

How Physics Affects Metaphysics and the Concept of God in the History of Western Thought: An Outline

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“History, in the last analysis, is ultimately inescapable, because we are all part of the same stream, albeit tossed by different currents.”¹

PREFACE

This paper is conducted in the deduction method, i.e., the inference of particular instances by referring to a general observation, principal or law.² In other words, this article seeks to outline how physics affects metaphysics and the concept of God in the history of Western thought in terms of *a tread leading through all*, i.e., from *the blockless mentality to the block mentality to the blockness mentality*.³ Such a method, apparently, is in contrast with the usual approach employed in modern Western research writings, i.e., the analytical dissection or induction method which inquires about the inference of a general law from first studying particular instances.⁴

Obviously, the detriment of the current deduction method exercised by most classical Chinese scholars is that, analogically speaking, it often sees the whole forest without the particular trees. On the other hand, the disadvantage of the induction method is that it oftentimes sees the particular trees and misses the view of the whole forest. Alvin Toffler succinctly comments on this typical Western methodology:

One of the most highly developed skills in contemporary Western civilization is dissection: the split-up of problems into their smallest possible components. We are good at it. So good, we often forget to put the pieces back together again.⁵

¹ John Brooke and Geoffrey Canton, *Reconstructing Nature: The engagement of science and religion* (Edinburg: T & T Clark Ltd., 1998), p. 37.

² Cf. *Oxford Dictionary of English*, Revised Second Edition, edited by Catherine Soanes and Angus Stevenson (Oxford, New York: Oxford University Press, 2006), p. 453.

³ Juxtapositioning with the term ‘block,’ the unusual term ‘blockless’ is used here as an adjective. Accordingly, a blockless mentality is a mentality without a block. On the other hand, a block mentality is one with a block, i.e., it is not blockless. The rest of this paper will give us more illustration.

⁴ Cf. *Ibid.*, p. 884.

⁵ Alvin Toffler, “Foreword: Science and change,” in: Illya Progogine, and Isabelle Stenger, *Order Out*

As a complementary approach to the method of dissection, it is hoped, therefore, that the current deduction method used in this article would help us hunt for the whole picture or outline of how physics has affected metaphysics and the concept of God in the Western history, which the ordinary induction approach would be unable to. This method is not perfect, but at least, as the rest of his article would unfold, it would help us make a distinct discovery respecting the panoramic view of the present theme.

I. INTRODUCTION

As we know, physics can be concisely defined as “the branch of natural science concerned with the nature and properties of matter and energy.”⁶ At the same time, metaphysics may be defined as that branch of study which seeks to know the whole of reality or existence in terms of the categories of substances, things or beings (*entia*), culminating in the knowledge of the First and the Final Cause of every being (*ens*) and learning.⁷ Most people brought up in this age of science, hence, tend to assume that there is little or no interconnection among physics, metaphysics, and our spiritual concept of God, since they belong to three distinct planes in history. However, in the final analysis, as quoted above, albeit tossed by varying currents, we are all part of the same historical stream in which these three subjects are inextricably interrelated.

Despite the apparent disconnectedness among physics, metaphysics and the concept of God, Thomas Aquinas (c. 1224-1274) hints to us briefly that these three distinct areas are interrelated: “It is natural to man to attain to intellectual truths through sensible objects, because all our knowledge originates from sense.” (*S. Th.*, I, 1, 9)⁸ In fact, it is quite appropriate that “spiritual truths be expounded by means of figures taken from corporeal things, in order that thereby even the simple who are unable by themselves to grasp intellectual things may be able to understand it.” (*Ibid.*)⁹ Thus, being affected consciously and subconsciously by this in-born, entrenched way of conceiving things, we humans are of the kind to reach the world of intelligence through our sensible experience of the physical world.¹⁰

of Chaos: Man's new dialogue with nature (Toronto and New York: Bantam, 1988), p. xi.

⁶ *Oxford Dictionary of English*, Revised Second Edition, p. 1328.

⁷ Cf. G. F. McLean, “Metaphysics,” *New Catholic Encyclopedia*, First Edition, Vol. 9, ed. W. McDonald (Washington, D.C.: McGraw Hill, 1967), pp. 727-731; Shen Qingson, *Wuli Zhi Hou: Xingshangxue de fazhan* [After Physics: The development of metaphysics], 2nd Edition (Taipei: Newton, 1991), p. 13. It is important to note that different scholars may define metaphysics differently.

⁸ This translation is found in: St. Thomas Aquinas, *Summa Theologica*, Vol. One, translated by Fathers of the English Dominican Province (New York: Benziger Brothers, Inc., 1947), p. 6.

⁹ *Ibid.*

¹⁰ Cf. Janet Soskice, “Knowledge and Experience in Science and Religion: Can we be realists?”

In other words, our sensible experience of the physical world (in our level of physics, whatever that is) has an immense influence over our metaphysical intelligence (in our level of metaphysics, whatever that is) of the world, as well as our spiritual intelligence (in our spiritual level, whatever that is) of God. For example, when we say that God is ‘infinite,’ we presuppose that the adjective ‘infinite’ is somehow measured by our earlier sense of the present ‘finite’ physical universe. Over time, metaphysically, we would intelligently divide the totality of reality into two metaphysical realms, one finite and one infinite. Again, when we praise God as ‘kind,’ we tend to determine the descriptive term “kind” in terms of the ‘sensible gifts’ which we received and examined intelligently in terms of their physical nature and properties. In due time, we would tend to categorize our whole existence metaphysically into two realms, one ‘kindly blessed’ and one ‘not so kindly blessed’ in terms of our earlier experience of sensible gifts. Thus, as the title of this paper presupposes, there is a definitive interrelationship among physics, metaphysics, and our concept of God, in whatever level they are in our knowledge or consciousness.

This paper, thus, seeks to do an investigation as regards the interrelation among physics, metaphysics, and the concept of God. Due to its magnitude, we can only conduct the research tersely in broad strides and limit it within the history of Western thought. Manifestly, the steering question is: *How has physics affected metaphysics and our concept of God in Western history?* Accordingly, the present article is divided into five sections. Section I is the Introduction. Afterwards, section II will deal with the Ancient Greek Period. Then, section III will treat the Patristic-Medieval-Modern Period, i.e., largely from the time of the early Church to the end of the 19th century. Afterwards, section IV will handle the so-called Postmodern Period, i.e., from the beginning of the 20th century to the present time. Finally, section V consists of some concluding remarks, as well as a summary chart as regards the contents of this paper.

All in all, one may discover that the whole Western thought, despite its long complicated history of almost three millennia, has gone through only one distinct *cycle* in its development of physics, metaphysics, and the concept of God, i.e., *from the blockless mentality to the block mentality and back to the blockless mentality*. By definition, the ‘blockless mentality’ is a way of thinking which believes that there is interrelational interpenetration between two or more entities, beings or substances. Simultaneously, the ‘block mentality’ supposes that there is no interrelational interpenetration between two or more entities, beings or substances.

Physics, Philosophy and Theology: A common quest for understanding, Third Edition, edited by Robert John Russell, William R. Stoeger, S.J., and George V. Coyne, S.J. (Vatican City State: Vatican Observatory, 1997), p. 173.

In any case, this unparalleled *cycle*, as elaborated below, is the general *thread leading through all* in this reflection, with respect to how physics has influenced metaphysics and the concept of God in Western history.

II. ANCIENT GREECE: PRIMITIVE BLOCKLESS AND BLOCK MENTALITIES

As a whole, four developmental eras may be distinguished in ancient Greek thought, i.e., (1) the cosmological era; (2) the anthropological era; (3) the systematic era; and (4) the ethical-religious era.¹¹ Throughout ancient Greece, it appears that there is a certain fluctuation zigzagging alternately between the blockless and block mentalities in their primitive development of physics.

