Phenomenology of Communication
As Anticipatory Systems

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Abstract

The purpose of this paper is first to give a definition of anticipatory systems, then suggest a phenomenological implication of such a system. In order to do this, the shortcomings of the Western view of knowledge based on Aristotelian and Platonic views which has dominated most of the world historical references, in comparison to Eastern philosophies, are criticized. The recent developments of autopoietic knowing and its influence on a constructivist orientation to knowledge, although significantly improved over the said views of Aristotle and Plato, are also criticized for their shortcomings. This is due to the fact that it only takes into consideration the conscious intentional aspect of human mentality, rather than a holistic view of knowing.

It is further suggested that anticipatory systems viewed from the constructivist perspective faces a similar criticism. We therefore propose a phenomenological approach to knowing. In addition we suggest a model, namely mythopoietic communication, which overcomes some of the said criticism addressed at autopoietic knowing.

We find no better concepts than information theory, and the phenomenology of communication that have the capability to provide us with this objective. That is, information in its very being, is the constituent of Being, it is inherent in the physical, biological, socio-cultural, as well as spiritual aspect of Being. Furthermore, the unity of Being is a text through which the pattern of behavior of parts and the whole are anticipatory in nature. Mythopoietic communication, our proposed Meta-phenomenological model, we suggest is capable of addressing both issues of physico-biological, as well as archetypal meanings and symbolic dimensions of mythology, therefore the knowing of the totality of Being.

Our proposed model represents our idea of bringing together all aspects of our world. The conceptual framework of the model consists of following components: the first component is information and communication theory. This theory is based on the concept of entropy that encompasses the opposite forces of nature and their transformation into one another. It deals with physical, and soco-cultural issues, whether they are material, meaning, or symbols. The second component is the phenomenology of communication, whether transcendental or immanent. The third component is autopoiesis dealing with biological entanglement and cybernetic closure. Finally, mythopoietic communication as a composite concept, which deals with the two diverse aspects of Being, namely, physical and biological (which is dealt with autopoieticly), and mythology, with a broad spectrum covering the unmeasureable aspects of human culture, including, meaning, religion, and spirituality.

Keywords: Aesthetics, philosophy, mythopoietic communication, phenomenology, anticipatory systems

1- Introduction-Anticipatory Systems and Aesthetic World

Let me first reflect on Robert Rosen's (1985, p. 341) definition of Anticipatory Systems as a: "*system containing a predictive model of itself and/or of it's environment, which allows it to state at an instant in accord with the model's predictions pertaining to a later instant.*"

Rosen assumes that anticipatory systems are related in the final causation of Aristotle. In anticipatory systems, reverse causal processes are at work, that is, similar to past causes; future causes also produce an effect at the present state of the system.

To define externalist and internalist anticipatory processes, Daniel Dubois (1998) gives the following examples. He says, externalist anticipation refers to external events. He gives the example of forecasting weather in the near future as a function of atmospheric conditions at present, which leads to the prediction of future behavior. The prediction of the near future behavior of the weather is then predicted based on initial conditions at the present. As an example of internalist anticipation, he gives the example of participants and authors for the planned conference prepare their papers and arrange for their travel accommodations accordingly. The participants of the conference, who have, therefore, memorized in their memory of the future, the "potential future event". In this case the anticipatory event is based on the construction of the event by individuals, and it is therefore internalist anticipation. That is, in the first case, the externalist anticipation is dependent on the environment and in the second case, on the internal anticipation of individuals which each create his own future events and manages to meet these anticipated events.

Regarding the internalist anticipation of the future, there might be paradoxes involved, that is, whether we looked at the situation from a solely conscious and intentional point of view, or from an intuitive and comprehensive or holistic point of view. Many constructivist authors assume such anticipatory behavior on the part of the organism is intentional and therefore conscious and predictable. Furthermore, authors such as Fodor build on this assumption, and assume such mental activities as computational.

The neo-Darwinian views, adopts the notion of random mutation to the equation, which picture species in a new perspective in which the environment has a greater role to play. With the Lamarckian views additional dynamism and therefore unpredictability enters the process which makes it ever more complex. That is, potentiality of being gives complexities of anticipated change in time (Dubois, 1998). Autopoiesis, Maturana and Varela have assumed that an organism's cognitive operations reflect only their own organization and assume that we are imposing our constructed views onto the environment. In other words they have favored a one-way system from organism (man) to environment and have not given enough consideration to the impact of the environment on an organism. To use the linguistic terminology they have considered the synthetic aspect of the language and not semantic. That is they have left out all of the cultural dimensions and symbolism involved in the biological-cultural coevolution in its totality.

According to constructivists, who support autopoiesis, the observer is constantly his/her own version of reality. Therefore, a universal reality seen by everyone does not exist, in only exists if it is given to individuals. In other words, reality is a thing that we

experience as things happen to us rather than a thing that exists out there and is described to us by someone else.

