

Paper Title: Definitions of Truth as Cultural Paradigms and a Rubric to Foster Communication within the Science and Religion Dialogue

Author: Tsiopinis, Nikolaos A. (Nikos)

Institutional Affiliation: Research Associate, Heyendaal Institute Nijmegen, Interdisciplinary institute for theology, sciences and culture; Candidate, Radboud University Nijmegen; LSI Member of the 'Heyendaal Circle'; Nijmegen, The Netherlands

This paper was prepared for "Science and Religion: Global Perspectives", June 4 - 8, 2005; University of Pennsylvania, Campus, Philadelphia, PA, USA

A program of the Metanexus Institute (www.metanexus.net)

Abstract:

In fostering communication within the Sciences and Religion as a global perspective on Dialogue, we first need to understand how people define truth (e.g. scientific / experimental, expert-testimony, universal standard, experiential, spiritual) and secondly, but equally important, why they are in need of truth for their lives. It is shown that truth is a value that validates their claims for to live in a community. People desire the validation of being part of a common understanding and see the agreement of others as validation that they have discovered 'Truth.' Because people understand themselves and their world by being participants of communities, communities become the natural habitat within which truths are defined and explicated and formulated into overarching cultural paradigms.

Cultural paradigms are all-embracing 'ways of life' whereby communities are given shape. At the same time, these paradigms remain fluid enough to allow for diffusion and penetration of the 'other' and even pollination by the other; what we also call affinity to relate. Thus, individuals can experience the collective validation of living and thinking within a paradigm that is also embraced as truth by others, while contributing to the evolution and expansion of this description of truth.

Once one understands how the 'other' defines truth, and why the other defines it that way (e.g. what are the underlined cultural values that are important to them) then one can communicate in a way that is understood by the other as well as understand the communication of the other, so that the communication loop is completed. At this point true crossdisciplinary communication between diverse paradigms of defining truth (e.g. scientific and religious) can be initiated. Then we can dialogue from a place of building bridges rather than walls and grow in a mutually interactive expansion of our understanding of truth.

This paper will explicate this process both conceptually and through two examples of specific truth definitions (cultural paradigms). The one was embedded in a theological culture of the 7th cent. Byzantium and was exemplified by the theory of the logoi of beings and the other is embedded in the modern scientific culture and is called information theory. Both present wholistic ways of apprehending the real by defining truth relationally. The notion of what is 'within us' and what comes 'from without' are

crucial for both understandings of the conception of the real as being true. These perspectives differ in the relative value each places upon certain aspects of experiencing truth relative to other aspects of the truth experience.

Biography:

Nikos Tsiopinis is currently completing an interdisciplinary Ph.D. in Mathematics and Theology at the Radboud University Nijmegen, The Netherlands. Previously, he completed more clear-cut projects earning a Master of Science degree in Solid State Physics at the University of Thessalonica in his home country of Greece and a Master of Science degree in Polymer Physics at the State University of Groningen in the Netherlands. Nikos has publications in the fields of physics and literature, as well as in the interdisciplinary field of science and religion. While completing his doctorate, he has held a research position at the Heyendaal Institute Nijmegen, an interdisciplinary research institute for theology, sciences, and culture. Through this position, he has participated in the Science and Religion dialogue in Europe. Nikos' understanding of both religion and science as integral to one's apprehension of the Real was birthed in Greece within the cradle of the Greek Orthodox Church and fostered during his education in the Netherlands. Eager to expand his horizons (and cultural paradigms), Nikos is currently in the process of moving to New York City.

Paper Text:

Definitions of Truth as Cultural Paradigms and a Rubric to Foster Communication within the Science and Religion Dialogue

Our views on the world are disparate and, although sciences comprehend parts of the world's rationality, this comprehension is not all-encompassing. As a consequence, we are faced daily with the realization of the limitations of our knowledge, as we struggle to resolve conflicts, differences, disagreements, contradictions and inequalities in our lives and in the lives of those around us. To find harmony in a multifaceted world full of differences and apparent contradictions, may at times appear to be an impossibility. Some attempt to resolve, or at least navigate, these apparent contradictions, through hypocrisy, evasion, or distortion. Others resolve it by reducing the facets of their world, by becoming a dedicated and 'successful' member of a small (part of the) world. To attempt to bring harmony without limiting either the truthfulness or the extensiveness of our experience of the world would seem to require a faith in some bold postulations. If the desire is to see the whole world, in its entirety, as it truly is, then one must somehow overcome even the biases and preference of one's own personal experiences and viewpoints, and build a basis for mutual communication and truth-seeking that crosses the boundaries of culture, faith tradition, and academic discipline. This may seem to be a lofty goal. Nevertheless, my attempt here will be along these lines.

My point of departure will be mankind and his/her striving for meaningfulness while living in the world. I propose that underlying this quest for meaning is mankind's search for 'truth.' Further, I posit that how mankind defines and experiences 'truth' determines how he/she incorporates it into different endeavors of his/her life. Thus, this exposition

of the quest for meaningfulness will be based on the pillar-concept of 'truth' and how mankind is seeking to refine truth in his/her life by interacting within various *life-contexts* and thus define 'truth' within these contexts and through the consensus of others.