2.1 State of Ancient Greek Physics

Among others, the early pre-Socratic physics in the so-called cosmological era may be characterized by its passion in looking for the unity of things in the physical cosmos. For example, Thales (c.636-c.546 BC) thought that every thing at the beginning was made of water. To Anaximander (c.611-c.547 BC), every thing was composed by a single boundless substance called *apeiron*. To Anaximenes (c.586-c.525 BC), this primary substance was air. To Heraclitus (c.535-c.475 BC), it was fire. To Empedocles (c.495-c.435 BC), it was earth. To Democritus (c.460-c.370 BC) and Leucippus (*fl* 5th century BC), it was atom.¹²

However, within these different schools one may discern two distinct mentalities, the blockless and the block. Since the elements of water, *apeiron*, air, fire, and earth tend to interpenetrate one another, these schools may be classified as belonging to the blockless framework. On the other hand, as atoms are impenetrable, the school of Democritus and Leucippus belongs, then, to the block mindset.

Apparently, this pre-Socratic physics largely conducted by intuitive observation may be described also as some primitive kind of physical energy period, since all these primary elements like water, *apeiron*, air, fire, earth and atom can be depicted in terms of today's notion of physical energy. Nonetheless, this cosmological development was left undeveloped or underdeveloped when the anthropological trend of the Sophists and Socrates (469-399 BC) took over. As it turned out, the sophistic

¹¹ Cf. Curt Friedlein, *Geschichte der Philosophie: Lehr- und Lernbuch*, 14., durchgesehene Auflage (Berlin: Erich Schmidt Verlag, 1984), p. 71.

¹² Cf. *Ibid.*, pp. 22-34.

argumentativeness of the Sophists and the philosophical moral approach of Socrates were not that interested in physics.

Later, treating matter as an empty concept, the universal system of Plato (c.427-347 BC) centred on the real transcendent world of bodiless and spaceless *ideas*. As a consequence, Plato tended to miss studying what was substantially real in the physical world,¹³ in spite of his interest in solid geometry, etc. Yet, the cosmological observation of Aristotle (384-322 BC) taught that every thing was substance (*οὐσία*) composed by matter and form. In addition, Aristotle galvanized his concept of substance dynamically in terms of his concept of *form* which “offers a substance not only its essential structure but also its developmental dynamic.”¹⁴ Nevertheless, his notion of substance consists still of a block mentality, since this ‘substance’ — as a real unity of the world of beings — is largely a passive, subsisting, independent block. There is no automatic, dynamic, interactive interpenetration between two substances regarded simply as two passive, independent, non-interpenetrative beings. In this primitive block mentality, what happens between two substances takes place also between any two units of matter in the universe.

After the rational systematic period of Plato and Aristotle, the rest of the Ancient Greek Period tended to emphasize ethical and religious developments.¹⁵ Still, thinkers could not avoid being metaphysical, in terms of the blockless or block mentality. Zeno (c.490-c.430 B.C.) the founder of Stoicism looked back to Heraclitus, and thought that all things in the cosmos were blockless, existing as inseparable parts of one single system called Nature.¹⁶ At the same time, Epicurus (341-270 BC) adopted the atomic infrastructure of the universe and the block mentality of Democritus.¹⁷

2.2 How the Ancient Greek Physics Affects Its Metaphysics

Pertaining to the whole of reality, metaphysics may be defined here also as “the study of the most general categories in which we think.”¹⁸ Except for the physics done by most cosmological thinkers in a blockless mentality, the ancient Greek physics after Aristotle was mostly constructed in a block manner. However, there

¹³ Cf. *Ibid.*, pp. 81-82.

¹⁴ Richard Tamas, *The Passion of the Western Mind: Understanding the ideas that have shaped our world view* (New York: Ballantine Books, 1993), p. 57.

¹⁵ Cf. *Ibid.*, pp. 71, 93-98

¹⁶ Cf. Bertrand Russell, *History of Western Philosophy*, New Edition (London: George Allen & Unwin Ltd., 1967), p. 262.

¹⁷ Cf. Curt Friedlein, *Geschichte der Philosophie: Lehr- und Lernbuch*, p. 97.

¹⁸ Rom Harré, *The Philosophies of Science*, Second Edition (Oxford and New York: Oxford University Press, 1989), p. 100.

were instances in which the earlier cosmological blockless mentality was revived after Aristotle. For illustration, the examples of Aristotle and Zeno are cited as follows.

Apparently, Aristotle's block mentality in metaphysics was developed on the basis of his block mentality in physics. One may even discern two levels of block mentality in Aristotle's metaphysics of substance. The first level of block mentality exists between things mobile or changeable in the world of substances, i.e., moving from potentiality to actualization. Despite its mobility towards actualization through being desired by the Final Cause, every thing in this real world is a passive substance or being, depicted in terms of ten categories, i.e., substance and nine accidents — quantity, quality, relation, action, passion, time, place, disposition (the arrangement of parts), and habitus (whether a thing is dressed or armed, etc.).¹⁹ However, there is no interaction or interpenetration *per se* between two substances which are regarded by Aristotle as merely two passive subsisting blocks of matter.

In the second level of block mentality, Aristotle divided the totality of reality into two compartmental realms, of things mobile and of things immobile. In fact, Aristotle divinized things perceived as entirely immobile and completely separate from matter in their existence. He grounded his proof of their real existence on the eternity of motion in natural philosophy. As eternal motion was imparted by unmoved physical movers, the ultimate ground of that eternity had to be a substance entirely actualized and so without motion and matter. Such a divine substance must be a real form which causes motion by desire as the First and Final Cause of every thing.²⁰ As it is, there is little interactive interpenetration between these two blocks of compartmental worlds. The most that one can say is that all things mobile are moved to action through being desired by the immobile Final Cause of all their activities. In the last analysis, this Unmoved Mover existing in the other realm is a pure Form, possessing no matter and potency.²¹

In Zeno's categories of things, in which the earlier blockless mentality was revived, one may discern the metaphysical existence of only one single system called Nature. According to this metaphysics, the systematic, all-encompassing, fire-oriented Nature is composed by blockless substances which include God, the world, and humans. Originally, there was only blockless fire. Then, the other blockless elements like air and water emerged. However, sooner or later, there would occur a cosmic

¹⁹ Cf. Curt Friedlein, *Geschichte der Philosophie: Lehr- und Lernbuch*, p. 92; W. H. O'Neill, "God in Pagan Thought," *New Catholic Encyclopedia*, Second Edition, Vol. 6, ed. by Berard L. Marthaler, O.F.M. Conv. (exe. ed.) (Washington, D.C.: Gale, 2002), p. 308.

²⁰ J. Owens, "Aristotle," *New Catholic Encyclopedia*, Second Edition, Vol. 1, p. 683.

²¹ Cf. Bertrand Russell, *History of Western Philosophy*, New Edition, p. 181.

conflagration in which all would become blockless fire again. Yet, this metaphysical process would repeat itself cosmically without end.²²

2.4 How Ancient Greek Metaphysics Affects Its Concepts of God

As mentioned above, ancient Greek thinking was a mixture of blockless and block mentalities in both physics and metaphysics. It is true that some tendency in the early cosmological period might have been further developed into some more mature form of blockless mentality.²³ In any case, to some significant extent, one may match the primitive blockless mentality in physics and metaphysics with the blockless conception of God in this period.

