Modality, Ecology, Metaphor[1]

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Abstract

This essay presents an aspect of our way of dealing with the dialectical relationship between the two phenomena "Ecology" and "Metaphor". For practical reason we limit our approach to a semantic dimension of the problematics. Our tradition regards metaphor and analogy both as conceptual activities and patterns as well as pre-conceptual and aconceptual capacities of mode of thinking, talking and acting.

Section 1 introduces our concept of *ecology*, namely as a philosophy-science of and for a living universe, a conscious nature, and many intelligent realities. Our view of ecology offers a new scientific paradigm, because it implies a non-dualistic, non-reductionist, non-causal, and a-causal description of nature, society, and persons. Via a dialectical interpretation of Bell's theorem we transfer these insights to the fields of communication and dialogue.

Section 2 continues the exposition of our concept of a *dialogue* in a *praxis*. An implication of these concepts is the concept *modality*, i.e. our ways of relating to the praxis and the dialogue. We distinguish between a *ground mood* of modality and a *particular mood* of modality. The dialogical modality is actually an expression of the interference between persons' and situations' *undercurrents*, i.e. streams of consciousness with waves of feelings, cognitions, and volitions. Centrally in our theory of undercurrents stands the idea and reality of *empathy*. We discuss these concepts in relation to *semantics*, by formulating a new semantic matrix.

Section 3 unfolds our conception of *metaphor-analogy*. Both imply transferences of similarities and differences in and between mental models. If the mental models belong to different categories, we term the transference *metaphor*; do they belong to the same category, we term it *analogy*. The former implies a *novum* in the mental transference, and from a survival point of view it works differently than the latter. Metaphor is involved when individualities, species and environments change *qualitatively*, analogy when they change *quantitatively*.

We end our essay in Section 4 by formulating our preliminary conclusion and some invitations for further discussions.

Der Artikel stellt einen Aspekt unseres Umgangs mit der dialektischen Beziehung zwischen den beiden Phänomenen "Ökologie" und "Metapher" heraus. Aus praktischen Gründen behandeln wir nur die semantische Dimension des Problemkreises. Unsere zugrundeliegende Theorie sieht die Metapher und die Analogie sowohl als konzeptuelle Vorgänge und Muster an, als auch als prä-konzeptuelle und a-konzeptuelle Fähigkeiten in Bezug auf das Denken, Sprechen und Handeln.

Der erste Teil des Artikels stellt unsere Definition von *Ökologie* vor, als eine "Philosophie-Wissenschaft" von einem lebenden Universum, einer bewussten Natur und vielen intelligenten Wirklichkeiten. Unsere Auffassung der Ökologie bietet insofern ein neues wissenschaftliches Paradigma an, weil sie eine nicht-dualistische, nicht-

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This essay is written in the lingua franca of modern science, English. We support the existence of a common scientific language, and for the time being we consider English to be the best possibility for such a common language. But we disagree in any demand of "linguistic correctness"; on the contrary we consider it most necessary to develop a wider range of acceptability regarding "scientific English". Instead of merely referring to British-English, American-English, Australian-English, etc., we also refer to Danish-English, Chinese-English, Zulu-English, etc. Only if these variants of English are acknowledged as acceptable on a par with British-English etc., can English develop into a scientific lingua franca of an open society (cf. Popper 1945). We trust that our Danish-English is communicable and comprehensible and we have chosen not to activate a mothertongued proof-reader.

reduktionistiche, nicht-kausale und a-kausale Beschreibung von Natur, Gesellschaft und Personen impliziert. Durch eine dialektische Interpretation von Bell's Theorem übertragen wir diese Einsichten in die Bereiche der Kommunikation und des Dialogs.

