



Against Scarcity In Science And Knowledge
Management:
Towards A New Enriching Empiricism.

Stream 17: 'How To Do Things With Philosophy'

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1. How as an engineer I became an applied philosopher

When I had to choose my university studies, I saw two useful directions: philosophy and engineering, which in Belgium is named applied sciences. I choose engineering because intuitively I sensed that one becomes a philosopher by working in the “real world”. To my surprise the way of teaching engineering did not differ much to the way “exact” sciences were taught. The social, economic, political and cultural environment in which science has to be applied, was completely left outside the curriculum.

I have been fortunate enough to start my career in South America in the late sixties, which were quite interesting times. The experience of what may be called a traumatic cultural shock shook the foundations of my scientific background. The irrelevance of the way I had been educated became so apparent that I was tempted to throw my whole scientific background away. The acquaintance with the work that Stafford Beer was doing at that time in the Chile of Allende made me aware that there were other ways of applying science. I started to study seriously cybernetics and general systems theory. I was not so much interested in the “technical” aspects of this scientific development, but I started to sense that something important was happening from an epistemological perspective. I related the practice of cybernetics with the ongoing discussions between Feyerabend, Popper, Lakatos and other philosophers of science. Through my work as a manager and as an organization consultant, I was bound to go back to philosophy. Heavily involved in the development of information technology, I became aware of the implicitly platonic epistemological stance of the whole industry: e.g. the concept of “real time”, meaning technically no time at all and the oxymoron “virtual reality” .

In the beginning of the eighties I became aware of the works of Peter Checkland. He also had to refer to philosophy to back up epistemologically his experience as a reflective practitioner. His work at Lancaster University on Soft Systems Methodology has been for me a marvelous example of what philosophy in practice means. His views helped me to regain confidence in the need to be an irreducible reductionist without shame, but at the same time to be able to make this reductionism relative. I will go deeper into it in the rest of the article. The reason why I accepted to come to Lancaster is also a tribute to the work he did here during about 30 years.

I think it is right to state my Weltanschauung before going further into the contents of this article. My stance is definitely epistemological. I am not interested at all in ontology. What I call reality is an inexhaustible

and unknowable field of potentialities, an infinite abundance in the terms of Feyerabend, with which I can interact. These interactions are conditioned by my “preferred” worlds as the late Feyerabend so cogently states in his posthumous work: the Conquest of Abundance. As a systemic thinker and practitioner, I put much more emphasis on this kind of interactions than on the two components of the interaction. This means that the epistemological split between subject and object of inquiry, one of the basic tenets of the mainstream scientific discourse, has lost its meaning for me.

This article does not come from a scholar, but from a reflective practitioner, who had no other means than to go back to some basic philosophical insights to make sense of the way he tries to apply science in real world contexts. I will start to share my wonder about the elusive meaning of “information”, a recently emerged and vague concept in most of the sciences today. Further I will use as philosophical hammers the concept of autopoiesis, information and cognition of Maturana and Varela helped with the concept of “preferred worlds” of the late Paul Feyerabend and with the way Schopenhauer defines knowledge in his: the World as Representation and Will. Finally, I will go to the roots of all science and philosophy: myths. I will give a reading of the Biblical myth of the Tower of Babel in relation to the myth of the Tree of Knowledge to illustrate how long ago the myth of knowledge or information management already exists and has been debunked. In a conference that takes as starting point the concept of language (philosophy) as a hammer, I find it useful to make a link with the archetypal building tribulations using this hammer.

2. The elusive meaning of the concept of information in the scientific discourse.

In the last century the concept of information starts to pervade the exact sciences. Already the neguentropic demon of Maxwell sitting on the lock between a high entropy chamber and a low entropy one starts to question the external observer. Could he sort out the slow moving molecules from the quick moving ones and so invert the inexorable decay towards higher entropy, another word for chaos? In quantum theory the Pandora box is opened: Schrödinger’s cat, which at the same time is alive and dead until we open his box and look at what is inside. These were the premises of a great debate about what information really was and which has been well documented by Katherine Hayles in her, How we became posthuman: virtual bodies in cybernetics, literature and informatics. In the mean time economics and genetics are using the concept of information as if there never had been any debate.