For example, teaching that every thing in the universe was made of blockless water physically and metaphysically, Thales spoke of a certain divine omnipresence in the world of water: “All is water, and the world is full of gods.”²⁴ Simultaneously, based on the blockless physical and metaphysical mentality, Heraclitus’ gods were the universal Logos and Zeus the cosmic fire; and to Anaximenes (c.586-c.525 BC), air was divine and the source of all the gods.²⁵

Thus, resembling Homer (*fl* c.850 BC), many of these early cosmological thinkers living before the atomists Democritus and Leucippus viewed nature and divinity interpenetrating each other.²⁶ However, with the appearance of these two rational, atheistic atomists, the physical world, once thought of being moved by the void, was seen as entirely material moving mechanically, possessing no deities, no divine order, and no purpose at all.²⁷

Later on, as the concept of physics and metaphysics began to move out of the epoch of traditional intuitive mythological belief into the era of rational reason, the ancient Greek conception of God began to move into a block mentality. The idea of God was no longer completely blockless and omnipresent, with a certain distance or block away. For example, in the *Phaedo*, Socrates’ last words were to ask Crito to offer sacrifice to Asclepius, the god of medicine and healing. One of the gods of Plato

²² Cf. *Ibid.*, pp. 261-262.

²³ As witnessed by what has happened since the beginning of the 20th century in the current Postmodern Period, it would take the West to wait for more than two millennia before such a blockless mentality would finally take off. This paper will deal with the Postmodern Period a few pages later.

²⁴ Richard Tarnas, *The Passion of the Western Mind*, p. 19.

²⁵ Cf. W. H. O’Neill, “God in Pagan Thought,” *New Catholic Encyclopedia*, Second Edition, Vol. 6, *op. cit.*, p. 306.

²⁶ Cf. Richard Tarnas, *The Passion of the Western Mind*, pp. 19-21.

²⁷ Cf. *Ibid.*, p. 22.

is the demiurge or creator of the world, whose function is to take over the chaos of disorder and reduce it to order, having to work with materials not created by him.²⁸

In Aristotle's largely block mentality aforementioned, he seemed to divide the totality of reality into two compartmental realms, one of mobile beings and the other of immobile beings. Consequently, Aristotle's God, originating motion but without motion Himself, exists in the realm of immobile beings. Eternally unmoved, this God exists eternally, as a pure Form without matter. Being the First and Final Cause, this God is also pure substance and actuality. Although He is divine thought, thinking about anything except what is perfect, i.e., Himself, He does not seem to know of the existence of the other mobile, imperfect world. As He does not seem to love people, His block relationship as the First and Final Cause is minimum with this world.²⁹

However, after the rational systematic era, both Zeno and Epicurus went back in thinking to earlier days. Epicurus chose to espouse Democritus' block mentality in atomistic physics and metaphysics, believing in gods who were a far block away, not concerned with human affairs, since "the universe contains so much evil that it could not be the work of the gods."³⁰

On the other hand, Zeno opted for a blockless physics and metaphysics, ending in adopting the blockless Logos, Fate, as well as Zeus the Divine Fire as his gods. These deities were "immanent and material in the sense of not separable from matter."³¹ Here is the noteworthy *Hymn to Zeus* composed by Cleanthes of Assos (c.330 - c.230 BC), the immediate successor of Zeno: "Lead me, O Zeus, and thou, O Destiny, lead thou me on. To whatsoever task thou sendest me, lead thou me on. I follow fearless, or, if in mistrust, I lag and will not, follow still I must."³² By and large, this hymn to Zeus only indicates to us how blocklessly involved He was, in a big contrast with Epicurus' gods existing blocks away.

III. PATRISTIC-MEDIEVAL-MODERNITY: DEVELOPED BLOCK MENTALITY

3.1 State of Physics

On the whole, it appears that a large part of the Patristic and Medieval Ages were

²⁸ W. H. O'Neill, "God in Pagan Thought," p. 307.

²⁹ Cf. Bertrand Russell, *History of Western Philosophy*, pp. 180-181.

³⁰ W. H. O'Neill, "God in Pagan Thought," p. 308.

³¹ Ibid.

³² Bertrand Russell, *History of Western Philosophy*, p. 264.

affected by several factors not conducive to the development of natural science. First, the primary stress of these times was the spiritual relationship with God and the Church, as seen *inter alia* in the establishment of monasteries, Papacy, and the Holy Roman Empire. From the time of Boethius (c.475-525) to that of Dante (1265-1321), there was not a single renowned scholar in Western Europe who was not a professional churchman. Then, these ages were mingled with constant invasions by non-Europeans, struggles between Eastern and Western Roman Empires, internal battles within the land, and impoverished economic conditions. Besides, there was the problem of translation from the writings of classical Greek and Arabian. At the same time, it took months to copy a book manually. The climate in Western Europe, too, was not attuned to the indefinite preservation of these works made in those times. Consequently, there is a clear distinction between the Ancient Greek Period and the Patristic and Medieval Ages, i.e., the former produced quite a few great thinkers in physics, whereas the latter failed to produce any.³³

As a result, Aristotle became probably the most influential thinker in Western Europe, not only in philosophy but also in physics. It is so even until the dawn of the Renaissance and the Reformation in the 15th century, characterized by the diminishing weight of the Church and the increasing authority of science. For example, Aristotle's classical theory of the universe was basically unchallenged until the heliocentric sun-centered model discovered by Nicolaus Copernicus (1473-1543).³⁴ Further, his two books entitled *Physics* and *On the Heavens* were considerably influential, dominating scientific thinking until the time of Galileo Galilei (1564-1642),³⁵ Although many of his views were overthrown, his concept of substance, functioning as a block with no interpenetration with other substances remained. In fact, this block mentality was embraced consciously or unconsciously by Issac Newton (1642-1727).

As we know, Newton's ingenuity made a breakthrough in physics in his discovery of the force of gravity and the proposal as regards the three laws of motion, etc. He also thought that the universe consists of three fundamental parts: i.e., (1) time, being the same all over the universe; (2) space, where each object possesses its own size and position; and (3) mass, the constant amount of matter (as the substance from which all objects are made) in an object.³⁶ Nonetheless, epistemologically speaking, it is impossible for one to observe something, without some fundamental concept of the

³³ Cf. Bertrand Russell, *History of Western Philosophy*, pp. 277-465; Janice VanCleave, *Scientists through the Ages* (Hoboken, N.J.: John Wiley & Sons, 2004), pp. 4-109.

³⁴ Cf. Janice VanCleave, *Scientists through the Ages*, p. 5.

³⁵ Cf. Bertrand Russell, *History of Western Philosophy*, p. 213.

³⁶ Cf. Janice VanCleave, *Scientists through the Ages*, p. 6.

world guiding the observation process.³⁷ Therefore, Newton's basic assumption was still Aristotelian, namely, that every thing is made of small, solid, static, passive, impenetrable matter or substance, with no interdependent and interactive relation with each other. In this way, Aristotle's physics that the world is built by small units of blocks was inherited intellectually by Newton's physics, knowingly or unknowingly.

3.2 Adventures of the Metaphysical View of Substance

Although Aristotle argues in *Physics* VIII. 1. 251a8—252a4 that the world has no beginning and no end, he is convinced that the world, being a system of interrelated processes, is one of logical stability.³⁸ Despite its mobility from potentiality to actualization in various major interrelated processes, such a system is grounded upon the concept of substance (*οὐσία*). Moved in some dynamic and active way from without by the First and the Final Causes, substance on a microcosmic level remains considerably a passive block, in the sense that it possesses no intrinsic, blockless, interrelational interpenetration with other substances as mentioned by today's physics. Nevertheless, substance itself still has its dynamic, active nature in relation with the First or Final Cause in some way, helping to move the world from potency towards its fulfillment.

