

# Aesthetics, Information and Architecture

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## Abstract

Aesthetics has been defined relative to objective and subjective values; its historical and cultural world views are referenced. The author's view of beauty as communication is also introduced, where chance and necessity, the two antithetical realities produce the information processes of modern time. That is, "difference" is associated with chance, the irrational, the spontaneous and the individual aspect of reality as opposed to necessity, the rational, the formal, and the universal aspects of things. Information is introduced as, the origin, as well as essence, of life. It is what produces information and is the only agent which produces both matter and psyche. Order and disorder, and the laws of "opposites" are considered building blocks of identity and difference and information. Information and communication as an interconnecting agent are also considered a bridge between eastern and western philosophy, i.e., in its deconstruction of the particular into a web or field of energies in the West, and in eastern thought in its becoming one with Nirvana or Brahman, the Sufi or the Tao, the ultimate one and all. Because goodness and truth under the influence of reason and science had failed, eastern philosophy as an alternative to western models is recommended. It is suggested that all that is left objectively is beauty, thus reason as basic is giving way to rules of beauty. And its principles are capable of describing man's evolution and his culture, as well as his aesthetic experience, which is nothing but information processes and communication. In conclusion, design as aesthetic communication is introduced as a model to reflect the above principles.

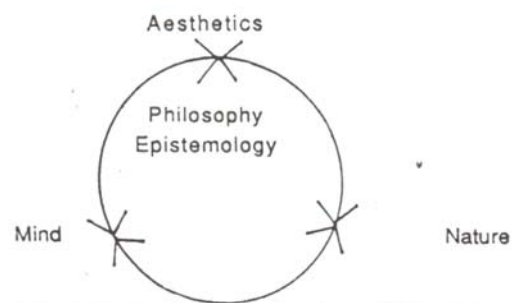
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## Aesthetics, Mind, and Nature

Throughout the history of the western world aesthetics have received a diversity of definitions, each representing an orientation or school of thought, that being naturalist, expressionist, cubist, etc. All of these could be generalized to have come from the interaction of mind and nature. Each viewpoint also falls in somewhere on a spectrum between two poles (Fig. 2).

Reflections of mind have two poles, subjective and objective. Subjective means that beauty is in the eye of the beholder, objective means that beauty is something universal, independent of individuals or cultures.

Reflections in nature also have two poles, atomist and structuralist. Atomism, meaning beauty can be referenced to individual objects, or isolated pieces, or segment independent of the context or the whole. Structuralism and contextualism meaning that beauty is a matter of the context and does not mean anything in isolated pieces and independent of context. These two correlate with semantics and syntactics in language.



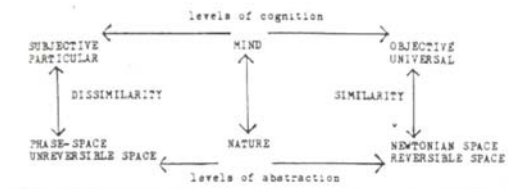
**Figure 1.** *Aesthetics as communication of mind and nature.* Source: Asghar Minai, *Aesthetics, Mind, and Nature*.

In the past each school of thought, or historic period, or style, emphasized one or a combination of some of these views in descriptions of their definitions of aesthetic objects. No doubt, each of the orientations represent the whole picture of beauty at a given time and culture. The problem arises when a multicultural orientation, and a world view is sought. Kant, for example, looked for a world view, and his answer is found in his reflective philosophy emphasizing the interaction of mind and nature and defining the objective world as reflective process. In other words, he defined beauty as something negotiated between mind and nature. "Beauty was the quality that an object has, regardless of its use" (France, 1920).

Existentialism, another school of thought, asserted that beauty was "a biological phenomenon related to human needs" (France, 1920), and therefore more connected to man's physio-biological conditioning which belongs to the sphere of nature rather than to the mind.

Hermeneutic philosophies added new dimensions to this complexity by trying to suggest that judgments are interpretive and subject to historic context, i.e., isolated pieces are void and incomplete. The phenomenologists similarly contributed their viewpoint, adhering to the idea that phenomena stand on their own independent of the observer as well as nature. In Heidegger's words, in our everyday dealing with things around us, "things do not appear first as a kind of pure world stuff, as 'raw' beings which would subsequently receive a 'form' of a 'subjective' coloring. Things appear primordially as 'ready to hands'" (Kockelmans, 1965, p. 39).