As a practitioner I was confronted by the results of the debate, when I got involved in information technology and information systems. My first surprise came when I worked for some time in a research program aimed at reading automatically scientific abstracts so that they could be selectively disseminated to potential interested readers. Although abstracts are fairly well contextually definable, because of the fragmentation of the scientific disciplines, I got confronted with the “misbehavior” of natural languages: homonyms, synonyms, ambiguities between verbs and nouns, etc. From this I learned that without contexts texts are meaningless. In his *System and Structure*, Anthony Wilden illustrates the misbehavior of language with the following pun: *time flies like an arrow, fruit flies like a banana*. A good illustration of the intricacies we had to deal with in the work we were doing.

As all engineers, I received in my curriculum a course in “information theory”. This handled information capacity, signal-noise ratios, the needed channel capacity once the capacity of sender and receiver had been matched, etc. All these things could even be measured and calculated. The famous Shannon-Weaver concept was taken for granted. But, the most important aspect of information in real life situations was left completely out: literally as Hayles remarks, we had to work with meaningless information. The existing concept of information was completely a-contextual, and thus essentially meaningless. Even the concept of signal to noise ratio is meaningless: who decides what is noise and what is signal?

Later on as an information manager, I discovered some strange paradoxes around that concept of information. To check the relevance of the long lists of paper, I was distributing daily into the organization, I stopped randomly sending certain lists to certain would-be receivers. If there was no response, they disappeared from my distribution list. If there was mostly an angry response, I knew that I had discovered a real customer. The strange thought that came to my mind was that a sender with zero capacity was not sending any bits to a receiver through a zero capacity channel, but that nevertheless this receiver reacted as if he/she had received an important information content. He/she was attributing an important meaning to a zero bit content message. This led me to redefine in 1979 the concept of Management Information Systems, a buzzword at that time, which has been replaced by other buzzwords in the following years as decision support systems, expert systems, knowledge management systems etc. I wrote then that in order to design good management information systems, managers should be asked what they didn't want to be informed of much more than to try to elucidate their “information needs”. How much this became relevant in the ensuing years when managers are flooded by a glut of information!

As I was responsible for the development of production information systems, I discovered more strange concepts. The mainstream methodologies took for granted that the physical flow and the information flow should be treated separately. As if goods stored or moved by trucks and conveyor belts had to lose all kind of meaning by the people working with them. How many times did I hear a manager say, looking at his information: "This could possibly not have happened". Mostly in the real world of material flows this meant that indeed it already had happened. And working for an American company I heard the strange remark of many a manager: "I want facts", while in fact he/she meant: "I want figures". I started to understand how the whole information technology was nothing else than Plato applied. Those who experienced reality directly were the poor sods in the cave, while those who were looking at the flickering of their screens, were enlightened. Many times I heard the strange expression that "reality was wrong", but the information was right. This was quite a shock for a scientist who had been trained in the empirical way of dealing with the world. If a work hypothesis is refuted by an experience, then the work hypothesis is labeled as wrong and "reality" is always right: this is the base of empiricism. In management literature and in economics one reads now that realities are wrong: the people don't like the latest management fad, politicians make economic policies impossible, external conditions are not favorable to proof the rightness of our strategies. And this also is called scientific: a strange reversal of empiricism!

So one can understand that some doubts came up when I heard economists talking about complete information and geneticists about the information contained in the DNA-code. I started to question what was underlying this strange habit in "exact" sciences to do as if information was a "thing" that could be stored, retrieved, could be complete, could be integrated, without any reference to someone who was attributing meaning to it. Why was it that inevitably a certain concept of information started to pervade all sciences, but the concept of meaning was consistently avoided?

My main hypothesis states that once the concept of meaning is introduced into the mainstream scientific thinking, one of its basic tenets breaks down: the split between subject and object. Take eg. the concept of complete information that is used in economic theory. As long as complete information is seen as something outside the observer, which is or which is not available, there is no epistemological problem. Once, we start to ask to the observer when he/she thinks he/she is completely informed, the game changes completely. To be completely informed becomes a decision, a choice to be made by the observer. The fact that decisions only make sense in a context of attributing meaning to data cannot any more be avoided. The observer comes into the picture.