Influenced by Aristotle & Augustine (345-430), etc., a transphysical, theocentric metaphysics of substance was developed by Aquinas (c.1125- 1274). As an analogical study of being (*ens*) as being (*ens*), it is built upon the general principles of how a universal being (*ens*) functions actively in the physical world. Except God who is existence (*esse*) itself, every thing or substance is composed by being (*ens*) and existence (*esse*) towards fulfillment or self-fulfillment. W. Norris Clark (1915- 2008) succinctly states: "The substance of a being, accordingly, is its perduring, autonomous self-identity, as manifested and fulfilled through activity."³⁹ Nonetheless, in two senses, it is still largely a static block mentality to describe reality. First, microcosmically, despite the fact that a being or substance is a centre of dynamic activity in terms of its accidents, as well as its relation with other beings and God the First and Final Cause,⁴⁰ there is no blockless, interactive interpenetration between two substances *per se*. This view is similar to Newton's notion of atom as a windowless

³⁷ Cf. George Couvalis, *The Philosophy of Science: Science and objectivity* (London: SAGE Publications, 1997), p. 20.

³⁸ Cf. John P. Anton, "The Unity of Scientific Inquiry and Categorical Theology in Aristotle," *Greek Studies in the Philosophy and History of Science*, ed. Pantelis Nicolacopoulos (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1990), pp. 29-30.

³⁹ Cf. W. Norris Clarke, S.J., *Explorations in Metaphysics: Being—God—Person* (London and Notre Dame: University of Notre Dame Press, 1994), p. 107.

⁴⁰ Cf., *Ibid.*, p. 112.

substance.

Second, macrocosmically, following Aristotle perhaps subconsciously, Aquinas divides the totality of reality into two compartmental blocks, one of things mobile in need of continuous actualization, and one of things immobile in perfect actualization. The latter realm is where Aquinas largely situates God who has attained perfect fulfillment (cf. *S. Th.*, I, 3, 4). Analogously, this uncaused First Being, being substantially real, is depicted as the First Substance without any accident. In some texts, Aquinas seems to say that God, being a real Being (*Ens a se*), belongs to substance by reduction (cf. *De pot.* 7, 3 ad 7). “Although God is not first as if contained in the genus of substance; yet He is first in respect of all being, outside of every genus.” (*S. Th.*, I, 3, 6) In other words, Aquinas’ God — being the immobile First Cause — dwells in His own supreme uncreated realm, transcendently outside of ordinary creation.

Extensively, Aquinas’ metaphysical concept of substance has not delved into the interactive interpenetrative relation between two substances *per se* as mentioned by high energy physics today. Metaphysically, this non-interpenetrative reality applies even to God — being taken analogously as the First Substance — in His relation with created substances. However, Aquinas’ concept of substance is still operational or dynamic in some way as mentioned. Indeed, he says: “Every substance exists for the sake of its operation.” (*S. Th.*, I, 105, 5) Yet, soon after Aquinas, the sad adventures of substance would begin. Here below, three sad examples are listed regarding the deterioration of substance in modern philosophy.

The first example is the concept of substance by René Descartes (1596-1650). Insofar as substance is pertained to God, it is “that which exists by itself, that which needs nothing else but itself to exist.”⁴¹ However, to creatures, substance is “that which needs nothing else save God to exist.”⁴² Substance, as a basic unit of reality, is, therefore, conceived as related vertically to God, but horizontally independent of other creatures, radically autonomous as self-contained monad, unrelated and self-sufficient,⁴³ losing Aquinas’ notion of substance as a centre of dynamic activity. As a whole, the ‘in-itself’ of the previous definition as a centre of dynamic action has become the Cartesian ‘by-itself’ concept of self-sufficiency, self-enclosure, essential

⁴¹ René Descartes, “Replies to the 4th Series of Objections,” *Philosophical Works of Descartes*, Vol. II, trans. Elizabeth S. Haldane and G. R. T. Ross (Cambridge: Cambridge University Press, 1931), p. 101.

⁴² *Ibid.*

⁴³ Cf. W. Norris Clarke, S.J., *Explorations in Metaphysics: Being—God—Person*, pp. 109-110.

unrelatedness, fundamentally shutting itself from other creatures.⁴⁴

The second example is the concept of substance by John Locke (1632 – 1704), another influential thinker of the Enlightenment. Immensely influenced by Newton’s physics, Locke identified substance as the inert, unknowable underlying layer of accidents which is *per se* static, with no dynamic, self-communicative relationship with accidents and through them to the outside world.⁴⁵ Similar to Newton’s model of the atom, Locke’s notion of substance is essentially static, passive, unchanging in its being, and has become “deeply imbedded in subsequent Western thought and is one of the main reasons later thinkers to this day reject substance as opposed to activity, development, relationship.”⁴⁶

According to Norris Clarke (1915-2008), perhaps the most destructive concept of substance is brought by David Hume (1711-1776). Strongly influenced by the nominalist tradition of William of Ockham (c.1288-c.1348), Hume’s rational, empirical, anti-metaphysical stance rejected outright “the notion of an abiding, self-identical substance, as an invention of the metaphysicians with no grounding in reality.”⁴⁷ Hence, substance has become some kind of a metaphysical mirage, illegitimately projected into reality as a linguistic accident based upon the Western subject-object languages; and if it existed, would have to be found separable or separate from its accidental properties indeterminately.⁴⁸ The credibility built up by Aquinas with respect to substance as a metaphysical concept was, thus, sadly destroyed.

Summing up, substance as an inherited Aristotelian metaphysical concept during this long journey in the Patristic-Medieval-Modern Period was first rather well developed by Aquinas’ medieval, active, dynamic block mentality. Afterwards, as Western Europe entered into its Renaissance and Age of Reason in Modernity, the earlier concept of substance began its sad adventures through the rational, empirical, and skeptical minds of various prominent thinkers of the time. Consequently, substance as a metaphysical concept was torn apart, with little or no metaphysical value left, except to people still espousing the scholastic tradition.

3.3 How the Concept of God was Affected by the Development of Substance

⁴⁴ Cf. *Ibid.*, p. 110.

⁴⁵ Cf. *Ibid.*, p. 111.

⁴⁶ *Ibid.*

⁴⁷ Cf. *Ibid.*, pp. 111-112.

⁴⁸ Cf. *Ibid.*, p. 112.

Below we list a few examples demonstrating how the concept of God was affected by the adventures of the metaphysics of substance mentioned.

The first example is the two-story theism of traditional Western theism represented principally by Aquinas. Rooted in Aristotle's physical concept of subsisting substance and his mostly block theism viewing God as some distant immutable First Cause,⁴⁹ Aquinas developed his metaphysics of substance. As a result, a certain block concept of God as the Subsisting Being Itself (*Ipsum Esse Subsistens*) was constructed in His existential relationship with humanity. George Maloney, S.J. (1925-2005) germanely states the negative result of such a block development in Western theology:

The greatest obstacle to spiritual progress was the conception of man's life as a two story building. On the first floor was man with a full human nature, all that came to him from God in creation, including the effects of the sin of the first man, Adam. Man acted purely as a human being on this level, with the seeming implication that God was not too interested in this area except for the one faculty, man's will. This was the backstairs that led up to the second floor, the super-imposed supernatural life. Grace builds on nature and God gratuitously gives His gifts to a receiving human nature that is disposed to receive them. Thus an individual could live in two different compartments, at one time a purely "natural" life and again a "supernatural" life in the state of grace.⁵⁰

Consequently, "Western theology by and large has become reduced to a static form of objectifying God's transcendence by separating Him in His primary causality in all things from the created world in its createdness."⁵¹ In this way, God as the independent First Subsisting Substance (*Ipsum Esse Subsistens*) seems more present in His uncreated transcendence than being immanently real in the created world with all its createdness, involving no dynamic interpenetrating omnipresence, ceaseless interaction, and interdependent co-operation with humanity. It is true that both St. Augustine⁵² and St. Thomas,⁵³ etc., did mention about God's omnipresence during the Patristic-Medieval-Modern Period. However, such a magnificent idea did not seem to take off, possibly due to the unfavourable block mentality of the time.

