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DECONSTRUCTING REALITY

> "If a lion could talk, we could not understand him". (Wittgenstein: *Philosophical Investigations*, p. 223 e)

REALITY

The word "real" (from the Latin "*res*" = thing) was coined in the 13th century to signify "having Properties" (Pierce, 1958, p. 358), whereas a "model" refers to an analogical representation, the structure of which should correspond to the structure or properties of that which it represents. For Scudder the mind is a system of models and each mind develops different models. We all have a different reality in mind and so we each live in a slightly different world (Scudder, 1975). Hence the real nature of the model and the model nature of reality are often indistinguishable. A snail, for example, when exposed to four tactile stimuli per second (with a rod on his belly) will be compelled to crawl upon that non-existing coherent spatial surface (Brecher, 1966). For the snail four tactile stimuli per second correspond to, or are isomorphic with, the structure of a spatial surface, but it is impossible for the snail to "know" which of the two structures is real.[1]

Is our competence to discern properties—or to make distinctions

[1] Nobel laureate Abdul Salam (1981), in an essay on ultimate explanation in physics, while discussing the successive attempts to uncover the underlying reality of the physical world, entertains the suggestion that we in fact live on a cylinder in eleven-dimensional space, whose extrageometrical dimensions are manifest to us as what we normally take to be fundamental physical forces.

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—the form of knowledge? Is our knowledge of objects identical with our knowledge of the truth of propositions about them (Rorty, 1982)? Perception of the sweetness of sugar is based on our interaction with a sub-stance, a structure that becomes sweet "superstructure" only when tasted. Without being tasted, seen and touched sugar is devoid of properties, and hence is not "real". Are secondary qualities ultimately (only) in the mind, and "nothing in the objects themselves" (Locke, 1690)?

The paradoxical injunction, or double-bind involved in the creation of reality reveals itself in its two oscillating aspects:

> sugar is not sweet (in itself and for itself),
> sugar is sweet (if tasted by an observer),
> hence sugar is sweet and not sweet.

Our only way of knowing the quality of sweetness in sugar is through interactive perception-cognition, that is, by tasting sugar. Sweetness is not a quality that stands on one side and perception "cognition on the other side, for itself and separate from the absolute", to use Hegel's words (1892, pp. 170-171). Sweetness is the result of an interactional process that creates brand-new information. In this example its proof is in the tasting (and eating) of the fruit of knowledge.

In order to evade the schizophrenic double-bind (Bateson, *et al.*, 1956) that "sugar is sweet", a double-bind that is against the rules of Aristotelean or two-valued logic, we assign the property of sweetness to sugar as a matter of routine. But in Aristotelean logic an object can be *either* sweet or not sweet and has truth-value only if it has properties. Moreover, the structure of language constrains us to start out with a subject noun whose action is expressed in an active verb. This pervasive structure divides the world into distinct entities or fixed and static particles. Blessed with all these restrictions-prescriptions, we have to give in and assign sweetness as a property to sugar, exclaiming at last: "Sugar is sweet".

Another untrue "compromise" (with truth-value!) is to reverse the process and assign the sweetness of sugar to its taster. This indeed seems to be the case with adherents of the Tibetan Tārā cult (Beyer, 1973, p. 99). After years of practice the Tantric Master "reverses the process by which the world appears, and hence

becomes its master". By dissolving non-reality "back into Emptiness, he creates a new reality that he possesses in its essence" (it is he who tastes sweet and not the sugar).

DECONSTRUCTION I

Both Western and Tibetan Tārā traditions define sweetness as a property of either a tasted (object) or tasting (subject) whereas deconstruction—a contemporary method of textual interpretation —defines the one through the other within a process forever in motion. There is a dialectical interpenetration of subject and object that defies the logic of identity, of either/or, through its emphasis on the logic of supplement, of both/and (Sampson, 1983). To deconstruct a discourse is to show how it undermines the philosophy it asserts, or the hierarchical oppositions on which it relies, by identifying in the text the rhetorical operations that produce the supposed ground of argument, the key concept or premise (Culler, 1983, p. 86).

