

What is the Matter? Understandings of Matter in Unification Thought and Modern Physics

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Journal of Unification Studies Vol. 6, 2004-2005 - Page 143

In any given age, the understanding of matter and material beings underpins the thought of that age. This is because our fundamental categories for understanding existence derive from our view of matter. Ontology has therefore been an important branch of philosophy, and hence in Unification Thought, ontological concepts are the foundation for the whole structure.

Historically the investigation of matter was carried forward through the construction of philosophical models, and for centuries the philosophy of matter originating with Plato and Aristotle was the dominant view. Christian theologians were influenced by this philosophical tradition, and incorporated some parts of these philosophical models of matter into their doctrines on God and Creation.

Physics subsequently became the inheritor of this quest and has made huge advances in our understanding of matter. The key additional technique of physics was experimental comparison of conceptual models with the observed universe. The modern culmination of the quest to understand matter is found in two theories: the Standard Model of modern particle physics and Einsteins Theory of General Relativity. This work is primarily concerned with the Standard Model, because, for the last thirty years or so, the Standard Model has reigned supreme in answering the question of what matter is made of.

In Unification Thought there are a handful of ontological concepts that are fundamental to its structure. Found in the first chapters of the text, the chapters on the Theory of the Original Image and Ontology, these concepts also make profound statements about the nature and existence of matter. With the advent of physics that has overturned aspects of Platonic and Aristotelian theory, Christian thought has tended to retreat from areas of scientific explanation. Thus, in introducing a theological discussion on the nature of matter that hopes to be consistent with physics, Unification Thought attempts to contribute to the relationship between science and religion. This paper explores and compares the modern understanding of matter, Platonic and Aristotelian theory, and Unification Thoughts fundamental ontological concepts.

Concepts of Matter

1. The Legacy of Plato and Aristotle

Plato (428-348 BC) and Aristotle (383-323 BC) framed the dominant view of matter for about two thousand years, and possibly even until the time of Daltons presentation of his atomic theory in 1803. Their view of matter was pivotal in many areas of western philosophy and Christian theology, and in places Dr. Lee incorporates their philosophy into the framework of Unification Thought. For this reason it is important to address the

basic concepts of their philosophy of matter here and compare that to the modern understanding of the Standard Model.

Both Plato and Aristotle consider material beings to consist of form and matter, where matter is the material stuff of the being, and form is the intangible and nonmaterial idea or pattern of the being. For Plato, forms exist independently of material beings in their own realm. This realm is considered to be more real than what we perceive. Aristotle, on the other hand, rejected the independent existence of forms and regarded the form and matter of a being to be inseparable. Making this distinction of form and matter of necessity leads to the notion of some kind of prime matter, the stuff of the being, that has no inherent formal content, but that is able to accept the form and be shaped by the form. For Plato, space itself is the undifferentiated, structureless, material stuff out of which things are made. Aristotle, on the other hand, regards form and matter as inseparable. Thus for Aristotle, prime matter cannot have an independent existence but refers to the stuff of things that is capable of changing and accepting new forms.

From this concept of existing beings both Plato and Aristotle derive a concept of soul, where, in a human being, soul would correspond to form.^[1] Both also associate soul with mind.^[2] For Plato the forms have independent existence; thus the human soul too is capable of independent existence, but in an immaterial way. This Platonic view is the source of the mind-body dualism found in western thought. Aristotle, on the other hand, regards form and matter as inseparable; thus the human soul cannot exist independently and must cease to exist with physical death. For Aristotle the human being is a single substance, whereas for Plato mind and body are different substances. Thus the categories of existence derived from this view of matter describe the universe in terms of a material part and an immaterial mind part. Traditional Christian thought has appropriated Platos concept of the independent existence of immaterial mind as the philosophical basis for explaining spiritual existence.

Plato and Aristotle both rejected the atomist philosophy of Leucippus and his student Democritus. In the atomist philosophy existing beings are seen to consist of indivisible physical particles called atoms. Platonic and Aristotelian theory requires that matter be continuous rather than existing as discrete particles. Prime matter must be a smooth continuous stuff without form. We see this theory in Dr. Lees analogy with the macroscopic properties of water.^[3] This smooth continuous stuff is shaped by an immaterial form or pattern in existing beings. As will be shown below, these key points in the Platonic and Aristotelian philosophy of matter are challenged by modern atomic theory and particle physics.