Im zweiten Teil wird dieses Konzept des *Dialogs* in einer *Praxis* weiter ausgeführt. Eine Implikation dieses Konzepts ist das Konzept der *Modalität*, d.h. der Bezug zwischen Personen und Dialog in der Praxis. Wir unterscheiden zwischen einer Grundstimmung der Modalität und einer *Sonderstimmung* der Modalität. Die dialogische Modalität ist eigentlich ein Ausdruck der Interferenz zwischen *Unterströmungen* der Personen und der Situationen, d.h. „streams of consciousness" mit Gefühls-, Kognitions- und Willens-Wellen. Zentral in unserer Theorie der "Unterströmungen" ist die Idee und die Realität der Einfühlung („empathy"). Wir diskutieren diese Konzepte im Verhältnis zur Semantik im Zuge der Formulierung einer neuen semantischen Matrix.

Der dritte Teil des Artikels entfaltet unsere Konzeption von *Metapher-Analogie*. Beide implizieren Transferenzen der Gemeinsamkeiten und Unterschiede in und zwischen mentalen Modellen. Wenn die mentalen Modelle verschiedenen Kategorien angehören, bezeichnen wir die Transferenz als Metapher; gehören sie derselben Kategorie an, bezeichnen wir sie als *Analogie*. Die Metapher impliziert ein Novum in der mentalen Transferenz, und fungiert vom Blickpunkt des Überlebens in anderer Art und Weise als die *Analogie*. Die *Metapher* ist beteiligt, wenn sich Individuen, Spezies und das Umfeld *qualitativ* verändern; die Analogie wirkt dagegen in den Fällen, in denen sich diese *quantitativ* verändern.

Der Artikel schließt mit dem vierten Kapitel, in welchem eine vorläufige Zusammenfassung sowie Diskussionsanstöße gegeben werden.

0. Introduction

This essay sketches aspects of our dialectical theory of bio-communication[2] in general and human, verbal communication in particular. In this context we elaborate our theory of human, verbal communication by means of the concepts *modality*, *ecology* and *metaphor* and introduce a *semantic matrix* and a dialectical theory of *analogy* and *metaphor*. In order to make our theory of *analogy and metaphor* understandable, we think it is relevant to introduce part of our general theoretical framework. The framework functions as our recourse, recursive basis, whenever we do research in human, verbal communication or bio-communication.

Science is a human activity that normally pretends to improve our personal existence and culture. The ideology of the 20th century believing in a neutral and value free science is in retreat – like other forms of dualism – and the general problem for scientists in the 21st century is to create new horizons for scientific praxis.

Our scientific tradition presents such a new horizon and aims openly at improving the competences of each person to act healthier in our personal, interpersonal and transpersonal relationships. A constitutive condition for acting in such a way is to exercise *mindful awareness* and to broaden and deepen our conception of *experience*.

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[2] When we discuss *communication*, or *bio-communication*, we are thinking of states, relations and processes in and between living beings.

First, our approach to human, verbal communication has both some affinities to trends in Cognitive Science, and differences that makes a difference. The differences can be stated shortly by pointing to the fact that we regard each person as a dialectical unity of *body*, *mind* and *spirit*. Therefore, the conception of "the embodied mind" is not comprehensive enough to us.

Doing research involves being aware of the fact that you cannot eliminate the persons neither from the process nor from the product. So, when we use *mindful awareness* in our theoretical praxis we do not forget

- who is asking the questions,
- how the questions are asked and answered, and
- why we are asking those questions.

To accept such a view implies a radical change in the understanding of 'facts':

> All data are theory-, method-, and measurement-dependent. That is, "facts" are determined by the theories and methods that generate their collection; indeed, theories and methods create facts.

> This means that how the problem will be defined, which model(s) of inquiry will be considered to be relevant to the problem as defined, where one shall look (and, by implication where one shall not) for evidence - and even what one shall consider to be constitutive of evidence - are all determined by the paradigmatic "map" or world view to which the scientist is committed. (John Ratcliffe, quoted in Manaka 1995:xxiv)

Working from our dialectical point of view we have left behind two forms of dualism (*dualism* is the proper term because a dualism is postulated when two entities are regarded as separated or separable):

- the dualistic dichotomy between neutral and value free sciences and engaged and value bound folk theories, and
- the dichotomy between philosophy and science.

