

RESEARCH PROJECTS FOR COMPARATIVE STUDY AND APPRECIATION OF ULTIMATE REALITIES THROUGH THE SCIENCES AND HUMANITIES¹

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Abstract: The essay distinguishes two kinds of ultimate reality, ontological and cosmological. The ontological kind is whatever answers to the question of why there is anything determinate at all. Three great thematic answers have been developed in the world's philosophic/theological cultures: that the reason for things is a function of consciousness, of spontaneous emergence, or of a creator God something like a person. The cosmological kind consists of the transcendental traits of anything determinate, of which four are discussed: form, components formed, existential location, and value-identity. Relative to form, the ultimate realities relevant to order, value, and right choice are discussed. Relative to components formed, the ultimate realities relevant to wholeness, integration, and healing are discussed. Relative to existential location, the ultimate realities relevant to engaging Others are discussed. Relative to value-identity, the ultimate realities of achieving value in oneself and in one's effects on others are discussed. The essay concludes with a series of proposed research topics that explore these points in more detail, emphasizing the collaboration of scientific and humanistic thinking.

I. Philosophical Introduction

TWO KINDS of ultimate realities exist and have been symbolized in the world's religious and philosophical cultures, the ontological and the cosmological.²

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¹ *Editor's note:* At the 2009 APA Eastern Division meeting in New York City, Professor Neville delivered a talk calling for innovative approaches to advance the philosophical engagement of Chinese philosophy, with the emphasis on "addressing contemporary first-order problems." Dr. JeeLoo Liu, the president of the Association of Chinese Philosophers in America (ACPA), was inspired by his talk, and brought the idea to organize special sessions on these new projects at the 2010 APA Eastern meeting. Dr. Hyung Choi, Director of Mathematical & Physical Sciences at the John Templeton Foundation, learned about this idea and was highly supportive of it. He secured a grant for the ACPA to further develop this "new projects" program. Part of the outcomes of this program was the production of six white papers that lay out future research directions for scholars interested in Chinese philosophy. Five of these papers are particularly focused on Chinese cosmology or Chinese metaphysics, as one of the aims of the John Templeton Foundation was to define the interface between science and metaphysics. Our hope is that these white papers will spark more interests in Chinese metaphysics and make Chinese metaphysics more relevant to the scientific worldview of our times. We will continue to publish the rest of these papers in our next issue for more future discussions.

I.1. *Ontological ultimate realities* have to do with the contingency of the world as a whole. Why is there something rather than nothing? Stephen Hawking concludes *A Brief History of Time* with the following remark:

Even if there is only one possible unified theory, it is just a set of rules and equations. What is it that breathes fire into the equations and makes a universe for them to describe? The usual approach of science of constructing a mathematical model cannot answer the question of why there should be a universe for the model to describe. Why does the universe go to all the bother of existing? Is the unified theory so compelling that it brings about its own existence? Or does it need a creator, and, if so, does he have any other effect on the universe? And who created him? (Hawking, 1988, 174).

Ontological ultimate reality (or realities) is whatever responds to the question of why there is the universe, of what its “cause” is, in whatever sense of “cause” might turn out to be appropriate. If it is suggested that the universe does not need a ground or cause, that it “just is,” the ontological question is reformulated as why it just is rather than there be nothing at all.

Reflection on ontological ultimate reality is ancient and multifarious in the diverse cultures of the world. But ontological reflection is always and inevitably subject to two contrary pressures. On the one hand is the pressure to think of ultimate reality in terms that are intimate to human life, that make sense to people. From the standpoint of human religious needs, the ultimate reality or realities are the ultimate boundary conditions of existence—matters of the meaning of life and death. The symbols that relate ontological ultimate reality to life need to be intimate and familiar. On the other hand is the pressure to think of ontological ultimate reality in transcendent terms—after all, it is supposed to be the “account” or “cause” of the world and everything within it. So ontological ultimate realities cannot be like the things in the world of which they are to give an account. The pressure toward transcendence, fueled by a consciousness of the dangerous seductions of idolatry, pushes concepts, language, and analogies beyond determinate limits.