2. The Standard Model

The Standard Model^[4] of particle physics combines electroweak theory (electromagnetic and weak interactions) with quantum chromodynamics (strong interaction) into a single framework that describes subatomic particles and their interactions. It does not include gravitation.

In the Standard Model there are two kinds of fundamental matter particles, quarks and leptons. They are considered point-like and structureless.^[5] There are six quarks and six leptons, arranged in three generations of particles as shown in Table 1.

Table 1. The Fundamental Particles of Matter

The Generations of Particles				
	I	II	III	Charge
Quarks	Up	Charm	Top	+2/3
	Down	Strange	Bottom	-1/3
Leptons	Electron	Muon	Tau	-1
	e-Neutrino	μ -Neutrino	τ -Neutrino	0

Each of these fundamental matter particles has a corresponding antiparticle. Combinations of these fundamental particles and anti particles can describe all the atomic and subatomic particles found by particle physics.

The physical universe exists because these fundamental physical particles interact with each other. There are four possible interactions between particles in the physical universe: gravitational, electromagnetic, strong, and weak. Since the 1930s physicists have described the four interactions in terms of field theory, where a field is something that varies continuously through space and time, such as a magnetic field around a bar magnet. One of the key differences between quantum mechanics and classical physics is the quantization of energies rather than the continuum of energy described in classical physics. This quantization extends to the quantum mechanical description of fields in electroweak theory and quantum chromodynamics. Thus the quantum mechanical description of the field of an interaction describes its action in terms of additional subatomic particles that carry the interaction, in other words, quantized particles of the field. These interaction-carrying particles are called bosons, and each interaction has its own particle or particles (Table 2).

Table 2. The Three Quantized Interactions

		Interaction		
		Weak	Electromagnetic	Strong
Boson		W ⁺ , W ⁻ , and Z ⁰	Photon	Gluon
Acts on		Quarks and leptons	Quarks and charged leptons	Quarks

The interactions operate between matter particles through an exchange of these interaction-carrying particles. The exchanged particles are considered virtual, in that we cannot directly observe them.

Matter, then, is composed of atoms, each consisting of a nucleus of protons and neutrons surrounded by a cloud of electrons. Protons consist of two up quarks and one down quark, and neutrons consist of one up quark and two down quarks. Normal matter, the stuff we see around us in the physical universe, is therefore composed only of first generation matter particles. The total number of protons in the nucleus, called the atomic number, determines the identity of the atom. In an electrically neutral atom there is exactly the same number of electrons as protons in order to balance the charge. The atoms themselves interact with each other via a residual electromagnetic interaction. Thus, the electromagnetic interaction is the most significant interaction for macroscopic matter and living beings. The duality of positive and negative charge is indirectly the source of the pair structure we observe in the universe.

3. Some Philosophical Implications

Despite precise agreement between quantum mechanical calculations and experimental observation, there remain some ontological mysteries inherent in quantum mechanics. These mysteries currently appear unsolvable. In particular, the wave function describing a particle in Schrödinger's wave equation has no physical correlate in the way as say velocity does in Newton's equations of motion. It is mathematically evaluated in terms of probabilities, but we don't know what in the wave function is actually doing the waving. This situation has led to enormous amounts of speculation over the meaning of quantum mechanics, yet with little or no experimental support for that speculation. Heisenberg, for example, was of the opinion that even the fundamental particles at their root are mathematical a kind of mathematical Platonism.

In a previous paper,[\[6\]](#) I proposed a method for inquiry into Unification Thought that combined an inner deductive four-position base with an outer inductive base. The outer base represents a comparison with existing beings. Now since physics has a well developed outer base rooted in experimentation, it is possible to substitute the outer base in Unification Thoughts method with explanations from physics, but only insofar as they have experimental support. Therefore, in keeping with this method, the speculation

surrounding quantum mechanics will be avoided in this paper as much as possible. The Standard Model itself has ample experimental support. Thus it is appropriate to use it here.

However, even limiting physics to experimentally confirmed theory does not remove all the ontological mysteries of quantum mechanics. There is still a certain indeterminism in the exact ontological status of the fundamental particles. They have a dual wave-particle nature, a fact that has been experimentally demonstrated. This has led to the term wave packet to describe both the wave nature and the discrete particle nature in one term. The term particle will be used here, since it is the discrete nature of the Standard Model that is important for the current discussion.