The main tenet of deconstructive thought is that writing requires an act of suppression in order to come into being. What the text says is based upon what its author had to suppress, in order to say it. Or, the mind suppresses the secret of its functioning from itself in order to function. Being a biological imperative, self-deception is the most perfect deception. This was already hinted at by Daniel Dyke, Protestant clergyman, who published his *Mystery of Self-Decieving* in London, 1615. In our days, and according to the "functionalists"—for whom the mind stands to the brain as a program stands to a computer—self-deception is a consequence of the division of the mind into a conscious operating system and an unconscious battery of parallel processors (Johnson-Laird, 1983, p. 476). The capacity of self-deception may even be a diagnostic sign of conscious organisms. The unconscious is structured in Johnson-Laird's model (not "like a language", as Lacan asserts, 1968, p. 251) like a parallel processing battery of algorithms. In any case, i.e., irrespective of any theory—self-deception has always been with us and is here to stay since we are constantly subjected to a two-fold task and compelled to reconcile both adaptation of ourselves to a world, and making that world adapt to ourselves.

The burden of this "double-bind" is already evident on the percentual level. Let me elaborate.

We know nothing of our own behavior but the feedback effects of our own outputs (Powers, 1973; Fischer, 1973). To behave is, therefore, to control—what is sensed as—perception (i.e. input). But what is an input? What our muscles react to, for example, is not the stimulus but the difference between feedback and stimulus. This difference (if any) is the input that calls for a response, and behavior intends to reduce this difference to zero (Powers, 1973). Preconscious processes rank-order the sensory input and feed forward into conscious processes inspecting only those sensory data that are relevant to the implied behavior. Cognition is the process of inspection of this restricted set of sensory data and rehearsal of its behavioral consequences (Wall, 1974, p. 405). All data, therefore, that are not available for conscious inspection will be repressed, denied, or misperceived. Clearly, self-deception is an integral part of the behavioral control of perception, i.e. the effort to have the world adapt to our capabilities.[2] In this sense, self-deception has proven to have survival value.

How much self-deception goes into a "text of everyday life" (Schrag, 1980) that is meant to reflect "external reality?" There are a hundred million sensory receptors in a human organism, and about ten thousand billion synapses in its nervous system. Hence, in an oversimplified way we may assume that we are 100,000 times better equipped for adjusting internally than adapting to external changes. Accordingly, "we are forever telling stories about *ourselves*" (Schafer, 1983, p. 31), professing that "it is better to *give* than to receive".

Let me attempt now a deconstruction of reality—that symbolic self-interpretation of central nervous system activity—whenever that reality is expressed in the signifying-symbolizing system of our daily language and (Aristotelean) logic. The perceived-experienced bitterness of quinine, for example, (or the sweetness of sugar, the green color of a leaf, or the sound of thunder, and so forth) is neither a property of quinine nor that of the tasting person. The

[2] Science, particularly physics, does this very same transforming of the outer world according to its own image. By transforming increasing portions of the outer world into a laboratory world, physics, no longer explains an observed world, but succeeds in transforming an unobserved world into the preestablished form of scientific inquiry (Pankow, 1976, p. 25).

environment does not contain information; it is the interactive process that creates information. Bitter reality results from and lasts only during the interactive process between taster and tasted. Hence, reality is not a localizable identity "out there" (in the quinine) or "inside us". Reality arises and is created through experience that is both the maker and taker of phenomenal reality. "Experience" may be matter's gradually evolved awareness of its self-interpretation. Be that as it may, the statement "quinine is bitter" is based upon what had to be suppressed, namely that bitterness is a threateningly fleeting interactional process between subject (matter) and (material) object; reality has no permanence; no past and no future; reality is a temporary construct that continually requires the retouching of the present against a backdrop of nothingness.

The above conclusions may be extended to other seemingly opposite polar poles, such as "ants and their anthill", "Self and World", "organisms and social structures", "conscious and unconscious", and "genes and the body they produce and inhabit". In terms of a non-Aristotelean, non-linear view these "pairs" stand for mutual interaction and interpretation involving "mutual causality" (Maruyama, 1976). They jointly create the phenomenon of reality, a generation of time and space, fact and fiction, i.e. a narrative that matter-energy tells to itself about itself.[3]

As Spencer Brown (1969) puts it: "the physicist is himself constructed of the particles of the world he describes". Or, in Valéry's (1957) words: "The mind is as much a creature of physical organs and faculties as the body is a vicarious creature of the intellect".