Science is one such life-context within which mankind puts his/her trust in eliciting answers for his/her life, *religion* is another and *culture* one more. This order is of course random, but we have to remember here something crucial. Mankind itself is a point of convergence or divergence where all three of these overtones are directed to point to or expand from within the life phenomenon. By point of convergence/divergence I mean that mankind is the one that on the one hand *participates* and, on the other hand, describes, and thus, observes the life phenomenon. The way mankind chooses to participate or/and observe determines drastically the 'quality' of the *life-world*. Life-world, in this context, is a dynamic concept that tries to encapsulate both the life phenomenon within the world affairs and the world affairs within the life phenomenon. Mankind is the only entity known to have the special function of influencing and being influenced by both. The effects of mankind's choices are depicted in the 'depth' of the overtones of the life phenomenon. Consider the image of three onion layers, but onion layers without any fixed boundaries and also without specifying which layer comes first, second, or third. Mankind's variety and depth of experience in each of these three life-contexts are reflected in the order and thickness of these layers. How thick these layers become, and their relative order of importance, is mankind's choice to make.

What makes the boundaries between these layers open-ended is for me an interesting question to ask. I venture a few answers in this paper. Specifically, I propose that it is mankind that *encapsulates* and at the same time *manifests* all these aspects of life. Mankind is constantly making hued value-laden decisions for or against various manifestations according to his/her belief in eliciting truth for his/her own life and for the lives of those with whom he/she decides to be in communion (scientific community, religious affiliation, cultural group etc.).

I posit that community(-ies)/communion is important for the life of mankind by being the natural habitats of truth(s). A growing phenomenon of our era is that mankind is no longer content to live life in belonging to *only* one community and endorse the beliefs and values (and 'truth' definitions of this community to the extent that individuals used to do in the past. For scientists, this desire is expressed in projects of an *interdisciplinary* nature and in the growth of forums for inter-disciplinary discussion, such as this conference. For the religious, this desire is given form, although less frequently so, in the growth of interfaith cooperation and dialogue. Meanwhile, the globalization of the world increasingly brings cultures into contact and forces them to interact. One further characteristic of our times is not only the interdisciplinary leaps, but the more daring and thus interesting *crossdisciplinary* ones! For the purposes of our dialogue here, I use the term interdisciplinary to refer to dialogue between different disciplines within the same field (e.g., between different scientific disciplines, between different fields of religious study), while the term crossdisciplinary refers to dialogue between disciplines which are within different fields of study (e.g., sciences and religion). For the time being, the territories are being chartered for points of pollination, this conference being one such a

territory, but I look forward to a future where crossdisciplinarity is innerly appropriated, that is to say, where people *experience* cross-disciplinarity instead of seeking it.

Along these lines, I will try to undertake in this paper a crossdisciplinary approach. I assert that the uniqueness of our *condition humaine* today, when compared with this process throughout history, has to do with the merging of all these life-contexts not from without, but from *within our own selves*. It is the contemporary mankind's realization that his/her belief in truth and seeking for meaningfulness cannot be consummated in disparate branches of the life phenomenon. It is also true that only today have we reached a climax in understanding the importance of the fusion, rather than that of fission, of our elementary life processes.

Crossdisciplinarity requires a synthetic rather than an analytic approach. Although it may run the risk of over-generalization, it nevertheless offers a very strong viewpoint. Crossdisciplinarity presents wholistic and thus globalized perspectives on reality. It does not seek to 'globalize' the world-affairs from without by implementing economic and financial measures and allowing the material capital to surge. This is certainly a helpful and a more tangible activity, especially when the problems of the world appear in tangible form and thus demand immediate tangible solutions. However, viability and sustainability of any implementing policy is based on the collective conscience and consensus that is being built up in any 'affected' community of the world. People are already talking about mass solutions to problems and implementing policy networks that address the issues *en masse*. However, even these proposed mass solutions are implemented on a local level. Community still matters. Sometimes, the importance of building up a *community consensus* for the viability of applied policies is forgotten. In their zeal to implement solutions, reformers and relief workers sometimes forget that interventions which succeed in alleviating problems are not achieved only by distributing financial capital to alleviate, support or eradicate a tangible problem. I propose that a tangible problem is frequently only an epiphenomenon of a deeply rooted spiritual need that is experienced individually or collectively. Finances and economics are based on the distribution of material means which are in the last analysis exhaustible (e.g., not sustainable in the long run). What is much more difficult to establish, and this is known to all technocrats of the world, are *spiritual capital networks*. These are more difficult to establish because they cannot be just implemented (or imposed) from without, because they require an inexhaustible source of consensus, which is always feeding itself up from within. Moreover, such solutions are complex, and therefore difficult and time consuming to devise and implement. Crossdisciplinarity wants to feed this loop, to build spiritual capital networks, by bringing individuals together across dividing borders to learn from and share the resources of each other.

