth of holisticity, which is a corner of integration for the ripening of human life and points to the expansion of relationships, is meaningfully broadened through the transversal traversing between a biblical

28 Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14.3 (1988), 595; Requoted in Rick Dolphijn and Iris van der Tuin, *New Materialism*, 157.

29 Donna Haraway, "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14.3 (1988), 595; Requoted in Rick Dolphijn and Iris van der Tuin, *New Materialism*, 157.

30 See, Gyu-Min Moon, *Introduction to New Materialism: New Materiality and Transversality* (Seongnam: Second Thesis, 2022), 80.

statement and the posthuman situation. The biblical text to be looked at for this expansion is Romans 8:22. And, also for this expansion, the way to understand the posthuman situation is critical posthumanism. These two form elusive boundaries as they each belong to the categories of theism and materialism, making it challenging to traverse between them. Transversal traversing depicts the dynamism and provisionality of a new boundary formed by the relationship between differences by traversing the differences without paying attention to this boundary.

The paragraph we want to pay attention to in Romans 8:22 is the groaning (στεναγμός) of creation (κτίσις). There are two major trends in interpreting creation in this text. One interpretation accepted by a considerable number of biblical scholars is to understand creation as "creatures excluding humans."[31] It understands the suffering of creation in connection with the problem of sin. In this case, the boundary line that determines the presence or absence of sin and judgment is drawn along between believers and non-human creatures, and God's wrath becomes easier to be depicted as being directed primarily at non-human creatures. In this case, an irony arises that although the sin was committed by humans, the judgment is directed to non-human creatures, and furthermore non-believers are pushed out of the discussion and alienated. This contains the notion that humans are superior to nature.[32]

Se-Jong Cheon opposes this dominant interpretation and introduces and proposes another interpretation, a comprehensive interpretation. This interpretation, which understands Paul to be speaking of all creation, including humans, in this text, "emphasizes the deep connection between

31 Se-Jong Cheon, "Paul's Understanding of 'Creation' in Romans 8:18-25 and Eschatological Salvation," *Journal of Presbyterian College and Theological Seminary* 45.2 (2013), 99.

32 See, *Ibid.*, 100-102.

humans and all other creatures,"[33] and depicts creation as an active agent.[34] It is the understanding that non-human creatures are also beings who await salvation along with humans.

So, what about the *groaning of creation*? The interpretation of this can be divided into two along another boundary line: eschatological interpretation and moral interpretation. In eschatological interpretation, the *groaning of creation* is "the collective resistance of all creatures against the malevolent forces suppressing them,"[35] and is an outcry of liberation as they participate together in the birth pangs of opening a new world. When following this path of interpretation, all of creation is a community of liberation.

Meanwhile, according to moral interpretation, the *groaning of creation* is due to the pain caused by the detrimental effects of human moral corruption.[36] Human activities in the ancient Mediterranean world, especially imperial activities, that is, wars and economic exploitation to realize imperial ambitions, damaged nature by destroying cities, desolating mountains and fields, and polluting streams, where this led Paul to lament the groaning of creation.[37] By emphasizing that humanity's moral structural evil has caused the suffering of all creation, this interpretation reminds us of humanity's responsibility for creation's groanings. Furthermore, it holds humanity facing today's ecological crisis responsible and demands that Christians do more to fulfill this responsibility.[38]

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33 *Ibid.*, 107.

34 See, *Ibid.*, 108.

35 *Ibid.*, 110.

36 William Horst, "Creation's Slavery to (Human) Corruption: A Moral Interpretation of Romans 8:20-22," *Perspectives on Science and Christian Faith* 73.2 (2021), 79-90.

37 *Ibid.*, 83.

38 *Ibid.*, 86.

Therefore, these two interpretations of creation's groaning intersect, bringing together the future (the prospect of eschatological liberation) and the past (the source of moral responsibility) into one place: the present (the suffering of creation). Humans can no longer be superior to nature, and as the ones who ruined the world, they face creation with the burden of guilt, and are given the responsibility to open a future together with creation. In this way, humans are connected to nature, so humans and nature can be understood as one continuum. This is the *breadth of holisticity*, that is, the connection between humans and nature, that can be reached by traversing the boundary of the interpretation of *creation* and by traversing the boundary of the interpretation of the *groaning of creation*.

