Metaphor, Organization and Building of Knowledge in Textual Sciences

Abstract: The object of this paper is to weigh the role played by some metaphorical paradigms in two joint epistemic fields which are connected, on the one hand, with the organization of knowledge and on the other, with the status of the objects of knowledge. We will focus our study on two paradigms among these, which are as long-lived in the old myths as in modern and contemporary science. The first one is that of the metamorphosis which covers several aspects referring all simultaneously to displacement, circulation, interchange and transformation, migration, dissemination, mobility and flexibility. It is to be found in most of contemporary epistemological models, and particularly in those of new encyclopaedism. The second one, that of depth—which has always been used in all the fields of linguistic, semiotic or hermeneutic sciences, meets today a renewed interest, particularly in the Information Technology (IT) sector which gives this paradigm a new status and new functions. This is what we will try to bring to the fore with the example of hypertext which seems to offer the adequate conditions for the emergence of a new technology no longer based on the being of science but on the heuristic doing of technology.

1. Introduction

As a recent polemic serves to remind us, epistemologists seem only capable of depicting the history of their discipline as a long succession of conflicts between two antagonist poles whose massive solidity hardly leaves room for median views. This dualistic dimension of epistemology, whose origin—according to specialists—ought to be sought in the controversy which opposed Socrates to the Sophists, whose peak ought to be found in the famous quarrel of the universals and whose most recent reiteration ought to be noticed in the criticism addressed by post-modernistic relativisms, is generally declined by the means of two conceptual paradigms (realism, idealism, positivism, rationalism vs nominalism, relativism, subjectivism; truth vs opinion, etc.) which each illustrates an opposite idea of reality and of its comprehension by man. The first idea, I quote, «découpe l'être physique de l'apparence sensible tout en faisant de celui-là la cause de celui-ci», while the second one postulates that «le langage est une mimésis de la forme du monde, mais d'un monde dont la forme est toujours-déjà une forme de langage» (Petitot, 1987); so that—to the assertion that it would be possible for science to reach reality, the other answers by refusing the distinction between truth and error—on which is based the latter—in order to prefer instead the notion of an anthropological plurality of the modes of narration and representation of reality.

If I linger a bit over this conflict which, in fact, is as old as the hills, it is because it has been lately revived by criticisms that some defenders of the objective rigour of science have levelled at the theses of constructivist inspiration which have developed in many contemporary research areas and in particular in those concerning Information and Communication Sciences (F. Varela, 1985, E. Von Glasersfeld, 1988 and J. Le Moigne, 1995). These theses support the idea that Information Technologies illustrate in an obvious way the relevance and fruitfulness of the subjective-relative epistemological model whose long alternative tradition, according to them, takes us from the Sophists to Morin, while...
passing by Aristotle, the Nominalists and many others like Vico, Kant, Dilthey, Valéry, Bachelard, Wittgenstein, Piaget, Bateson, Barela, H. Simon and Bougnoux. And indeed, these theses often state the opinion that: no longer would the objective truth matter but what can be constructed or is feasible; no longer would the discovery of reality matter but the experimentation, the modelling and simulation of processes that can be formalized and falsified; they do not deal any more with true knowledge but with teachable cognitive experiments; and they do not wonder any more about the being, the meaning or the origins but, as Herbert Simon (1990) puts it, about artificiality, i.e. the doing, its procedures and its end as if—by that way—the goal was to turn the engineer into a skilled rival for the scientist.

To put it in a nutshell, these theses claim to abandon the discovery of objective reality—which would be accessible in depth—so as to take only into account, as Varela puts it «les représentations opérationnelles horizontales» i.e. those that build the knowledge which thus they constitute, as shows the famous and often quoted poem by Antonio Machado:

Caminante, son tus huellas
El camino, y nada más;
Caminante, no hay camino:
Se hace camino al andar...
...Caminante, no hay camino,
sino estelas en la mar.

By quoting this poem, I now move on to the first metaphorical paradigm which I intend to deal with today. This paradigm will be referred to, for greater convenience, by the generic Greek term métabole (metamorphosis) several aspects which relate simultaneously to displacement, circulation, interchange and transformation, migration, dissemination, mobility, flexibility or perhaps even to lability. In short, I would say it falls within the province of a thinking which seems to be entirely derived from thermodynamics and quantum physics, or at least from the trivial views—arts persons have about this thinking.