[3] The structure of events or processes should not be confused with the logical structure of unidirectional causality that prohibits "circular argument". "Mutual causality" exists in many biological, ecological, physical, and social processes. A mutual causal network with feedback loops may be hooked up in such a way that it works to amplify change, counteract change, drift randomly, or any combination of these, says Maruyama (1976). Deviation-amplifying mutual causal processes can increase differentiation, develop structure, and generate complexity.

In contrast to negative feedback systems that counteract deviation, combat decay and tend to converge toward equilibrium, mutual causal systems with internal positive feedback can lead to runaway situations, morphogenesis and evolution of ecosystem and literature.

DECONSTRUCTION II

Deconstruction was born when Niels Bohr had to face the dilemma of a (sub-atomic) entity being both identical and not identical with itself. To paraphrase William and Lawrence Bragg (Laithwaite, 1977), a *wave*-like probabilistic future became transformed in the act of observation "*now*" into a definite past of *particles*, and hence the exclusive identity of a sub-atomic entity could no longer be maintained without violating the principles of Aristotelean logic.

It was the very act of observation (i.e. the interaction with the observed) that created the information, that is the particle-property Bohr was observing. It became evident that without being observed an atomic entity has no properties at all; it will, in fact, have no properties apart from those we impart to it by a particular observation (interaction) or measurement. (We have not forgotten meanwhile that by being tasted sugar becomes sweet in-formation, and, hence "real").

According to the classical (Democritean–Newtonian) ontological principle only the atoms of a macroscopic body are real. Complementarity deconstructs this "narrative" into a story of the illusory nature of the atom and ascribes reality only to the relation between the observed and the observing mind.

Bohr conceived the paradoxical notion of *complementarity* (1926, pp. 350-351) to "deconstruct" the dislocated relationship between non-Aristotelean logic and Aristotelean language. The wave-particle aspects of matter were pronounced complementary *and* mutually exclusive (Holton, 1973, p. 156). Through the metaphor of complementarity Bohr re-established consistency between the order of concepts and the order of signification. Bohr's deconstructionist style may be epitomized by both his well known

[4] The role of observation as creator of structural change is contained in the non-trivial relation between theory and observation. In mathematical statistics a structural change occurs in the expression that denotes observations from a normal distribution when we "eliminate" the theoretical value (the "true mean") and replace it by the *observed* value of the "sample mean" (Thomas, 1963).
The wave-particle nature of the structure of matter reminds us of another most difficult problem, treated in the last chapter of St. Augustine's *The City of God*, a problem that is still awaiting deconstruction. It concerns the resurrection of two bodies, one of which has, through cannibalism, become intimately mixed up with the other (Gordon, 1981).

dictum: «Every sentence I say must be understood not as an affirmation, but as a question" (Rosenfeld, 1945, pp. 12-13), and the legend above the *insignia* of his self-designed coat of arms (the symbol of Yin and Yang): *Contraria sunt complementa* (Holton, 1973, p. 121).[4]

While the wave-particle aspects of matter are complementary and mutually exclusive, position and momentum are *not* mutually exclusive. The *uncertainty* principle of Heisenberg tells us that if we attempt to localize a particle in space (or time), we shall during the measurement process impart to the particle momentum (or energy) within a range of values that increases as we decrease the size of the space-time region on which we wish to focus attention. Position and momentum are complementary aspects in the restricted sense that they cannot both *at the same time* be ascertained with arbitrary high precision (Holton, 1973, p. 156).

The particle—with its two degrees of freedom, its position and its momentum—can be perceived provided that some *uncertainty* remain concerning position or momentum. But if, perchance, all uncertainty should be reduced to zero, the particle will not be perceivable. It will have faded from the awareness of the perceiver like an image held in a fixed position on the retina.