And finally, for Gert Eilenberger, a contemporary physicist, feeling for beauty is inspired by "the harmonious arrangement of order and disorder as it occurs in natural objects—in clouds, trees, mountain ranges or snow crystals. The shapes of all these are dynamical processes jelled into physical forms, and particular combinations of order and disorder are typical for them" (Gleick, 1987).



**Figure 2.** *Interaction between mind (and its levels of cognition) and nature (and its levels of abstraction).*

For us beauty is "in the 'communication' of all things (including man)—in nature's text, in the very nature of interconnecting patterns of all things," (Minai, 1993). That is, beauty could fall in anywhere as well as being everywhere in the spectrum (Fig. 1).

With computers and information processing technology these days we begin to get still broader definition of aesthetics, and somehow closer to the eastern positions; i.e., we lose the distinction between the hardware and the process. And this could be expanded all over with all the hardwares of life (objects) and their processes (behavior—sociocultural activity).

Eastern views have been different; while they have stuck to their holistic orientation they do not allow inputs of analytic modernist philosophy. Their views of beauty are mixed with undefined properties of mysticism and romanticism. The breakdown here is more in the layers of inner self rather than among the object world.

Aesthetic experience for me finds its definition somewhere between the eastern and western orientation. That is, the ultimate reality is reflected in forms of communication, which includes in it an irrational element, much like Hegel's identity-in-difference principle. Therefore, to introduce it here I have chosen to proceed through an antithetical position toward an appreciated or an understood synthesis. I introduce it in communication terms which best represent the identity and the difference, the opposite properties of the phenomenon.

Aesthetic communication and information theory are used not only to deal with the identity-in-difference, but also to heal the modern bifurcations of mind and matter, arts and sciences, subject and object and east and west. I believe that twentieth century science and humanistic studies have gone beyond the classical, absolute, and

abstract conceptions of the nature of things, whether expressed in Newtonian science or in the rational order of kinds, virtues, and values used to understand human behavior. In both of these areas a more functional, dynamic and contextual orientation has come about, and I propose to apply the same principles developed in information theory to these two antithetical modern realities making, the two sides of the same coin.

Since the ultimate reality for me is "information" then the usual metaphysical problems arise; from the one how did the existing many derive? Unity has no differentiations. Following Hegel, Nietzsche, Heidegger, and Derrida, I emphasize the "difference" principle that is associated with chance, the irrational, the spontaneous and the individual aspects of reality as opposed to the necessary, the rational, the formal, and the universal aspects of things. The emphasis finds expressions in my communication theory, aesthetic theory, and in the connection and similarity I see with such eastern ultimates as found in Taoism, Zen Buddhism, and Sufism. Perhaps the best expression of this is in terms of Hegel's identity-of-opposites.

It is apparent that there is much confusion between "information" and "meaning." And once this distinction is settled, "one is free to think about information (though not meaning) as an objective commodity, something whose generation, transmission, and reception do not require or in any way presuppose interpretive processes" (Dretske, 1981).

Information and meaning could be distinguished as follows: Information is objective, pure, and does not have anything to do with intentionality on the part of sender or receiver. It is any difference and compilation of differences, patterns, forms, structures, etc., out there irrespectively of who is looking at it, using to for whatever purpose. Meaning, on the other hand, has to do with self-referential systems. A piece of information is meaningful when it is matched against our mental information with a positive response. The Christian cross at first was nothing but a geometrical form carrying no meaning. Similarly, as Louis Kahn noted, a symbol is not what we invent, but what it becomes. He says "I can not build symbolically. But I hope my building does become symbolic." That is, he makes information systems, but the very same things become meaningful symbols. Neither information nor meaning are absolute; they both exist only in certain relativity between a sender, receiver and certain

referentiality. If for Carl Fredrich von Weizsacker information is only what is understood, then all information could be meaning as well. According to such a position, it is not only a human being who uses self-reference as a base for his judgments; any self-organizing system, as part of its process of self-organization has to make "judgments" against some form of referential system. That referential system, or information, exists "out there" by virtue of the system trying to self-organize, sometimes via some kind of optimization of its information. Selections are done by the system in comparison with something else that could have happened, in order to maintain ongoing unity and structure, as well as organization of a given self-organizing system.