Usually any speculative discourse such as this, if it is original, starts with a belief, an idea or a hypothesis. This idea is then put into a context of the cultural, social, scientific, etc. Here in this paper, I am putting forward the idea that an aesthetic value is not necessarily an objective value reasoned by rationality, but a poetic or artistic feeling, a socio-cultural, or religious value evolving due to a very complex set of circumstances which has lead to its becoming. Subjective experience resulting in direct experience capable of measuring both qualities and quantities and irregularities as well as regularities, is an equal if not more important partner to objective measures. For this reason such an event or series of events are not predictable but anticipatable. Furthermore, I see a profound inseparable web of connections between all properties of "things" where our definitions of beauty and value system come from. I suppose this cosmic web underlies a unity between philosophies of aesthetics and the truth. In such a web, or aesthetic communication system, it is not we who manipulate the rules of the game regarding the definition of good and evil, and beauty; rather it is the nature of things including ourselves which manipulates our consciousness and therefore our views about beauty and values on righthoodness. Beauty is not changing; we change our mind about beauty. Beauty, goodness, and righthoodness is a matter of chance and necessity, a matter of text, a matter of the order of things and their predictabilities and unpredictability, a matter of anticipation than prediction, and consequently, a matter of difference.

Difference is there to establish the very being of the things. Difference is there to negate its own negation. Difference is there because it is the law of being, and not the law for segregation and establishment of preference. It is there to take the empty place of a value system where difference in kind is replaced by difference in text. Therefore, to know it we have to establish a worldview of phenomenology and hermeneutics, a worldview where bad and good are part of a continuum of differences. Mysticism and physics are becoming closer and closer.

I take the challenge but assume that as an interpreter, or anticipator of these interconnections I may have to make some generalizations, and for that reason I have to assume these generalizations are acceptable, justifying its purpose. A purpose interjected from everything to everything, or in Pauli's words: "From an inner center, the psyche, ...to...an extraversion, into the physical world...". And if this is true, even the two extreme ends of this spectrum become each other's being and otherness, i.e., for example physics becomes the study of the structure of consciousness."

Let us take the matter into a different plain: if this flower is more beautiful than the other is, while both are coming from the same genetic path, it could be based on two grounds. One, it is due to the taste of the beholder, which is nothing but cultural, driven from cosmic text, or evolutionary processes, which makeup the beholder's state of mind, which is again coming from the same cosmic text. Two, it is due to the bedding properties, air temperature, and all other circumstances from which these flowers have evolved, and that is nothing but cosmic text. The same analogy could be made about atmospheric conditions, rainfall, air circulation, and on and on. These are similarly nothing but the evolving, emerging circumstances, which are bound to local, regional, continental, and cosmological circumstances. Could these be anything but self-organizing systems that do not have any purpose but being, and doing what evolving circumstances

lead them to do? That is what Rumi says about this notion. He says the sun shines, energizes, gives warmth, but it is doing it not to please any one, or for any reason. It does it because of its nature; it is just the way it is. It is we who add color to the picture, and our perspective to its attributes and it is purposes.

2- Eastern Wisdom and Contemporary Philosophy

In the Western world, the traditional view of knowledge, best exemplified in Aristotle, is based on the definition of "things" in the external world. Aristotle's view supposes that "definition is held to concern essential nature and is in every universe" (Russell, 1917, p. 195). Plato's approach to knowledge, of course, is different. To him, self-evident truth is the total picture resulting from the interconnection and intercommunication of all beings and their sub-components, which is impossible to see with today's frame of reference. That is, while Plato assumed the world could be known through sense perception, Aristotle proposed that rational definition, classification, and redefinition could do that, while most Eastern philosophers assumed it could be done through essence, gnosis, and intuition. While for both Plato and Aristotle, the subject of knowing was considered a property of mind; their emphasis on perception and cognition varies. However, Eastern philosophers use the phenomenal world and essence as the basis for beings and Being, and gnosis as a way of knowing. These both bring together the properties of the object as well as the subject world. They have the potentiality to bridge between the two worlds. This issue of essence also is closer to phenomenology, existentialism, second-order cybernetics, and autopoiesis than either knowing through sense perception or through rational categorization. That is, in all of this school of thought (phenomenology, existentialism, second-order cybernetics, and autopoiesis) it is not the mind, which is the subject of knowing the object world, but the entanglement of knower, knowing and to-be-known, that brings about knowledge.

Jon Barwise and John Perry also emphasize on the contextual issues as part of the knowing objects. They have suggested that "speech, writing, thought, and inference are *situated* activities. That is, they are activities carried out by intelligent, embodied in, limited agents, agents situated in a rich environment, an environment that can be exploited in various ways" (Barwise and Perry, 1989). The said activities are taken from an agent's view within the environment, and they are about other areas of that environment to which the agent is directly or indirectly connected. However, the impact of these activities often changes the environment within which the agent operates. Consequently, the changes have an impact upon the agent (Barwise, and Perry, 1989. p. xiii).

Here we find Ole Fogh Kirkeby's work having a lot in common with these frames of reference. So with reference to his work, we are going to discuss the phenomenological aspects of transcendence and immanence. We further discuss how a philosophical orientation of a phenomenological approach to human experience has similarities with Eastern wisdom, while it presents a different perspective than that of general trends of Western philosophies. That is, in phenomenology, not only are the mind and particularly the objective mind not at work, but the total human being (mind-body-conscious-subconscious) is at work.

Even Hegel, whom we find to be the philosopher who branched off from the line of thought established by Descartes, and then Kant, nevertheless still exhibits in his doctrine a separation of existence and thinking. It was in the later phenomenological

development and in the works of Heidegger and Merleau-Ponty that this link was strengthened. This link has to be understood through a certain scheme of logic which existence itself, as a historical phenomenon, is supposed to make necessary. That means a certain blindness to the fact that logic cannot be founded by logic.