Philosophical/theological/cultural reflections on ontological ultimacy have thus appropriated fecund symbols and pressed them in two directions—toward intimacy and toward transcendence. Three great symbol systems have dominated the world’s cultures: consciousness, emergence, and personhood. These are internally various and overlap in many ways, but have their own logic.

Consciousness, its powers and objects, has been a powerful symbolic theme, especially in the cultures of South Asia, including those we know as Hinduism, Buddhism, and Jainism. Everyone can relate to

² For purposes of this paper, “ultimate realities” means the boundary conditions for the existence of the world. As *ultimate*, they are the last in a series of conditions without which some important aspect of existence would be missing or impossible.

consciousness, and everyone can engage in meditation in which we become conscious of objects of consciousness and capacities to empty and to control consciousness to some degree. Some people are extremely adept at this, but everyone can relate to the symbols of consciousness intimately. Pushing toward the transcendent side, consciousness is symbolized as a thing in itself, separable from its objects. In some symbolic systems, the objects of consciousness are real on their own too, resulting in various forms of dualism; in other systems they are not so real, resulting in non-dualisms. Some systems, usually Hindu, say that the underlying personal consciousness (atman) is somehow (in a great many different possible senses) identical with Brahman, a kind of Primal Consciousness. Brahman is symbolized as with qualities (Saguna Brahman), in relation to human life and the creation of the world, and without qualities (Nirguna Brahman) beyond any connection with the world or any kind of multiplicity. Other systems, usually Buddhist, say that the underlying personal consciousness is truly empty so that an enduring self is an illusion, but one that allows for symbolizing ultimate reality as Buddha-mind in some denominations. South Asians do believe in gods, including some highly transcendent ones such as Shiva and Vishnu. But as persons the gods are subject to the laws of karma, and hence are not truly ultimate. The symbols of Shiva and Vishnu (and other gods) are pushed toward ever more transcendent representations and then they switch from models of personal agency to models of consciousness, identifying with Brahman.³ The diversity in the models of consciousness cannot be overestimated, and yet the thematic symbol has some coherence throughout the models.

The theme of emergence developed prominently in East Asian cultures, and takes its metaphorical center from springs of water emerging from the ground, the emergence of buds in the spring, and the like. Its symbolic stress is on novelty, the development of the complex from the less complex or simple. The notion of the Dao is two-dimensional. One is the emergence within time of the later from the earlier, often with a stress on spontaneity. The other dimension is the emergence of the Dao that can be described from a deeper, unnameable Dao. Dao De Jing, for instance, begins:

The Tao (Way) that can be told of is not the eternal Tao; the name that can be named is not the eternal name. The Nameless is the origin of Heaven and Earth; the Named is the mother of all things. Therefore let there always be non-being so that we may see their subtlety, and let there always be being so that we may see their outcome (Laozi, Dao De Jing, ch.1).

³ A splendid example of the morphological shift from the consciousness of intentional agents such as personal gods to pure unintentional consciousness associated with Nirguna Brahman is in the work of the great late 10th-early 11th century non-dual Kashmir Shaivite philosopher Abhinavagupta. See Paul Eduardo Muller-Ortega's *The Triadic Heart of Siva: Kaula Tantricism in the Non-Dual Shaivism of Kashmir* (Albany, NY: State University of New York Press, 1989) for a study of the cultivation of devotional consciousness.

Wangbi, the great third century commentator on the *Daodejing* gave this interpretation of the lines just quoted:

All being originated from nonbeing. The time before physical forms and names appeared was the beginning of the myriad things. After forms and names appeared, “Tao (the Way) develops them, nourishes them provides their formal shape and completes their formal substance,” that is, becomes (or is) their Mother. This means that Tao produces and completes things with the formless and nameless (Wang, CLT, 1).⁴

On the Confucian side, the 11th century Neo-Confucian philosopher Zhou Dunyi wrote:

The Ultimate of Non-being and also the Great Ultimate (T'ai-chi)!
The Great Ultimate through movement generates yang. When its activity reaches its limit, it becomes tranquil. Through tranquility the Great Ultimate generates *yin* (Zhou, AEDGU, 463).