A decisive argument for letting go of the first dualism is that there is not a "view from nowhere" at our disposal. A scientist (Robert O. Becker) who has worked in the field of regeneration in biology writes about science and scientist in the following way:

> Many, perhaps even most, of its practitioners have been greedy, power-hungry, prestige-seeking, dogmatic, pompous asses, not above political chicanery and outright lying, cheating, and stealing. (Becker & Selden 1985:331)

A decisive argument for letting go of the second dualism is that both science and philosophy is grounded in and constituted by our individual and collective experiences and social and personal history and praxis.

Secondly, our approach to human, verbal communication also has some affinities to Buddhism, and also some differences that make a difference. Among the differences we would like to point to one: we do not accept the no-self hypothesis in its normal interpretations. And among the similarities is the theory that we, our world and our realities are changing all the time.

1. Ecology

An interesting feature of the 21st century is the fact that more and more scientists begin to treat and interpret nature as living and cosmos as a conscious universe (see e.g. Radin 1997). Such a change in science, philosophy and research shows itself in a change of analogies and metaphors used in the language of various sciences.

We use the term *ecology* in a manner that differs from some usages. We regard ecology as a philosophy-science of and for a living universe, a conscious nature, and many intelligent realities. To be alive is to be part of wholes and a whole constituted by parts; to be alive is to communicate energy-information. An implication of such a position is that we are mindfully aware of the fact that any understanding, interpretation or description co-implies a self-description and self-identification. Consequently there are three minimal conditions for using *ecology* the way we do. We must understand ourselves

- as dynamic parts of dialectical wholes,
- as a dialectical, complex system constituted by parts, and
- as unable to live apart from wholes and the whole.

We regard ourselves, our culture, Gaia and the world a dialectical whole where everything interacts and nothing is separable. As the physicist Henry Pierce Stapp writes: "[...] the profound truth is that the world is either fundamentally lawless or fundamentally inseparable" (Capra 1983:75).

For making our position more easily open for discussions we relate our presentation of *ecology* to the thoughts and ideas of Lakoff & Johnson. They write:

> The environment is not an "other" to us. It is not a collection of things that we encounter. Rather, it is part of our being. It is the locus of our existence and identity. We cannot and do not exist apart from it. It is through emphatic projection that we come to know our environment, understand how we are part of it and how it is part of us. (Lakoff & Johnson 1999:566).

Our theory presents an alternative way of understanding ourselves and our environments:

- The environment is an 'other', an 'Other' and part of us.[3]
- The environment presents a whole of agents, relations and processes that we both encounter and co-create.
- As agents we are individual holons or complex systems that interact and co-act in various ways.
- We exist as a part of wholes, and we cannot live apart from wholes.
- It is through mental, social, and physical analogies and metaphors that we interpret ourselves and our environments.

Our view of ecology offers a new scientific paradigm, because it implies a non-dualistic, non-reductionist, non-causal, and a-causal description of nature, society and persons. An implication of this philosophy is that the environment is not something that is given, static, and in which living beings evolve. On the contrary, the environment and its agents change dynamically, and inter-dependently. The relationships between a living being and its environment are neither a linear process nor a causal process, but it is a co-implicative relation or a dialectical implication between conscious beings.

A decisive blow against the possibility of any form of reductionism and causalism (implying linearity etc.) was given by Bell's theorem (Capra 1983:72-75). Here we will use Bell's theorem in relation to two phenomena: *memory* and *communication*. Bell's theorem implies that if two particles have interacted locally, then independent of the later distance between them, it is possible for one to respond instantaneously (we regard 'the response' as a sort of resonance) to changes in the other. There is a communication of *information* between the two particles. And to be able to receive, store, and share information is a predicate of being conscious.