Despite these ontological problems of quantum mechanics, there are still important implications of the Standard Model for any philosophy that would utilize Platonic and Aristotelian theory.

The Standard Model describes existing beings in terms of discrete particles, not as a continuum of stuff. Energy is quantized and does not exist independently of physical particles, so it cannot be regarded as a continuum. Moreover, even apparently immaterial fields are quantized into particles and are not continuous. This discrete nature of existence in the Standard Model demonstrates that the continuous nature of matter in Platonic and Aristotelian theory is incorrect. A continuous physical prime matter without form, even in its Aristotelian formulation, is untenable. This also brings into question the concept of form, since it in turn is defined with respect to prime matter and existing beings. Since there is no continuous prime matter, there can be no form in the Platonic or Aristotelian sense to give it shape. It is possible to retain some notion of form and matter, but, as shown below, it would require significant modification of Platonic and Aristotelian theory to accommodate the discrete nature of existence in the Standard Model. The Standard Model demonstrates that matter is significantly more complex than Platonic and Aristotelian theory suggests. Thus it is clear that Platonic and Aristotelian theory can no longer be directly applied to material beings.

Furthermore, since all things are seen to exist through particles, the Platonic description of mind or soul as an independent immaterial existence is also overturned. This in turn brings mind-body dualism into question. Proponents of the dualism of mind and body hold to this view not because of the preponderance of evidence for it, but because they acknowledge a spiritual existence. If we are limited to the categories of existence derived from Platonic and Aristotelian philosophy, then denial of this dualism is tantamount to denial of spiritual existence. Indeed, many scientific materialists who point out that natural science disproves the dualism of mind and body do exactly that.

Fortunately, Unification Thought offers new categories for existence that can embrace the functional materialism of physics yet still uphold spiritual existence. We see the emergence of these new categories in Unification Thought's description of the structure of a human being. In Unification Thought, each human being has a four-fold structure.^[7] There is the spirit person consisting of spirit mind and spirit body, and the physical person consisting of physical mind and physical body. Now since it is assumed that God created the cosmos after the model of the human being, as the image of God,^[8] it seems natural to apply this four-fold structure to the cosmos as a whole. Neither Divine

Principle nor Unification Thought takes this additional step, but it has important consequences for our view of existence.

If we extend the four-fold structure of the human being to a four-fold structure in the created cosmos, then in the cosmos there is a spiritual universe consisting of spiritual *sungsang* and spiritual *hyungsang*, and a physical universe consisting of physical *sungsang* and physical *hyungsang*. This view of the cosmos does not require the duality of mind and body in order to acknowledge spiritual existence. Rather it points to a dualism of spiritual universe and physical universe where mind and body exist in both. Thus it has the potential to be compatible with physics. Moreover, when this fourfold view is compared with the Standard Model we can see that physical *sungsang* and physical mind, as part of the physical universe, cannot exist independently of physical particles. This is more Aristotelian than Platonic. The question then becomes, not how do mind and body interact, but how do spirit mind and physical mind interact? It is to this question that explanations such as the quantum mechanical views of Eccles and Penrose, described by Otani,[\[9\]](#) can be applied.

There are additional ramifications of this view. Based on a correspondence to the physical universe, where matter and material beings consist of physical *sungsang* and physical *hyungsang*, the existence of spiritual *sungsang* and spiritual *hyungsang* leads us to postulate the existence of some kind of spiritual matter in spiritual beings. Thus the new categories of Unification Thought describe a material spiritual existence, not an immaterial Platonic one. A concept of spiritual matter and all the connotations that go along with it, such as divisibility and notions of body, are an anathema to traditional thought. However it is their very lack in traditional thought that requires the duality of mind and body in order to account for spiritual existence. Perrottet[\[10\]](#) documents this problem in traditional thought.

Adopting this four-fold view of Unification Thought will of necessity also require redefining terminology, since spirit in traditional thought is essentially synonymous with mind, but is clearly distinct from mind in the fourfold structure. What is needed is an ontology that includes the spiritual universe in a consistent way. Wilson[\[11\]](#) begins to attempt this. His approach of deductively working from existing testimonies of the spiritual universe is probably the only way forward at this time, but he is hampered by the existing definitions of fundamental ontological concepts in Unification Thought itself. The remaining task of this work is therefore to examine some of these ontological concepts in the light of deductive logic and the particle-based understanding of the Standard Model.