When tranquility reaches its limit, activity begins again. So movement and tranquility alternate and become the root of each other, giving rise to the distinction of yin and yang, and the two modes are thus established.⁵ These texts and others indicate some of the sophisticated thinking about the emergence of determinate things “from nothing” or “the formless and nameless.” The intimacy pull on the symbols of emergence highlights common experiences of spontaneity and fresh starts.

Personhood is the third major symbolic theme developed in the great religions of the world, and also in most of the minor ones, including the tribal religions that did not develop into the Axial Age traditions. Symbolizing the ontological ultimate reality grounding the world with the metaphors of personal agency, intention, and creativity is dominant in Western pagan and monotheistic religions. The symbols of personhood are highly various, and run from anthropomorphic representations of gods as super-human agents to the highly transcendent conceptions of God as not exactly personal in the sense of being a limited Spirit with intentional relations to other things but as somehow being “more than that.” There is nothing at all personal in the Neo-Platonic conception of God as the One beyond all determinate difference, or in the Thomistic conception of God as the Pure Act of To Be, or in the Kabbalistic conception of Ein Sof; but these highly sophisticated super-personal conceptions are usually tied into a continuum with more personalistic images. The fundamental ontological employment of personal symbols is to articulate a conception of God as creator of the world.

This point about the widespread elaboration of conceptions of the ultimate as somehow personal should not be confused with the points that all cultures have at some times believed in supernatural beings, that

⁴ These texts are discussed in Neville, *Ritual and Deference: Extending Chinese Philosophy in a Comparative Context* (Albany, NY: State University of New York Press, 2008), chapter 4.

people tend to over-extend the attribution of agency beyond what can be justified on thorough analysis, and that all children at some time believe in supernatural beings who can read their thoughts. Belief in supernatural beings need not have anything to do with the symbolism of ultimacy, or with religion; rather it is among elementary scientific beliefs, beliefs about what things there are in the world and how they work. Only some supernatural beings have been identified as symbolic of ultimacy. For instance in many Hindu and Buddhist cultures there is widespread belief in supernatural beings of many kinds, but all are subject to Karma and hence are not ultimate. In cosmologies believing in reincarnation, a given soul might move from animal to human to various kinds of supernatural demonic or divine bodily forms. Only when these supernatural beings are tied somehow with the ultimate boundary conditions for how or why there is a world would they be religiously interesting. Nevertheless, the symbolization of ultimate ontological reality with themes of personhood is so dominant that many people in the West commonly think of religion as belief in God, where “God” means something personal. Taking a broader, more comparative, perspective, the symbolic systems of personhood comprise only one of at least three families of symbolic systems for engaging ultimate ontological reality.

From these considerations, an important set of research projects is the comprehensive multidisciplinary task of comparing how these families of symbol systems variously articulate ontological ultimate reality. One focus of these projects would be on the normative questions of what can be known of the ontological cause of the world and another focus would be on how these symbols function intimately in religious and cultural life in various traditions.

I.2. *Cosmological ultimate realities* constitute the boundary conditions for the world and human life that come from the characters of what it is to be a “world” or “thing in the world” at all. There have been many models of cosmologies that depict basic structures of the world, from the yin/yang cosmologies of East Asia to the causal *pratitya samutpada* cosmologies of South Asia to the substance cosmologies of West Asia. Such cosmologies have been given ancient expression as well as contemporary expressions that relate to the mathematical language of science. One of the most exciting intellectual adventures of the 20th century was Alfred North Whitehead’s criticism of substance models of the cosmos as being unable to allow for the kinds of relations mathematical physics imputes to things. He constructed an alternative cosmology based on relational connections developing in process (Whitehead, 1925). But all of these and any other possible cosmologies suppose that whatever is proposed as real and basic to the cosmos is *determinate*. Any thing is determinate in that it is what it is and not something else, and it is what it is rather than there being nothing at all.