Before Bell's theorem physicists believed that elementary particles were without history, because elementary particles had no trace of what has happened to them in their past. Following our interpretation of Bell's theorem it seems right to ascribe *memory* to elementary particle. Furthermore, we have to change our idea of what *communication* is, and consequently we have to modify our idea of *interaction*, too.

We formulate a thesis of communication – which is partially a consequence of Bell's theorem – in the following way:

Theorem 1:

When a communication takes place at one level or field it is transferred or resonates in different ways and by different means to all other levels/fields. The resonance is more or less critical or significant dependent on the situation in which it is needed or used in the other fields/levels.

Our general theory of communication has radical implications for a theory of human, verbal communication. We regard a dialogue as the smallest unit of human verbal communication; and we define a dialogue as a verbal communication which takes place between at least three persons of different age and sex (cf. Steffensen 2000:49ff.).

Even when it seems as-if there is a monologue or duologue, and not a dialogue (in our sense) going on, we interpret the communication in relation to the normal dialogue, i.e. as a conversation between three persons. The dialogue has thus two derivatives, namely a monologue and a duologue.

So, when we talk to ourselves, i.e. conduct an *internal monologue*, we treat such a use of language as explicable in relation to and presupposing a basic core experience, e.g. when a woman conduct an internal conversation concerning marrying or not marrying a certain person, then the conversation is constituted by some core experiences. The core experience of the woman is constituted by a normal dialogue between

  i)   the person who talks to herself. In this proces there is an argumentation with pro and con arguments. The argumentation presupposses more than one person.
  ii)   another female within her essential and vital social relationships and
  iii) a male within her essential and vital social relationships.

When we participate in or observe a *duologue*, i.e. a conversation between two persons, we interpret the duologue through the optics of a dialogue. We propose that whenever two persons converse there is presupposed a third person that both persons might accept as a sort of an arbiter between them in relation to both the form and the matter of their conversation.

We describe a dialogue as a complex system, and the persons engaged in the dialogue can be described as systems, too. In a complex system information is created, stored, and shared

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[3] We use the term *other* to indicate individualities that are not human and the term *Other* to indicate other persons. Our individualities are sustained by our various immune systems, i.e. our mental, social and physical immune system. Thus, our identity is dialectically determined by our immune systems.

between the parts, participants, and agents. After the communication has taken place in a dialogue the information is stored in the different participants on different levels/fields and is stored in a shared mnemo field, too[4] (see Døør 2001:17).

2. Modality

For years we have tried to conceptualise a dialectical theory of verbal communication by means of this notion of a *dialogue*. Our reason for positing *dialogue* as the prototype of linguistic communication is the simple fact that an utterance is uttered

- in a certain situation and culture,
- in a particular mode and modality, and
- in order to share some experiences with somebody for some purposes.

A dialogue is developed in a situation and changes the situation; and part of the semantics (the matrix of possible interpretations of the signs and text) is constrained and conditioned by the situation. Interpreting a verbal communication – the text or the dialogue – dialectically implies understanding part of a *praxis*. We hope that the following quotation from Wittgenstein contributes to the understanding of our position:

> Giving grounds, however, justifying the evidence, comes to an end; - but the end is not certain propositions striking us immediately as true, i.e. it is not a kind of *seeing* on our part; it is our *acting*, which lies at the bottom of the language-game.
> (L. Wittgenstein 1974:§ 204)

Wittgenstein's philosophy embraces two important understandings. The first is that the interpretation of a text in a dialogue is not restricted to a comparison between the text and a set of linguistic forms. The interpretation has to comprise an interpretation of the communicators' praxis co-implied by the text and the situation, too. Such a view has radical consequences for the object of linguistics and for the definitions of what kind of research literary criticism, cultural studies and linguistics really are.