⁴⁹ Cf. Charles Hartshorne and William L. Reese, *Philosophers Speak of God* (Chicago and London: The University of Chicago Press, 1969), pp. 58-75.

⁵⁰ George Maloney, S.J., *A Theology of Uncreated Energies*, The 1978 Pere Marquette Theology Lecture (Milwaukee, Wisconsin: Marquette University Press, 1978), pp. 114-115.

⁵¹ *Ibid.*, pp. 8-9.

⁵² Cf. *Ibid.*, pp. 108-109: *Enar.* in Ps 74:9 (PL 36, 952); *Sermo* 277, 13, 13 (PL 38, 1264-65); etc.

⁵³ Cf. St. Thomas Aquinas, *S. Th.*, 1, 8, 1.

The second example is Deism, which accepts as true a remote God who once created the world but does not intervene afterwards in what happens in creation. Apparently, Deism is “[a]n umbrella-term for the beliefs of many British, European and American writers of the seventeenth and eighteenth centuries, who in various ways stressed the role of reason in religion and rejected revelation, miracles and any providential involvement in nature and human history.”⁵⁴ Evidently, this block mentality was influenced directly and indirectly by the classical Aristotelian block theism of Aquinas. One illustrative example of Deism can be found in the scientific, agnostic, block theism of Immanuel Kant (1724-1804) who was well-known for being a great admirer of Newton’s scientific ingenuity.

As we know, grounded upon his scientism, Kant’s metaphysical world is divided into two compartments, one of Phenomena and the other of Noumena. The latter is unknowable, since it consists of entities which are non-sensory, intellectual, or intuitive objects of the understanding alone.⁵⁵ The natural or phenomenal realm is ontologically real and trustworthy, since it is scientifically verifiable. The supernatural realm, in consequence, would belong to the compartment of Noumena, since it consists of supernatural entities scientifically unverifiable, hence agnostic and untrustworthy. Since God is in the latter realm and is indispensably needed for human moral purposes, He is to be approached *as if* He exists. However, there are still two distinct blocks in Kantianism which highly stresses the role of reason in religion and rejects agnostically Divine Revelation, miracles, and any direct providential involvement of God in nature and human history. God, clearly, is being put apart by Kant into an unknowable block.

Finally, there is the scientific atheism of Karl Marx (1818-1883). Immensely influenced by Kant, Marx did not waste time with entities scientifically unverifiable. As a result, God existing in the transcendent, unscientific block was completely forgotten and jettisoned in materialistic Marxism. Patently, this is an adverse impact of the two-story mentality of theism, although not every two-story theist has been affected in this way. However, such a mental block can easily lead people whose faith is weak or next to nothing to derail completely from traditional faith in God.

⁵⁴ Gerald O’Collins, S.J., and Edward G. Farrugia, S.J., *A Concise Dictionary of Theology* (New York/ Mahwah, N.J.: Paulist Press, 1991), p. 53.

⁵⁵ Cf. Charles Hartshorne and William L. Reese, *Philosophers Speak of God*, p. 143; John Cheng, “Awakening from the Kantian Anti-supernatural Slumbers,” *Fu Jen Religious Studies*, No. 8 (Winter 2003), pp. 220-222.

Besides Marx, another distinguished example is Bertrand Russell (1872-1970). As a well-acknowledged agnostic, Russell could not rationally prove the existence of God in terms of the argument of the First Cause and the natural law, etc., even when he applied to celebrated use all his outstanding rational mind in mathematics, physics, history, and philosophy, etc.⁵⁶

IV. POSTMODERNITY: BLOCKLESS MENTALITY

4.1 Postmodern Blockless Physics

Postmodern physics is blockless, in the sense that observable physical things, beings or substances have been discovered existing in blockless continuum by quantum physics as countless blockless, interpenetrative, interactive interflows of energy waves. A renowned theorist in high energy physics, Fritjof Capra informs us that the universe, as it is, can no longer be described in terms of static units of substances in the classic block mentality. The whole postmodern cosmos, in fact, is a ceaselessly dynamic, cosmic web of energy dance, involving virtual, massless, non-local sub-particles interpenetrating one another, appearing, disappearing, and reappearing in immeasurably small particles and waves of energy, coming into being and vanishing without end.⁵⁷ He reports:

In this world, we deal with dimensions which are a hundred thousand times smaller than atomic dimensions, and consequently the particles confined to such small dimensions move considerably faster than those confined to atomic structures. The move, in fact, so fast that they can only described adequately in the framework of the special theory of relativity. To understand the properties and interactions of subatomic particles, it is thus necessary to use a framework which takes into account both quantum theory and relativity theory, and it is relativity theory which forces us to modify our view of matter once more.⁵⁸

Demonstrably, this new discovery that mass is nothing but a form of energy is in sharp contrast with the classical block mentality found in the substance or mass physics of Aristotle and Newton. Moving beyond Newton's physics of substance, the theory of relativity established by A. Einstein (1879-1955) shows that mass, space,

⁵⁶ Bertrand Russell, "Why I am not a Christian," *The Basic Writings of Bertrand Russell (1903-1959)*, edited by Robert E. Egner and Lester E. Denonn, with a preface by Bertrand Russell (London and New York: Simon and Schuster, 1961), pp. 585- 597.

⁵⁷ Cf. Fritjof Capra, *The Tao of Physics* (Bungay, Suffolk, UK: The Chaucer Press, 1979), pp. 236-259.

⁵⁸ *Ibid.*, p. 210.

and time are interpenetratively interrelated, even relativistically.⁵⁹ Additionally, his equation of energy and matter ($E=mc^2$) proves that ‘energy’ as a new paradigm can express more exactly the dynamic world of matter, as well as the interactive relation between blockless or massless sub-particles,⁶⁰ explainable, for example, in terms of the S-matrix approach. “The question concerning what goes wrong with these infinities is thus transcended to the questions as to why infinities are there and how we can sense out of them.”⁶¹ As the above remark indicates, the discovery by this new physics was so bewildering that Werner Heisenberg (1907-1976) spelt out his theory of quantum indeterminacy.⁶²

Actually, Einstein was in a state of a shock when he first came in contact with the new reality in quantum physics. He wrote in his autobiography as follows:

All my attempts to adapt the theoretical foundation of physics to this (new type of) knowledge failed completely. It was as if the foundation had been pulled out from under one, with no firm foundation to be seen anywhere, upon which one could have built.⁶³

In retrospect, the use of the two paradigmatic terms, i.e., ‘block mentality’ and ‘blockless mentality,’ have been very helpful in revealing the deep nature of things. This is so true as regards how Newton’s mechanics improves on Aristotle’s and that Einstein’s improves on Newton’s as instruments for revealing the depths of differences in a simple, outstanding, easily recognizable fashion.⁶⁴ As Thomas Kuhn (1922-1996) in his masterpiece *The Structure of Scientific Revolutions* notices, the employment of paradigm has made transitional, incommensurable differences worth

⁵⁹ “According to relativity theory, space is not three-dimensional and time is not a separate entity. Both are intimately connected and form a four-dimensional continuum, ‘space-time’. In relativity theory, we can never talk about space without talking about time and vice versa. Furthermore, there is no universal flow of time as in the Newtonian model. Different observers will order events differently in time if they move with different velocities relative to the observed events. In such a case, two events which are seen as occurring simultaneously by one observer may occur in different temporal sequences for other observers. All measurements involving space and time thus lose their absolute significance. In relativity theory, the Newtonian concept of an absolute space as the stage of physical phenomena is abandoned and so is the concept of an absolute time.” Fritjof Capra, *The Tao of Physics*, p. 64.