Although an analysis of determinateness as such is about as abstract a philosophical endeavor as can be imagined, it is extraordinarily fruitful in articulating ultimate boundary conditions for the world and for the human symbolization of the world. Any determinate thing has four

features, each of which is a “cosmological ultimate reality” and evokes symbolization in reference to human life. The four traits are *form* or pattern, *components formed*, *existential location* relative to other things with respect to which the thing is determinate, and the meaning or *value* of having these components together in this form in this existential location relative to others.

That things have form (in some sense of form) means that they are actualizations (in some sense of actualization) of possibilities (in some sense of possibility). Since there are many things in existential fields, their possibilities are coordinated in something like a field. From the standpoint of human beings, sometimes there are alternative possibilities whose actualization depends in part on human choice. Whenever there is decisive actualization, by human choice or not, the actual includes the exclusion of the possibilities that are not actualized. Often the alternatives for choice differ in value. Many different accounts of value have been given, not all of which consider value to be a function of form—it might be the result of divine will, for instance. The mathematical language of some science obscures the value dimensions of the world but even the most mathematically sophisticated of scientists faces problems of choosing well.

In all cases, however value is constituted, where there is a difference in value among alternatives for choice, the chooser lives under obligation. To choose the better is to be the better chooser, and to choose the worse is to be the worse chooser. Choice determines moral worth in the case at hand. Something like this is the root meaning of being obligated. Of course, the situation regarding obligation is extraordinarily complex. For instance, most decisive actions are conjoint ones involving more than one person. Choosing does not automatically address the real alternatives that are possible, but only those that are known, or potentially knowable.

Nevertheless, facing alternatives for choice with different values is a universal human condition, built in to the cosmological trait that all things have form. Every culture and every religion has ways of articulating morality or righteousness, often with complex procedures of moral deliberation. Some social psychologists such as Jonathan Haidt claim that fundamental moral instincts have evolved so that humans act on the instinct before reasoning much about the choice, and that this evolution is because this kind of attention to choice is adaptive for passing on genes within individuals and groups (Haidt, 2000, 814-834). Cultures differ fairly radically in their moral codes and the ways in which they articulate value and choice. But all cultures address the issues of choice among alternatives of different value. As they attempt to symbolize what the ultimate boundary conditions are that set up the situation of living under obligation, they develop symbols of the ground of obligations. The ground of obligation is a cosmological ultimate.

Any determinate thing has components that are put together in the form or pattern that it has. Cosmologies differ greatly in the kinds of things hypothesized to be components. Whatever the components of a thing are, they themselves are determinate and therefore have form,

components, existential location, and value. Paying attention to the form of a thing focuses on the thing's unity. To focus on its internal multiplicity is to pay attention to proper comportment toward the character and value of its components. Only for sentient beings is comportment toward components a likely problem. The components of different people's lives vary widely. But all people have bodies and can comport themselves toward their bodies with care or neglect; special things are important for some bodies, for instance caring for disabilities and disease conditions. All people have communities, usually families. Albeit people can rebel against their family and its culture, that is a way of comporting toward them. People have social and historical circumstances that are parts of their lives toward which they should comport themselves. Part of people's realities is how they impact their natural environment. Spiritual matters, including spiritual maturation, constitute important components of life, although different cultures conceive these in sometimes competing ways. Put in abstract terms, people are well-grounded when they comport themselves toward their important components well, and ill-grounded when they do not. The abstract fact, derived from being determinate, of having components toward which comportment can be differential means that having the task of well-grounded wholeness is an ultimate condition of human life. Symbols of ultimate reality include those for well-grounded wholeness and all religious traditions have some such symbols.