The second understanding is the discernment that no scientific argumentation can be reduced to an evaluation of the relations between sentences/propositions, nor can it be isolated from the communicators or the situation. In short, every dialogue implies an interpretation of a text and an understanding of the situation and the actors, i.e. of the praxis. The philosophical reflection of Wittgenstein accords very well indeed with our 1st theorem.

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[4] One of us have worked as a psycho-therapist for years and used this dialogue-model as a clinical tool.

Every verbal communication is primarily enfolded on the linguistic level or field. It is, however, dialectically implied and determined by other levels, too. One of those fields is what we call the *ground mood* of modality (*Grundstimmung*). The communicators bring their own particular ground mood into the dialogue, and the dialogue as a complex system creates its own specific ground modality in which the communication of information is embedded. The matrix of the ground modalities is the recursive recourse basis from which we relate to our realities and the world. Through our acting we co-create *realities,* mental, social or physical realities, and the *world* is the matrix of every possible reality. The way we relate to our realities and the world co-creates our matrix of the ground modalities. Therefore, other non-linguistic levels or fields, such as the ground mood of modalities, is important for an understanding of our way of being and becoming.

The communicators in the dialogue are constituted by their situational or *particular mood* alongside with their *ground mood*. We could say that the participant is tuned by his/her ground mood, but also by his/her particular mood, which is a modulation of the ground mood. So a person whose ground mood is to be optimistic can nonetheless bring a pessimistic, particular mood into a specific encounter. The particular moods express the person's and the situation's *undercurrents*. This concept is introduced and developed by Dorte Bay (2002).[5]

Undercurrents are streams of consciousness with waves of feelings, cognitions, and volitions (and propensities). *Human consciousness* embraces both normal ego-consciousness, subliminal consciousness (e.g. motor mimicry), and extraordinary modes of consciousness.

The recursive or recourse basis, and *conditio sine qua non*, for understanding any dialogue and interpreting a text or situation is the capacity for *empathy*. Empathy (*Einfühlung*) is an understanding and a sharing of another living being's experience in a particular situation and functions by means of resonance. Thus, empathetic experience is an aspect of a shared undercurrent.

If we have an empathetic experience of another person we both experience the person's actual state and the person's interpretation and simulation of the significance and meaning of the situation for the person. This empathetic experience implies experiences of similar persons and situations in the past. Therefore, the experience presuppose both

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[5] We, in particular Dorte Bay, have developed our theoretical term *undercurrent* partly from Virginia Woolf's *A Room on One's Own* (1928). Virginia Woolf writes about "the murmur or current behind [...] which changed the value of the words themselves" (Woolf 1928:14).

- memory,
- internal models ("schemata")
- analogical and metaphorical transference.

All three capacities function on different level/fields.

Verbal communication is both a source of and an articulation of empathetic experiences, or you could say that without mutual empathetic experience any form of verbal communication in particular or communication in general is impossible.

Every science the object of which is human beings has to incorporate the categories *empathy*, *memory*, *internal models* and *analogical-metaphorical transference* in their conceptual frame. For instance, *semantics* has to work explicitly with these categories in order to be relevant and sensitive. We use the linguistic discipline semantics to illustrate our point of view and our theory of analogy-metaphor.