Building Crossdisciplinary Communities, a Science-Religion Paradigm

I propose that a constructive engagement of Sciences and Religion, and the building of associated crossdisciplinary spiritual capital networks, begins with a sound understanding of the problematic between worldviews. Understanding reality is mankind's primordial

problem as he/she faces himself/herself in the world. His/her means of grasping reality is nowhere more explicitly manifested than in articulating himself/herself; that is, in putting himself/herself in a position against which he/she can view the world. I name this articulating position *worldview*. In the world of academia these views-of-the-real are drawn from different scientific disciplines. Although the subject-matter under consideration can be common, the different disciplines throw light to it from different perspectives, that is from different understandings. In recent years, there is increased recognition that what is of importance for world-affairs is the interconnectivity of individual viewpoints, or more technically *centers of awareness*. In the case of scientific crossdisciplinarity, these individual viewpoints are the articulations which are formed within individual scientific fields. Theology tackles the question of interconnectivity with the notion of "Persons in Communion" (e.g., Torrance, 1996; Gunton, 1991; Yannaras, 1984) or of *Being as Communion* (e.g., Zizioulas, 1993). Sociology is tackling the issue with the notion of Sociontology (e.g., Kondylis, 1999) and psychology through Systems Theory (e.g., Mash & Dozios, 2003); while E.O. Wilson (1975) was awarded the distinction of the National Medal of Sciences for his work on Sociobiology regarding the biological and societal complexity of the living.

Recognizing the need for reconciliation of diverse views on the world and its workings, my particular area of interest is on promoting the concept of *reconciled worldviews* between the science and religion. By this, I mean how one can approach the issues of our world-affairs that both science and religion need to face in concerted action. A concerted action is demanded today more than ever before in the human history. The aim is to promote, on the one hand, a filial understanding of each other, and, on the other hand, a more comprehensive understanding of humankind embedded in the world-nature at large by incorporating and reconciling the truths which have been heretofore presented by each individual viewpoint (e.g. Science or Religion/Theology) not in a concerted manner but, rather, independently or even antagonistically. One of the core issues that have separated these two fields is their divergent perspective on the status of humankind as one that stands *beside* or *inside* the world. Therefore, the interdisciplinary field of Sciences and Religion, or else, rationally demanding talk about the divine presence in the world, is a fertile ground for beginning a reconsideration of this question and building dialogue on this issue; thereby learning more about the 'true' complexity of the relation between mankind and the world, of which each viewpoint perceives a part.

The crossdisciplinary perspective is based on the conviction that the ordering of *reality* as an intelligible whole (i.e., the *kosmos*) includes ethical and logical values, as well as physical ones. In other words the *physis* of Plato and Aristotle is not sufficient of itself to account for the modern concept of *nature*. Rather it is the dynamics of *physis* and *kosmos* together --of self-generation as well as ordered totality-- that shapes the course of development as that development is mediated by the intelligibility of *logos*. With the rise of modernity, the ordered totality of Greek philosophy has become divided into two perspective-defined 'totalities' opposed to each other, the objectivity of an externally observed nature (i.e., science) and the subjectivity of a fully autonomous and self-sufficient self (i.e., theology). This division is shaped by differing underlying conceptions of the mediation of *logos*, ranging from the technical to the mystical, and offers, in

principle, a fragmented picture of reality.

The communication sciences' concept of *units of intelligibility* (e.g., *information*) is a fundamental tool that has become commonly accepted by numerous disciplines and therefore may play an essential role in the understanding of reality today as comprising a structural whole, and in grasping and even forming this reality. The Latin root of the word "*in-formare*" literally means "*to give shape/form to*". Several theories from diverse academic disciplines that utilize the concept of information provide a rubric for discussing the previously mentioned interconnections between scientific disciplines. For example, modern physical descriptions of the quantum world point to the aspect of information as a *relational quantity* between elementary (quantum) processes that become 'meaningful' only when an observer intervenes (Rovelli, 1996). The meaningfulness of an observer's intervention in determining the real is already birthed in the conceptualizing of the physics of quantum entanglement as a metaphysics of relations (Esfeld, 2004). On the other hand, the theological interest in a metaphysics of relations lies in the persons' ability to *contemplate* and thus *form* the real.

I propose that *Science* talks about reality *impersonally* because its concern is to establish an empirically verifiable manner that can reveal nature's intricacies *a se*. Humans are important for the sciences as mediators of information about nature. In contrast, *Christian Theology* talks about a reality which is revealed in the relations of the persons, that is, a reality which is always and again anew revealed by the establishment of ever new relations of persons. According to the theory expounded by Maximus the Confessor (580-662 A.D.), this Revelation will become *complete* in the eschaton, that is, when the Church becomes the full Body of the Messiah, to every one person according to each one's *appropriation of the logoi of beings*. Under the theological approach, the focus is upon contingencies of human relations, rather than on the contingencies of nature. I consider this theory the theological counterpart of the modern information theory. Within this conceptualization, rather than merely mediating information about nature, the ordering that humans reveal in their *mutual relations* are seen as having power to affect the contingency of the natural order.

The new explication given for the (quantum) nature of events by Rovelli (1996) reveals this aspect of reality by putting just the right stress on the role played by the observers in any description (value-laden) of a 'sequence of events' (system). *Any description is observer-dependent*. Which unavoidably means *a full description is observers-related!!* Human persons embody in the *truthfulness* of their relations something that is exactly revealing and for that matter mysterious indeed. The quality of their relations affects the Nature/Reality dialectic!