Sungsang and Hyungsang in Unification Thought

In Unification Thought the fundamental ontological description of existing beings is given by two sets of dual characteristics, their relationships as described by the four-position base, and Universal Prime Force. The two sets of dual characteristics are *sungsang* and *hyungsang*, and *yang* and *yin*. All existing beings are seen to exist, act, grow and multiply through give and receive relationships between these dual characteristics, mediated by Universal Prime Force. The *sungsang* and *hyungsang* relationship is, however, considered most fundamental. Thus the primary description of

matter in Unification Thought is through the concepts of *sungsang* and *hyungsang*, which will be the focus of the rest of this paper. *Yang* and *yin* and Universal Prime Force will be addressed elsewhere.

In *Essentials of Unification Thought*, Dr. Lee gives his initial description of *sungsang* and *hyungsang* as aspects of the Original Image. Correspondingly, all existing beings are seen to have an invisible aspect, or *sungsang*, and a visible aspect, or *hyungsang*. *Sungsang* corresponds to mind, both in God and human beings

The Original *Sungsang*, or Gods *Sungsang*, is the part of God corresponding to mind and represents the fundamental cause of the invisible aspect, or functional aspect, of all created beings. The invisible aspect of created beings corresponds to mind in human beings, to instinct in animals, to life in plants, and to physicochemical character in minerals.[\[12\]](#)

This passage contains the core concepts of *sungsang* as mind (and instinct), life, and physico-chemical character. *Hyungsang* refers to the visible physical manifestation of existing beings. This core explanation of *sungsang* and *hyungsang* in Unification Thought is essentially identical to the explanation given in Divine Principle. Unification Thought, however, is substantially more complex than Divine Principle. There are additional layers of explanation, the concepts have been developed through a deductive process,[\[13\]](#) and Dr. Lee has tried to place Unification Thought in the context of philosophical thought in general.

This has led to a number of additional explanations of *sungsang* and *hyungsang* beyond the view presented in Divine Principle, additions which have differing effects on our understanding of the terms. The concept of *sungsang* as a functional aspect in the above passage is one such addition. What is meant by functional aspect is not immediately clear. There are hints in this context in the examples of mind,[\[14\]](#) life and physico-chemical character,[\[15\]](#) but a clear consistent explanation is not given. A clear picture of the meaning of function would aid in understanding the meaning of *sungsang*, but picture is thusfar incomplete.

Another striking addition relates to the philosophical context of Unification Thought. Dr. Lee retains, or rather reintroduces, Platonic and Aristotelian theory of matter by placing both the forms and unformed matter within God. Thus Gods *Hyungsang*, as a kind of pre-energy or pre-matter, is treated as the unformed prime matter required by the form and matter distinction.

Gods *Hyungsang* is the fundamental cause of the material aspect of human beings, animals, plants and minerals. In other words, the human body, the body of animals and the materials of plants and minerals are manifestations of Gods *Hyungsang* in different dimensions. The visible aspect of all created beings consists of matter and form, the essential cause of which is the fundamental matter and the potential for a limitless number of forms within Gods *Hyungsang*.[\[16\]](#)

And

Matter ($hylé^{1/4}$), as mentioned by Aristotle, originally refers to pure material without any determination. Why, then, does Unification Thought call it *Hyungsang*, which, in Chinese characters, has the connotation of form? The reason is that *Hyungsang* has the potentiality to assume specific forms. This can be explained by taking water as an analogy. Water has no form of its own, but it can assume numerous forms depending on the container in which it is contained. Therefore, it can be said that water, though formless, has a limitless number of forms. Likewise $hylé^{1/4}$ is also formless, but it has the potential to manifest a limitless number of forms. For that reason, it is appropriate to call it *Hyungsang*.[\[17\]](#)

Gods act of creation is then seen to take place in two stages.[\[18\]](#) The first stage is creation of the Logos for a being in an inner developing four-position base. In this Dr. Lees explanation is very Platonic. The Logos for a being would correspond to the Platonic form with independent immaterial existence within God.[\[19\]](#) Subsequently the second stage is creation of the material being from the interaction of Logos and *Hyungsang* in an outer developing four-position base. Thus in the outer developing base prime matter (*Hyungsang*) is given form resulting in an existing being. The description of this process of creation, for the creation of a bird, is explicitly laid out in *Explaining Unification Thought*.