We treat *semantics* as a theory concerned with the problematics of explicating the matrix of possible and actual meanings of and in a text (verbal or written). Therefore, we have developed a model, a semantic matrix, as a heuristic device for identifying the various semantic aspects of texts:
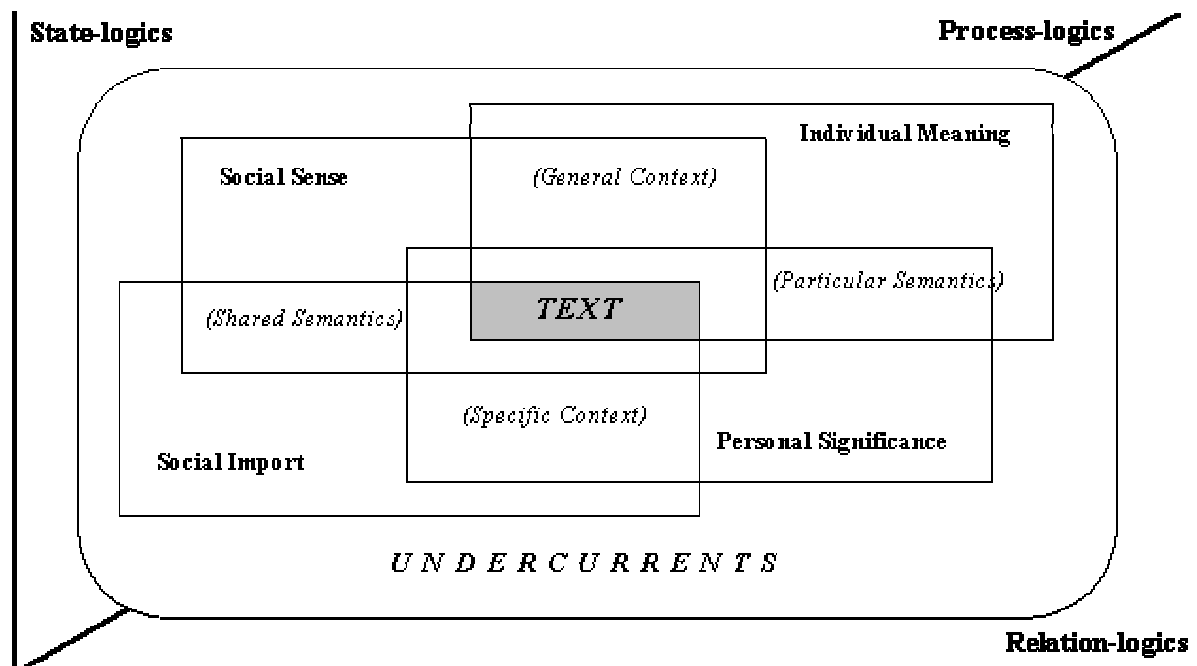

Figure 1. The Semantic Matrix (D.S.B. 2003)

The semantic matrix is a communicative device for interpreting texts (spoken or written) and dialogues. It is both 'applicable' and 'adequate'; 'applicable' because the matrix has been

successfully used for interpreting some texts, and 'adequate' because there seems to be no texts or dialogues incapable of such interpretations.

We define *social sense* as the pole that expresses what is collectively and situationally, and relatively and relationally invariant. The term *individual meaning* indicates a semantic feature which is unique for a communicator although it is also relatively and relationally invariant over many situations. *Social import* is a semantic property that demarcates one type of situation and one type of institution from others, and consequently is collectively and topically stable in those particular forms of organisations, but varies according to the specific situation, type of discourse, or institution in which a text is embedded dialectically. Finally, the term *personal significance* varies from individual to individual and from topos to topos; it expresses a person unique semantic identification of what is significant for a particular person in a specific, concrete situation; in other words *personal significance* is a communicators incarnation of the other three semantic dimensions. All four dimensions, however, are dialectically embedded in some undercurrents and constituted by them.

3. Analogy & Metaphor

An implication of our dialectical philosophy is that it is wrong to think that you can separate one kind of communication. Therefore, every linguistic act is embedded in a network of different kinds of communication. A dialogue manifests and articulates a certain mode of being present, and being alive involves being part of a multidimensional communicative network. We cannot separate the linguistic part of a dialogue from this network, and as living beings, persons, we communicate and share energy-information. There are more energy forms or forces than the traditionally four, i.e. gravitational force, electromagnetic force, weak nuclear force, and strong nuclear force. Besides these four fundamental forces there are different forms of so-called *subtle energies* which are needed in order to interpret and understand natural phenomena. We use the term *energy* to express a capacity or propensity to perform work, i.e. to sustain or change the energy level, pattern or configuration of a system.