When geneticists start to talk about junk code in the genetic code, it has nothing to do with the genetic code in itself, but by the lack of ability to attribute meaning to some pieces of code by the geneticist him/herself. Already in the late 50's, von Foerster, a cyberneticist and biologist, discovered the paradoxes of the split between observer(subject) and observed(object) and wrote a long essay: On the Observer. This generated quite some discussions into the cybernetics circle in which he participated. All this leads me to the next part of the article, in which I start to (ab)use some texts from Feyerabend, Schopenhauer and Maturana and Varela as a hammer to make sense of the elucidating meaning of information in science and business.

3. Three philosophical hammers.

Feyerabend: Conquest of Abundance: The idea that reality is uniform but ineffable is not the only possible way of bringing order into what we think and know. Another way which, as far as I am concerned, is less one-sided (though compatible with the uniformity thesis) would be to admit that there are many different kinds of objects and features, that they are related to each other in complex ways, that some of them, such as fashions... reflect human interests while others, though manufactured with the help of complex equipment, seem to be more independent, and this hierarchy becomes the more obscure the more we try to remove ourselves from it.

Schopenhauer; The world as representation and will: We may form us an idea of the immense value of concepts and thus of reason by looking at the immense variety of objects and events who coexist or follow each other and to think how language and writing (the signs of the concepts) give us nevertheless adequate information about every thing and every state, at each moment and at any place, because a limited number of concepts may grasp and represent an infinity of objects and events

Maturana and Varela: Autopoïesis and Cognition: Everything said is said by an observer. The fundamental cognitive operation that an observer performs is the operation of distinction. By means of this operation the observer specifies a unity as an entity distinct from a background and a background as the domain in which an entity is distinguished.

Here are writing two philosophers and two biologists turned into philosophers. If I am coherent with what each one of them writes, I only can write what I read and you as a reader, only can read what you read. It is strange that philosophers have to point us again the way to empiricism. What I want to argue in the next paragraphs is that the concept of information, cq. knowledge that is used in science and business intrinsically tries to bypass the α of experiencing, which is the fate of every human being.

*** Feyerabend:**

Let us start with Feyerabend. It is natural for him that the venom is in the tail. The end of his long sentence is the key: *and this hierarchy becomes the more obscure the more we try to remove ourselves from it*. What do I understand with this hierarchy? Apparently, objects and features, or as Schopenhauer says objects and events which are less tainted by human interests belong to a higher hierarchy in defining what they are. In management eg. the implicit rule is that good decision making should be done on the base of the best available information. The use of the term information here implies that the decision maker should not experience directly the state of affairs on which a decision should be taken, but that he must gather intelligently intelligence from all available sources, except his own perceptions and senses. Decisions have to be taken in the brain, the center of the head office. The office of the CEO is as isolated from the senses as the brain is well protected behind a thick skull. In fact, the whole information technology has been sold to the business world with the idea that to be able to control a multifaceted world, you have to use the results of the following process:

Somehow, people experience “real” events, objects and features. These experiences are reduced into data. Mostly the concepts behind these data are only partially owned by those experiencing the event. This first reduction is already colored by at least two “concepts”: the one in which the experimenter of the event tries to encompass his experience and his understanding of the “distinction” that is imposed upon him to classify the data. These data are “enriched” into information by structuring processes. Behind these structuring processes are also “concepts” which have been distinguished by what are called professionals, well informed about concepts but not so strong in experiences. Ultimately, through the intermediation of a complex technology this information is fed to the decision maker, surrounded by his virtual reality, this beautiful oxymoron coined by the IT-world.

Although Feyerabend refers to the complex machinery that physicists use to make sense of the world of particles, I like to generalize the concept of complex machinery as the construction of logical schemes to classify the world of reasoning. How eg. events and things are transformed into accounting classification systems is sometimes quite miraculous. The search for quantifiable variables in science and management, in short in these affairs, which are characteristic for those who like to control “realities”, is not coincidental. Only good mathematicians can show *human interest* for numbers and much less for figures. Normal people are bound to be very detached from statistics and quantified measures. This detachment is then, if we follow the reasoning

of Feyerabend, a guarantee of independence and thus higher in the hierarchy to which he refers. Which leads us to a paradoxical situation: the more detached one is from the direct experience which requires human action, the more he is able to be in control of reality and to take the right decisions. But Feyerabend warns us: *this hierarchy becomes the more obscure the more we try to remove ourselves from it.*