As noted by Kirkeby in Heidegger's phenomenology, one exposes to the same kind of hidden appeal to a meta-logic. He uses the argumentation of dissolving figures of thought. Heidegger's sensitivity to the historical limits of logic, according to Kirkeby, (1997, p.26) opened up to the relation between phenomenology and both Zen Buddhism and art. This is of course also true to Irfan and Sufism. This and other statements by him show his views toward Western thought: "that behind the apparently transparent figure of the *noesis noeseos*, and behind its transformation to the cogito, and to the figure of *representation*, there lies a deeper irrationalism." Or in other words, as Heidegger himself might have said: "Nothingness prefers to disguise itself in the most forceful formalism as well as in the most obvious argument."

The aesthetic experience and its accent on insight, and intuition could be seen as creation of a framework concept, which anticipates this transcendent of irrationalism. Using mystic imagery and philosophy and even poetry out of tune with formal philosophical terminology, "they let the said be unsaid by creating-what you might call - a 'negative-symbolic' level of self-reference" (Kirkeby, 1997, p. 26). Because such allegories or poetry they may be able to "hide their knowledge about the world behind their words knowing that the over-presentation of this knowledge would make it the victim of the logic of the very system they wanted to criticize."

What I find in Heidegger and Merleau-Ponty that is similar to Eastern philosophy is what was sacrificed by Kant in describing the subject. Eastern philosophy on the other hand emphasized self-reflection as it is presented by the text- the unity of Being (*wahdat al-wujud*) more than by the person speaking through it. Or you might say the feeling of the unreduceability of the text to the extent that the self-observation of the observer was at the same time hidden as a philosophical-critical subject which renounced its own text. Those Western philosophers such as Heidegger and Merleau-Ponty and Kierkeggard who questioned the emphasis placed on rationalism and advocate direct experience and the intuitive approach as the way of knowing have a lot in common with Eastern philosophy. Kierkegaard in his criticism of Hegel, as his opponent-observer, would owe his way of conceptualizations to the perspective that he outlined. Perhaps the idea is that advocating and promoting insight, and intuition might make its own task by taking irrationality or arationality seriously to prove that not only philosophy is alive but the mystic way of direct knowing also was forgotten, but in some ways up to par with complementary rationalism and scientism.

3- Metaphysics, Transcendence, and Immanence

Kirkeby put all of these into what he calls the metaphysical square in the following. To describe the concept of selfcesseity he uses the said square as an example. Each corner of the square presents what he contra-intuitively shall phrase a *transcendental immanence*. He defines four forms *of transcendental immanence*. They are forms presenting us with the fact that there is a *metaphysical* disposition inherent in experience itself. For him metaphysical does not refer to "negatively to an ontological possibility, but epistemologically to a borderline of experience." On this basis he calls the square

metaphysical. The square is presented as follows: the first corner (A), represents experience of an outer world, a place that might contain object and relations beyond what you think or presuppose. But the "reality of this 'reality' is produced by a *synkinesthesiafical* activity of the body under the rule of language games." He refers to this neologism which expresses the fact that things are received through your experience of them. This experience is a result of the cooperation of all the senses, the *language and* the ability to move and touch. On this ground of experience and representation the intellect does not give its consent and perception up to rely on hypothesis. "It is transcendental in its immanence, because you cannot see your seeing, hear your hearing" and so on. In other words, because in such communication the whole body rather than the mind alone is involved, or, as Merleau-Ponty might say, this instrument (body) cannot be experienced in its very processing.

The second corner (B) represents the human voice. Using a modern phenomenological definition, he views *speech* as a core relation to reality. He refers to it as a sixth sense, because one touches the world through a sound, or calls it into existence by naming it. He supposes that in this process you also constitute something *which* is named, something which is 'outside' the name, which this 'outsideness' is a rule in the language game itself. Here language *denotes* something or *refers* to something outside it. Luhmann refers to it as the system-environment-distinction, as a distinction inherent in the system. Or, in still different wording, the preexistence of meaning in the "environment" is based on its characteristics or "outsideness in its power as *event*, and hence as *context*" (Kirkeby, 1997, p.14).

Kirkeby points out the two roles that *transcendental immanence* plays here. First, that speech constructs a world that conjures up a semantical network outside which you yourself do not know yet. "The experience of semantical heterenomity is the condition of the language game itself." Second, that the place from which your voice comes "is totally inaccessible to experience." That means "consciousness cannot constitute itself as a subject." Therefore, all of those who based their assumptions on the primary role of consciousness such as Descartes, Kant, and Husserl are misrepresenting this experience.

The third corner (C) represents the experience of the other person. Here there is a tendency that you experience your own projections in your relations to the other person. How reflective you might be of your own 'persona,' of your own intentions, of your own prejudices, "you shall never succeed in getting over the suspension bridge of communication to the real 'self' of the other person, unless in very exceptional situations" (Kirkeby, 1997). Here, intentionality, which is present in Descartes, Kant, Husserl, and for that reason the constructivist, is ruled out (Kirkeby, 1997). In this context, Arefs, Sufis, or Buddhists are right that "the autonomous, epistemologically omnipotent, historical-situation 'I,' the prerogative of the western culture, is an illusion." In such body-mind experience, much more than in thinking only, one relates to *reflectivity.*

In this regard, this is what Merleau-Ponty referred to as "the anonymous readiness of perception before perception" calling this "the Pre-reflective cagito" (Merleau-Ponty, 1945). Kirkeby has a good personal example in this reference, where he says, in my perceptions, actions, when I listen, and when I speak, I am *not* exactly "what I am, since I cannot tune myself. I do not have myself, I am only myself. I am 'armed' so to speak - of a body, who 'knows' so far more than my conscious 'I' does" (Kirkeby, 1997). So in

his diagram Kirkeby refers to this the *other* which is a correlation to one's lack of the possibility to experience itself.