Let me quote from a previous article: “The presence of this paradigm shows itself in at least two joint epistemic fields which are connected, on the one hand, with the organization of knowledge which is about the respective status of sciences, their field of competence, their frontiers, their relations and their interchanges, and on the other hand, with the status of scientific objects, in which has raised—among others—the question of the construction and the transfer of a knowledge upon these objects” (Deremetz 1997b).

Indeed, we have witnessed for at least thirty years or so the spreading of models of organization of knowledge which refuse any linear, hierarchical and partitioned classifications—in the shape of synoptic tables or tree diagrams— but favour dynamic systems which are governed by interaction and recursivity. Such is the notion which shows through—although vaguely— in the Tibetan Mandala figure which P. Caro (1997 p.57) chose in order to depict the roots of knowledge. Though it is “une figure géométrique formée de carrés et de cercles qui se déploient d’un centre vers une périphérie dans une disposition concentrique”, this Mandala constructed by Hermès, a god from space who, as Caro puts it when quoting Aeschylus, is “le plus grand des chercheurs”, he “qui montre et qui cache... hante les carrefours et de ses yeux qui voient tout, scruté les horizons du savoir”. So, this Mandala “n’est pas une construction linéaire, séquentielle ; il permet les libres associations, les retours, les circuits, les voyages, et en plus, il exige toujours, un effort d’imagination...”.

Such is also the principle which guides the working out of J. Piaget’s cyclic pattern (1967), a de-hierarchized model of knowledge “qui s’irriguent mutuellement au fil d’une boucle circulaire” or which prompts E. Morin’s paradigm of the complexity sciences (Le Moigne, 1995, p.98) in which the “connaissances tourmentes s’organisent en boucles enchevêtrées, qui construisent les liens par lesquels nous les connaissons, éphémères sillage

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par l'encre retraçable qui tissent le sens de l'expérience du sujet connaissant ». Lastly, based on the same inspiration, comes the model of the volcanic archipelago which was depicted by Le Moigne (1995, p.99-106). It consists in a spiral pattern whose initial argument is to take into account the organization of knowledge « en les articulant selon qu'elles privilégient le sillage (le résultat) ou le mouvement (le processus) par lequel y accède le sujet connaissant », and which is based on the idea of a continuous interaction between four large epistemological paradigms (matter, life, movement and engineering sciences). In all these models, the organization of knowledge is thus seen as an independent, dynamic and open system in which all the interconnected elements keep on reciprocally transforming themselves according to the actions and feedbacks which constitute the system and make it evolve at the same time. That is the reason why the organization is sometimes compared to « un organisme culturel en perpétuelle évolution biologique » (Jeanneret, 1997).

Besides, according to some of the cyber-knowledge theorists, such an organism could only come into being thanks to digital technology. It currently develops in the shape of information systems (internet?) which, in the like of the autopoiesis organizing life (i.e. the production of cells and tissues), « sont organisés comme des réseaux de processus de production de composants qui... constituent le système en tant qu’unité concrète dans l’espace où il existe, en spécifiant le domaine topologique où il se réalise comme réseau » (Varela 1989, p.45). Moreover, this organism would make it possible to create the model of an encyclopaedia –hitherto utopian- in which various local encyclopaedias could interconnect, intersect and be superposed whether they should be complete, coming out or to come.

U.Eco (1988) illustrated this new encyclopaediaism model with two close figures: the rhizome and the labyrinth. Deleuze and Guattari (1980), who invented the rhizome figure, presented it as a « système acentré, non hiérarchique, sans Général, sans mémoire organisatrice ou automate central, uniquement défini par une circulation d’états », a system which – unlike Porphyry’s root-tree whose basis is always an unspecified and unique primal point from which spread a multiplicity of successive branches (and of units consequently) and from which they are all derived, forms a reticle without either beginning or end or position or basis, which can be dismantled, reversed and indefinitely modified and which is only made up of lines all communicating between them. As to the labyrinth figure, Eco supported the view that « le système général des sciences est une sorte de labyrinthe, de chemin tortueux capable d’anéantir n’importe quel arbre encyclopédique qui voudrait le représenter », a system which is composed, as puts it Alembert in his Discours Prélinaire, of « diverses branches dont plusieurs ont un point de réunion ».