⁶⁰ Cf. Luis Gutheinz, S.J., “A Metaphysical Dialogue with Professor Dr. Thaddaeus Hang,” p. 33.

⁶¹ T-Y Wu, and W-Y Pauchy Hwang, *Relativistic Quantum Mechanics and Quantum Fields* (Singapore and London: World Scientific Publishing, 1991), p. 251.

⁶² Cf. Robert John Russell, “Quantum Physics in Philosophical and Theological Perspective,” *Physics, Philosophy and Theology: A common quest for understanding*, p. 361.

⁶³ P. A. Schilpp, ed., *Albert Einstein: Philosopher-Scientist* (Evanston, Illinois: The Library of Living Philosophers, 1949), p. 45.

⁶⁴ Cf. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Second Edition, Enlarged (Chicago: The University of Chicago Press, 1970), p. 206.

determining, both with more precision and in a larger variety of situations.⁶⁵ He states: “During the transition period there will be a large but never complete overlap between the problems that can be solved by the old and by the new paradigm.”⁶⁶ Apparently, in this radical transition between the whole pre-Postmodern Period and the Postmodern Period, the old data are reinterpreted and seen in new ways, and new kinds of data are sought in light of this sharp dependable distinction.⁶⁷

4.2 Postmodern Blockless Metaphysics of Relation

Comparatively, pre-Postmodern metaphysics of substance may be defined as a classical worldview seeing the totality of reality in a block mentality, i.e., the whole reality is composed by two or more largely non-interpenetrative, non-relational, independent block units of reality. On the other hand, Postmodern metaphysics of relation (or relations) can be defined as a worldview seeing the totality of reality in a blockless manner, i.e., the whole reality is constituted by two or more largely interpenetrative, relational, interdependent blockless units of reality. At its roots, Postmodern metaphysics of relation in the West seems to be initially inspired by the discovery of the blockless, relational, interactive, interpenetrative energy framework of quantum physics.⁶⁸ Apparently, five general levels of metaphysics of relation may be distinguished according to their scope of relational penetration or interpenetration.

(1) *Penetration of All by One!* In the first level of metaphysics of relation, one finds that all the blockless units in the totality of reality are being penetrated or permeated by one blockless reality interrelationally and interactively. For example, all the people on earth in some way are blocklessly penetrated by the sun’s radiant energy waves. Furthermore, according to the ingenious blockless observation of Aldous Huxley (1894-1963), there is a Divine Ground present interrelationally in all major religious traditions. To the Hindu, the Divine Ground is Brahman. In Mahayana Buddhism, it is the Pure Light of the Void. For Islam, it is the Real or Unity of Allah. To the Christian, it is the Being of God. To the Daoist, it is Dao.⁶⁹ Besides, to the Confucian, it is the

⁶⁵ Cf. *Ibid.*, p. 25.

⁶⁶ Cf. *Ibid.*, p. 85.

⁶⁷ Cf. Ian G. Barbour, “Ways of Relating Science and Theology,” *Physics, Philosophy and Theology: A common quest for understanding*, p. 38.

⁶⁸ Cf. Michael Esfeld, “Quantum Entanglement and a Metaphysics of Relation,” *Studies in History and Philosophy of Modern Physics* 35 (2004), pp. 601-617; Rolf-Peter Horstmann, *Ontologie und Relationen: Hegel, Bradley, Russell und die Kontroverse über interne und externe Beziehungen* (Athenäum: Hain, 1984), p. 175.

⁶⁹ Cf. Aldous Huxley, “Introduction,” in: Prabhavanada & Isherwood, C., trans., *The Song of God: Bhagavad-Gita* (New York: New American Library, 1972 [1944]), pp. 11-14.

cosmic Ren.⁷⁰

(2) *Interpenetration of One Another within the Same Group ad intra*/ In the second level, all blockless units of reality interpenetrate one another *ad intra* (towards inside) within the same group, interrelationally, interactively, interdependently. Such an interpenetration can happen within the same family, department, society, nation, culture, etc. For example, psychologists like J. Piaget (1896-1987) and Carl Rogers (1902-1987) remind us of the symbiosis between the fetus and the mother. Sociologist Max Weber (1864-1920) tells us of the vitality of interpersonal relationship within the same family, organization or community, etc.⁷¹ In this age of information highway, another instance is the interpenetration of electronic information among operating computers, ceaselessly taking place in the inclusive world of cybernetics.

(3) *Interpenetration with Others Outside the Group ad extra*/ In the third level, blockless units of reality within a group reach out *ad extra* (towards outside) to relate interpenetratively with other groups and their members, interrelationally, interactively, and interdependently. For example, Edmund Husserl (1859-1938) has cultivated the idea of intersubjectivity and interpenetration of human relations. Martin Buber (1878-1965) has elaborated the I-and-Thou relationship.⁷² Simultaneously, such an interpenetration can happen with other families, departments, communities, societies, nations, cultures, religions, etc., interpersonally, interdepartmentally, internationally, interculturally, interreligiously, etc. Another example is the interdisciplinary approach highly recommendable to both students and professors in the agenda of universities.

(4) *Unitive Interpenetration of One Another in the Created Realm*/ In the fourth level, all the blockless units of reality in a certain created realm interpenetrate intimately with one another, so much so that they become one in all, all in one. For example, in the subatomic world of quantum physics, the unitive interpenetration of sub-atomic energy waves takes place “in such a way that each of them contains, in itself, all the others.”⁷³ Another instance is the unitive interpenetrative Communion of Saints in Heaven. Allegedly, this may be the greatest dream of the Church on earth that “all families of people, whether they are honored with the title of Christian or whether they still do not know the Saviour, may be happily gathered together in peace and harmony into one People of God, for the glory of the Most Holy and Undivided

⁷⁰ Cf. Luis Gutheinz, S.J., “A Metaphysical Dialogue with Professor Dr. Thaddaeus Hang,” pp. 27-32.

⁷¹ Cf. *Ibid.*, pp. 33-34.

⁷² Cf. *Ibid.*, p. 34.

⁷³ Fritjof Capra, *The Tao of Physics*, p. 310.

Trinity.”⁷⁴ Eschatologically, in the expression of Alfred N. Whitehead (1861-1947), this unitive actuality is the ideal interrelational togetherness of a supreme category existing between God and the people of this world in process and reality.⁷⁵

(5) *Perfect Unitive Interpenetration of One Another in the Uncreated Realm*/ Finally, the fifth level can only take place in the Uncreated Realm among God the Father, God the Son, and God the Holy Spirit of the Most Holy Trinity. Ostensibly, all these blockless units of reality in this Uncreated Triadic Union interpenetrate one another so perfectly that they become All in One, One in All, interacting with each other “in such a way that each of them contains, in itself, all the others.”⁷⁶ In the theological language of the Church, this is the so-called perfect *Perichoresis* or Circumincession which takes place ceaselessly and eternally among the Three Divine Persons.⁷⁷ It happens in such a way that every Divine Person is perfectly related to and influenced by every other Divine Person in this perfect Undivided Trinity.⁷⁸

4.3 Postmodern Blockless Concept of God

Since the postmodern discovery of quantum physics and its subsequent development of metaphysics of relation, many theologians have attempted to keep up with the implications of the *paradigm shift*. Due to the momentous historical transition veering from the *classical block mentality* grounded upon the physics and metaphysics of substance to the *postmodern blockless mindset* built upon high energy physics and metaphysics of relation, various necessary adjustments have been made with regards to the concept of God. Below are some notable examples.