The fourth corner (D) represents death. Kirkeby builds on one of the fundamentals of phenomenology, where death is considered a change, a relationship rather than a fixed fact.

Kirkeby refers to recent studies in the relationship between psyche and some by neuroscience and biology that, concludes that, illness might be chosen by the person at a level not accessible to consciousness. In other words, condition of death is a condition not chosen by the subject. But if the body really can be conceived of as 'thinking,' "thus being a kind of 'now-instrumental instrument,' then there might be much more knowledge of death within you, than one normally thinks."

This is similar to what Zarathustra and Nietzche refer to as eternal reoccurrence of all things in an endless cycle, to act in such a way that one can choose this action, activity, whatever, to be with us again and again. A beautiful action is that which is intrinsically complete and is full of value. Does this choice of beauty empower in such a way that one can choose this action as evolutionary change? Is the aesthetic the ultimate source of valuing nature? Activity intrinsically completes and values full. Does this choice of beauty empower evolutionary change? Is the aesthetic the ultimate source of valuing nature? Perhaps this is not the right way to put the question. How does our spontaneous or anticipatory experience reveal the aesthetic qualities of nature and of actions?

Nietzche's image of the threat of eternal return was the shepherd with a black serpent biting his tongue. He had to bite it off and spit it out and revel in the moment of overcoming. This was Nietzche's description in Zarathustra.

This idea of translutionarity portrays a communicational dystopia, when exceptional situations or circumstantial situations call for "genuine communication." That is again based on the concept that questions the notion of a universal prelinguistic or precommunication medium of thought as suggested by Husserl and the constructivists. This is due to the fact that the subject of speech is the fusion of the conscious-subconscious body-mind and environment, and not a transcendental or reflective ego.
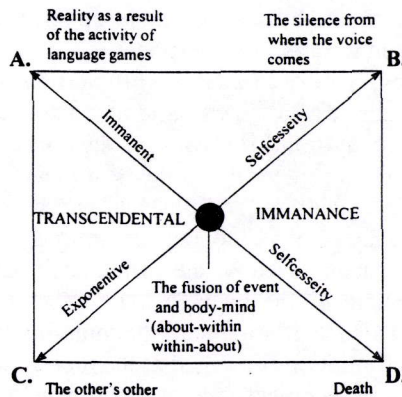

Figure 1: The Metaphorical Square. Source: Kirkeby, 1997, p.13.

4- Phenomenology of Communication

Communication and information are not used in their familiar terms; here communication is rather used to refer to the qualitative structure by which an amount of information or meaning is exchanged. The more obvious the organization the easier it is to understand the message, but the less information it contains.

Mythopoietic or aesthetic communication consists of a set of components as object, event, and association (meanings) – the realm of concrete and physical realities, the realm of the interrelational, behavioral, and transformational, and the realm of abstraction, neoplatonic ideas and forms, symbolic meaning and values, and associations (correlating the other two in context). Dynamic continuous flows of all material and nonmaterial matter - energy-events, i.e., information processes-constitute this model.

We think mythopoietic, or aesthetic communication in its phenomenal form, is devoid of some of the characteristics of other languages trying to describe world order, such as those mentioned above. The reason for its advantages over the others includes: 1. It is not a formal language based on predefined elements and structures, it is rather a spontaneous emerging language born out of the context based on similarities and differences in the context; 2. It is not functional in a sense of structuralism or other constructive forms of language, with logical or rational structure; and 3. It is rather phenomenological and hermeneutical in its interpretation of cultural and historical properties in a contextual setting.

This phenomenal communication emphasis on the circumstantiality of spontaneous situations, without overlaying it with our rational modes or constructs as a way of understanding it. Rather, the contingent world is experienced in conscious-subconscious direct experience down through the earth's practical reflections, where body and mind, conscious and subconscious are all present and each pairs are the two sides of the same coin.

Information, and consequently meanings, is omnipresent as the closeness of world, mind, and communication processes come into a unity, the unity that presents itself as a meaning. "The *facticity* of this phenomenon is sealed by two conditions. The nonreflectivity accessible to historical constraints of the body-mind *and* the finitude and fragility of the flesh" (Kirkeby 1997, p. 11). This is the way Kirkeby describe such processes after the German hermeneutic philosopher, Hans-Georg Gadamer (1972), and to whom, our views, as well as our interpretations of our sages, adhere. In other words, we, similar to Kirkeby, believe in a fusion of two textual horizons, which makes up our world: "the body-mind's text the intext, and the historical world's text, the *context*." Of course, when we say body-mind it means all the conscious-subconscious, sociocultural, physical and biological attributes and contexts; it means the historical context with all its dimensions, namely sociocultural and physical and biological aspects. And as Kirkeby (1997, p.11) comments, such a contextual setting "presupposes that casualties are dissolved in this very fusion, because the fusion itself generates the contextual setting by pounding the perspective of the event." Any event in its body-mind side is "about-within" the event and also "within-about" the mind-body in regard to its outside context. An event or pile of information is merged at the prosecution of intext outtext. The context is a conceptual matrix of all objects and events to which an event or piece of information is corresponding with, or is situated in, the Platonic horizon which could be generated with this event. Intext, on the other hand, is formed through the cross-referencing of

associated memory topics conjured up by the information realized through a cross-referencing of objects and events in space-time, which the intext itself as a cognitive horizon makes possible.