As was briefly illustrated above, my interest in the promotion of the understanding of Sciences and Religion under a crossdisciplinary perspective is to promote the view of *concurrency* within this dialogue. I do this in order for the dialogue to be of equal importance to all participants/practitioners, and in doing so follow the explorative practises that H. Häring initiated at Heyendaal Institute Nijmegen (Häring, 2004). To this end, I will attempt to express core aspects of the definition of 'truth' and the 'real' within

these two currents. It is my hope that by doing this, I can promulgate the incorporation of these important perspectives into each other's dialogue and worldview. It is hoped that such a sustained practise might eventually promote the *concreativity* that such a dialogue demands and provide a more comprehensive basis for the formation of a new disciplinary field (e.g., a crossdisciplinary one) which will promote the awareness of how to understand the different wording provided by different fields as they communicate about a common underlying message; that being the search for a universal underlying 'truth.'

In Search of Meaningfulness

Human Relatedness, A Degree of Quality of the World-Life

Information is the term currently used to denote the means of interaction with the world. By putting pieces of information together, we make comprehensive pictures of our *world in-discourse*. When we cease to communicate vital information, we as humans cease to exist. Our purvey of the concept of information will be enlightened by recognising information as a means of any communicative activity between individual units, or, phrasing it a bit more aptly, as *an interactive means of any communicable unit*. A communicable unit recognizes itself as individual but not as *self-accomplishing*. The most receptive and at the same time the most articulating being is the human being, elsewhere referred to as mankind. It is the person who is able to comprehend, apprehend, perceive and thus *recognize existence*.

Existence is manifested in the world through *energy transfers*. Though them the world is sustaining itself. Their manifestation is apprehended by humans through information gathering, dissemination, or retention. Therefore, we *communicate* with exchange of information and *act* with energy transfers in order to sustain our existence. Energy can be measured, transformed and lost; but it is manifested only when *communicated*. Precisely there, is the role played by the *personal agent*, since this is the one who is going to take a *decision* of informing others fully, partly, or falsely. Decisions, when taken, manifest the quality of communication between the agents, that is, the truthfulness of their relationship. Such decisions may build up or loosen the relationship of the agents. We should not forget that any decision is always taken on behalf of *some-body* (e.g., the individual himself/herself, another individual, or a community of individuals) or for the sake of somebody. Our *rationality* is shown in the fact that we choose to act and make decisions based upon the information we have accumulated prior to that time. I propose that *we always act on behalf/for the sake of somebody* in order to sustain, strengthen or loosen our relation(s) to one(s). In other words, our actions are embodied within relationships with others and it is impossible to separate ourselves and our actions from the relationships that surround us and their implications upon these relationships.

All our decisions are implemented according to our available means. However, these decisions, when taken, may not be based entirely upon our available means. At times, we each make risky decisions, that is decisions that are not entirely controlled by our available means at that moment. For some of us these times occur more frequently than

for others. Often, it is these risky decisions that become the most profitable ones. Regardless of their true risk level, for the decisions to be implemented, the agents have first to convince other agents that they have the available means and are justified in using them. Therefore, any implementation of a decision carries inherently within itself a contingent nature. In other words, the successful implementation of the risky decision is dependent upon the individual's ability to convince others to support the venture with their resources. This *natural contingency of decision-making* is already enclaved in the world, and practically means that any decision could have been reached differently, by a completely different way. The dynamic aspect of life is manifested exactly at this level. *Decisions are means-free; operations are means-dependent.* The prudence of our decision is founded upon the realization that the product of our thought is going to effect, by its implementation, other agent(s), and most crucially, the resources of those agents. This prudence is shown by the degree of strengthening or loosening of our *relationality*, that is, our ability to realize our relatedness. This is the human condition of being related with others in order to exist, that is, to find meaning in our life.

Where Do Meanings Exist?

Meanings naturally exist in dialogue; their natural ecology is the dialogic. One of the first dialogues that mankind initiated and continues to do so is to understand his/her positioning of being within this world by referring himself/herself as to the world *a se*; that is, by viewing himself/herself in relationship to the world as an external observer. He/she realised however, that such a positioning was not gratifying, since it cannot endure. Any relation to this world *a se*, eventually ceases to exist for one reason or another. The cessation of existence, or the awareness of passing by or away, gives rise, however, to the notion of *endurance*; endurance of that with which one can be related.

This realization made mankind refer himself/herself to the world not *in se*, to the passing by things, but *ad extra*; that is by viewing himself/herself in relationship to that which is from without the world (e.g., the divine). As a result, mankind realized or intuited that there must be a relation between this world, which for the sake of argument we call *mundane*, and that which holds it fast, and for that reason must be *divine*. Mankind's relation to the 'divine' we call religion, while to this 'world' we call science.

It is this relation that leads to the assertion that: Any Science cannot live up to its name without Religion. In other words, Science cannot exist without a conception of what is the relation of the divine to the mundane world. The divine manifestation in the world is discerned by the primordial need of mankind not to be satisfied with its present condition. This is manifested in mankind's *inability not to communicate* and in the 'feeling' that there is always something missing in its current state (condition humaine)! This utter and deep-seated hunch makes mankind responsive. The fact that it responds is its *religion*; the way it articulates it, is its *science*. Viewing the matter this way, we can give a definite answer to the false dilemma: Religion as a cultural product or as generator of cultural products? It is apparent that we choose the latter.