Once the Purpose for creating something such as a bird is formed by Heart, the Inner *Sungsang* interacts with the idea or image in the Inner *Hyungsang*. The concrete plan of the bird is its logos. Logos is the unity of the dual characteristics of Inner *Sungsang* (reason) and Inner *Hyungsang* (law). The actual bird is the result of the give-and-take action between Logos and *Hyungsang* (pre-matter). Logos is in the subject position: pre-matter in the object position.[\[20\]](#)

Although this complete description does not appear in *Essentials of Unification Thought*, it is still implied, as the same structure of the Original Image is presented in that text.

Since the Standard Model shows that Platonic and Aristotelian philosophy of matter can no longer be directly applied to existing physical beings, it is important to address Dr. Lees use of it in Unification Thought. By placing both prime matter and the forms in a Platonic sense within God, Dr. Lee removes them from the physical universe and avoids direct conflict with the Standard Model. However, in doing so he breaks the Divine Principles principle of resemblance, whereby attributes of God are deduced from common characteristics of existing beings.[\[21\]](#) Thus his retention of the form and matter distinction by placing prime matter and the forms within God is a purely logical construct required by using concepts derived from Platonic and Aristotelian philosophy, and is not based on observation of existing beings.

Using this form and matter distinction is tempting. It allows simple explanations about God, material beings, the creation process, and Gods connection to creation, using familiar terms that have a history of interpretation. Moreover, since Gods existence and purpose in creating are underlying assumptions of Unification Thought, we must

presuppose some conception of material beings within Gods mind. This suggests that some notion of form at least should be retained.

Breaking the principle of resemblance is, however, a more serious problem than the explanatory benefits derived from using Greek philosophy. I believe that the principle of resemblance is one of the key points in Unification Thoughts method for inquiry, and that it is the only methodological justification for the view of God presented in the texts. If we adhere to that principle, then since the Standard Model teaches us that the Platonic and Aristotelian concepts of form and matter can no longer be directly applied to understand matter and material beings, they should not be directly applied to the Original Image either. Specifically we cannot justify regarding Logos and Gods Hyungsang as form and prime matter in the Platonic sense.

Hence, this second additional concept beyond Divine Principle does not initially contribute to an improved understanding *sungsang* and *hyungsang*. There is, however, one addition in Unification Thought that is extremely important for developing our understanding. That is the presentation of a connected two-stage structure of inner and outer four-position bases, where mind is treated as the inner base. This is most clearly explained in the Theory of the Original Image as the Two-Stage Structure of the Original Image, and the Two-Stage Structure of Creation.[\[22\]](#) It opens up a whole new way to regard *sungsang*, allows a clearer definition of the term itself, suggests some novel definitions of mind and life, and allows us to revisit notions of function and Greek philosophy in a consistent way that is also compatible with physics.

***Sungsang* as an Inner Base**

1. Deductive Developments

When the two-stage structure is applied to the Original Image in Unification Thought the inner base, consisting of an inner *sungsang* and an inner *hyungsang*, is seen to correspond to mind. The inner *sungsang* is said to consist of intellect, emotion, and will, and the inner *hyungsang* of ideas, concepts, laws and mathematical principles.[\[23\]](#) In the chapter on Ontology, however, Dr. Lee does not apply this inner four-position base to all existing beings in this same way. Rather he sees the inner and outer structure of the Original Image reflected in a beings existence as an individual truth body and as a connected body.[\[24\]](#) This changes the inner and outer structure from one that applies to a single being to one that involves more than one being. In the process the nature of the inner and outer bases are changed somewhat. In particular, the outer base is no longer a mind and body (*sungsang* and *hyungsang*) type of relationship within a single being.[\[25\]](#) Again, this compromises the principle of resemblance.