Now, let's move across the boundaries of interpretation that have unfolded against the backdrop of biblical statements and move on to *critical posthumanism*,[39] one of the currents of thought that has settled in the era of artificial intelligence. Above all, critical posthumanism seeks to transcend both the limitations of Western modern humanism and the limitations of postmodern anti-humanism. In order to achieve this, it aims to

39 In fact, critical posthumanism is one of the ideas within several boundaries drawn as a landscape of the posthuman condition. Stefan Herbrechter draws a dividing line between posthuman-ism, also known as popular posthumanism or transhumanism, and post-humanism corresponding to critical posthumanism. Rosi Braidotti draws a tripartite boundary between reactionary posthumanism, analytical posthumanism, and critical posthumanism. Apart from these various dividing lines of posthumanism, critical posthumanism itself "is not only not unified, but is also difficult to systematize because it is made in a wide variety of academic fields." (In-Chan Park, "The Road to Posthumanism: Focusing on the Co-evolution of Humans and Machines," in *Issues in Posthumanism*, Woo-Sung Kang et al. (Seoul: Galmuri, 2021, 25.) Here, we will start from some common features and continue the discussion in a direction that converges with Braidotti's thoughts. However, in line with the flow of this paper's argument, we will focus more on the transversal integration of critical posthumanism and the holisticity of spirituality.

rigorously push forward non-dualistic reasoning. In accordance with this, the world is understood as a *nature-culture continuum*. However, Haraway's concept of nature-culture continuum does not converge into a singular unity. Instead, it is a transversal process and product to itself that cuts across nature and culture, and not predetermined in advance.[40] It is simply "a continuum which evolves through ecology of differentiation."[41]

However, since the world is a nature-culture continuum, humans themselves as part of this continuum are also such a continuum. Especially in the present day, technological interventions and machines are also part of the global nature-culture continuum and are themselves such a continuum. Consequently, one can find a convergence with the assertion of actor-network theory, which claims that ultimately, "humans cannot be separated from non-human entities like machines or other artificial beings."[42] Simultaneously, this aligns with Rosi Braidotti's understanding of posthuman subject as "an expanded, relational self that functions in a nature–culture continuum and is technologically mediated."[43] Moreover, Braidotti goes one step further by defining critical posthuman subject as "a relational subject constituted in and by multiplicity, that is to say a subject that works across differences and is also internally differentiated, but still grounded and accountable,"[44] including in the scope of its relationship "the non-human or 'earth' others."[45]

In this case, the nature-culture continuum of critical posthumanism

40 See, Gyu-Min Moon, *Introduction to New Materialism*, 84-93.

41 Rosi Braidotti, *The Posthuman*, trans. Kyung-Ran Lee (Paju: Acanet, 2016), 204.

42 In-Chan Park, "The Road to Posthumanism," 29.

43 Rosi Braidotti, *The Posthuman*, 82.

44 *Ibid.*, 67.

45 *Ibid.*, 68.

meets the interpretation of the Bible that speaks of the connection between humans and nature. At the same time, this continuum moves beyond the reach of biblical statements and their interpretations by sailing toward a broader realm that includes machines and technology. Here, transversal traversing illustrates how the totality of spirituality can, within today's ecological contexts mediated by technology, acquire new points of meaning without being predetermined. We now find ourselves confronted with the amplitude of holisticity that oscillates between the natural and the artificial, moving back and forth between biblical statements and posthuman conditions. In other words, the call to think about the nature-culture continuum in terms of strengthening life and to pursue strengthening life in terms of the nature-culture continuum is given as a breadth of spiritual totality.

3. Depth of Integrality

The concept of integrality, which deals with the relationship between spirit and matter, or more precisely, spirit and body, can approach a modern understanding through transversal encounters with neuroscientific discussions on the relationship between the brain and spirit.

First, let's start by thinking about how closely the brain is related to social life.[46] According to the Social Intelligence Hypothesis regarding the evolution of the brain, one of the crucial factors contributing to the increased brain size in primates is the complexity of social decision-making. The hypothesis suggests that the brain needs to process vast

46 The content of this paragraph is a summary of some parts of Dae-Yeol Lee, *The Birth of Intelligence: From RNA to Artificial Intelligence* (Seoul: Bada Publishers, 2017), 255-263.

amounts of information rapidly and accurately to handle intricate social interactions. As the importance of social life increases, not only the size of brain but also the structure of the brain responsible for social decision-making evolves, and one of the topics that can confirm this fact is the Default Network. The default network refers to an area of the brain that is busier while the brain is at rest without any specific activity. In this state, the brain overlaps "reminiscence of the past and imagination of the future"[47] by reflecting on memories related primarily to social ones. Neuroscientist Dae-Yeol Lee points out that the activity of the default network suggests that "social thinking is at the core of human spiritual life."[48]

Spiritual life! So, how does neuroscience understand the spirit? Philosopher and science journalist Martin Hubert, in exploring the theme of the "third view of humanity," reconstructs the neuroscientific understanding of the relationship between the spirit and brain around the concept of interaction.[49] The third view of humanity is grounded in the perspective that "spirit arises through the interconnectedness of brain, body, and environment,"[50] in contrast to the traditional view that separates the spirit and matter, where the spirit is seen as forming the essence of humanity and to the reductionist view which suggests that the spirit can be understood by reducing it to the neural cells of the brain and considers it merely a phenomenon accompanying matter. The brain cannot function without a body receiving and responding to external stimuli (information). Even if there is both the brain and body interconnected, it would also be

47 *Ibid.*, 261.