A second question that arises then is: If mankind transcends him/herself what motivates him/her to do so? A tentative answer would be: For this is the only way for mankind to LIVE. By reaching out and connecting with another 'other,' mankind validates for himself/herself that he/she is alive. I claim that this is the concept of 'extasis' that Plato and Pseudo-Dionysius grasped in quite similar contexts. So, openness = extasis.

An accompanying question at this point is: Where does mankind want to reach out to? A tentative answer would be: the divine. And this is not at all a theistic approach that saves us from an otherwise incomprehensibility of our condition (condition humaine). God IS for those who believe in the openness of the human condition. The logoi are for Maximus the Confessor the vehicles to experience the real eucharistically (religious approach of the life-world), as is information the tools (or vehicle) for experiencing the real cognitively (physical approach to the life-world).

Beings, embedded within a teleological perspective, are functional; that is they are comprised of causal parts with 'efficient' and 'final' causes. However, 'means and ends' in a discussion of teleology do not refer to the same realm of 'reality'. Means are physical but ends are 'virtual', transcendent. They can only be grasped by symbols, it cannot be otherwise. So, teleology is a very fruitful concept if we realize that it refers to this realm that we 'reach out to', but which, cannot be described or presented by 'physical' terms!

Communities as Natural Habitats of Truth(s)

Cultures are concerned with *ultimate meanings* that people try to appropriate by creating *relations* with each other. The more intense the relation, the more common is their meaning for their life. This intensity of relations and appropriation of meanings is expressed in the reality of the formation of communities. Toward this achievement of meaning, humans historically attribute *ultimate values*.¹ What communities perceive as their ultimate values, eventually becomes perceived as *truth(s)* by the community. Truths concern affirmations of such values. In any case, people-in-community suppose that what they affirm is so *in reality* (Amaladoss, 2002). Truths then are affirmations of what reality is for those people that they share (a) common meaning(s); thus, it is their ultimate achievement of living in a community. Therefore, within communities is the only place where truths naturally survive.

The quest for meaningfulness is central to characterizing the human condition. Humans, by striving for meaningfulness, form communities within which they appropriate meanings, which in turn characterize *their* reality as *true*. For a reality to be true, it should be shared or jointly experienced. Otherwise it is only valuable as a figment of imagination, which can potentially be maintained in a frozen state until the moment of defrost, that is, a moment of sharing again. The central dogma of the thesis is the unity of the experience of living within this world. Information theory tells us that that which changes our apprehension of reality when we *apply sciences*, instead of our own personal experiences, to comprehend the life-world, is *the level of reference* to the real. So long as we recognize this, we can comprehend differing descriptions of the real (worldviews) without having split, reductionistic descriptions of reality, but rather, whole pictures in

which we can share reality, that is, build communities.

Many modern approaches to the question of the dialogic engagement of natural sciences and religion begin with the opposite presupposition; namely that we can theologize accepting the models of the Natural Sciences as faithful representations. I propose that a different approach to the interdisciplinarity of the real, is more vital. Scientific conclusions are only temporarily faithful models of reality which scientists apply to apprehend the life-world, that is, *naturalize* the world. In turn, this means that scientists *decide* to make use of certain idealized structures which may or may not exist in the physical world. Within this mindset, only certain particular structures may be realized; or at least taken seriously as models of (parts of) the concrete life-world. The sacredness of the real is, on the other hand, experienced when a *relational aspect of the real* is fully endorsed through and through.

Symbolizing the Real

But what is really that which humans *communicate with each other* and *hand down to following generations*? This question is intriguing and its answer might pave ways to enlightening new paths for the human condition. What humans really hand down to next generations is not language itself, but *symbols* that can be used to communicate through the medium of language. This is so because symbols (or metaphors) are *essentially immaterial carriers*, that is, their capacity of communicating a message is limitless and thus they can *present the real*. They do so as the only means to transmit meaning unaltered and unmistakably from generation to generation. Organized religion has always known that, which is why its existence has not been ceased through the ages.

The *logoi of beings* and *information* are precisely this type of transgenerational message carriers. What makes these carriers different from each other is how in practise their messages became appropriated by the different communities in the exact formation of a *culture* proper. When humans-in-community appropriate a message and define and communicate it within the confines of their common communal definition of ‘truth,’ the initial limitlessness of the appropriation is lost. However, as the message is expressed (materialized) as one of its possibilities, and moreover as the possibility which is best understood as ‘truth’ by humans-in-community, it becomes thereby more meaningful. In other words, messages, as a means of communicating information with a receiver (listener) are inherently contingent in nature and depend upon the communal context and language within which they are embodied for their understood meaning. A discerning reader can read between the lines that the actual concept of *tradition* proper is hidden there. In fact, this is exactly the *community* that receives the message.

Symbols are the *real* transmitters of meaning from generation to generation. By themselves symbols live in a *transcendent realm* and are the means that drag humans beyond their current condition. Can symbols become interiorized to such an extent that they can mediate experiences between humans? Here two different answers are given by the respective paradigms (logoi, information). Their relative focus is on the intensity of

the truthfulness of the real and they suggest, respectively, that the carriers of truth are the Experience in Communion and Individual Experience; otherwise codified as, 'Ecclesial Being' and 'Atomistic Being', the latter meaning one that has consciousness or is/becomes conscious.