According to Norwich's well documented and convincing "entropic" view of perception awareness is not possible without uncertainty and one can (therefore) never perceive an event whose outcome is certain (this is the phenomenon of adaptation). Norwich's provocative point is that in the microscopic, physical realm the upper limit of resolution imposed by the Heisenberg uncertainty principle becomes identified with the lowest possible uncertainty at which physiological perception can take place. Whether a human being observes nature without the aid of instruments or with the aid of an instrument, the process is in a sense the same. Heisenberg's uncertainty principle is, therefore, valid not only on the subatomic level of perception but on *all* levels of perceptual experience as well (Norwich, 1983). Moreover, I am proposing that the uncertainty principle is at the root of our perceptual *and conceptual* experiences. It is paradoxical that one must be uncertain about or question the existence of a phenomenon before one can perceive it... and at the same time one must perceive before being uncertain (Norwich, 1983). But it is no less paradoxical that

the meaning of the words and sentences of which a text is composed cannot be interpreted until one knows the meaning of the text as a whole... and one can only come to know the meaning of the whole text through understanding its parts (Stent, 1981). Or in Pascal's words: "*Tu ne me chercherais pas si tu ne m'avais trouvé*" (1963, p. 401).

To break this vicious circle hermeneutics invokes the doctrine of pre-understanding (Vorverständnis), representing the life experience and insight that the reader must bring to the task of interpreting a particular text (Coreth, 1969). Hence, understanding a text means interiorization of meaning, i.e. self-interpretation.

DECONSTRUCTION III

Writing narrative fiction is not an act of communication but the creation of literary reality, a reality that is written in "unspeakable sentences" (Banfield, 1982). Fictional reality is a codified reflection of the author (-observer)'s state of consciousness. Consciousness enters, and permeates its own narrative creation—while object and subject of consciousness become identical (and not identical) with themselves—in analogy to the world of factual reality that does not exist apart from ourselves.

For the physicist-cosmologist Wheeler (1977) the past has no existence except that it is registered in the present. The past has no existence except when it is permeated by consciousness and thus embodied in the *persona*. Hence, reality becomes "the remembrance of things present" (Fischer, 1976).

The relation between a narrative text on the one hand and writing-reading and literary criticism on the other may then be compared—in paraphrasing Wheeler (1977)—to the relation between the creation of a universe and the existence of observers that will evolve from that creation. "So God created man in his own image..." (*Genesis 1*: 27).

To the medieval mind, it seemed that the Creator had manifested His will in two texts: in the "Book of Books" and in the "Book of Nature". The Bible was actually and literally a book, whereas the "Book of Nature" had to be "read" through the metaphors of the sensory world (Burckhardt, 1968, pp. 286-288). But in time both

books were deconstructed to what they are now, monumental fictional contexts, and Science has taken over the hermeneutic interpretation of another version of the "Book of Nature": the Book of our *own* Nature. Does this Book constitute Nature's self-interpretation? Since reality is an interactional observer-dependent, consensually validated fictional "text of everyday life", its "Laws" are likely the reflection of our own Nature. But not forever, says Wheeler (1980, p. 372). Laws cannot stand engraved on a tablet of stone for all eternity. Not only does the observer alter the observed by the act of observation; the laws of physics and the laws of logic that describe such interaction are also temporally created by what precedes them: a historical series of observer-dependent relation events, out of the statistics of billions upon billions of acts of oberserver-participancy each of which by itself partakes of utter randomness (Wheeler, 1980, p. 363). Hence laws too are the remembrance of things present (Fischer, 1976). To read history is simply to read a "textual chain, the structure of substitution". It is to recognize "that there is nothing outside the text", the text has no center beyond itself, for "there is nothing outside of the text" (Derrida, 1974, p. 158)... "the text" (the world) "is simply there".

Löfgren (1981), a Derridean "*malgré lui*", also considers life as an autolinguistic phenomenon, and distinguishes a hierarchy of cerebral languages, ranging from the lowest genetic description-interpretation processes (for example, transcription of the DNA-code, a language that does not depend on cognition) to our daily language of thought. There is a striking structural similarity between the genetic code and our daily language (Doerfler, 1982), a similarity that gives rise to the question to what extent and in what way DNA sequences may be related to the innate specifications (the universality) of human languages.