The first instance is the panentheistic endeavour attempted by Pierre Teilhard de Chardin, S.J. (1881-1955). Deeply affected by the postmodern blockless mentality, Teilhard’s God is the omnipresent all-penetrating Lord who permeates all his personal being. The following prayer of Teilhard manifests his profound interactive relationship with this all-present Divine Being:

Yes, O God, it is you who vivify, for me, with your omnipresence, the myriad

⁷⁴ *Dogmatic Constitution of the Church*, 69, in: Austin Flannery, O.P., general editor, *Vatican Council II: The conciliar and post conciliar documents* (Northport, New York: Costello, 1980), p. 423.

⁷⁵ Cf. W. Norris Clarke, S.J., *Explorations in Metaphysics: Being—God—Person*, p. 110; Alfred N. Whitehead, *Process and Reality*, Corrected Edition, ed. by David R. Griffin and Donald W. Sherburne (London and New York: The Free Press, 1979), pp. 342-351

⁷⁶ Fritjof Capra, *The Tao of Physics*, p. 310. In fact, there is no created language which can describe appropriately this perfect Uncreated Interpenetration. Here we just borrow a fascinating blockless expression of a theoretical physicist.

⁷⁷ Cf. Michael O’Carroll, C.S.Sp., *Trinitas: A theological encyclopedia of the Holy Trinity* (Wilmington, Delaware, Michael Glazier, Inc., 1987), pp. 68-70.

⁷⁸ Cf. W. Norris Clarke, S.J., *Explorations in Metaphysics: Being—God—Person*, p. 110.

influences of which I am the constant object. In the life which wells up in me and in the matter which sustains me, I find much more than your gifts. It is you yourself whom I find, you who makes me participate in your being, you who moulds me... O God, that at all times you may find me... that you may lay hold on me fully, both by the Within and the Without of myself, grant that I may never break this double thread of my life.⁷⁹

Further, instead of depicting God in terms of a block mentality in accordance with the traditional theistic expression, Teilhard boldly alters the classical block image of God in a blockless fashion, i.e., God is like the all-permeating Light of the world. He states: "If we may slightly a hallowed expression, we could say that the great mystery of Christianity is not exactly the appearance, but the transparence, of God in the universe. *Yes, Lord, not only the ray that strikes the surface, but the ray that penetrates, not only your Epiphany, Jesus, but your diaphany.*"⁸⁰

Even more amazingly, Teilhard depicts the traditional transcendent God as the Divine Milieu who permeates all creation with His real divine immanence. "All around us, to right and left, in front and behind, above and below, we have only had to go a little beyond the frontier of sensible appearances in order to see the divine welling up and showing through. It has sprung up so universally, and we find ourselves so surrounded and transfixed, that there is no room to fall down and adore it, even within ourselves."⁸¹ He adds: "By means of all created things, without exception, the divine assails us, penetrates us and moulds us. We imagined it as distant and inaccessible, whereas in face we live steeped in its burning layers."⁸² Prayerfully, Teilhard sums up his profound experience of God's presence in all things: "*In eo vivimus* (In Him we live). *Venite, adoremus* (Let us come. Let us adore [God])!"⁸³

Today, this omnipresent concept of God has been increasingly embraced and described in terms of the Eastern Orthodox concept of Divine Uncreated Energies. Accordingly, God is fully present in these Energies of His. It is the Orthodox expression respecting the all-permeating mode of God reaching out to us.⁸⁴ On the other hand, such an expression has been employed by James Redfield, a non-Christian or anti-Christian New Ager, whose God seems to be the omnipresent, conscious

⁷⁹ P. Teilhard de Chardin, S.J., *Le Milieu Divin: An essay on the interior life* (London and Glasgow: Collins, 1973), pp. 78, 80.

⁸⁰ *Ibid.*, p. 131.

⁸¹ *Ibid.*, p. 112.

⁸² *Ibid.*

⁸³ *Ibid.*

⁸⁴ Cf. Vladimir Lossky, *The Mystical Theology of the Eastern Church* (Crestwood, New York: St. Vladimir's Seminary Press, 1976), pp. 73-74.

Divine Energy or Divine Force in which we are an inseparable part. “We are judged when we die... by a divine consciousness of which we are a part.”⁸⁵

On the other, the present author thinks that “God’s personal Uncreated Energies are God Himself in His own limbs and fingers reaching out to the whole of creation.”⁸⁶ In fact, encouraged by Teilhard’s insight of the cosmic dimension of Christ,⁸⁷ in particular by the Divine Revelation that “Christ is all and in all” (Col 3:11), he portrays Christ as the ‘All-in-all’ in the sense that Christ pervades all His humanity, as well as all creation, with His very Divinity or Divine Energies. Hence, all the Divine Energies of Christ (as God) are not only in Him as a human being, but also in all of creation, as these Divine Energies of Christ are ceaselessly transradiated from Him as the God-Man *ad extra*. This portrayal seems best seen in the Resurrected Christ or the Transfigured Christ on Mt. Tabor, as He “was transfigured before them, and His face shone like the sun, and His clothes became dazzling white.” (Mt 17:2) In actuality, this image of Christ is consistent with the blockless mentality, as well as with Teilhard’s panentheism, considering that everything is in God.⁸⁸

V. CONCLUDING REMARKS

Analytically, in terms of the paradigmatic shift swinging cyclically like a pendulum from the *blockless mentality* to the *block mentality* and back to the *blockless mentality*, this paper has sought to describe how metaphysics and the concept of God have been coherently affected by physics in the history of Western thought. As a whole, one may observe that the West has encountered three distinct physics, i.e., the pre-Socratic physics which was both blockless and block in thinking, the largely Aristotelian-Newtonian block physics, and the current blockless high energy physics initiated by Einstein.

It is true that many of the new exciting theories in quantum physics have yet to be properly proved in no-nonsense scientific laboratories. Nonetheless, these stirring

⁸⁵ James Redfield, *The Celestine Vision: Living the new spiritual awareness* (New York, NY: Warner Books, 1997), p. 192.

⁸⁶ John Cheng, *Energy and Environment: The spiritual-human-material nexus* (Lewiston, NY: The Edwin Mellen Press, 1993), p. 19.

⁸⁷ P. Teilhard de Chardin, S.J., *The Heart of Matter* (London and New York: Harcourt Brace Jovanovich, Publishers, 1979), p. 212. On May 8, 2011, Pope Benedict XIV reminded Christians to involve Christ in everything, to bring the Christian values into every possible sphere in daily life. Cf. <http://www.zenit.org/article-32517?1=english>.