Today with developments in information processing technology on one hand, and developments in cognitive sciences on the other, the separation between subject and object has been reduced to a great extent. The mental threshold once confined only to the brain boundaries, is now considered to extend to the outside world, and therefore the referrer and the referee in the field of self-referentiality are playing one and the same game. Meaning, therefore, once considered the property of brain function alone, is part of the contextuality of the ext of the object world as well. Or, in Bateson's view, redundancy in such a communication text is at least a partial synonym for "meaning." That is, if the receiver, let us say a self-organizing system, can guess on some missing parts of the message (fulfilling its structural integrity or unity), then the received parts must carry meaning which refers to the missing parts.

Information is described by the laws of entropy (Clough, 1977), manifested in both Boltzmann's and Shannon's formulas, which are here called "aesthetic communication."

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

Although this is the view of the founders of information theory, including Shannon, nevertheless, many have read much more into the model, interpretations such as information is meaning, and a qualitative value system.

Information is one's measure of choice when selecting a message. It is based on similarities and differences in given occurrences. With this reading one accepts that the chance involved in information is the essence of freedom and freewill. This freedom then allows

for understanding “how meaning can evolve, how genuine cognitive systems—those with the resources for interpreting signals, holding beliefs, and acquiring knowledge—can develop out of lower-order, purely physical, information-processing mechanisms.” Such a framework would allow us to see that “the higher-level accomplishments associated with intelligent life can then be seen as manifestations of progressively more efficient ways of handling and coding information. Meaning, and the constellation of mental attitudes that exhibit it, are manufactured products. The raw material is information” (Dretske, 1981).

Could we by any chance suppose this transformation is an intelligent act? I think it is and I think our complex mental activities have no other origin but such simple transformations of information formation and transformation. Information is neither an absolute isolated phenomenon, nor something one claims as his own: it is part of the text. “To speak of information as *out there*, independent of its actual or potential use by some interpreter, and antedating the historical appearance of all intelligent life, is bad metaphysics. Information is an artifact, a way of describing the significance *for some agent* of intrinsically meaningless events. We *invest* stimuli with meaning, and apart from such investment, they are informationally barren” (Dretske, 1981).

Contrary to the common belief that information came at the later stages of the evolutionary process let us assume it came first. Such information, of course, does not have any value attached basis on any value system resulting from any pre-existence of intelligent life forms; rather it is just what information theory assumes to be pattern dispositions of similarities and differences in the circumstantiality of nature’s occurrences. Or, in other words, let us assume that information is in patterns of behavior in nature independent of our assigned interpretations. Or let us throw away for a minute any metaphysical existence and go back to bare nature where information is only a by-product of another information, a meaningless event acting on behalf of some natural processes, maximizing or minimizing some performance function. Instead of further restating what I mean by these assertions let me take this idea and compare it with some of the similar concepts presented by some of the philosophers.

This idea certainly differs from what dualists, such as Descartes, have supposed. While Descartes has

assumed matter and mind are two different things, this idea views mind and matter, although not as the same thing, as part of the same natural process of information formation and information process.

A comparison between these ideas and Husserl’s views might result in the closest approximation with the differences that Husserl’s account of phenomenology seems to have with certain “rules” on the part of the phenomena that mind does not assume to presuppose. In other words, the picture Husserl draws of the nature of intentionalities is somehow closer to rational and reasoned behavior than that of, let us say, Heidegger’s, which is more a play of a free agent like our model. Husserl’s intentions are still too value controlled to allow enough room for circumstantiality of information flow.

To search for its origin, we are starting with the prevalues era where all it was, was the flow of ‘information,’ i.e., circumstantiality of similarities and differences in pattern behavior of elements of nature, where there were constantly unfolding oceans of patterns and processes without any value attachment—no meaning, no directionality of any intentional behavior, and therefore no judgment.