Such a dynamic idea of the organization of knowledge and therefore, of the encyclopaedia, is likely to have repercussion on the status its defenders grant to the objects of knowledge and hence, on the procedures which, according to them, are undertaken when it is a matter of constructing or transferring a knowledge upon these objects. Although their doctrine remains changing and sketchy, it seems possible to extract the logic and the main orientations from it. These, as we mentioned before, form a paradigm which is constructed around four main terms: phenomenology, teleology, complexity and construction, which are the respective opposites to the terms making up the paradigm of traditional epistemologies and which are: ontology, determinism, analysis and sufficient reason. We shall only take into account the first two couples, which meets the needs of this paper and moreover, we shall restrict our study within the debates which go through linguistic and textual sciences today.

The reproach which is generally directed to traditional epistemologies is that they seem to believe:

on the one hand, in the potential of discovering, in an increasingly accurate and precise way, a localized reality which would exist independently from the way it is depicted and of

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reaching from behind the veil of the visible phenomena—«l’essence, la substance et la permanence des choses» (Le Moigne, 1995, p.19 et 23) and to disclose them in the shape of discreet elements combining with each other according to the law of an algebraic system7 whose formula can be a priori established, and on the other hand, in the exclusive existence of an internal determination or an efficient causality enabling to explain in a unique and permanent way the reality whose existence is postulated, the latter being supposed to have a meaning in itself which would be independent from the observer’s point of view.

Therefore, linguists of structuralist or generativist inspiration who are thus suspected of believing in the substantiality of the linguistic structure and/or the autonomy of language, find themselves reproached for making of language:

- either an inert object—whether it is considered as a code or a catalogue—which is composed at regular intervals of stable and identifiable meaningful units, following the example of separate units in phonology, and for remaining thus the prisoners of a simplistic atomism which is the remote heir to the Democritean model of the stokheia and to an unavowed Cratylusism,

- or a living organism which is born, grows and transforms itself, and for contenting themselves thus with a basic neo-Darwinian biologism which ignores for instance the feedback processes (Varela, 1988).

The same applies to the criticisms which were directed by the ‘new epistemologists’ against the notions of the text which we inherited from romantic hermeneutics and philological positivism or against those which were constructed by such disciplines as poetics, semantics and structural semantics. These criticisms focus on the common idea according to which the text would consist in a substantial reality which could be compared—depending on the school of thought—either to a massive, unique8 and intangible object, which would contain a meaning corresponding to the author’s purpose or to an autonomous and closed organism whose sense would fit into the strict limits of the space it fills without extending beyond it, or perhaps to a structure immanently containing all it requires in order to exist and to convey meaning.

These above mentioned epistemologists oppose to these notions of the language and of the text which are developments from the various de-substantialization, dissemination and deconstruction theories i.e. pragmatics, enunciation and reception theories without forgetting to mention the one which is referred to as interactivity sociology. So, to them, language seems no more like an object but an act of speech, a process, a contractualized strategy or ‘game’ which depend on the speakers, the context of the utterance and its addressees.

As for the text, it is looked upon in a dynamic way, which results in various subversions of the canonical model. One of them, for instance, consists in considering the text not as an object containing a unique meaning but a «sémiosis illimitée» (Eco, 1992), an almost infinite productivity of receptions or interpretations in which any thing interprets any other thing. Another subversion consists in asserting within the space of a text—which is from then on apprehended no more in its massive uniqueness but its elusive multiplicity, the proliferation of its alternative versions, its glosses and its readings or in restoring before its existence the heavy amount of its various drafts, skeletons and outlines which lead us straight to the heart of poiesis so that we should appreciate more deeply the development of this text and its completion. Lastly, the third subversion consists in revealing that the text possesses various forms of transcendence which will be called as Gennette (1982) says, intertextuality, paratextuality, metatextuality, architextuality and hypertextuality9 and consists in admitting it possesses a deep variability—in its nature and in its function which depends on the material condition of its publishing and conveying (Chartier, 1996 et Cadioli, 1997).
But it seems that this view of the text as an unstable entity—which is always threatened by otherness, opening and dissemination, expresses itself most radically with digital technology. Indeed, one of the first consequences which put down to the electronic publishing of text, is their dematerializing and their becoming virtual (R. Chartier, 1996, p.32-33). On this notion of immateriality are based several other ideas which connote it and amend it. Thus, the electronic text is said to be:

- labil, changing and evanescent for it can be presented, on request, in various shapes of contexts which reproduce or do not the traditional modes of publishing (pages, images, typed documents etc.),
- dynamic, for it allows «de nouvelles associations de l'image et du texte et la manipulation directe de données évolutives»
- easy to handle and to modify (as the texts were before the invention of printing),
- hidden, for in order to read you need tools (hardware and software) but you cannot reach the text physically with a simple functional gesture—leafing through.

All these real or assumed characteristics are but those which today allow to represent and materialize the functionalities of what is called the computer hypertext which refers to a system of navigation and of construction of knowledge thanks to which it is possible to isolate any textual units (sound or icon) and to link it up to another or several others (intratextual, metatextual, critical, explanatory units, etc.) specifying if needs be the nature of the link thus established. In such circumstances, the text is divided into an infinite number of units with various sizes which can correspond to the whole text or to any of its parts and which are as many ‘nodes of information’ and problematic entities whose nature and value depend on various ‘links’ which—as they connected this entity up with other entities, put it within the scope of critical interpretative topics.

We should now deal with a claim which pervades the writings of the new epistemologists, i.e. the claim that—thanks to the I C N T—the horizontality of knowledge came into existence. If we are not mistaken, this claim actually rests on two postulates which seem to presuppose mutually:

- the first one suggests that the objects of knowledge are immediately and openly within the reach of everyone, which opposes to the idea—taken up again since Lucretia—that truth and knowledge lie in secret places out of reach of the common run of people which can be only accessible to those who climbed up steep summits or down unfathomable abysses under the leadership of an exegete (Deremetz, 1997a).
- the second one—which is implicit—suggests that these objects correspond to facts which can be directly or indirectly examined or constructed, but not to an hidden objective reality whose existence would be supposed to be independent from this observation and this construction.

As a consequence, the systematic recourse to the horizontality metaphor contrasts in a remarkable way with the dominating role the verticity metaphor and, therefore the contrast between surface and depth have always played within textual, linguistic, and social sciences (Deremèt, 1997a). This opposition is largely found within a recent tradition which include Freudism and Marxism (in which are also found identical antagonistic couples such as: superficial/profound, manifest/latent, conscious/unconscious, superstructural/infrastructural) as well as romantic hermeneutics according to which works disclose a hidden trah towards which the interpreter must go back (Schlegel), and even science whose aim admittedly is to reach the level of the latent laws and regularities which govern the visible phenomena. F. Rastier (1987, p.219) points out that this contrast—which present usage he relates to the nearly exclusive dominance of the generativist perspective in linguistics as well as semiotics—«is variously used and taken up again everywhere because it has many advantages. » For
instance, it is present in A.J. Greimas’s semantics which shifts the Chomskyan concepts of
generative and transformational grammar to the level of the textual generating in order to
postulate through a kind of « en phase de la verticalité une suite de paliers d’explications
s’enchaînant le long d’un parcours génératif » (Parret, 1987, p.25) which leads us from the
deep structures of signification (the semiotic square) to the superficial levels where the
content then the text show themselves (Courtès, 1976). In his semantics, the meaning is
considered as a dynamic process of emergence, a generative creation whose secret workings
can only be disclosed by leaving « le paraître du discours...qui n’est là que pour signifier
autre chose » and by penetrating into the depths of the language and the text where lie,
according to Greimas, « l’être du texte sémiotique » (Greimas, 1976, p.25) and its ultimate
logical foundation.