48 *Ibid.*

49 See, Martin Hubert, *The Rediscovery of Consciousness: A Dialogue between Modern Neuroscience and Philosophy*, trans. Seok-Young Won (Seoul: Pronesis, 2008), 28-38.

50 *Ibid.*, 28.

difficult for the combination of the brain and body to function properly if there is no environment that is the source of information and the object of response. Here, spirit can be said to refer to the interconnection itself of these three. In this sense, it can be considered that "spirit and matter are two aspects of the same event."[51]

Interestingly, neuroscientist Antonio Damasio explains that the human brain responds by constructing a map of body states based on signals coming from the somatosensory area.[52] The brain acts as both a cartographer, creating maps, and a traveler, navigating based on those maps. Then, as explored earlier, just as cartography is transversal, the brain can also be understood to operate through transversal traversing. This traversing is physiological events that occur across the map of the internal world of an organism and the map of the external world of the organism.[53] In other words, physiological events are transversal interpretations, and at least one of those traverses transversally the body's boundaries dividing the internal world of the body and the external world of the body.

Therefore, the integrality of Christian spirituality, which pursues a life in which the spirit and body complement each other and are harmonious in an inseparable relationship, can probably encounter Hubert's third view of humanity in terms of *interconnection*. However, in that the relationship between spirit and body in neuroscience is three-dimensional rather than two-dimensional (the spirit arises through the interconnection of brain-body-environment), it deviates from the manner of explaining the relationship between spirit and body only in terms of harmony and

51 *Ibid.*, 29-30.

52 Antonio Damasio, *Spinoza's Brain: The Brain Science of Joy, Sadness, and Feelings,* trans. Ji-Won Lim (Seoul: Science Books, 2016), 135.

53 See, *Ibid.*, 228.

complementation. From the perspective of neuroscience, humans are bound by a spirit-matter feedback loop. However, this feedback involves not only harmony and complementarity but also the reinforcement of differences. This is partly due to the fact that the spirit and matter exist on different levels and that the spirit cannot be solely defined by its relationship with the body. Above all, humans are beings characterized by a mixture of coherence and incoherence, harmony and disharmony. Physiological events traverse both difference and similarity.

Moreover, the fact that the emergence of the spirit requires not only the brain and body but also the world beyond the body implies that the understanding of integrality focused solely on the relationship between spirit and body is no longer valid. If integrality requires the world beyond the body, then this integrality can only be integrality in the light of holisticity. Therefore, the integrality, which is traversed transversally by modern neuroscience, traverses holisticity. So, through the transversal traversing between integrality and the neuroscientific view of humanity, we encounter the integrality as spirit-matter feedback that oscillates between two-dimensional and three-dimensional and traverses coherence and incoherence. And finally, we face spirituality as a transversal traversing of integrality and holisticity.

V. Conclusion

If we summarize the points traversed in the discussion so far, the following can be outlined: Firstly, it was discussed that Christian teachings should be introduced through literacy rather than missionary work in university liberal arts education settings. Secondly, it was emphasized that

artificial intelligence is a crucial factor characterizing the era of techno-capitalism, posing challenges for humanity in terms of both labor and uncertainty. Thirdly, artificial intelligence makes us question the meaning of intelligence again, and in response to this, the need to present the Christian concept of spirituality in the form of reinterpretation was discussed.

Intelligence is concerned with maintaining and enhancing of integrated life. Accordingly, it was argued that the concept of spirituality, which also pursues an integrated life, needs to be reinterpreted and applied to university liberal arts education. Let us explain this argument further. Within this argument, two considerations for how Christian literacy education should be developed were presented. One is the transversal traversing: this is a response to the question of what methodology can be used to apply Christian literacy contextually in an era that is alien to traditional Christian teachings. The other is *spirituality as a transversal traversing of integrality and holisticity*. To reach such spirituality, at least four transversal points had to be traversed: 1) teachings on spirituality in the Christian tradition, 2) interpretation of a passage from the Bible (Romans 8:22), 3) critical posthumanism as an understanding of contemporary techno-science, 4) recent insights from modern neuroscience on the spirit and matter. This spirituality serves as a concrete example of how Christian *literacy* can be shaped within university liberal arts education through transversal traversing.