The most important notion of information is that all things are *interconnected*. Anything we know and anything we do is part of some kind of a change in some state of these interconnections. The essence of being is considered to be *difference* and difference is the basis for any information. Its most manifested formulation is in physics. A combination of Newtonian ideas of reality and the Cartesian way of looking at the world has dominated our knowledge up to the turn of the century. The view presented here is 180 degrees opposite to this view, and is similar to that of the well known physicist Pauli. His significant observation relative to interactions between quantum theory and psychology reads: “It now appeared that the observation of nature also contained a subjective element—the irreducible link between observer and observed. Likewise, the personal nature of mind had now been shown to contain an objective, impersonal level” (Peat, 1987, p. 102). He indeed stresses the idea that there is a deeper interaction and similarities between matter and mind.

Here neither is the observer separated from the world nor is the physical world made of independent objects and events. Rather, everything is a flow of

information. Objects are material entities, events are dispositions and transformations of these entities, and associations are the interaction and interconnection of objects and events in space and time. Information flow is the single and ultimate form of all of these interactions.

Since everything here is viewed as being interconnected to everything else by manifestation of some forms of information flow, you therefore find not only that there are no autonomous entities or parts but also that there are no means or ends. Therefore, any form, formation, transformation, and its means and ends are part of the same information processes. Self-reference is a clue to everything you might imagine, that is because everything is defined via a reference to other things (including itself). Another characteristic notion of information is that there is no origin and destination or one-way chain of reaction between elements of the system (cause and effects); rather, any difference anywhere in the system is a source of information. Causal relationships are assumed to break down here because linear sequences of causality exist only when one is able to define a one-way interaction between those entities or events assumed to be "cause" and those assumed to be "effect." Here, in a multidirectional system of interaction every cause is at the same time an effect and vice versa; therefore, a one-way direction from A to B does not exist.

Information is the essence of life. It is the only agent which reproduces both matter and psyche. In linguistic terms that means it is the textual information process which produces a text and nothing else: Derrida supposes, "there is nothing outside of the text (Megill, 1985, p. 332). Cosmic system is viewed as "*information field*"; that is, there is nothing which is absolute. As Mackay reports, everything is defined as the state relative to all the other states, a system within which there are "no detachable parts, indeed no enduring, unchanging parts at all" (Johnson, 1988, p. 182).

Modern views of language are analogous to the notions of information system used here. This view of language was begun by Ferdinand de Saussure and further developed by his successors Levi Strauss and later Chomsky and others. The structure of the language is a more important function of a language than the elements of structure, the in-between the lines, the mosaic of inner meaning of a culture that its language becomes meaningful. Language is an "integrated nondivisible whole." Language systems are not to be "regarded as

collections of discrete semantic units, but as unified systems in which meaning derives from the relational exchanges between signs. The effect of this view was to locate meaning not in a one-to-one correlation between the sign and its external referent, but in the relation between signs" (Hayles, 1984, p. 22).

This idea of linguistic integration goes to the extent that Derrida describes the text as the beginning and end to any meaning. "There is nothing outside of the text." The assumption is that meaning in a literary text is derived not from a mimetic relationship between the text and "real life" but from the internal structure of the literary codes.

## IDENTITY AND DIFFERENCE AS SOURCES OF INFORMATION

The notion of identity and difference although used differently, is a key concept both in Hegel's philosophy and in Shannon's information theory (Taylor, 1986). Here this idea actually becomes the theme. Difference is information; information is everything. For Hegel spirit is "pure self-recognition in absolute otherness" (Taylor, 1986, p. 8). This view of spirit in his philosophy comes to being only at the "*union* of the union and nonunion." It is only in the interconnection of identity and difference where the union of ideas and spirit is born. To me information theory, on the other hand, is the only complete explanation of the nature of things which targets its very existence on the idea of difference. Order and disorder, the major characteristics of any difference, are the building blocks of the theory and entropy, the only full description known to me to mediate between the two sides of the "opposites," has the capacity to transform back and forth between the opposites. The assumption is borrowed from Shannon's information theory that chance or potentiality of having something or its otherness is hidden in the very choice which is the basis for creation of information. This is similar to Hegel's idea that "each contains its *own other* within itself and both are joined in a complex reflexive structure of identity-in-difference" (Taylor, 1986). In his philosophy Hegel "tries to avoid two opposite extremes. He wants neither to collapse difference in identity nor to dissolve identity in difference" (Guppy, 1964, p. 358). Nevertheless, in information theory such concern does not exist because the basic principle of the theory is the essence of this difference. The highest probability of

occurrence of an event corresponds to the lowest probability of its otherness and therefore there is no need for reconciliation.