Existential location is a trait of anything determinate because each determinate thing is determinate with respect to some other things. To be determinate is to be in relation. Therefore, a determinate thing has two kinds of components, conditional and essential ones. The conditional components are the ones that a thing has by virtue of being conditioned by or conditioning some other thing, as in cause and effect, thinking or thought of, here relative to there, half of and the square root of, and so forth. If a thing had no conditional components relative to other things it would not be determinate with respect to them. On the other hand, a thing needs essential components in order to integrate its conditional components. If it were only conditional components it would not be able to be a term in the relations of conditioning. Each of the other things with respect to which a thing is determinate also needs to have its own essential features so that it could be a reciprocal term in the conditioning relation.

An existential field is a matrix of conditioning relations by virtue of which things are determinate with respect to one another. These fields have been understood in very many ways, from large-scale cosmological pictures such as the expansion of the cosmos from a golden egg to a geography of levels of reality to fields of consciousness. A given thing might participate in a great many existential fields, giving it a complex sense of existential location.

The cosmological significance of location in an existential field is that a thing necessarily engages with the others in the field. On the human level, if not others, the engagement of others is often problematic. The others—other people, social institutions, various

structures and ecologies of nature—have natures and values of their own. Perhaps the default position is for people to treat others only in ways consonant with their own needs and interests. But the Axial Age religions point out that this is unrealistic. A realistic engagement with others treats them according to their own nature and value, with respect. This is enormously complicated and incapable of being carried out completely because of the competition of so many things for attention. But most religious traditions have some symbols for the need to be compassionate, loving, just, and so forth. Engagement with others is a cosmological ultimate condition for human life.

Most things that happen in human life involve relating to all three ultimate conditions. Every action involves choice among alternatives with different values, all choices arise out of the state of well- or ill-grounded wholeness of the chooser, most have to do with engaging other things, often other people. The ultimate dimensions of obligation, wholeness, and engagement of others overlap and feed back on one another.

The value identity of a thing comprises both the value achieved in itself and the values it affects in other things that those other things integrate with their own essential features. The value of a human life achieved over a lifetime and in a life-time's movement throughout various environments is very hard to conceptualize. For some traditions with personifying symbols for ontological ultimate reality, having a value identity is like standing under judgment or having a divinely bestowed purpose. For other traditions the forces of Karma bear the meaning and value of a life, from one lifetime to another, and for many traditions the meaning of life involves escaping Karma. For yet other traditions, the meaning and value of life are read in terms of participation in the larger harmonies of the cosmos, or in the smaller harmonies of the local community, clan, and land. Everything a person does contributes to the value identity that the person achieves, and much of that also is a contribution to the values (or disvalues) of other things with respect to which the person is determinate. The fourth cosmological ultimate reality is the fact that everything has a value identity with others in its existential field. This is what is usually meant when the question of life's meaning arises.

A very great portion of life is lived in reference to proximate, not ultimate concerns. We worry about what choices to make, not about how and why choice is a part of life; we do things to get ourselves together without worrying about how human life is the integration of components with form that requires a sensitive comportment toward the components. We treat others in pragmatic ways, hopefully with sensitive appreciation, without worrying much about the sheer ultimate fact of otherness. We attend to achieving important projects in life without thinking about the meaningfulness or value of our lives as such. But there are occasions when the proximate concerns are pushed back toward their ultimate conditions, and that is when those concerns take on an ultimate dimension. Living under obligation with a need for well-grounded wholeness and the open engagement of others according to their own

worth, adding up to a value identity that defines who we are and what our life's meaning is—these are the orientations toward the cosmological ultimate realities with which religion is concerned.

II. Topics for Research

With this philosophical framework of one ontological and four cosmological ultimate realities in hand, it is possible to lay out in somewhat systematic fashion a program of research topics than calls upon the collaborative efforts of the sciences and humanities, paying attention to the state of the art about the various topics. The following is a brief, suggestive, formulation.

II.1. Address the question from Stephen Hawking with which this paper began: Why is there a world to which scientific, particularly mathematical, theories apply? This project would obviously involve scientists who could supply a deeper understanding of what the theories assert than an amateur reading would give. It would also involve philosophical dialecticians who could watch for the criteria of proper explanation for the existence of the world as such. Moreover, because the dialectical considerations of the existence question come from so many different traditions, the dialecticians would have to represent or be grounded in those various traditions.