If we strictly apply the principle of resemblance, then all existing beings should also be seen to have this same basic two-stage structure of inner and outer four-position bases as found in the Original Image. Thus in human beings mind (*sungsang*) would consist of an inner *sungsang* and an inner *hyungsang* in an inner four-position base comparable to the inner base of the Original Image, and the outer base would simply be the mind and body relationship. Similarly, inner four-position bases in existing beings would also describe life and physico-chemical character. In other words, applying the principle of resemblance allows us to characterize *sungsang* in general as an inner base for all

existing beings. Or rather, if existing beings are seen to have a two-stage structure, where *sungsang* exists as an inner base, we can then apply that structure to the Original Image. For human beings this kind of structure is suggested in the Theory of Art, where the creation of a work of art begins from an inner four-position base that is equivalent to the inner developing four-position base of the Original Image.[26] However, as shown above, this is not consistently applied throughout the text. In order to gain more insight into this structure in existing beings we look again to the results of natural science.

2. Comparison with Natural Science

Up to this point in our discussion of *sungsang* and *hyungsang* we have been using logic to derive and support a two-stage structure for existing beings. In this section we will look at some insights for the notion of *sungsang* as an inner base derived from considerations of modern neuroscience and biology, and then address implications of the Standard Model.

The main seat of the physical mind in the physical body is the brain, and in recent years neuroscience has made rapid progress in unraveling its functioning. Memory, emotion, reasoning, sensory experience and movement are known to depend upon the chemical and electrical pathways in the brain.[27] Memories, for example, are laid down by the establishment and strengthening of connections between neurons in specific parts of the brain. In other words, neuroscience shows that the contents of the inner *sungsang* and inner *hyungsang* of the physical mind exist and act in the chemical and electrical connections of the brain.[28] They have direct relationship to the physical structure of the brain and are not separate substances in themselves. The physical mind does not exist independently of physical particles. Moreover, the contents of the inner *hyungsang*, memories, prototypes, ideas, concepts, laws, mathematical principles, etc., can be generically regarded as information. Thus the contents of the inner *hyungsang* of the physical mind can be regarded as information coded onto the physical structure of the brain. The inner *sungsang* can then be regarded as the faculties which access and express this information, described in Unification Thought as intellect, emotion and will.

Life, like mind, is very difficult to define. At its root, however, the life of any organism is life at the cellular level. The cell should thus exist and act through both inner and outer four-position bases. In this model, life (*sungsang*) can be seen to consist of an inner *sungsang* and an inner *hyungsang* in an inner four-position base that depends on the chemical and electrical pathways in the cell. Similar to mind, the inner *hyungsang* of life is information coded into the physical structure of the cell. Primarily, but not exclusively, we can see this in the information coded into the DNA. The cell also has an inner *sungsang*, functional components that read and express this information in the proteins of the cell through RNA transcription.

The *sungsang* of matter is described in Unification Thought as its physico-chemical character or function.[29] The text does not, however, clearly explain what physico-chemical character actually is. I believe that with this model of *sungsang* as an inner four-position base we can begin to address this problem, although the situation is not as clear-cut as it is for life and mind. Since the fundamental particle of matter is the atom, let us consider an atom in this context. An atom has a clear *hyungsang*; it has shape and mass, and, as the Standard Model shows, is composed of smaller particles. It is more difficult to

apply the inner base of *sungsang* to the atom because its complexity is not sufficient to support the discrete structures of an inner *sungsang* and inner *hyungsang* such as we find in a cell or the brain, but we can still discern this structure in a vestigial or rudimentary way.

As a generalization, the inner base can be regarded as an inner *hyungsang* that is information coded on material particles, and an inner *sungsang* that reads and expresses the information. Now in the atom we do not have the constant electrical and chemical signaling of the same sort that we find in living beings. However, the type of atom and its chemical and physical properties are determined by the nucleus of the atom. In particular, the character and identity of the atom is determined by the number of protons in the nucleus. It is therefore possible to view the informational content of the atom as a whole to be coded onto the structure of the nucleus, which is read and expressed through the quantum interactions within the atom.

In addition to this basic picture, the Standard Model gives important additional insights concerning what is physico-chemical character. At first sight the Standard Model appears to challenge the pair structure concept contained within Divine Principle and Unification Thought. This is because the strong force has a threefold color charge and protons and neutrons are composed of three quarks in a way that cannot be explained in terms of *sungsang* and *hyungsang*, or *yin* and *yang* pairs. Unification Thought does, however, contain an often-neglected threefold structure: the intellect, emotion, and will of the mind.