This speculative concept of the world is also present in Zarathustra's views and their manifestation in Hegel and Nietzsche, neither of whom consider themselves nihilists as some interpreters have done. Information theory in its broadest perspective is an explanation to these people. In information theory, difference is not a judgment in favor of one side or the other, but rather the essence of being and being in difference. As Nietzsche assumes, for Zarathustra none and all are equal. He says: "*When I spoke to all I spoke to none*" (Taylor, 1986, p. 16). For Hegel this concept is the actual logos or the structure of everything that is. And for Nietzsche, "consciousness is inevitably relational, there can never be only one force but always must be at least two forces." Therefore, for him "force is actually a play of *differences*." This dialectic notion of difference in Zarathustra, Hegel, and Nietzsche, therefore, is not just some ideas or concepts but rather is the essence of reality. In short, to them existence is born out of this difference (Taylor, 1986, p. 9).

Since for me the ultimate is information and the continuous process is aesthetic communication, then everything is interconnected with everything else and nothing is independent. Aesthetic communication is like a game; it's like the game of life, which evolves from circumstances. This means that the self is not a closed package with fixed boundaries; rather, the explanation of any phenomenon is as a flux, described in field theory, where all relations are internal, similar to what comes from the concept of "emergence," a sense of coming from everywhere without walls, separation and barriers, a sense of circumstantiality, spontaneity, unpredictability, and open-ended horizon, or to what Langton termed "the new 'Science of Complexity': a kind of grand unified holism that would run the gamut from evolutionary biology to fuzzy subjects like economics, politics, and history" (Waldrop, 1992).

Western science in today's world view tends to deconstruct the particular into a web or field of energies, but eastern thought has always advocated the denial of particularity and desire, aiming at becoming one with Nirvana or Brahman or the Tao, the ultimate one and all. Or in the Sufi tradition, one living in the realm of the particular must begin from the particular in order to reach the universal through revelation.

With the emphasis upon "difference" one might expect individuality to assume the importance it has in Western thought, but such is not the case. Instead, whatever individuality might arise through chance, choice, or novelty is intuitively grasped aesthetically in terms of the mystical patterning of identity-in-difference that is beauty. This is somehow between neoplatonic orientation and Suhrawardi's innate way of seeing, that is, by not knowing things either by definition (Aristotle) or sense perception (Plato).

In Plato we have as most ultimate the good, the true and the beautiful given expression throughout the hierarchical order of kinds of reality. In Suhrawardi we know things not by mediation (either definition or sense perception) which necessitates separation of object and subject, but by "knowledge of presence" (Corbin, 1977), an innate experience—and through the essence which requires the union of object and subject. That is when consciousness and self are the same. This is close to what Langton and the artificial lifers refer to when they say that "the essence of life is in the organization and not the molecules" (Waldrop, 1992, p. 292). Or what Farmer says: "Life is a reflection of a much more general phenomenon that I'd like to believe is described by some counterpart of the second law of thermodynamics—some law that would describe the tendency of matter to organize itself, and that would predict the general properties of organization we'd expect to see in the universe" (Waldrop, 1992, p. 288).

For me, with my ultimate web of interconnectedness, and with all I assumed went wrong in western cultures and their linear thinking, all that is left objectively is beauty. Truth has fallen by the wayside with the removal of reason as basic. Goodness is removed from cosmic significance, from objectivity, because the reality of perfected kinds is supplanted by the levels of interconnected patterning, from the ultimate down to the least difference, in which each is what it is with no good or bad, perfection or lack of it, appropriate to it. Good and bad are all part of the accumulation of culture and therefore they are subject to their contextualities, settings, and points of references from which they have originated.