In what ways is the universality of the genetic code, its program or the *logos* (Fischer, 1979) that "was in the beginning"—related to the narrative texts that the brain writes about its own functioning? Sacred myth, folktale, epic, romance, legend, allegory, confession, satire, and, for the past two centuries, the novel (Scholes and Kellogg, 1966, p. 3) may be considered texts that the brain writes about itself. Literature then, is a sea of self-observations with recurring tides, the feedback of history. Are stories indeed intimate

confessions, self-observing monologues that the brain conducts with itself about itself? Do we exist as selves because of self-registration? Very much so! Quinine becomes bitter reality only by being tasted. Facts exist only when pinned down by statements which describe them (Popper, 1946, n. 60). And a five billion light years old galactic explosion has no existence except as recorded in the present (Wheeler, 1977).

* * *

Can deconstruction itself like psychoanalysis, according to Blood (1983, p. 1328) escape the effects of what it endeavors to deconstruct? Must not deconstruction partake of—repeat—the dislocations it seeks to describe? What is a deconstructed text good for? By uncoupling logical structure from rhetorical structure in the ortho-language of a text, the meta-language of deconstruction enables us to perceive in *both* languages the self-deception, the uncertainty and undecidability that emerge from their interpretation. Is deconstruction a test to breaking point of the communicative power of language?

Consider, for example, de Man's dealing with a passage in Proust's *À la recherche du temps perdu*, where the narrator claims that through reading he can have truer access to people and passions, just as by remaining indoors he can grasp the essence of summer more intimately and effectively than if he were actually outside (Culler, 1983, p. 243).

The passage, according to de Man (1980, pp. 14-15) contrasts two ways of evoking the natural experience of summer and unambiguously states its preference for one of these ways over the other. The preference is expressed by means of a distinction that corresponds to the difference between metaphor and metonymy,... the aesthetic superiority of metaphor over metonymy... Yet, a rhetorical reading of the passage reveals that the assertion of the mastery of metaphor over metonymy owes its persuasive power to the use of metonymic structures (de Man, 1980, pp. 14-15).

The deconstruction does not occur between statements, as in a logical refutation or dialectic, but happens instead between, on the one hand, metalinguistic statements—in the text—about the rhetorical nature of language and, on the other hand, a rhetorical praxis

that puts these statements into question (de Man, quoted by Culler, 1983, p. 245).

Hence, deconstruction seems to reveal the referential constraint of the text, that is knowledge about the mechanics of knowledge (Gasché, 1981, p. 45). Within this context deconstruction appears to echo the rhetoric of the serpent in the Garden of Eden. The serpent was holding out to Eve and Adam the promise of an altogether novel kind of "abstract" knowledge... and, indeed, after having tasted the fruits from the tree of knowledge Adam and Eve became conscious of themselves in the very act of seeing. Since then self-awareness also implies a capability of deconstructing the sensory world..., but what is revealed—the "referential constraint of the paradisic text—turns out to be a reflection of the self-reflexive, self-deceiving nature of consciousness. How did the Coptic Gospel according to Thomas (1968) verbalize it? "What is revealed is concealed; but what is concealed will again be revealed".

Evolution of the Logic of Deconstruction

After having deconstructed reality, a few words should be said about the origin of the logic of deconstruction. Where can we trace the roots of this non-Aristotelean logic?

Mahayana Buddhist logic

The Mahayana Buddhist logic holds that things are without substance, experienced existence is momentary and continuous, and things are not self-identical. This logic has been taken over from the Chinese Hwa Yen philosophy that is based on the doctrines of *sūnyatā*, totality (all-in-one and one-in-all) and mind-only, i.e. "coherence".

The transcendental dialectic of simultaneous affirmation and negation is discussed by Chang (1971) who holds that "A is A because A is not A" is a higher truth that can be reached on intelligible grounds. One might say that A is A because A is phenomenally experienced as A, and that A is not A because in so experiencing A there is no way of attributing reality to A. How did Eddington (1958, pp. 147-150) phrase it? "When we take a

structure of sensations in a particular consciousness and describe it in physical terms as part of the structure of the external world, it is still a structure of sensations". Or we may say, in paraphrasing Chang (1971), since unobserved "things" (the sub-structure) become real (super-structure) only by being observed (by me, the meta-structure), it can be stated that "A is A" because my observation makes it A superstructure; and "A is not A" because without being observed it is not a superstructure but a sub-structure.