But this contrast is mainly to be found in J. Christeva (1969. Passim) whose semanalysis
is based on a verticalized division of the text into a pheno-text (« surface phénoménologique
de l’énoncé ») and a geno-text (« fonctionnement signifiant du texte »). She relates the
division to the dualistic schema inherited from rhetorics (expression and contenO),
hermeneutics (literal and figurative sense) and generativism (surface structure and deep
structure) of which she gives her own interpretation: « surface et fond, structure signifiée et
productivité infinie », « sujet pulsionnel et structuration sociale ». Thus, she considers the text
as a process, a dissemination or a productive element so that her interpretation compels us to
go back10 to the geno-text, i.e. to the significance which is the hidden signifying activity of the
geno-text, which can be read like a filigree11 under the signification of the signs. As a
consequence, « sans oublier que le texte présente un système de signes, la sémanalyse ouvre à
l’intérieur de ce système une autre scène : celle que l’écran de la structure cache, et qui est la
signification comme opération dont la structure n’est qu’une retombée décalée ».

So, we would be tempted to ask the following questions: can we choose between the
vertical and horizontal views -both biased- and can we, as new epistemologists believe, escape
the depth fever and confine our explanations to the horizontal level only. Today, on the
contrary, many epistemologists believe that the existence of the depth schema is coextensive
with any explanatory, clarifying or descriptive work and any search for fixtures or
isomorphisms. In other words, any interpretation would bring about some depth and would
create a depth effect, which would not always and necessarily mean reaching an unspecified
hidden reality. Would there be, as a consequence, several ideas of what depth is ?

Indeed, this is what H. Parret (1987, p.37-41) thinks. He shows it in the article in which
he analyses the connection that Chomsky makes between ‘vision’ and ‘depth’. Indeed,
concerning this connection, Parret remarks that the distinction between being and appearance
on which this vision of depth is based, is « vieille comme le principe démocritéen selon lequel
il faut pénétrer à travers l’apparence de surface pour aboutir à une réalité profonde sous-
jacente ». But he also points out that Chomsky promotes himself the ‘galilean style’ which,
according to him, can be regarded as a ‘revolution’ inasmuch as it is characterized by « un
déplacement de l’attention intellectuelle pour les données vers un intérêt pour la vision et la
profondeur d’explication ». Therefore, the ‘deep regularities’ -wished by that linguist, would
have « le même degré de réalité que celui attribué par Galilée aux modèles mathématiques de
l’univers ». Parret concludes that this wish « trahit cet étrange mélange d’essentialisme et de
naturalisme caractéristique de l’épistémologie chomskyenne ». To this Democrito-galilean
depth of the « structures idéalisées et mathématisées » praised by Chomsky, Parret opposes
the relation-depth concept defended by L.Wittgenstein (1982) who does not believe either that
an appropriate consideration of discursive reality might arise from the penetration into the
depths of discursive sequences -disclosed in the shape of « structures idéalisées et
mathématisées »- or that a causal or another kind of explanation might create any depth.
Wittgenstein refuses to acknowledge this view which he considers as a chimera or a sickness related to idealization, and for him the concept of depth consists only in the reactions which can be triggered in us by any speech –even common– with which we are directly related. Depth, to quote Parret is only “le reflet d’une transposition paraphrastique-translative.”

As a consequence we would witness, with Wittgenstein, the emergence of a notion seeking to depart from the vertical model stemming from triumphant positivism. This model, if we assume that any discourse can be the subject of a metadiscourse which itself could be the subject of a metadiscourse and so on, also implies that each stage in the metadiscursive process generates an elevation –as to the understanding of the phenomena being analysed, which itself correspond to a deeper and deeper immersion into the heart of reality which this strategy seeks to reflect and to which it gives the following names: being, origin, secret law, regularity, foundation, or ultimate truth.

But there is a third kind of depth which is also alluded to by Parret who links it – wrongly according to me13 with Greimas’s semiotics. It is called identification-depth which – following Peirce, the semiologist discovers in the semiotic process itself as it is shaped by interpretation. The latter is linked up with semiotic productivity so that breaking through the layers means only starting up the procedure consisting in identifying the successive interpretive paradigms which feed the ‘scientific’ description.

Even if the operating of interpretive sémiosis thus leads us to give the prospect of horizontality and to add it to the numbers of myths which nourish our contemporary imagination, it does not necessarily requires us to go back to the democritien idea of a reality-depth. This operating also induces us to support and state the view according to which “la verticalité ne figure plus comme propriété du système, mais au mieux, comme simple instrument de sa modélisation” (Deremetz, 1997a, p.406) and according to which depth results from the interpreter relating or rather setting in perspective (in its pictorial sense) the various problematic which nourish the construction of his/her explicative or critical discourses.