With this orientation, while there is the dynamism of identity-in-difference throughout, there is no real time or change involving duration and development. History as a sequence, a developmental reality, is an illusion. There are no means-ends relations, only patterns of identity-in-difference, some wider, some narrower, but ultimately all

interconnected with all. Much as in virtual reality or the emergent world, collective patterns, there are paradigms which, as in eastern mysticism, are local rules (individuals) making global or universal dynamics, in a world where everything reflects the cosmic information. This reflection in man has the advantage of being active and having presence. Therefore, in this study, we want to look into "the possibility of adopting an eastern philosophy with the idea of the world of ever changing processes of inseparable states, inseparable from their 'origin,' i.e., creation, and their 'destination,' i.e., elimination and destruction, as a flow of ever changing differences of information processes" (Minai, 1993). Because goodness and truth, under the influence of reason and science, have become so obsolete, abstract and inadequate, only beauty remains as expressive of anything real. That is, it is not only in the eye of the beholder.

The quest of modern science and the Age of Reason has been for the good in the name of the human condition, and while our modern orientation needs reworking from almost the ground up, to reinterpret that quest from an eastern and basically aesthetic perspective, what should be done is to render meaningless the realities up which the western quest has been based.

It is claimed that chance is a major player in the processes of the universe and human experience. It is also claimed that within the seeming randomness of today's world view of life that is an "order" (Minai, 1989), which is more meaningful than the order imposed by formal rationality and which constitutes aesthetic forms and experiences. In this order, as described by "field physics" (Minai, 1984), everything including human choice and free will is subject to "chance," which itself is a necessity. The presence of chance in life and art forms provides room for choice alteration, deviation, and change. These are the necessary conditions which allow for variety and higher levels of complexities and thus, creativity. Creativity exists only where there is a choice and possibility for change. This allows for a breaking of the rules and a replacement of the old with the new. Creativity is an inherent order within the uncontrollable/unpredictable/intuitive experience. Creative forms take shape at the crossroad of patterns of order and disorder (Fig. 3).

Random patterns are no longer seen as anomalies and should become important facts in the description of aesthetic form. Such properties hidden in the structure of any art form distinguish it from non-arts. As

Langton says, "the mysterious 'something' that makes life and mind possible is a certain kind of balance between the forces of order and the forces of disorder" (Waldrop, 1992). In other words, he's saying that you should look at systems in terms of how they behave instead of how they're made. And when you do, he says, then what you find are the two extremes of *order* and *chaos*.

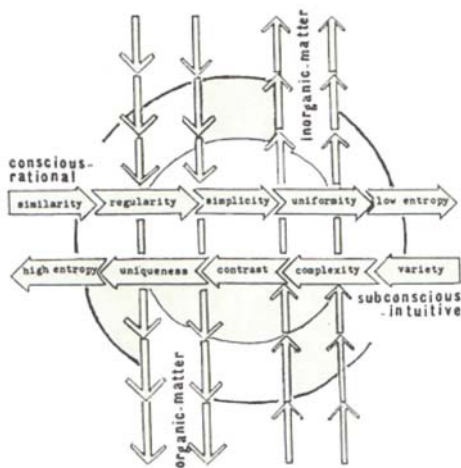
The alternative—the complex approach—it total Taoist. In Taoism there is no inherent order. The world started with one, and the one became two, and the two became many, and the many led to myriad things. The universe in Taoism is perceived as vast, amorphous, and ever-changing. You can never nail it down. The elements always stay the same, yet they're always rearranging themselves (Waldrop, 1992).