Western multivalued logic

In the West, 1800 years after the birth of Buddhist logic, multivalued logic was reborn in Mallorca. The usual exordium (in the preamble of fairy tales) of the Mallorcan storytellers (Giese, 1952) is: "*aixo era y no era*" (this was and this was not). And Ramon Llull (or Raymundus Lullus), born 1232 in the Ciutat de Mallorques—known as Palma since the XVIth century—after his religious conversion and illumination experience wrote in the *Ars Generalis Ultima* (1308):

> No stone is visible (for itself and in itself).
> A particular stone is visible (by the onlooker).
> Therefore a particular stone is visible and not-visible.
> (Platzeck, 1962, *1*, pp. 434-5; 437-445).

The formal contradiction that prevails between the two premises is overcome through Llull's discovery that the predication of the first premise is multivalued (*"lex Llulliana"*). The contradiction in Llullian logic is very similar to that of Lupasco's "logic of contradiction" (1941, p. 131) within which neither identity nor anti-identity can be self-sufficient so as to exist independently. Fundamental elements in the logic of contradiction actualize and potentialize alternately, the actualization of the one bringing about the potentialization of the other.

Llull, after his conversion experience, is identical and nonidentical with himself; truly, Llull's philosophy is his autobiography. From the point of view of the "*lex Llulliana*" all abstract forms are real insofar as they appear realized in the individual (Platzeck, 1962, 1, p. 442).

Llull's period, the thirteenth century, was the era of Thomas of Aquinas, Averroes, Maimonides, Roger Bacon, Grosseteste, Marco Polo, Cimabue, Dante, and many others... But the main source of Llull's ideas was John Scotus Erigena's *De divisione naturae* (Yates, 1960, p. 34) where is expounded a Christian philosophy strongly influenced by the Greek Fathers—particularly Maximus the Confessor—and by Pseudo-Dionysius (the Areopagite) who, in fact, was St. Paul's first Athenian convert. Erigena, the loneliest figure in the history of European thought, who lived in a dark and difficult age, the ninth century, tried to integrate these texts in the Latin Christian tradition and particularly with Augustine.

Erigena borrowed from the neo-Platonic world of Pseudo-Dionysius the method of the affirmative and negative theology (*affirmativa et abnegativa*), attempting to unite the affirmation and the negation in one statement, since the Absolute involves both the positive and the negative (Bett, 1925, p. 23). Thus, Llull's logic was developed from the medieval doctrine of *duplex veritas*, or double truth, ascribed to the Latin Averroists and discussed by Erigena. The doctrine asserted, for example, that the Biblical teaching of the world's creation (a theological account), and the Aristotelean contention of the world's eternity (a philosophical account) may both be true even if their logical conjunction leads to a "flat contradiction" (Jammer, 1974, pp. 105-106).

Although Llull did fuse Scotism and astrology into a scientifically organized art, Llull himself was not an alchemist and never used the method for alchemical purposes. But his successors, the Pseudo-Llullis were to do so (Yates, 1960, p. 31). This detour in the historical process through which methods designed for purposes of mystical contemplation turn into scientific or pseudo-scientific methods enabled the process to continue its evolution and transformation into another, a scientifically acceptable "species".

Llull's influence can be traced to the Renaissance neo-Platonists, to Nicolas of Cusa, Athanasius Kircher, Giordano Bruno, Leonardo, Bacon, Descartes, Leibniz, Hegel, Novalis, Mallarmé, Borges and Breton. The first version of André Breton's *Surrealist Manifesto* carries Llull's name and describes the figures of his Art on which concepts are set out in revolving letter notations (Holländer, 1970). What Llull had initiated within the formal-logical domain was at last fruitfully completed in the first half of the twentieth century

by Ivo Thomas, I.M. Bochenski, and J. Lukasievicz (Platzeck, 1962 *1*, p. 224, Note 180).