One of the activities I enjoy while educating information managers towards an MBA is to spend with them together one day in a museum of contemporary visual art. The reason why I do this is exactly to clarify again the obscure hierarchy, Feyerabend is writing about. From their training, information technology people and I think, in general managers, only look at the contents of the information they treat or receive. They are thinking in terms of information as a model of the real world, a model seen as a representation. They have forgotten the mediating aspect of any report, any statistic, or image on a screen. Not what they see, some sheets of paper filled with ink marks or a flat screen full of colors is important, but the “reality” behind it. The models are taken for reality and acted upon as if they were reality. A Martian would have problems to understand why people can get so emotional while looking at a screen full of strange symbols. They would not understand why one of the most used propaganda tools in management, Power Point generated slide shows, uses the word Power and seems to make the Point. Managers have lost the capacity to be empiricists, ie. to use their own sense of sight, because they are lost in the obscurity of the hierarchy of Feyerabend. Bringing them in a museum of contemporary visual arts obliges them to take contact again with their visual sense. They ask again the relevant question looking at the works of art: what does that mean? But they have to start up their own meaning creating processes, based upon their own senses and their own Weltanschauung, based on their history and experiences. Generative contemporary visual art makes these processes compulsive. Only the sensing of the form can lead to whatever contents the viewer may generate. With some frustrated exceptions, this experience is for the students a real eye-opener. And my quiet hope is that when they are again confronted with very emotional discussions about the “contents” of the information they receive, some of them will start to point out the only reality a management team is sharing in such an experience: the form in which the information is presented. This is the only empirical ground on which they stand at that moment.

When we are able to act as real empiricists we are able to follow the rule of Stafford Beer: don't listen to what the system says it does, look at what it does. As a consultant a visit on the premises of an organization as someone who tries to experience the place is worth a lot of “desk”-work, looking into the contents of year and other reports and is sometimes

preferable and surely cheaper to a series of interviews, which are aimed only to gather information instead of building up relations. It is strange that direct experience of a place or event is called subjective, while objective means to be very detached of the affairs one wants to influence. But the hierarchy, Feyerabend is pointing to us, obscures us so that subjectivity, which is at the core of all human experience and the core of empiricism has become less relevant in science and in business than what is called objectivity, which is detaching us through the mediation of complex systems from our interactions with reality. One can refer as well to the sophisticated technological diagnostic tools used in medicine as to the increasing number of specialist auditors in organizations trying to fit once experienced realities in the Procrustes' beds of their standard forms.

No wonder that our real experiences are more and more related to the world of entertainment, not the world of work. Pine and Gilmore have even coined the term Experience Economy, while they refer only to entertainment, one has paid for. Bad experiences don't belong to economic life, while they are essential for the empiricist stance. So the way is paved to the virtual world, or better the virtue-all world, where painful learning through refutation of our worldviews is avoided. It is a beautiful self-regulating paradox that the scientific ethos, which started from a rigorous empiricist ideology, has let us into a world where our senses are only stimulated by mediated representations of reality. The scientific ideology didn't discover its internal contradiction: **objectivity and empiricism are essentially at odds**. It is the wit of Feyerabend who makes us again conscious of this contradiction and shows us the inverted hierarchy. We human beings are only subjective objects and are unable to become objective subjects.

* Schopenhauer

I received for my 60th anniversary the Dutch translation of Schopenhauer's *The World as will and representation* from a friend philosopher. Inside I found a postcard showing a portrait of the author with one of his sayings: everything will become worse. A good incentive to read the work!

I choose the quotation to illustrate the inverse process referred to by Feyerabend. As human beings we are bound to abstract, to create concepts or in systemic terms to discover invariants. In this sense, discovering doesn't mean to find something out there, but to find a new articulation of experiences we have. The form in which this articulation may appear can be very broad and surely is not limited to text. Leonardo da Vinci already was able to draw the gravitation law, which Newton could articulate mathematically about 150 years later, and he was

drawing the systemic invariants of flows by mapping the estuary of the river Po on the arteries of an arm. Even technological inventions may be seen as articulations. As I mentioned earlier, the introduction of information systems in business at the end of the 1950's is nothing else than the technological articulation of Bentham's paranoid panoptics. The masterly discovery of Watson, the IBM CEO who against all odds made a business out of calculating machinery was to tap that paranoia of control. He created the illusion of control from without: the people in the head office could control reality without being in touch with it. In a time when the American multinationals started to disseminate in the global world, this illusion was worth a lot of money.