Questions for the time for discussion:

- Why do we need symbols for to communicate?
- Why is it that mankind cannot do other than live in transcendence (condition humaine), and yet be always embedded in a specific context? (tradition of community)
- Is it true that meaning is *immanent* and symbols are *transcendent*?

Cultural Paradigms or Worldviews as Wholistic Apprehensions of the Real

Cultural paradigms are all-embracing 'ways of life' whereby communities are given shape. At the same time, these paradigms remain fluid enough to allow for diffusion and penetration of the 'other' and even pollination by the other; what we otherwise call *affinity to relate*. Thus, individuals can experience the collective validation of living and thinking within a paradigm that is also embraced as truth by others, while contributing to the evolution of this description of truth. For Information Theory, which arose within the modern scientific culture, truth is defined as logic which is graspable in tautological or analytic sentences (e.g., ones that are empirically verified).

In the case of Logoi of Beings, which arose within 7th century Byzantium and was explicated by Maximus the Confessor, reality is revealed within the relations of persons and through the establishment of ever new relations, until the revelation becomes complete in the end (eschaton) according to each one's appropriation of the *logoi of beings*. This appropriation of the logoi of beings is the journey of mankind towards becoming a *person*, that is, one who can be addressed to, listen and respond. This is when a mankind becomes I.

My endeavor here is to attempt to capture a glimpse of a synthesis of the spiritual and the physical by considering the two previously mentioned cultural paradigms, the 'logoi of beings' and 'information theory', as paradigmatic expressions of the life-world seen as a whole. Although the life-world is not considered as always wholistic, but rather as fragmented and thus unmeaningful, both of these perspectives attempt to capture the totality of the experience of the life-world. Both paradigms are considered here as *breaking points in the history of mankind*, as immediately before and after these periods the life phenomenon was differently interpreted or even more so, experienced. So, these historical periods are critical for the understanding of the transitions that mankind incurred to the life-world. It will become evident that the comprehension of the life-world goes hand with honestly experiencing the real.

Logoi of Beings (Byzantium 7th century), Rational in Relational

The Fathers of the Ecclesia speak of the eternal reasons of things contained within the divine reason, that is to say, in the Logos of God, and include in their understanding of this term those continuously more sublime meanings hidden within created realities. Moreover, the fathers consider that with the help of the supreme Logos, these inner principles are grasped by human reason, which lays hold of the reasons of things in the strict sense. The fathers sometimes distinguished the meaning of the thing from its inner principle, giving the name *logos* to the latter and *noema* to the former. Similarly, they distinguished the understanding of the meaning (*noesis*) of the thing in itself from that strict personal reason that grasps the objective reason of the thing, although they did use the term *logos* for both of these latter realities. We will follow this distinction and will in turn distinguish between, on the one hand, the reasons of things and the knowledge of reasons that comes through the agency of human reason in the strict sense and, on the other hand, the meanings of things and the continually progressive understanding of this that arises from a cognitive act of more synthetic and direct nature (intuition). In a way similar to that of the Ecclesia fathers, we recognise a connection between, on the one hand, the reasons of things and the knowledge of them through the agency of the strictly analytical power of reason and, on the other hand, the meanings of things and the understanding of these through the agency of a correct judgment that is more direct and intuitive. For even the analytical knowledge of created things, opens up new vistas within the discovery of new meanings inherent to these same things (Maximus the Confessor, *Amb. 10*, 1112D - 1116A3). For that matter Maximus wrote that the motions of the soul are those of its parts --mind, reason, sense. The first is *simple* and in immediate relation with God; the second is *analytic* and seeks the cause of things; the third is *synthetic* receiving from sensible things some symbol of their reasons and referring them to the reason.

Analytical reason looks into the partial reason of the created thing and seeks to find the exact proportions of the elements that enter into its composition and the conditions within which the thing itself is constituted and maintained. Thus, all things and every aspect of their formation, continuance and dissolution are strictly rational. The human body also has its own reason or rationality. Even the human being -as a being constituted always of body and soul- has its reason. However, according to the '*logoi of beings*' (Maximus the Confessor, *Amb. 7*, 1085A7-C6 and *Amb. 10*, 1121A, 1128D, 1133A) within each component and within each of its inner connections exists something that transcends what can be grasped by the analytical reason. Thus, into the very reason of each individual reality, taken in each entirety, there already enters a meaning that can be intuited, although not known or defined in the strict sense. It is a meaning that is intuited ever more deeply and into which endless and ever new connections are entering in the light of which the individual reality itself is to be seen. The mind, or the reason as understanding, sees this higher meaning and every kind of connection between the different individual realities or units, and in its grasp of each unit the mind takes into account the other units as well. This sheds light simultaneously upon the more complete reason of each thing. Hence, there exists a general 'logos' of all 'logoi'. The more general logos/reason is the meaning or the wealth of meanings of one thing joined to the logoi/reasons and meanings

of all its components and to all other things as well.