The following are the philosophical and epistemological orientation, which make phenomenology of communication:

1. There is no absolute statement about any phenomenon; history is dead, metaphysics is dead; and the only rule standing is that everything evolves. We deal with becoming rather than being; therefore, speculations resulting in self-reference give us a clue not to being but to becoming.

2. There is no determinacy and no directionality of aimed natural processes; therefore, one could as well reverse history and choose present time as an origin counting backward and forward, to the historical past and anticipated future. This is in the same vein of what Rumi says: Burn the past and future, take this moment as eternal return.

3. There is no separation between object and subject, matter and psyche, or, for that matter between mind and nature or their reflections in philosophical and epistemological processes; however, to be known and knowing are all one single process.

4. Intuition has advantages over logic and rationality because it is not bound. Logic has its limitations and therefore objectivity and subjectivity should be considered as complementary processes.

5- Cosmic Communication, a Direct Experience, a Unified World View

We suggest that mythopoietic-communication encompasses both the objective and subjective world, and therefore is a means to reflect the total human experience and knowledge. Information is driven by context (including biological coupling), by similarities and differences established by the patterning of fields or communication as a context for objects, organisms, and humans, and all of their interconnecting webs. These channels of interrelationship originate among humans by the "transmission of information itself. *Information flows are self-structuring"* and describe the behavior of self-structuring flows (van der Leeuw, 1981, p. 238). This concept of mythopoietic communication, comparable to Hegelian "identity in difference," suggests that in the pictured unified world, it is only through this changing context and its circumstantial flow of emerging properties that we define things (whatever "thing" may be). Furthermore, this flow does not provide us with anything else as a yardstick but those changing properties, whether it is called "identity in difference," or "difference which makes a difference" (Bateson, 1972), or "information which makes information" (Weizsacker). In this information theory, while pure information is immanent, dialectic, and objective, its representation emerges as forms of objects, organisms, and human beings.

We think with Jakob von Uexkull when he describes the concept of 'umwelt' and states that the phenomenal world of the organism is the world around animals, as they themselves perceive them. He suggests that when the organism is born into such a world of signification around it (umwelt), whatever an organism senses also mean something to it: food, escape, etc. According to Uexkull, "every action, therefore, that consists of perception and operation imprints its meaning onto a subject-related meaning-carrier in the respective umwelt (subjective universe)" (von Uexkull, 1982, pp. 25-82).

Kuppers (1990, p. xvii) also reports from an evolutionary point of view, stating that organisms have two major components: replicates and interactors. While the former

is reproduced through material processes, the other a program-controlling device." The metabolic subsystem is a dissipative one, and entropy producing. The program-controlling subsystem, although inactive without energy consumption, is essentially a non-energetic entity. It is the *information* rather than the matter or the energy that matters (Szathmary, 1989, p. 169).

In the following figure, on the one hand, the organism tries to act so that what it perceives changes toward the thing that appears in the environment; on the other, the organism may change the things in the environment so that it fits its desires and perceptions. This interface of organs and environment is always settled in equilibrium. That is, there are two ways of conflict reduction or elimination: one, a change in the environment towards an elimination of that "error" (as far as the organism is concerned), and two, perturbation of the organism.
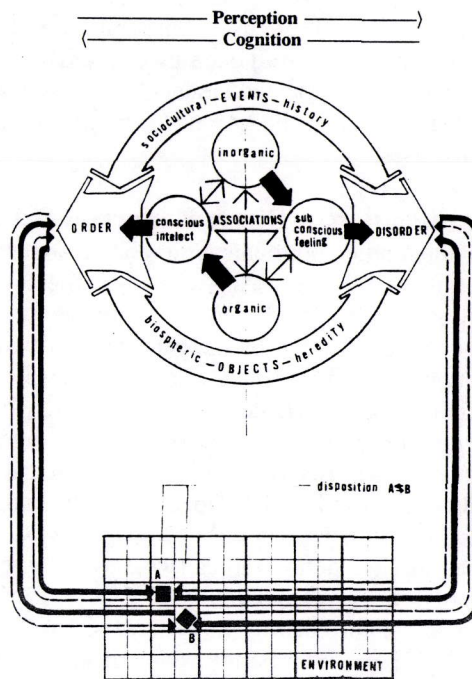

Figure 2: The Mythopoietic Communication Process Between the Human Being and the Environment Through Pattern Characteristics: Order versus Disorder. Source Minai, 1993.

6- Autopoiesis verses Mythopoiesis

In summation, mythopoietic communication views of knowledge are a kind of hermeneutic approach which, due to the fact that they are associated with objective as well as subjective accounts, and therefore are reflective of cosmic communications, where information and knowledge could become the interconnecting agents for all beings, or for that reason, all objects and subjects, and for the material and nonmaterial functions.

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Maturana and Varela developed Autopoiesis theory, and their assumption describes human understanding in biological, or better-said, bio-cybernetic terms. That is "the nervous system is making communications to accommodate behavior to the circumstances-as implied by the idea of 'learning'" (Maturana, 1988). This particular type of physiological correlation with the environment, is the connection of boyhood with behavior in the sensory-effector correlation. In this theory, a definition of cognition is a sequence of this sensory-effector correlation between the organism and the environment. However, we have our critical views of the model, we use our modified version of autopoiesis, namely mythopoiesis.