We have traced the origin of the logic of deconstruction in the West to Ramon Llull and followed his influence up to André Breton. The logic of deconstruction follows the Llullian tradition:

> "Deconstruction is not something" that is "added to the text but it constitutes the text in the first place... A literary text simultaneously asserts and denies the authority of its own rhetorical mode" (de Man, 1980, p. 17).

Considering the endless process of deconstruction that distinguishes it, de Man wonders if a text is "the allegorical narrative of its own deconstruction" (p. 72). And we wonder whether reality, that fleeting and ephemeral creation–"the text of everyday life" (Schrag, 1980) is also an allegorical narrative of its own deconstruction? Or, in Goethe's words (Faust II): "*Alles Vergängliche ist nur ein Gleichnis*".

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This essay is dedicated to Günther Ohloff, friend and "mover of mountains", on his 60th birthday.

REFERENCES

BANFIELD, A. (1982). *Unspeakable Sentences*. Boston, London, Routledge & Kegan Paul.

BATESON, G., JACKSON, D.D., HALEY, J. AND WEAKLAND, J. (1956). *Behavioral Sciences 1*, 251-264.

BETT, H. (1925), *Johannes Scotus Erigena*. London, Cambridge University Press.

BEYER, S. (1973). *The Cult of Tara*, Berkeley, University of California Press.

BLOOD, R. AND WEBER, S. (1983). *Modern Language Notes 98*, 1327-1332.

BOHR, N. (1926). In Jammer, M. (1966). *The Conceptual Development of Quantum Mechanics*. New York, McGraw Hill.

BRECHER, G.A. (1932). *Zeitschrift für Vergleichende Physiologie 18*, 204. In Fischer, R. (1966). *The Voices of Time*. Fraser, J.T. Ed., New York, G. Braziller.

BURCKHARDT, S. (1968). Appendix in *Shakespearean Meanings*. Princeton, Princeton University Press.

CHANG, G.C.C. (1971). *The Buddhist Teaching of Totality; The Philosophy of Hwa Yen Buddhism*. University Park & London, The Pennsylvania State University Press.