Since mind exists through a threefold structure, *sungsang* in general may also exist through a threefold structure. Thus the apparent conflict of Unification Thought with the strong force can be resolved by regarding the threefold structure of the nucleus as structure of the *sungsang* of the atom. This view of threefold structure within the *sungsang* is strengthened by the fact that quarks do not exist independently of each other in the present universe. Additionally, this triplet structure of protons and neutrons can be regarded as coding information in the inner *hyungsang*. Thus the code for a proton is two up quarks and one down, whereas the code for a neutron is one up quark and two down, and the code for the atom is contained in the total triplet structure of the nucleus.

This further demonstrates that physical *sungsang* is not independent of physical matter, and interestingly brings us to an additional correspondence with living beings. The informational content of a cell is primarily encoded in the DNA of the cells nucleus, where a sequence of three bases in the chemical structure of DNA codes for a particular amino acid.[\[30\]](#) The basic informational coding of DNA for storage and expression of protein information is a triplet structure. Thus, at the heart of the *sungsang* of living beings there is again the threefold structure that we find in the *sungsang* of mind and of atoms.

3. Form, Matter and Function

With this understanding of *sungsang* as an inner base, we are now in a position to revisit the notions of function and Greek philosophy in Unification Thought. If mind is considered to exist as an inner four-position base, then the inner *sungsang*, as the part that does the thinking, can be regarded as the functional aspect.[\[31\]](#) Similarly, if *sungsang* in general is considered to exist through an inner four-position base, then the inner *sungsang*, not *sungsang* as a whole, can be regarded as the functional aspect of an existing being

that reads and expresses the information coded in the inner *hyungsang*. Thus, this model of *sungsang* allows us to reintroduce a concept of function in *sungsang* in a consistent way that can be clearly defined for all existing beings. The inner base of *sungsang* can then be described as an inner *sungsang* of a functional aspect and an inner *hyungsang* of an informational aspect. *Sungsang* is therefore connected to patterns of information storage and processing as it relates to existing beings.

With respect to Platonic and Aristotelian theory of matter, it is the more complex discrete nature of the Standard Model that is at odds with the relatively simple model of a continuous unformed prime matter. Although we cannot apply Greek philosophy unchanged to existing beings, this does not mean that we must discard all its concepts. The notion of form is the starting point here. The concept of form contains both idea and pattern of existence; it is information and three-dimensional structure that somehow impresses itself into the unformed prime matter, almost as a kind of mold. Form does not directly say anything about the stuff of the prime matter itself. Similarly the two-stage structure of *sungsang* and *hyungsang* developed in this paper does not directly address the stuff of matter either. It is rather part of a universal image, or universal pattern of existence, that contains both information and structure. It shows how a being exists and how information is coded onto the structure in an inner base. The two-stage pattern of *sungsang* and *hyungsang* in existing beings can therefore be seen to correspond to, and develop, the Platonic and Aristotelian concept of form.

In the Standard Model, the fundamental particles are seen as point-like and structureless. Three-dimensional structure arises only from the relationships of these particles. In other words, the Standard Model describes the stuff of matter and the stuff of relationship. The relationship between the information / pattern of existence in Unification Thought and the particles of the Standard Model can then be seen to be one of form and matter. The ontological structure of Unification Thought provides the form, and the particles of the Standard Model provide the matter. Thus physics and Unification Thought can be seen as complimentary. They do not describe exactly the same things.

Additionally, natural science shows that for physical beings this relationship is Aristotelian in that the information and pattern do not exist independently of the particles. However, since the independent source of the pattern is found within God in Unification Thought, the overall structure is also Platonic. That is, this revised concept of form and matter combines Plato, Aristotle, the Standard Model and Unification Thought in a comprehensive structure.

Furthermore, when this two-stage pattern of *sungsang* and *hyungsang* is applied, as form, to Gods existence, it does not address the actual stuff of God Himself. The integrity of Unification Thought does not require that we address what God is made of, rather just the formal content. Indeed, since God is separate from His creation, we can say nothing about the actual composition of God, but can only infer from observation of existing beings about the informational content and pattern of His existence.