This relating which is carried out by the interpretative-descriptive transposition can also be called hypertextuality if the latter is viewed as the creation of an interconnected network of nodes of information and of logical or procedural links, which opens up a multidimensional epistemological space where each node can –in its turn- be the subject or the instrument of cognitive construction.

In such a space each node of information belongs to one or more conceptual paradigms (see the multipatternal structure of the thesauruses) which each relies on the specific epistemological programme whose definition and properties depend on the heuristic project which generates it. Therefore, all of these paradigms and all of the terms that make up this programme are not the element constituting the reality of the epistemic field which is studied but represent the successive stages in a conceptual construction corresponding to an identified scientific goal. So, such a space is considered as hyper- or even meta-typological inasmuch as it enables the clash between diverse technologies and points out by this process their relativity since this space does not record anymore the stuff the things we speak about are made of but the reason why and the way in which we speak about them. As to depth, it is considered but as a token of the plurality of viewpoints, modalities and procedures according to which such or such an object of knowledge can be looked upon or constructed13.

The outcome of this reflection consists in a hypothesis which, according the beliefs of some or others, will be regarded as an illusion or an expectation: the hypothesis that the IT are on the way to introducing a ‘breaking off’ in the epistemological paradigm inasmuch as they provide not only new methods for assessing, presenting, making the most of and weighing up our traditional knowledge and its specific subjects but also the favourable
conditions for the creation and development of new knowledge as well as new procedures for their assess. As anthropology showed us, new tools create new objects of knowledge and new knowledge about these objects.

Notes
1 This is a référence to the Sokal affair which has been upsetting the scientific community for the last two years.
2 From now on, the abbreviation IT will be used in the text.
3 See G.B.Vico and his notion of Verum factum which states that « le vrai est ce qui est fait et que ce seul celui qui a fait peut connaître le résultat de son opération », without having to express his opinion on the status of the truth to be known.
4 Proverbes et chansons, 29, Champs de Castille, 1917.
5 I thank J.Bertoneche for having mentioned to me this work which I often had recourse to in this paper.
6 In the volcanic island long-drawn-out metaphor imagined by Le Moigne and based upon the Scientific Archipelago metaphor invented by P. Weiss—the biologist, everything consists in interchange, interaction, circularity and transformation: the explorer-researcher who lands on this island will discover in its centre a volcano which, through its spiralled canals, pours its lava—symbolizing the knowledge of knowledge—down four interconnected beaches standing for matter, life, movement and engineering sciences (which include the social sciences). These beaches are on the empirie sea and are washed by its sap which flows up through the same volcanic canals into the episteme crater where they will catalyse new reactions—sometimes explosive, which will transform the epistemological lava; and the latter as it settles will change the shape and the size of the island by adding here and there a new cape or a peninsula.
7 See infra—Perret’s allusion to the ‘galilean style’ of the Chomskyan epistemology.
8 About the view of the text as a unicum, see A.Cadioli (1997).
9 For Genette (1982, p.11) it refers to the « relation unissant un texte B (hypertexte) à un texte antérieur A (hypotexte) » and therefore its meaning must be distinguished from what it refers to in computing (C infra)
10 this going back actually is a going down to the original place of textual genesis!
11 See the complying with the hypotext in Genette’s palimpsest.
12 See supra – Greimas’s reference to the semiotic being.
13 Nowadays, technology enables us to picture and to imagine the network that fills this space and the depth effect it creates in two shapes which can be regarded as two metaphorical fields: the multi-window system and the 3D conceptual network. The multi-window system which enables you to open and to close, to superpose or to place side by side on the semiotic surface of the screen the various paradigms and topics that you call or lock on during a cognitive journey, clearly shows the methodological and logical nature of verticality. Yet, this process does not allow the display of all the operation and their logical linking, and relies much too closely (as the internet) on a tree-like, hierarchized and biased pattern. As to the 3D network, it will allows us to explore a conceptual space which can be altered and in which we will travel on the path of an ever uncompleted encyclopaedia always needing updating. Such a network is still in its infancy.

References

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