⁸⁸ Cf. Gerald O’Collins, S.J., and Edward G. Farrugia, S.J., *A Concise Dictionary of Theology*, p. 169.

sophisticated theories show at least that the multi-dimensional high energy physics⁸⁹ has doubtlessly surpassed Newton’s three-dimensional world of substance. Distinctly, such a historical transition can be seen in light of the remarkable influences and fruits brought forth by the subsequent blockless metaphysics and concept of God. In order to make what is presented above easier to grasp, a concise summary of the paper is contained in the following diagram:

Blockless Mentality (there is active interpenetration between two beings or things) Block Mentality (no interpenetration between two beings or things)	Physics (Physics is the branch of natural science concerned with the nature & properties of matter & energy)	Metaphysics (It seeks to know the whole of reality or existence in terms of the categories of beings (<i>entia</i>), culminating in the knowledge of the First & Final Cause of every thing & learning)	Concept of God (Here our research is focused succinctly on how physics has affected metaphysics and the conception of God in the history of Western thought)
Ancient Greek Period: Primitive Interpenetrative Blockless Mentality & Non-Interpenetrative Block Mentality	Looking for the unity of things, Thales (c.636-c.546 BC) blocklessly thought that every thing at the beginning was made of water. To Anaximander (c.611-c.547 BC), <i>apeiron</i> . To Heraclitus (c.535-c.475 BC), fire. To the block mentality of Democritus (c.460-c.370 BC), atom. To Aristotle (384-322 BC), a block of substance (<i>οὐσία</i>) composed by matter and form. To Stoicism, all things are blockless parts of a system called Nature.	Aristotle’s metaphysics of substance: Every thing in the real world is passive subsisting substance or being, depicted in terms of ten categories, i.e., substance & nine accidents. The world is formed by individual substances moved from potentiality to actuality ultimately by the First & Final Cause. To Zeno (c.490-c.430 BC), all things in Nature are metaphysically blockless, actively interpenetrating one another like elements within fire.	Aristotle’s God is a supreme remote form or substance removed from the real world, not interfering much with human lives. Entirely separate from matter, this perfect Being is without potency & motion. As the First & Final Cause, this Unmoved Mover is posited by logical necessity, causing motion by desire. Zeus, the blockless divine Fire or God of Stoicism, is the active soul of both the world and each human being in Nature as one system.

⁸⁹ Cf. M. J. Duff, ed., *The World in Eleven Dimensions: Supergravity, Supermembranes and M-theory* (Bristol and Philadelphia: Institute of Physics Publishing, 1999), pp. 1ff.

<p>Patristic-Medieval-Modern Period: (from c. the early Church to c. the end of the 19th century) A Developed Non-interpenetative Block Mentality</p>	<p>To Newton (1642-1727), there were three basic parts of the universe: time (the same all over the universe); space (each object had its own size & position); mass (the constant amount of matter in an object). Every thing is made of small, solid, static, passive, impenetrable block matter or substance, with no inter-dependent & interactive relation with each other. Thus, Aristotle's view that the world is built by blocks was maintained.</p>	<p>Influenced by Aristotle & Augustine (345-430), etc., a transphysical, theocentric metaphysics of substance was developed by Aquinas (c.1125-1274). As an analogical study of being (<i>ens</i>) as being (<i>ens</i>), it is built upon the general principle that every thing or substance in the universe is a block being (<i>ens</i>). Very Aristotelian, it is still a rather static block mentality to describe reality, similar to Newton's block mindset about substance.</p>	<p>Some block mentalities: Theism: God is the Subsisting Being, more transcendent than immanent, involving no dynamic interpenetrative omnipresence, ceaseless interaction & inter-dependent co-operation with humanity. Deism: a remote God created the world but does not intervene. Agnosticism: the existence of God is impossible to verify by natural science. Scientific Atheism: God does not exist for His existence is unverifiable by science.</p>
<p>Postmodern Period: (from c. the beginning of the 20th century to the present) Developing An Interpenetrative Blockless Mentality</p>	<p>Moving beyond Newton's physics of substance, the theory of relativity by A. Einstein (1879-1955) shows that mass, space and time are interpenetratively interrelated. His equation of energy and matter ($E=mc^2$) proves that energy is a new paradigm to express more exactly the dynamic world of matter as well as the interactive relation among seemingly blockless sub-particles, & the relativistic interrelation among mass, space, and time.</p>	<p>Due to Einstein's blockless, interrelational, interpenetrative energy mentality, metaphysics of relation is developed. Husserl (1859-1938) cultivated the intersubjectivity & interpenetration of human relations. Buber (1878-1965) elaborated the I-&-Thou relationship. Whitehead (1861-1947) worked on the relation between process & reality. Teilhard (1881-1955) used energy terms to deepen his ultimate relational metaphysics.</p>	<p>Affected by this block-less metaphysics of relation, Teilhard's God is omnipresent permeating all creatures. Today, this concept of God, similar to the Eastern Orthodox notion of God as the Divine Light or Energy, is increasingly embraced by Westerners. Besides, the author champions panentheism (i.e., a doctrine that all is in God) that God — even Christ — permeates all things as the All-in-all in terms of Divine Energy.</p>

Unmistakably, in view of how physics has consistently affected metaphysics and the concept of God in Western thought paradigmatically, the concept of a paradigm as “a cluster of conceptual, metaphysical, and methodological presuppositions embodied in a tradition of scientific work”⁹⁰ should, consequently, be extended to include the comparable constellations in the traditions of philosophy and theology. As this article unambiguously indicates, the paradigmatic shift switching between the blockless and block frameworks has been crisscrossing physics, metaphysics, and the conception of God in Western history. Being a *thread leading through all*, this macroparadigm shift helps us to see what has happened revealingly, even unprecedentedly, as a whole. At the same time, one may say that such an outline seems to have left countless trees behind without sufficient analytical study. As aforementioned, this is manifestly the consequence of conducting a paper in terms of the deduction method. Perhaps one day this unconventional outline might be complemented and expanded into a detailed monograph through the induction approach familiar to modern scholars.

All in all, insofar as the timely, relevant conception of God is concerned, it seems that the Church as the People of God can no longer afford to ignore the physics of the time, as well as the subsequent metaphysics generated by this physics. Rev. Stanislaus J Grabowski curtly states: “The vitality, earnestness and depth of one’s religion follow the types of image of God that is conceived and entertained in the soul. If the concept of God is beclouded one-sided or even distorted it will have as its counterpart a more or less uncertain one-sided and distorted kind of religion.”⁹¹ Without doubt, a blockless concept of God is more fitting to the blockless generation of Christians, as compared to the block concept of God in the previous classical period. For instance, just as ‘energy’ as a new paradigm can express more exactly the dynamic sub-atomic world of matter, a comparable concept of Divine Energy introduced by Eastern Orthodoxy may have a similar effect with respect to the description of the all-embracing, all-permeating, all-relational God.

As a matter of fact, the present blockless multicultural, pluralistic West has not only been influenced by high energy physics and its blockless metaphysics. Among others, Western Postmodernity has also been affected by the discovery of its blockless interrelational psychology and sociology, as well as by the blockless East Asian exercise and medicine of *qi*, including the blockless Eastern Orthodox theology of

⁹⁰ Ian G. Barbour, “Ways of Relating Science and Theology,” *Physics, Philosophy and Theology: A common quest for understanding*, p. 38; cf. Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Second Edition, Enlarged, 43-51.

⁹¹ Stanislaus J. Grabowski, *The All-Present God: A study in St. Augustine* (St. Louis and London: B. Herder, 1954), p. 60.

Divine Energy abovementioned. All these new extraordinary vistas are causing the postmodern West to open its doors and windows ever wider to the current macroparadigm shift from the block mentality to its blockless counterpart. While this shift may still be going on slowly in some quarters, one begins to sense that the concept of ‘what is real’ has become something increasingly interrelational, dynamic, concrete, immanent, even radiantly interpenetrative, as if ‘what is real’ can no longer be non-relational, static, hazy, transcendent, and non-interpenetrative as encountered in a block mentality. Rather, ‘reality’ has to be addressed concretely and dynamically, timely defined in terms of the interrelational and interpenetrative blockless mentality.

It is, therefore, crucial that the Church today would attune to the present blockless mentality prevalent in both physics and metaphysics, bringing forward the blockless concept of God for the blessing of God’s people everywhere.

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