Thus an inexhaustible common meaning of things exists, a meaning that binds them together, a meaning of limitless wealth toward which humanity advances. Their unique supreme meaning is the divine Logos, for within this Logos are found the meanings of all things. He alone explains all things, and only in him does the human person find the meaning proper to its own existence. The one who believes is particularly the one who grasps this supreme meaning through a general act of intuition, that is, through his spirit.

In this connection with the reality, that transcends both world and nature -and hence to the extent that he/she cultivates this connection- the believer finds still higher and richer meanings, indeed, the supreme meaning of reality as a whole and of his/her own existence, in particular. Progress toward these higher meanings and toward the supreme meaning is also a question of the will - of human being's will to develop correctly in harmony with all his fellow humans, with the whole of reality, and with the highest reason/logos of reality as a whole. The higher meanings and the supreme meaning are revealed to the human person in conjunction with the reality that transcends both himself/herself and nature, but they are simultaneously revealed as meanings that are demanded by the fullness of his/her own existence and by nature itself. In other words, in the light of the supreme reality, the human person's existence and that of nature reveal even more completely both their own meanings and the supreme meaning. According to Maximus the Confessor, to the extent that he/she draws near to God, the believer will discover his own supreme meaning in the light of the fuller revelation of God. In the same way, he will thereby also discover the meaning of any one particular thing. In other words, according to our faith, the world is enlightened in its ontological relation with God, but it is not detached from God either in its existence or in its meaning. Thus, the meaning of the world is bound up with the meaning of God.

Analytical reason sees the world and each thing that belongs to it in a manner that is somehow separate. However, in one who lives his existence completely, analytical reason is accompanied by an understanding that intuits the still higher meanings of things and their supreme meaning through the different achievements of analytical reason. According to our Christian view, reason makes progress in the knowledge of things and of the logical connections between them inasmuch as it is led by that reason or understanding that intuits the ever higher meanings and the supreme meaning of existence. By the very results it achieves at each of its stages, analytical reason is convinced that it has not reached the final and total explanation of reality, while intuitive reason, that is, the understanding that at each stage is intuiting still higher meanings, urges on the analytical reason to further investigations, at the same time making it conscious of the fact that the supreme or complete meaning of any individual reality that it has investigated is a mystery linked to the mystery of reality as a whole and of the supreme reality, a mystery that it will never come to know completely.

Information Theory (Massachusetts 20th century)

In apparent contrast to the relational focus embodied with the 'logoi of beings' as to their reference in the Logos of God, *information theory* as a worldview bases its approach on the distinctiveness of nature to entities and on the relations between them. The aim of experimentation is to isolate certain partial aspects of natural phenomena that are analysed under the most ideal natural and technical conditions possible (boundary conditions). The experiments of physics and of the other modern natural sciences are designed to produce regularized and reproducible phenomena and to vary them in a controllable manner. In order to comprehend what is going on with these entities, we have to work out nature's workings on a level which is completely abstract, truly conceptual in character, and in which, as far as we can name what we do by following certain rules, we can imitate nature's workings, or, something even more formidable, foretell them, or even conceive of other pictures of 'reality' and thus, create other another image of our universe of discourse. Because this level of conceptual abstraction has a complete operative autonomy and because of its success, as a surrogate, it may be mistakenly taken as reality per se, forgetting, all of a sudden, that it is *ad hoc* invented to save us from an otherwise total incomprehensibility of our world of change. That is to say, *how* the world functions is a completely different story than *what we can comprehend of how* it functions. Nevertheless, we trust our law-like comprehension as not only *valid*, but as *nature-abiding*, that is, nature itself and its workings are manifested in our laws.

What hard scientists do with the help of the mathematical sciences is to refer the problem they tackle to another level of discourse, to give an interpretation of what they observe, or better yet to classify phenomena within relations, considering these relations as accomplished facts. Thus, scientists give an account for something *a posteriori*, never *a priori*, since the intervention of an observation catalyses reality. This is the stumbling block and the major finding of the interpretation of the quantum world.

Gottlob Frege (1848-1925), the founder of logicism (along with Russell and Whitehead) and a forerunner of Wiener's Cybernetics (1948) and Shannon's Mathematical Theory of Communication (1948), otherwise known as Information Theory, wrote on "The concept of number": [T]he applications of arithmetic to the explanation of natural phenomena would be logical processing of observed facts (observation itself already includes a logical activity); computation would be inference. Numerical laws will not need, as Baumann (1868-9, 2:670) contends, a practical confirmation in order to be applicable in the external world; for, in the external world, the totality of space and its contents, there are no concepts, no properties of concepts, no numbers. Therefore, the *numerical laws* are really not applicable to the external world: they are not laws of nature. They are, however, *applicable to judgments*, which are true of things in the external world: they are laws of the laws of nature. They assert *connections not between natural phenomena, but rather between judgments*; and it is to the latter that the laws of nature belong' (Frege, 1950). What makes coming to terms with the world so exciting is our ability to *communicate with it and with each other* by ever extracting and thus expanding its

inherent rationality. The very fact of communication testifies to the intelligibility inherent in the world. Moreover, the fact that 'laws' change in due time testifies to the world's *contingent order*, since, in order to comprehend our world we have to make judgments first, as Frege helped us realise. The impact on us, however, of extraction and expansion of the world's rationality is translated as our humanisation. However, the way we make judgements and reach decisions regarding how to divide the relevant subject matter from the irrelevant is of paramount importance to the construction of our worldview and eventually to the construction of reality itself.