II.2. Test the hypothesis in the philosophical introduction that there are at least three families of basic symbol systems for articulating and engaging the ontological ultimate reality: consciousness, emergence, and personhood. For this, both historians of religions as well as experts in symbolic religious hermeneutics would be required. One of the principal needs of this project is to reset the default position of most discussions in the West, particularly in the scientific community which has a mainly Western ideology, that the ontological ultimate reality is to be understood as a divine being with personal characteristics. The comparative balance with consciousness and emergence symbols is crucial. Therefore, important experts in the religions with the non-theistic notions of ultimacy would need to be involved so as to rebalance the assumptions.

II.3. Building on but perhaps as part of #2, ask what interpretive frame would be put on the scientific explanations of the world within those non-theistic approaches to symbolizing ontological ultimacy. Within the theistic West, the interpretive frame has been that the rationality and explicability of the world comes from the perfectly rational mind of God its creator. Whitehead, in *Science and the Modern World*, pointed out that this was the underlying assumption in the modern scientific community long after many scientists had given up belief in a real creator God; he called it a faith that the world has a rational base. Perhaps the interpretive frame for science that could be developed out of the traditions of consciousness would put greater emphasis on the contributions of human consciousness to the order supposedly found in the world than on an underlying realistic order. Perhaps the interpretive frame for science that could be developed out of

the emergentist traditions would see rational order as itself evolving, not the explanatory cause of phenomena but that which itself most needs explanation. The theistic interpretive frame usually associated with Western science is often not noticed unless it is put in comparative contrast with the frames associated with non-theistic approaches to what is ultimate. Scientists, philosophers, and scholars of religion would be crucial to this project.

II.4. Because each of the three families of ultimate ontological themes—consciousness, emergence, and personhood—is internally so complex with divergent and re-intersecting streams, each should be studied on its own to work out the diversity of contexts and logics of the streams. Obviously scholars of each of the many streams within each of the families would be needed to collaborate in this project. But the thematic families are not associated too much with separate traditions. The consciousness themes so important in South Asia show up in Chan Buddhist and Neo-Confucian meditation practices in East Asia and in contemplative monasticism in the West. Themes of emergence are important for the South Asian preoccupation with time and change, and with the Western preoccupation of the emergence of life from the lifeless, even from the dead. Personifying deity themes are not only in the Western pagan and monotheistic religions but in the pantheons of South Asia and in the lingering wonder about the Mandate of Heaven in East Asia. Among the important issues regarding this question is that of influence and the porousness of boundaries, and of structural parallels that might not involve causal influence.

II.5. A comparative study of form and value across traditions can elucidate the hypothesis that all things have value of a sort, or many sorts, as recognized variously. It would be particularly pertinent to raise the question of how the scientific representation and explanation of various elements of reality in mathematical language, or at least with an ideal of mathematical expression, relates to the widespread experience of value. In the West, this has been shaped as the fact/value distinction, with various strategies for dealing with it, many of which claim that value is a subjective projection. In the Confucian and Daoist based traditions, the framing assumptions about the ubiquity of value in experience have made it difficult to relate the traditional cosmologies in which value plays such a large role to scientific work, resulting in a general failure to rethink East Asian traditions in scientific terms and the equal failure to represent science in the cultural comfort zones of East Asia. Although many East Asian people are scientifically adept and culturally adept, these are not easily integrated. Recent debates in India about the Hindutva movement, which claims that many modern scientific ideas were already advanced in the ancient Vedas, much to the scorn and ridicule of scientifically educated South Asians, point to the inability to relate the deep cultural metaphors about consciousness at the base of reality to science. Science thus is too much represented as crassly technological while the Hindu religious traditions (there are many) are too much represented as preposterous to the modern mind and out of date. Although the question of the bearing of scientific language

in mathematical form on cultural expressions of value in experience is one of the most abstract intellectual topics that might be addressed, it has enormous practical importance. To the usual mix of scientists, philosophers, and relevant scholars of religion this research project should add political and cultural critics, including artists, as well as journalists.