Living beings have memories, mental models and the capacity and propensity to analogical and metaphorical transference just as they have emphathetic experiences testified by their survival. Living beings are topologically defined and can neither live nor be understood apart from their environment. We express this feature by saying that any living being is a *holon*.

Our theory of analogy and metaphor has for years been developed in a dialogue with the writings of George Lakoff (e.g. Lakoff & Johnson 1980 and 1999, and Lakoff 1987), and here we concentrate on a theory proposed jointly by Lakoff & Núñez (2000). We have for three reasons chosen them among the many scientists that concern themselves with metaphor. One is that we highly appreciate their way of thinking; secondly, because they have chosen a scientific discipline which most people consider as not dependent on metaphorical thinking; and thirdly, because they write so beautifully and clearly so that it is easy and fruitful both to agree and disagree with them. Let us shortly indicate some disagreements. They write:

> [...] "Potential infinity". It is simply a process that goes on without end, like counting without stopping, extending a line segment indefinitely, or creating polygons with more and more sides. No *metaphorical ideas are needed in this case*. [...] The idea of "actual infinity", where infinity becomes a <u>thing</u> - an infinite set, a point at infinity, a transfinite number, the sum of an infinite series - is what is really important. Actual infinity is fundamentally a metaphorical idea. [...] *All forms of actual infinity* [...] *appear to be special cases of just one basic metaphor of infinity*. (Lakoff & Núñez 2000:xvi; our italics)

The authors express some ideas that are incompatible with our theory. First, they say that the concept "potential infinity" does not need any metaphorical idea. We, however, know that every (mathematical) idea and all concepts 'need' metaphorical ideas. For instance, the idea of potential infinity presupposes time-place metaphors of various kinds. The authors seem to adapt a kind of dualism between mathematical ideas that need metaphors and other mathematical ideas that do not. We do not support any kind of dualism. Secondly, they write that "actual infinity" appears to be a special case of just one "Basic Metaphor of infinity". We think that you cannot isolate one metaphor from the network of metaphors which defines a particular discourse, e.g. mathematics. The authors seem to subscribe to a sort of reductionism, which we do not.

Yet we do indeed – and in deed – agree with Lakoff & Núñez when they insist on talking about human mathematics as grounded in human experiences, our body and culture. Our theory is that every dialogue and discourse presuppose and use analogies and metaphors, because otherwise the discourse/dialogue would be absolutely separated from human experience and praxis and hence be *atopical*. We differ, nonetheless, in our interpretation of the term *experience*.

The way we see the universe, nature, the world and our realities, makes us distinguish between kinds of transference from one mental model[6] to another, i.e. we distinguish between

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[6] Our concept *mental model* differs radically from the idealised cognitive model of Lakoff (1987).

analogy and *metaphor*. Secondly, we place the basic capacities of analogical and metaphorical transference, elsewhere than they do. Lakoff & Núñez write:

> Ideas do not float abstractly in the world. Ideas can be created *only* by, and instantiated only in, brains. Particular ideas have to be generated by neural structures in brains, and in order for that to happen, exactly the right kind of neural processes must take place in the brain's neural circuitry. (Lakoff & Núñez 2000:33; our italics)

Lakoff & Núñez subscribe once more to a form of reductionism. For they believe that the brain is the one and only source of mental ideas. Besides the physical level or field there are other places in and around the body in which memories are created, stored and shared. Generally speaking our philosophy articulates a multi-dimensional world and an alternative conception of *consciousness*, *experience*, and *being human*. Our *ideas* exist on many levels and in many fields; roughly speaking both on a physical level (the brain, heart or liver), a mental level and a spiritual level.

Analogies and metaphors in the linguistic medium are only one manifestation of a general matrix; and a linguistically mediated or created transference is dialectically implicated by states, processes, and relations in other mediums.

The fundamental importance of *analogical and metaphorical transference* is that without them we could not think, speak, feel, or act: we could not survive as individuals, and we could not have survived as a species. Analogical and metaphorical transference is necessary for our cognitive performances.