The analysis of the world-affairs at the level of logic by allowing a grasp of the real in tautological or analytic sentences (ones that are empirically verified) has rendered the whole to be graspable only in synthetic judgments taken *a posteriori*. *A priori* judgments cannot exist. Hence mathematics should be founded upon an analytic, and thus logical, base. Under this perspective, knowledge has only to do with functions and relations, abolishing thus the traditional distinction between the subject and the predicate in a judgment. In this logic, the predicate shows the function; that is, the sum of the relations within which the 'I' can find himself/herself. The 'I' thus is sunk in the sum of the relations or in its predicates. The above paradigm is culminated in the modern information theory.

Concluding Remarks

In this paper an attempt for *concreativity* is ventured for the promotion of a crossdisciplinary dialogue between Science and Religion. It is shown that both are seen as *cultural paradigms* and thus present reality from within their respective worldviews. My chosen paradigms (logoi of beings/information) were selected because both present wholistic approaches toward the real by providing a *synthetic view*. In each case, their truth-claims were formed and nurtured within their communities. These paradigms were used to illustrate a proposed method for the initiation of a new synthesis because both of them in their historic manifestations were *breaking points* for the understanding of humankind in its apprehension of the real. This makes them interesting candidates for a leap of concreativity between Science and Religion. The legitimacy of concreativity for the creation of crossdisciplinary fields is based on the assumption of *conculturality* of the fields, as was illustrated here. The intuition is based on an assumption made by modern physics, namely that *any description is observer-dependent*. This unavoidably means: *a full description is observers-related!!* Human persons embody in the *truthfulness* of their relations something that is exactly revealing and for that matter mysterious indeed. The quality of their relations affects the Nature/Reality dialectic!

References

Amaladoss, M. (SJ) (2002). *Intercultural Theology*. Lecture Notes. Nijmegen: University of Nijmegen.

Barendregt, Henk (2003). Reflection and its use: from science to meditation. In Charles Harper, Jr. (ed.), *Spiritual Information*. West Conshohocken, PA: Templeton Foundation Press.

Baumann, J. (1868-9). *Die Lehren von Raum, Zeit und Mathematik in der neueren Philosophie nach ihrem ganzen Einfluss dargestellt und beurtheilt*, 2. vols. Berlin, Germany: Reimer.

Bergmann, S. (2004). Transculturality and tradition? Renewing the continuous in late modernity. *Studia Theologica*, 58, 140-156.

Esfeld, M. (2004). Quantum entanglement and a metaphysics of relations. *Studies in History and Philosophy of Modern Physics*, 35, 625-641.

Frege, Gottlob (1950). *The Foundations of Arithmetic*, §87, tranl. by J.L. Austin, Oxford: Basil Blackwell.

Gunton, Colin E. (1991). Trinity, ontology and anthropology: towards a renewal of the doctrine of the imago Dei. In Christoph Schwöbel and Colin Gunton (eds.), *Persons, Divine and Human*, 47-61. Edinburgh, Scotland: T & T Clark.

Häring, H. (2004). Zufall - fügung - vorsehung theologische reflexionen. *Akademie des Bistums Aachen, Sind Gottes Würfel gezinkt?*, 27-28.

Kondylis, Panajotis (1999) *Das Politische und der Mensch. Grundzüge der Sozialontologie*, vol. 1: Soziale Beziehung. Verstehen. Rationalität, aus dem Nachlaß, ed. by von Falk Horst, Berlin: Akademie-Verlag.

Mash, Eric J., & Dozios, David J. A. (2003). Child psychopathology: A developmental-systems perspective. In Eric J. Mash and Russell A Barkley (eds.), *Child Psychopathology* (2nd ed.), 371. New York, NY: The Guilford Press.

Maximus the Confessor (1857). *Ambigua* [explanations of difficult passages in Gregory Nazianzen and Pseudo-Dionysius], ed. by F. Oehler, Halle. In J.-P. Migne, *Patrologia Graeca* [PG] 91, 1032-1417, Paris.

Rovelli, C. (1996). Relational quantum mechanics. *International Journal of Theoretical Physics*, 35, 1637.

Shannon, Claude E., & Weaver, W. (1949). *The Mathematical Theory of Communication*, Chicago, IL: University of Illinois Press.

Torrance, Alan J. (1996). *Persons in Communion*. Edinburgh, Scotland: T & T Clark.

Wiener, Norbert (1961). *Cybernetics: or Control and Communication in the Animal and the Machine (2nd ed.)*. Cambridge, MA: MIT Press.

Wilson, Edward O. (2000). *Sociobiology: The New Synthesis (25th Anniversary Edition)*. Cambridge, MA: Harvard University Press.

Yannaras, Christos (1984). *The Freedom of Morality*. Crestwood, NY: St. Vladimir's Seminary Press.

Zizioulas, John. D. (1993). *Being as Communion: Studies in Personhood and the Church*. Crestwood, NY: St. Vladimir's Seminary Press.