Here to put our criticism in a nutshell, the theory assumes cognitive processes are solely biological and is building upon costructivist views of the intentional aspects of the cognitive activities of the organism. This we do not think covers all aspects of cognition, namely the unmeasurable and hidden dimensions of involuntary acts such as those that constitute culture, and its values and ethics.

Constructivist theory stands opposed to discovery or recognition, since these last two require a world richer than one brought forth in the act of knowing itself. Indeed, "the very idea of constructing reality marks a radical separation of human knowers from an ontological domain of observer-independent objects and relations and trivial constructivism" (Maturana, 1988). Maturana, for example, views the world in such a perspective when he says: "Nature, the world, society, science, religion...indeed all things, are cognitive entities..." (Johnson, 1993, p. 28). Von Glasersfeld, a constructivist, goes to the extreme by saying: "Those who merely speak of the construction of knowledge, but do not explicitly give up the notion that our conceptual constructions can or should in some way represent an independent, 'objective reality,' are still caught in the traditional theory of knowledge that is defenseless against the skeptic's arguments. From an epistemological point of view, therefore, their constructivism is trivial" (von Glasersfeld, 1989).

However, we suppose combining this model with mythological attributes might make a more comprehensive model. Mythology as a concept covers such issues raised by Nietzsche, "the will to lie," "the will to power, etc. Mythology is a necessary condition for any holistic model, because "myths record the symmetry-breaking phase change from biological to moral information" (Artigiani, 1994, p.6). These emerging properties of nature are the information people have stored in the form of myths as they acted to satisfy such biological needs such as hunger, etc. Therefore, this dimension has to be added to autopoiesis, which assumes organisms act only biologically to satisfy the said needs for hunger.

The socio-cultural dimensions of human life emerge while people interact and explore their environments separately in a random manner. Or as Kauffman (1993) suggests: each person being slightly different, the aggregate exploration produces a "cloud of possibility." Now, since it was exploration that brought people into contact with one another, one can assume that there is a threshold beyond which their connections began to act as a whole. The nature of the emerging properties of a society cannot be predicted under a restricted rule or law. The created information through such emergence "is diffused through the whole system, as it is in every other case of experience" (Artigiani, 1994, p.6), and that we think could be extended to the Being as a whole, and should be approached holistically. Finally, based on arguments presented

earlier, we suppose that the cosmic system is an aesthetic Being and this mega-mythopoietic communication system deals with it accordingly. That is, differences which are there are not there to substantiate value-attached characteristics, such as good and bad; they are there rather as the very essential make-up of information, which makes the pluralism involved in the beings of the Being.

7- Mythopoietic Communication, a Representation of the World's Emerging and Anticipatory Properties.

By mythopoiesis, we mean those systems that have double-edged functions that are constantly shift between the two functions in instantaneous manner. The two functions are: 1) they are self-contained unities, or cybernetic closure, whose only reference is to themselves whether they physically represent coherent unity such as organisms; 2) they are open systems as an inseparable part of the unity of total Being. The combination of the two functions together produces evolving patterns such as socio-cultural activities or atmospheric pressure systems, up to the total cosmos. This concept was originated in biology as autopoiesis, where Maturana and Varela have constructed its original form, assuming biological systems to be autonomous, self-referring, and self-constructing, or autopoietic systems (Maturana, 1980).

However, Maturana has further extended the concept to social systems, suggesting that social systems fall into the above classifications, that is, in their realization of their autopoiesis they constitute social systems and, like natural systems, social systems define a certain unity by their organization.

Likewise, Luhmann has suggested that social systems use communication "as their particular mode of autopoietic reproduction. These elements are communications which are recursively produced and reproduced by a network of communication and which cannot exist outside of such a network" (Luhmann, 1990).

I have proposed that with the same argument, we can suggest that any self-organizing system is a mythopoietic system whose description falls into our communication model, where its organization properties act as an agent of autonomy towards some forms of self-referentiality, and its hidden and its unmeasureable properties make up the emerging mythological dimensions. That is, it is not only a human being that uses self-reference as a basis for his judgments (von Weizsacker). We believe any self-organizing system, as part of its process of self-organization, understanding information produced by its system, has to make "judgments" against some form of referential system. That referential system, or context, and context-driven information, exists "out there" by virtue of the system trying to self-organize. With this assertion, all systems, material, biological, and socio-cultural, are considered mythopoiesis and components of our mythopoietic communication systems.

In our communication system, emerging properties represent a learning process in which the information accumulated at each level of learning (knowledge) is self-organizing, as well as self-defeating while it is evolving. Information is an agent of change; and it is self-produced. Because of its dialectic potential being, it is both self-producing and self-defeating, and because it is a product of binary choices of being and not being, it always lives on the border of chaos, where "to be or not to be" is conditioned between forces of chance and necessity, manifested in forms of openness and closure.

We assume that reflections in referential systems (including human minds), as discussed earlier (intext and context) have two poles: particular and universal (subjective and objective in the human mind). Particular means inference, using local reference for judgment. Universal means reference, using universal reference for judgment.

8- Mythopoiietic, or Aesthetic communication- The Design of a Model

Mythopoietic or aesthetic communication is defined as the cosmic order, where:

1 -   objects and subjects are part of the same continuum, i.e., man is an inseparable part of nature: He is part of the ground and the figure.

2 -   The building blocks of this communication system are described not as concrete reality through a practical dimension of sense-experience, but as essence described in evolutionary and emerging structural properties of "order-disorder" rather than substances-atoms.