II.6. Although religious and cultural traditions differ interestingly in the contents of their representations of moral and social values, they all, each in its own way, provide grounds for understanding that people lie under obligation. When religious traditions lose their plausibility and force, social groups tend to lose their sense of the importance of obligation. They become relativistic in the sense that nothing of moral weight really counts. This is different from the legitimate relativism that says that different things are valuable in different contexts. A socially as well as intellectually important research project would be to investigate in a comparative way the different paths by which cultural traditions ground obligation. In addition to philosophers and religious and cultural experts, it would be important to include social psychologists and cognitive scientists who study the natural evolution of moral sensibilities. A good guess would be that this research project would include that the grounds for lying under obligation are biological, cultural, and philosophical, all at once such that the human condition of lying under obligation cannot be represented without all three.

II.7. Personal wholeness is a widely if not universally shared goal in cultural and religious traditions. Often this is what is meant by spirituality. But in what does wholeness consist? This depends on the kinds of components of human life that are construed as important to be well grounded and integrated in personal life. From the ontological themes of consciousness come the spiritual traditions of meditation and personal discipline, such as in the martial arts. From the ontological themes of emergence come the spiritual traditions of harmonization with nature, society, and other individuals. From the ontological themes of personhood come the spiritual traditions of perfecting body and action, individually and conjointly. These mix together across the large religious and cultural traditions. Under the impact of modernity the components of historical location, social identity, and relations to family and local community have become items of concern as domains to which individuals should be comported. Dislocation makes all these problematic. The research into wholeness should involve biological, medical, and psychological experts who approach wholeness in terms of brokenness with responses in the form of therapy. It should also involve those modeling wholeness on growth and discipline, such as theological advocates of theosis in the Orthodox Christian traditions, trainers, coaches, and monastic masters from Daoist, Buddhist, and Christian communities. Finally it should include those whose framework for wholeness comes from symbols of personal, social, and cosmic narratives.

II.8. The ultimate reality of otherness, stemming from the location of people in various existential fields, poses two particularly potent

research questions at the present time. The first and most obvious is the study of proper and improper relations to others given the biological, personal, and cultural biases toward protecting “our own.” The question breaks down into three kinds of “others”: persons (or peoples), social institutions, and nature in the sense of the environment. Great importance has been given, rightly, to in-group/out-group distinctions and where they arise. Evolutionary theory explores the hypothesis that genetic transmission of genes is an individual matter, and the alternative hypothesis that genetic evolution is a function of groups rather than, or in addition to, that of individuals. Recent evolutionary science in anthropology and cognitive science has grappled with the costs of the default assumption that people are motivated by their own perceived interest, one of which is the difficulty of explaining altruism. The great religions more or less agree that compassion, love, or altruism should be accorded all people regardless of their in-group or out-group status. How does this affect the relevant sciences (which usually study within only theistic assumptions about religion)? Treating social institutions as “others” that must be engaged in an existential field is a relatively understudied topic. Some, such as Jonathan Haidt, recognize this as a phenomenon of in-group identification, but the difficult question comes with regard to prizing and tending institutions of out-groups, e.g. non-democratic societies. The third topic area is engaging the natural environment in many modalities as an “other” that needs respect and care. Sadly, few if any of the great cultural traditions have developed intricate ways of articulating environmental issues, even those associated with nature in the public mind such as the Daoist traditions. Partly this is because the new knowledge derived from science and the alarms arising from environmental disasters postdate the formative periods of those traditions. But also all those cultural traditions have been preoccupied with the human place in the cosmos to the ignorance of the larger context in which human life is but a causal factor. The collaborative scientific and humanistic study of the engagement of “otherness” is an ultimately important topic in all three of its cases: the otherness of individuals, institutions, and nature.