Coming back to Schopenhauer: I could clarify through his reading a drawing I made for the first time in my book: Making Work Systems better, a practitioner's reflection in 1990. See figure 6.2. Schopenhauer sees the origin of concepts (articulations) as the transfer of domain III to domain IV. The most specific and concrete are our experiences, what we perceive with our externally and internally directed senses. The transformation into generative concepts (concepts which can generate an infinity of meanings in others) is what Schopenhauer names the "Anschauung". He is adamant that concepts that are not based on this process only lead to confusion and are not worth to be discussed. In fact following Locke and Hume, but also influenced by Hinduism and Buddhism, Schopenhauer positions himself as a real empiricist.

In science and business the concept of information and knowledge is mostly referring to a quite different process: the transformation from domain II to domain I. All mediated representations of the world, from which we miss the experiential context, we can situate in domain II. I refer as well to accounting "facts" as to what the mass media are broadcasting. The great majority of what we "know" of the world passes nowadays through this kind of mediated representations. It is our virtual reality. The normal way to work with these representations is to try to make sense of it through our own internal and external antennas, ie. to create our personal context. Then we can go into the "Anschauung" and create our own interpretations through our own articulation. In fact we make these representations subjective. This process is implicit and natural. But somehow, through the criterion of objectivity, the refusal of our subjectivity, another process takes place. We transform the a-contextual concrete representation into a general abstract one. Scientific ideologists name this the "Universal Truth" or scientific truth, business people name this the inexorable economic laws, politicians name this democracy, freedom and free markets. In general, information and knowledge that is used as an external legitimacy of human actions comes from this unnatural process.