CORETH, E. (1969). *Grundlagen der Hermeneutik*. Freiburg-Basel-Wien, Herder.
CULLER, J. (1983). *On Deconstruction, Theory and Criticism after Structuralism*. London, Routledge & Kegan Paul, Ltd.
DE MAN, P. (1980). *Allegories of Reading*. New Haven, Yale University Press.
DERRIDA, J. (1974). *Of Grammatology*. Baltimore, The Johns Hopkins University Press.
DOERFLER, W. (1982). *Medical Hypotheses 9*, 563-579.
EDDINGTON, SIR A. (1958). *The Philosophy of Physical Science*. London, Cambridge University Press.
FISCHER, R. (1973), *Forum* (Amer. Soc. Cybernet.) *5*, 1.
FISCHER, R. (1976). *Confinia Psychiatrica* (Karger, Basel-New York) *19*, 149-173.
FISCHER, R. (1979). *Diogenes 108*, 17-38.
GASCHÉ, R. (1981). *Diacritics 11*, 36-57.
GIESE, W. (1952). *Cahiers S. Puscariu 1*, 137 ff. Reference 135 of Jakobson, R. in *Style in Language* (1960). Sebeok, T.A. (Ed.). New York, The Technology Press of MIT and Wiley.
GORDON, M. (1981). *Diogenes* 116, 70-93.
HEGEL, G.W.F. (1892). *The Encyclopaedia of the Philosophical Sciences*. Wallace, Wm. (Transl.). 2nd ed., Oxford, Clarendon.
HOLLÄNDER, H. (1970). *Westdeutsches Jahrbuch für Kunstgeschichte 33*, 193-233.
HOLTON, G. (1973). *Thematic Origins of Scientific Thought; Kepler to Einstein*. Cambridge, Mass., Harvard University Press.
JAMMER, M. (1974). *The Philosophy of Quantum Mechanics*. New York, Wiley.
JOHNSON-LAIRD, P.N. (1983). *Mental Models*. Cambridge, Mass., Cambridge University Press.
LACAN, J. (1968). *The Language of the Self*. Wilden, A. (Transl.). Baltimore, The Johns Hopkins University Press.
LAITHWAITE, E.R. (1977). *Interdisciplinary Science Rev. 2*, 100-108.
LOCKE, J. (first published 1690). (1975). *Essay Concerning Human Understanding*. Nidditch. P.H. (ed.). Oxford, Blackwell's.
LÖFGREN, L. (1981). In *Autopoiesis, a Theory of Living Organization*. Zeleny, M. (Ed.). New York, Oxford, Elsevier. North Holland Inc. (pp. 236-248).
LUPASCU, S. (1941). *L'Expérience microphysique et la pensée humaine*. Paris, Presses universitaires de France.
MARÚYAMA, M. (1976). In *Evolution and Consciousness*. Jantsch, E. & Waddington, C.H. (Eds.). Reading, Mass., Addison-Wesley.
NORWICH, K.E. (1983). *Journ. Theor. Biol. 102*. 175-190.
PANKOW, W. (1976). In *Evolution and Consciousness*. Jantsch, E. & Waddington. C.H. (Eds.). Reading, Mass., Addison-Wesley.
PASCAL, B. (1963). *Pensées, Le Mystère de Jésus*, Brunschvicq, J. (Ed.). Paris, Pléiade, Editions du Seuil.
PEIRCE, CH.S. (1958). *Values in a Universe of Chance*. Selected Writings. Wiener, Ph. P. (Ed.). Garden City, New York, Doubleday Anchor; (p. 358).
PLATZECK, E.W. (1962). *Raimund Lull. Sein Leben, seine Werke. Die Grundlagen seines Denkens (Prinzipienlehre)*. Bd. 1-2, Düsseldorf, Schwann.
POPPER, K.R. (1946). *Proceedings of the Aristotelean Society, Supplementary Volume 20*, 41-60.
POWERS, W.T. (1973). *Behavior: The Control of Perception*. Chicago, Aldine.
ROSENFELD, L. (1945, 1961). *Niels Bohr's Contribution to Epistemology*. Amsterdam, North Holland.
RORTY, R. (1982). *Synthèse 53*, 323-348.
SALAM, A (1981). In *Scientific Explanation*. Heath, A.F. (Ed.). Oxford, Clarendon Press.
SAMPSON, E.E. (1983). *Journal of Mind & Behavior, 4*, 135-164.

SCHAFER, R. (1981). In *On Narrative*. Mitchell, W.J.T. (Ed.). Chicago, The Univ. of Chicago Press.
SCHOLES, R. and KELLOGG, R. (1966). *The Nature of Narrative*. London and Oxford, Oxford University Press.
SCHRAG, C.O. (1980). *Radical Reflection and the Origin of the Human Sciences*. West Lafayette, Indiana, Purdue Unviersity Press.
SCUDDER, C.L. (1975). *Fields Within Fields 14*, 49-58.
SPENCER BROWN, G. (1969). *Laws of Form*. London, Allen & Unwin.
STENT, G.S. (1981). *Journal of Social & Biological Structuralism 4*, 107-124.
THOMAS, R.E. (1963). *Battelle Tecnical Rev.* (Febr.) 11-19.
THOMAS, The Coptic Gospel according to Thomas (1968). In *The Secret Sayings of the Living Jesus*. Summers, R. (Ed.). Waco, Texas, Word Books.
VALÉRY, P. (1957-61). *Les Cahiers du Paul Valéry*. Paris, Centre Nationale de la Recherche Scientifique. 29 Vols. in facsimile.
WALL, P.D. (1974). In *Essays on the Nervous System*. Bellairs, R. & Gray, E.G. (Eds.). Oxford, Clarendon.
WHEELER, J.A. (1977). Genesis and Observation. In *Proc. 5th Intl. Congr. of Logic, Methodology and Philosophy of Science*. Butts, R.E. & Hintikka, J. (Eds.). Part 2. Boston, Reidel, pp. 3-33.
WHEELER, J.A. (1980). Beyond the Black Hole. In *Some Strangeness in Proportion*. Woolf, H. (Ed.). Reading, Mass., Addison-Wesley.
YATES, F.A. (1960). *Journal of the Warburg & Courtauld Institutes 23*, 1-44.