Conclusion

The understanding of matter in modern physics throws up challenges for philosophy and theology that are not well met by the traditional categories of Platonic and Aristotelian thought. Unification Thought has the unique potential to integrate traditional thought and

modern physics, if it can be made logically consistent and in agreement with observation of existing beings. That is, it should be compatible both with experimentally confirmed theories in physics and with theology. The analysis presented here demonstrates some of that potential in new categories for existence that are compatible both with spiritual existence and the scientific denial of mind-body dualism. Furthermore, the Standard Model also has implications for Unification Thought where its concepts are obtained from Platonic and Aristotelian theory. This leads us to the proposal of describing *sungsang* as an inner base and to redefining the Greek concepts of form and matter to be consistent with Unification Thought and the Standard Model, respectively. I believe this move will help to make Unification Thought more logically consistent and compatible with physics.

Notes

[1] Samuel Enoch Stumpf, *Socrates to Sartre* (New York: McGraw-Hill, 1982), p. 187.

[2] Platos concept of soul has parallels with Unification Thoughts concept of mind as emotion, intellect, and will. Aristotle, on the other hand, applies a concept of soul to plants and animals too. His description is more reminiscent of the stepped structure of *sungsang* described in Unification Thought.

[3] Sang Hun Lee, *Essentials of Unification Thought* (Tokyo: Unification Thought Institute, 1992) p. 7.

[4] The Standard Model has been extensively described in popular science and scientific literature. In this work I have found the online Encyclopaedia Britannica to be of particular use. A good starting point for further reading is: Standard Model. [Encyclopaedia Britannica](http://search.eb.com/eb/article?eu=71193). 2004. Encyclopaedia Britannica Online. 20 May 2004 <http://search.eb.com/eb/article?eu=71193>.

[5] This is challenged in String Theory, where the fundamental particles are seen as vibrating strings rather than structureless points.

[6] David Burton, Unification Thoughts Methodology and the Dual Characteristics, *Journal of Unification Studies* 5 (2003): 81-84.

[7] Lee, *Essentials*, p. 93.

[8] *Exposition of the Divine Principle* (Seoul: Sung Hwa Publishing Co., 1996), p. 45.

[9] Akifumi Otani, A New Idea for the Mind-Brain Problem, *Journal of Unification Studies* 5 (2003): 113-14.

[10] Claude Perrottet, Conceptual Roadblocks to an Understanding of Spiritual Reality in the Western Philosophical Tradition, in *Unity of Sciences and Unification Thought: Proceedings of the 15th International Symposium on Unification Thought*, Moscow, November 27-30, 2003.

[11] Andrew Wilson, Research into the Ontology of Spirit World and Spirit Persons in Unification Thought, *Journal of Unification Studies* 5 (2003): 145-174.

[12] Lee, *Essentials*, p. 3.

[13] Burton, *Methodology*, p. 84.

[14] Lee, *Essentials*, p. 5.

[15] *Ibid.*, p. 43.

[16] *Ibid.*, p. 6.

[17] *Ibid.*, p. 7.

[18] *Ibid.*, pp. 32-33.

[19] As pointed out by Wilson (Wilson, *Ontology*, 150.) Logos as presented in Unification Thought is a little different to the Platonic sense of form since Logos also contains individual image. However the relationship between the immaterial Logos, which is seen to have independent existence, and Hyungsang is the same as that between form and prime matter in Platonic Theory. It is the specifics of this relationship that is of concern here rather than the precise contents of Logos.

[20] Sang Hun Lee, *Explaining Unification Thought* (New York: Unification Thought Institute, 1981), p. 35.

[21] *Exposition*, p. 16.

[22] Lee, *Essentials*, pp. 32-33.

[23] *Ibid.*, p. 23.

[24] *Ibid.*, p. 68.

[25] David Burton, An Exploration of Questions in the Ontology of Unification Thought, *Journal of Unification Studies* 4 (2002): 48 - 50.

[26] Lee, *Essentials*, p. 231.

[27] *Scientific American* 289 (September 2003). This is a special issue dedicated to neuroscience.

[28] Neuroscience cannot as yet explain consciousness. That is a more intractable problem and will probably require invoking the spiritual mind as well.

[29] Lee, *Essentials*, p. 43.

[30] See, for example, Stephen J. Freeland and Laurence D. Hurst, Evolution Encoded, *Scientific American* 290 (April 2004): 84-91.

[31] Lee, *Essentials*, p. 5.