The distinction between *analogical transference* and *metaphorical transference* is one that articulates the fact that we make transferences from one mental model to another in two different ways. First, we emphasise the fact that *transference* (or projection) takes place *between* mental models and *in* mental models. Secondly we emphasise that the transference is a transference of both similarities and differences. Thirdly, some transferences are (i) performed between models belonging to the same category, i.e. *analogical transference*, and other transferences are (ii) performed between models belonging to different categories, i.e. *metaphorical transferences*. Fourthly, transference is a co-implicative or dialectical relation because the mental models mutually specify and determine each other.

Our theory of analogical and metaphorical transference implies that it is impossible to separate one analogy or metaphor from the system it belongs to and co-constitutes. It is decisive for understanding our theory to realise that we regard analogy-metaphors that are inscribed in language as *concepts*.

Furthermore, our theory implies that the use of any concept or analogy-metaphor is a blend. It is an axiom in our theory of communication that there is no concept and no analogy-metaphor that is not a blend; for instance are all ideas in mathematics metaphorical conceptual blends (for a different theory, vide Lakoff & Núñez, 2000:48)

Examples of analogical and metaphorical transferences are:

- *Analogical transference*: (i) between a model concerning love between mother and child and a model between woman and man, and (ii) between a model concerning a child sucking her mother's breast and a model of an adult drinking from a fountain with sparkling, clear, nourishing water.
- *Metaphorical transference*: (i) capitalism develops in a country as if it was a cancer tumour in a human body, (ii) my mind works like a computer.

There exists, however, still another difference between analogical and metaphorical transference. Hence, we describe transference between two internal models as an analogical transference when transference from a source model onto a target model does not involve a *novum*; and we describe transference as metaphorical when it does involve a *novum*. Therefore, the two forms of transferences work differently when looked upon from a survival point of view – both the survival of the individual and its environment, and the survival of the species and its environment.

From our dialectical and ecological point of view it is the case (i) that every level, field and agent interact and are interdependent, (ii) that every agent, field or level change, and (iii) that because the world and nature consist of complex system then new states, relations, and processes emerge all the time. In order both to survive and live a good life individually and as a species we have to develop healthy analogies and metaphors[7].

A surprising property of language is that we can formulate texts that – on the surface – seem to be without any analogy or metaphor. But that does not mean that the text is not embedded in a network of analogies-metaphors. Therefore, it is pertinent to distinguish between implicit and explicit analogy-metaphor. Just as there is no text without a subject, and no value-free description, so there is no text or dialogue that is independent of a matrix of analogies-metaphors.

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[7] We use the term *healthy analogy and metaphors* in order to indicate that any scientific theory ought to be evaluated in relation to its contribution to the health of the realities and world it is part of. The true, the good and the beautiful are dimensions of health!

4. Invitations & Conclusions

In this essay we have presented a few aspects of our theory concerning the relationships between *ecology* and *metaphor* in such a way that it is related both to some of the ongoing discussion in various fields of research and to some of the most interesting theorists, e.g. Dean Radin, William A. Tiller, J. Francisco Varela, Eleanor Rosch and Rupert Sheldrake. By doing this it has been our purpose to make it easy for researchers from different scientific disciplines to understand our theory and purpose and to participate in a dialogue with us.

The modality in which the essay is created is an optimistic and realistic one. Some readers might think that we are a bit naïve to be optimistic in the present situation with American neo-colonialism and inhuman attempts to create an American world hegemony. How is it possible to be optimistic facing a war in the Middle East? Do we have just one serious argument in favour of our mental mode?

The answer is yes. Modern chaos theory implies that even a very small, local activity can have dramatic effects globally. A butterfly flapping its wings in Brazil may create a snowstorm in Alaska. So a short essay written and read by only a few people may have an enormous influence in the long term behaviour of our culture.

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