Similarly, Prigogine and his associates in their notions of "dissipative structure" (Prigogine, 1983), and "order out of chaos" (Prigogine, 1984), talk about the same irreversible processes. Nevertheless, many are still offering reversible process as explanation for man's culture and its aesthetic reflections. This would mean that because they assume such processes are reversible and predictable, then for its measurements they use methods and techniques which are incorrect. For our purposes of measurement and comparative analysis of culture, and its manifestation, aesthetic experience, we no doubt have to accept irreversibility as a fundamental function of evolution and culture and therefore accept its studies as dynamic processes involved with complexities not fully explainable. And if something is unpredictable and unexplainable it can not be advocated for use as a model of progress. This is reflected in the works of Szathmari when he searches for the origin of life, he supposes: "Our *biological* knowledge must be extendable *downward*, and our *physio-chemical* knowledge must be extendable *upward* to reach the no man's land between the realms of molecular chaos and biological order" (Eros, 1989, p. 169). In other words, life could be found at the crossroad of where order and chaos meet, through "the operation of non-evolutionary self-organizing processes (such as those described by synergetics) and evolutionary transformations *sensu stricto* resting on the action of natural selection" (Szathmari, 1989).

From an evolutionary point of view organisms have two major components: replicators and interactors. While the former is reproduced through material processes, the other is not. From the theoretical biologist's point of

view, on the other hand, the first is metabolic, that is, consumes material and energy, and the other is "a programme-controlling device." The metabolic subsystem

Is a dissipative one; it assumes a far-from-equilibrium state, maintainable only by energy consumption and entropy production. In contrast, the programme-controlling subsystem, although inactive without energy consumption, is essentially a non-energetic entity. It is the *information* rather than the matter or energy that matters; widely different programmes can exist at (roughly) the same energetic level (Eros, 1989).



**Figure 3. Communication: A design model.**  
 Source: Asghar Minai, *Design as Aesthetic Communication*. This is a metamodel: of a metaphoric representation of a holistic picture of interactions between the opposite forces in nature, i.e., "identity-in-difference." Horizontal arrows represent the dialectic nature of dichotomy of opposing features of conscious-rational, and subconscious-intuitive mind. The vertical arrows represent the opposing natures of organic and inorganic phenomenon where the life forces tend towards an increase in order and the inorganic tends towards an increase in disorder. The design process in its broadest definition, whether a function of the designer's mind, or as a function of an atom, an organism, or even the whole cosmos, is the interplay of all of these forces and takes place

where the laws of entropy (information and communication) negotiate.

Similar to Van der Leeuw we have come to the conclusion that man's evolution as well as his culture, and aesthetic expression, as described in adaptation is nothing but information processes involved in matter, energy, and information, or objects, events, and associations. These are all components of communication systems which describe the world in forms of complex fields of interactions, where every single element is unique in its contextual setting and therefore its behavior. Or "matter, energy and information cannot be perceived or studied independently" (Van der Leeuw, 1981, p. 234). In other words it is only in the nature of the text, the context through which we could be able to see things. It is in this regard that Tverski and his associates propose their cumulative hierarchical nesting of information. To describe this concept the following points are given:

1. Similarity and dissimilarity should not be taken as absolute.
2. Judgment occurs by comparing the subject with a referent. Generally, the subject receives more attention than the referent.
3. Judgment is directly constrained by a complex (such as the other subjects or other referents around the one under scrutiny).
4. Whether a judgment of similarity or one of dissimilarity ensues is also constrained by the aims of the comparison (Van der Leeuw, 1981, p. 235).

One these bases Van der Leeuw offers the following model of perception (Fig. 4). He says, a first comparison of phenomena always takes place without any context because there is no precedent or context. There is no established rule for similarity or dissimilarity, only equality. Once the initial comparison had established a relevant context (i.e., patterns of similarity or dissimilarity), this context is tested against other phenomena. In such comparisons, "the subject is the pattern, the similarity, the referent is the phenomenon. Thus, there is a distinct bias in favor of the context, and of similarity. Once the context is firmly established, and no longer questioned, it is the referent in further comparison" (Van der Leeuw, 1981).



Such comparisons are of course biased towards the individual phenomena, and towards dissimilarity. When a large set of dissimilar phenomena are registered, the initial bias is neutralized. That is, the initial context is no longer considered relevant, and new judgments establish new context. This is exactly how "field theory" and "information and communication" concepts work. Information is driven out of context, out of similarities and differences established by the patterning of field or communication context. In other words, among humans, and between humans and

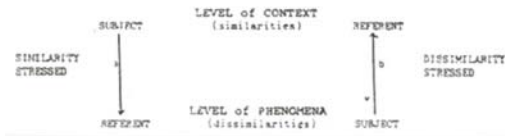


Figure 4. Schematic representation of conceptualization based on interaction between two levels of cognition. Source: S. E. van der Leeuw. Archaeological Approaches to the Study of Complexity.