The need for Christian teachings to be presented in the form of Christian literacy in university liberal arts education should be strongly emphasized. At the same time, we must face the fact that there is a difficult gap between traditional Christian teachings and the obvious materialistic tendencies of the technological-mechanical civilization symbolized by ar-

tificial intelligence, which is a difficult challenge for Christian liberal arts education even in Christian literacy. This essay can be seen as an exploratory attempt in Christian liberal arts education to take a step, even a small one, in navigating between this need and the challenge. It is hoped that further research on Christian literacy will continue with and across the contemporary era.

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Bibliography

Bostrom, Nick. *Superintelligence: Paths, Dangers, Strategies*. Translated by Seong-Jin Cho. Seoul: Kachi, 2017.

Braidotti, Rosi. *The Posthuman*. Translated by Kyung-Ran Lee. Paju: Acanet, 2016.

Cheon, Se-Jong. "Paul's Understanding of 'Creation' in Romans 8:18-25 and Eschatological Salvation." *Journal of Presbyterian College and Theological Seminary* 45.2 (2013), 93-116.

Damasio, Antonio. *Spinoza's Brain: The Brain Science of Joy, Sadness, and Feelings*. Translated by Ji-Won Lim. Seoul: Science Books, 2016.

Deleuze, Gilles. *Proust and Signs*. Translated by Dong-Wook Seo and Choong-Min Lee. Seoul: Minumsa, 2023.

Dolphijn, Rick & Iris van der Tuin. *New Materialism: Interviews & Cartographies*. Translated by Park Jun-Young. Paju: Gyoyudang Publishers, 2021.

Harari, Yuval. *Homo Deus: A History of the Future*. Translated by Myeong-Ju Kim. Paju: Kim Young-sa, 2017.

Hong, Sung-Wook. *Posthuman Odyssey*. Seoul: Humanist, 2019.

Horst, William. "Creation's Slavery to (Human) Corruption: A Moral Interpretation of Romans 8:20-22." *Perspectives on Science and Christian Faith* 73.2 (2021), 79-90.

Hubert, Martin. *The Rediscovery of Consciousness: A Dialogue between Modern Neuroscience and Philosophy*. Translated by Seok-Young Won. Seoul: Pronesis, 2008.

Jung, Hoe-Hyeon. "Directions for Christian Universities and Christian General Education Suitable for the 21st Century." *Theology and Evangelism* 14 (2023), 45-80.

Kim, Jae-In. *The Era of Artificial Intelligence, Asking Questions about Humans Again*. Seoul: Dongasia, 2018.

Kim, Pyong-Ho. "Understanding Artificial Intelligence and Its Issues: A Critical

Perspective on the Discourse of Artificial Intelligence in Korean Society." In *Artificial Intelligence, Power Transformation, and World Politics*. Edited by Hyeon-Seok Cho, Sang-Bae Kim, et al. Seoul: Samin, 2018.

Lee, Dae-Yeol. *The Birth of Intelligence: From RNA to Artificial Intelligence*. Seoul: Bada Publishers, 2017.

Lee, In-Kyung. "The Possibility of Interreligious Education in Christian General Education Courses at Christian (Protestant) Universities in a Multireligious Society." *Journal of General Education Research* 15.3 (2021), 65-81.

Lee, Kyung-Min. "Artificial Intelligence and Human Intelligence: A Dialogue between Cognitive Science and Theology on Intelligence." In *Human Beyond Human*. Edited by Geum-Sil Kang, et al. Goyang: April Books, 2021.

Lee, Yong-Ho. "Key Contents and Limitations of the Treaty on the Prohibition of Nuclear Weapons (TPNW)." *Youngnam Law Review* 49 (December 2019), 203-233.

Moon, Gyu-Min. *Introduction to New Materialism: New Materiality and Transversality*. Seongnam: Second Thesis, 2022.

Moore, Diane L. "Diminishing Religious Literacy: Methodological Assumptions and Analytical Frameworks for Promoting the Public Understanding of Religion." In *Religious Literacy in Policy and Practice*. Edited by Adam Dinham and Matthew Francis. Chicago: Policy Press, 2015.

Park, In-Chan. "The Road to Posthumanism: Focusing on the Co-evolution of Humans and Machines." In *Issues in Posthumanism*. Woo-Sung Kang et al. Seoul: Galmuri, 2021.

Park, Tae-Woong. *Park Tae-Woong's AI Lectures*. Seoul: Hanbit Biz, 2023.