II.9. The second topic concerning the cosmological ultimate condition of engaging others in existential fields is the extent to which our ways of conceiving “others” objectifies them so as to distort and, often, demean them. This is a typical concern of postmodern thinkers who stress the ways in which large-scale theories in science or narratives in cultures marginalize and distort those who are viewed as “others.” For instance, evolutionary science in the 19th century objectified Africans as diminished human beings (Agassiz); medical science in the 20th century objectified homosexuals as diseased and subjected them to cruel “cures” such as electroshock therapy, lobotomies, and hysterectomies. European colonial powers objectified the “native” cultures they ruled as “primitive” or underdeveloped and destroyed or radically reconstructed them to conform to ideal European standards. Nature, in the era of modern science and technology, has been objectified as valueless in itself and ready for exploitation for the values defining human purposes.

Our current intellectual culture is riven by hostilities between outspoken representatives of the scientific community who prize objectivity with its imposition of universal laws and rationality and equally outspoken representatives of humanistic disciplines who construe scientific objectivity as the expression of certain cultural values disguised as a purely realistic representation of what's what. A research project involving collaborative representatives of both sides of this divide could work through the excesses and extremes of both sides through careful consideration of issues in the objectification of human, institutional, and natural "others." In general, the current "religion and science" discussions have not sufficiently internalized the lessons to be learned from Foucault, Said, and other postmodern thinkers.

II.10. The cosmological ultimacy of the fact that each person achieves a complex and usually ambiguous value-identity gives rise to the massive question of life's meaning. All the major religious traditions address the question of the meaning of life in various ways, usually without benefit of what science can teach about the nature of human life, its context within social and historical conditions, and its reach within the cosmos. The symbols of life's meaning in the various traditions need to be studied comparatively in conjunction with scientific perspectives. Perhaps this research would be enriched by parsing the categories for life's meaning through the other ultimate categories of obligation and value, well-groundedness in the components of life, issues of engaging others in life's existential fields, and human relations to the ontological ultimate reality variously symbolized.

III. Summary and Conclusion

Section 1 of this paper sketched a philosophical scheme that identifies five ultimate realities. One is the ontological ultimacy of the contingency of the universe on whatever makes it be. The other four are the cosmological ultimate realities of form, components formed, existential location, and value-identity, which constitute the boundary conditions of human life as being under obligation, seeking well-grounded wholeness, engaging others, and finding meaning in one's value-identity. These cosmological ultimates come from the traits of being determinate, the most abstract notion of what it is to be a thing and thus common to all cultural, philosophical, religious, and scientific ways of representing the cosmos and human life. All religious and cultural traditions have approaches to all five ultimate realities.

Section 2 laid out briefly ten research projects to address issues of ultimacy so understood that would involve collaborative work by scientists of different specialties with thinkers from other disciplines, particularly philosophy and the study of religion. These projects are:

- 1) Why is there something rather than nothing?
- 2) Can the theistic approach to ontological contingency be balanced by symbolic approaches deriving from the ontological themes of consciousness and emergence?

- 3) Within what interpretive frames is science to be understood from the perspectives of the consciousness and emergence ontological themes as well as that of personal theism?
- 4) What does it mean for the sciences that the consciousness, emergence, and personal theism symbolic themes mix within and across traditions?
- 5) How, in comparative perspective, does value relate to form, and what does this mean for the scientific representation of form in mathematical language? Can the mathematical sciences express value?
- 6) What does it mean in scientific and comparative religious perspectives that people lie under obligation?
- 7) In what does personal wholeness consist, in comparative religious, biological, medical, and other scientific perspectives?
- 8) Given the common assumption of selfishness in the sciences of human evolution, how can people be understood to engage other people, institutions, and nature in respect to their real and deserving characters?
- 9) How does scientific objectification affect engagement with other peoples, institutions, and nature?
- 10) How is the meaning of life to be understood in comparative scientific and religious perspectives?

Each of these research projects is very large and involves multidisciplinary collaborative study. For practical purposes each might be broken into sub-projects, or into sequential stages of research. But the array of questions as a whole articulates an agenda for the study of ultimacy that respects the many contributions of the various sciences and the different cultural perspectives of the world religions.

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