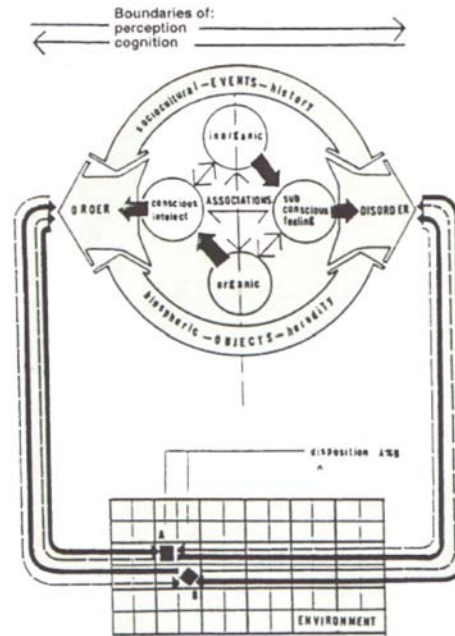


Figure 5. Communication process between the mind and the environment through pattern characteristics: order versus disorder. Source: Asghar Minai, Design as Aesthetic Communication. A metamodel representing the interaction between the mind and the environment. The upper part of the model represents factors involved in mental processes (see Design Model, Fig. 3). The grid shown at the bottom represents the environment. The arrows connecting the two parts represent the communication process. These processes constitute a dialogue between the causal and physical processes (autopoiesis) between the mind and the environment. This dialogue negotiates (evaluates) the juxtaposition of environmental configurations, e.g. A & B (is it to be A or B) as well as, the Juxtaposition of internal processes (learning, knowledge adjustment, etc.) balancing actualities and potentialities. The arrows at the very top show that there are limits at the two ends of the spectrum of cognition and perception. Similar to the sensitivities of our ears and eyes, our mental activities best function as a certain range on this spectrum of perception and cognition. This range varies from person to person, as well as from culture

to culture. That is we have certain conditioning in our susceptibility to degrees of predictability, order and disorder.

Object world "channels originate among humans by the transmission of information itself. *Information flows are self-structuring*" (Van der Leeuw, 1981).

It is therefore suggested that a more prestigious position be given to the role of chance in formulating a definition of aesthetics and art forms, whether they be music, dance, plastic arts, architecture, film, or literature. This high position is held in field physics, information theory and the theory of chaos, where the availability of choice provides each point of a field space with relevant information and, thus, communication. This choice is based on the dynamics of the structural characteristics of a pertinent environmental context. This communication as a subject of human association, i.e., perception and cognition, results in symbolic information and human communication. Associations reflect processes of conscious and subconscious mind which are similarly ordered and disordered. The resulting picture of the reflected environment takes shape at the edge of order and disorder (Fig. 5).

Such a process in any artistic experience comprises two levels of an inseparable psychological whole dealing with intuition and cognition. These opposite yet complimentary halves are identified as having control over the rational/logical side of the process and the nonlogical/intuitive side. Harmony is attained where the halves are balanced, not only in communication arts, but throughout the continuum of life. The halves can be identified as morphic and entropic. Morphic is analogous to the rational/logical, having a specified comprehended form or shape. The entropic is analogous to the random/unstructured (logically)/uncomprehended, having the quality of a system undergoing change. This balance between the amorphous and the concrete or order and disorder is what constitutes an art form. The disorder/unexpected/unpredictable which cannot be explained by reason or logic. The power of perception which is the source of a creative act, goes beyond intellectual reasoning and cannot be replaced by logic and objectivity. While intelligence and formal rationality search for logical order, aesthetic experience searches for a higher form of "order" (structured randomness) in the midst of certainties and uncertainties. The first is a science and the

second is an art. The art is a harmony in the synthesis of the opposites, and unity of the diversities.

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