3 -   Everything, including the mind and its byproducts, are part of a unified system of this communication and are pure information (or Suhrawardi's view of evolving essence). That is, the mind is described not as dualist, materialist, epiphenomal, or idealist, but the subject of monist-connectionist -functionalist description, as part of a unified cosmic order.

4 -   Its constituent components are not described only with an a priori logical yardstick and within the boundaries of formal rationality, i.e., a priori space-time, but by a posteriori phenomenological parameters of "Mythological," within psychological space-time, where its pattern overlap, take irregular as well as regular form, and with varieties of intensity and distribution.

We call this communication aesthetic because it is defined in the image of cosmic order that we think is nothing but good and beautiful. That is, although we believe in the dualistic principal of the opposite characters of cosmic order, we think that they are the two side of the same coin, and they are interchangeable via transformation and transmutation into one another. It rather deals with open/closed operations phenomenologically, which are based on chance and necessity capable of dealing with direct experience and it is real as well as unreal, subject of symbolism and mythology.

Further description of the double-edged "order" build in this communication model can be found in Ernest Krenek's description of inspiration, when he says: "Generally and traditionally 'inspiration' is held in great respect as the most distinguished source of the creative process in art. It should be remembered that inspiration by definition is closely related to chance, for it is the very thing that cannot be controlled, manufactured, or premeditated in any way.   It is what falls into the mind...unsolicited, unprepared, unrehearsed, coming from nowhere. This obviously answers the definition of chance as the absence of any known reason why an event should turn out one way rather than another" (Krenek, 1960).

What we call mythopoietic or aesthetic communication is also similar to what William Lycan calls "humication" or Hofstadter calls "isomorphism" of the mind and the world. It is a system, which uses the same criteria describing objects and subjects, or substance and meaning, where meaning is dealt with very seriously, even more than substances. That is, meaning is also viewed as somehow like a "physical property" that transcends physical properties. Hofstadter supposes that this meaning is isomorphism. He defines this as "an information-preserving transformation," that is, "when two complex structures can be mapped onto each other in such a way that to each part of one structure

there is a corresponding part in the other structure." He therefore thinks "it is such perceptions of isomorphism which create *meanings* in the minds of people" (Johnson, 1988. P. 197).

What is essential in mythopoietic communication, what differentiates it from both autopoiesis, and communication theories, is that, in addition, it deals with spirituality and meanings. Meaning emerges from the phenomenal world, mental world, and archetypal world.

The equation for selective information-content is equivalent to $\text{Log}_2 N$, where N is the number of possible states of the message system. This, however, is identical with the statistical measure of thermodynamic entropy, described in Boltzman's equation with a difference in sign. "Where information is given out, entropy increases." Thus, "just as the entropy of an isolated physical system tends to increase by the Second Law of Thermodynamics, so also 'an isolated system can only lose or give out information'" (Johnson, 1988). MacKay's description of his information system takes him to his conclusion (as well as ours) " that our concept of time" is "directly linked with the objective notion of the flux of information." This view of meaning and aesthetic communication is what is common in both matter and mind and the object-subject world.

Although the information theory was developed by Shannon, nevertheless, his followers, including MacKay, went far beyond Shannon's intentions. Shannon thought the theory of selective information-content is mechanistic and only measures the amount of information. "It isn't until we consider the range of other states of readiness, *that might have been selected but weren't*, that the notion of meaning comes into its own" (Johnson, 1988). MacKay, on the other hand, "tried to bridge the gap by *picturing an item of information as a kind of tool that operates upon the recipient's internal 'state of conditional readiness'."* Accordingly, he assumes that one's approach *"offers a criterion of meaningfulness and meaninglessness which seems more realistic and less procrustean than the 'verifiability' or 'falsifiability' criteria canvassed by some linguistic philosophers."* He therefore hopes it can account for "how the message recovers its meaning" in order to resolve "the whole debate between 'mechanists' and 'anti-mechanists'" (Johnson, 1988).

9- Information Theory, the Essence of Matter and Meaning

We know of no other way to find a unifying system capable of describing all these processes, but the laws of entropy, manifested in both Boltzmann's and Shannon's formulas, called aesthetic communication (Clough, 1982).

$$H = K \log I \qquad X = -P \log P$$

That is, what makes information is actually entropy, or stochastic relationships, or the probability of things being seen in certain ways. This form of knowledge, or what we call knowledge of in-between the lines, or the interconnections, is what is actually produced by the interrelation or interconnection of things. To be more specific, in contrast to the material knowledge, or the knowledge embodied in material form which was once the only source of knowledge, these reflect the sources of knowledge of immaterial "things" and processes, that is, concepts, ideas, forms, structures, and finally information and communication.

The greater the uncertainty, the larger the number of possible internal structures, the higher the probability, and the larger the entropy. As Brillouin points out, "any additional piece of information increases the negentropy of the system." This similarity,

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of course, points to the principle that there is a correlation between the quantitative measure of information and an increase of the negentropy. Therefore, Brillouin thinks not only that negentropy leads to information, but also that information leads to negentropy. He consequently concludes that (Brillouin, 1964, p. 11):

Negentropy ----> information ----> negentropy

The process of complying with the environment, as it characterizes mythopoietic structures, means that such structures, at the same time that they are senders, are also receivers of information. Information exchange takes place in a mythopoietic feedback process. Since pragmatic information impacts on the receiver, it also has impact on the potential sender in the same structure. That is why Ernst von Weizsacker (1974) redefines his father's definition of information (above) to "information is what generates information potential."
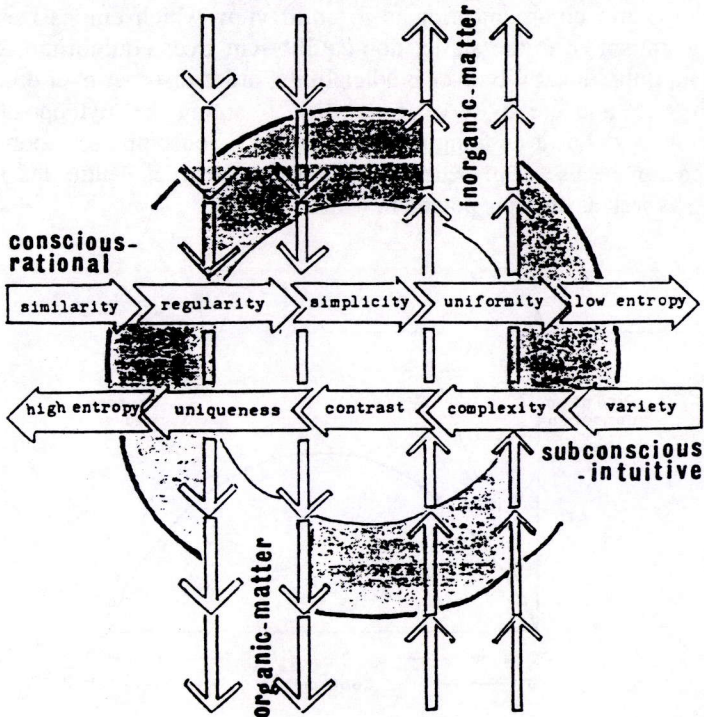

Figure 3: Communication Model. Source: Minai, 1984

Mythopoietic communication, therefore, is a more global communication system capable of measuring information both for a material, self-organizing system and a human being's ethics, and value system. This information is neither measured against neither, order nor disorder alone, but a range of combinations of the two. It is composed of a complementary characteristic of novelty and confirmation. The relationship can be seen in following figure Pure 100% novelty, or all unique messages do not carry

meaningful information, only noise. Pure 100% confirmation does not say anything new but only what is known, therefore, it contains no new information. However, a range of situations between the two poles gives varieties of "characteristic information" based on whom it is going to be meaningful to. Whereas the right side of diagram (100% confirmation) shows what is information to Shannon, the other end of the diagram is what is information to Brillouin. Jantsch has established a connection between this mythopoietic information, which, after Ernst and Christine von Weizsacker, he calls pragmatic information, and the ordering principles at work are equilibrium and non-equilibrium structures. As shown in the diagram, a 100% confirmation corresponds to a system in thermodynamic equilibrium. At this point, where pragmatic information becomes zero, it is the correlate of the impossibility of bringing about any directed effect in equilibrium. The point of 100% novelty may be interpreted as the instability phase in which stochastic processes cease to confirm to the old structure and have not yet established the new structure. In between, in the balance between novelty and confirmation, we find the domain of information.

Mythopoietic communication is a world view which emphasizes process over structure, dynamism over the static, non-equilibrium over equilibrium, evolution over non-evolution, unpredictability over predictability, order-disorder over order, spontaneity over permanence, and creativity over stability. Adapting the mythopoietic or aesthetic communication model as a unifying umbrella, I believe, encompasses potential descriptive values, which can be useful in better describing the order of nature and mind and their relationships, as well as entropic potential, which
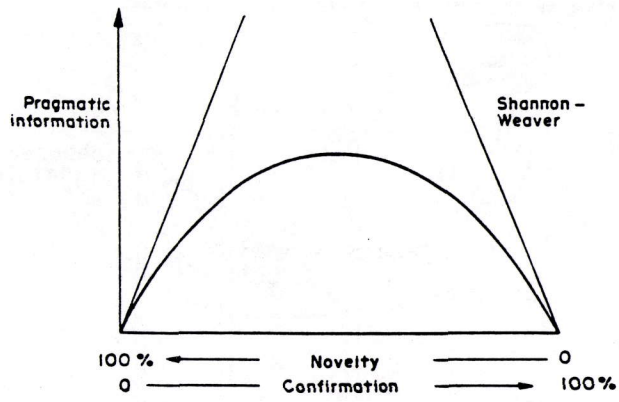

Figure 4: Information is Composed of Two Components, Novelty & Confirmation, and reaches a Maximum when both Components are Balanced. Source: E. van Weizsacker, 1974.

not only measures rational and logical objective orders in quantitative terms, but also measures random patterns, fuzzy logic, the intuitive and the subjective in qualitative terms. Chance is accepted as playing a fundamental role in the functioning of the universe. Aesthetic communication encompassing the overall experience of man could be a playing

field of predictable and unpredictable probabilities or "chance and necessities" built into circumstantial entropies potentially capable of moving in all directions.

I therefore suggest that a mythopoietic communication of the mind and nature goes deeper than the objective surface. It is perceptive and hermeneutical in nature and it is the only overall umbrella that ties together all human endeavors. This communication is similar to what Heidegger refers to when he says "on the things themselves," i.e., things are out there rather than something superimposed by the human ego, and mythopietic communication is this text of things out there. This text is nothing but things that, "are perceived states of the world; they refer to unexhibited, often unexhibitable, world possibilities. They always presuppose, moreover, a background world, necessary for interpretation, and against which they are understood"(Minai, 1993).

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