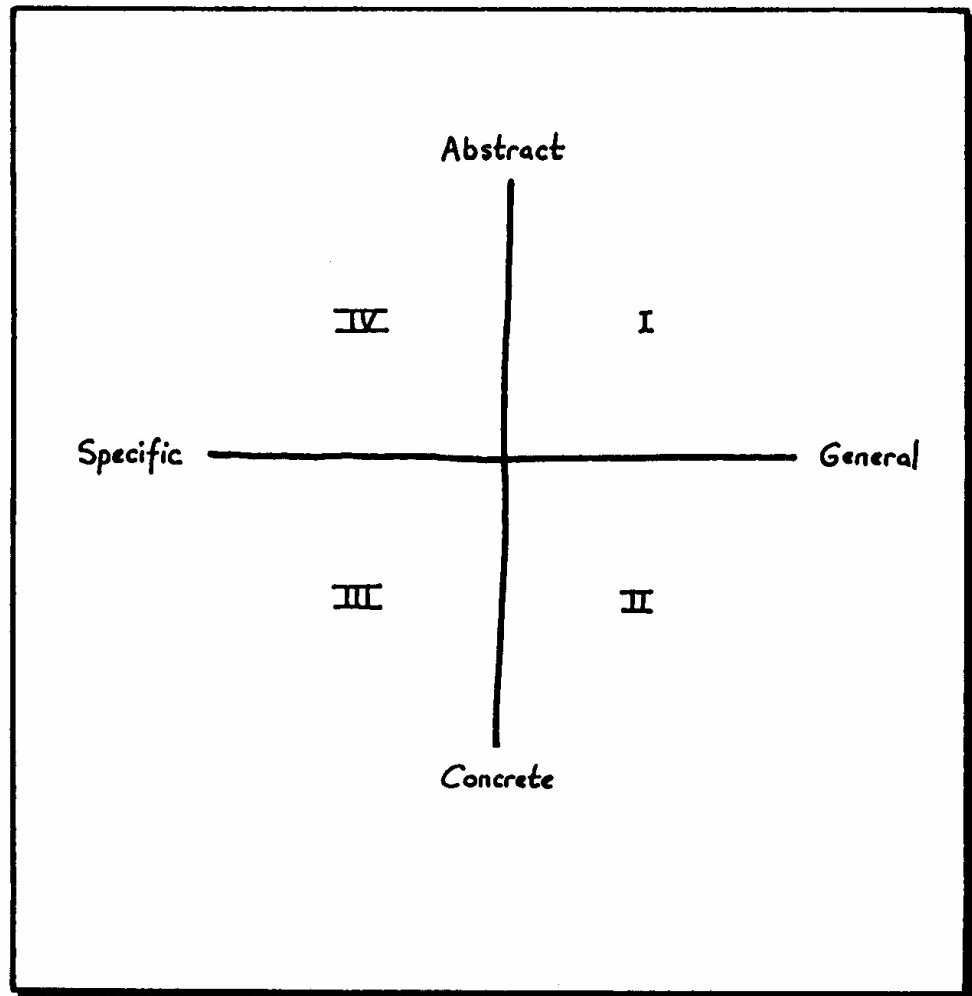


Figure 6.2 A quadrant for statements of the debates in the value-systems domain

The transformation from domain II to domain I is the basis for ideology and propaganda. Don't believe your own senses, don't try to give your own interpretation, but accept the "truth", which means accept the meaning attributed by any body in power. This is creating a world in which meaning becomes scarce.

Although this process is unnatural, because each of us, human beings, is essentially a creature creating meaning, it has become pervasive in our modern world. Once a child starts schooling it becomes indoctrinated that the process from II to I is the "normal" one. One learns about reality, not by interacting with it through experiences, but by the mediated teaching material and the teacher with whom the interactions are completely regulated. As a child I was punished because a winter fly appeared in my attention field. As the windows to the outside world had been purposefully made opaque, so that I couldn't look outside, the buzzing and the strange experience of a fly in winter was stimulating my "Anschauung". This distraction was labeled illegitimate and worth a punishment. The teacher tests your knowledge of reality, not by seeing how you are able to deal with it, but how you comply with the mediated meaning imposed by the teaching material. This is called an

examination. This type of schooling lasts for about 12 years. And then we start our life in reality. But the working life continues the same indoctrination process. Personal experiences have to be shunned. Reports and articles have to look objective and neutral. For the courts paper evidence is much more valuable than the stories told by the various parties involved, in which they try to give their meaning to the contentious events. Experts are called in, who know better than the direct involved people who we are and why we act as we act. We are confronted with data dictionaries and thesauri that define how we have to interpret in an unambiguous way what the meaning of concepts are. Concepts have been stored in databases and their relation with real experiences has been completely lost by strange abstracting mechanisms. When we are in doubt, it is our own subjective problem. We are in trouble, never the concepts. If our experience is contradicting this interpretation, then something is wrong with our perception. Reality doesn't refute any more concepts, but concepts are continually refuting realities. A strange inversion of Popper's concept of refutation!

I like to quote here a parable of Jung, the psychoanalyst.

There was an old curious man, who tried continually to know what he didn't know and knew that it always happened. After thinking a long time about the unthinkable he could not do anything else in his dire situation than to take a piece of chalk and to draw all kind of figures on the walls of his cave. In this way he tried to visualize what he didn't know. After many attempts he drew a circle. 'That looks right' he felt and 'now also a square into it' and it felt even better. His disciples came. They discovered the drawings on the wall and copied them. In this way they inversed completely the procedure: they started with the result and hoped in this way to recreate the process that led to that result. So it went, and so it goes still nowadays.

The important part of the parable is that the disciples were copying in order to pass through the same process. Many times in organizations best practices are copied exactly to avoid learning experientially the same process. The general abstractions are copied as a short cut for experiences. Organizational blueprints, mission statement, strategies etc are copied from the MBA-books by consultants and managers, because they are taken for truths that have not to be experienced anymore.

The world of broadcasting, propaganda, advertising and its ramifications in the virtual worlds we are daily confronted with becomes a world, scarce in meaning, when we are led by the ideology that objective information and knowledge has a higher status than personal subjective interpretations. The fact that we are living now with 6 billion meaning creators on this earth increases the tendency of the would-be social

engineers to rely on this scarcity to avoid the abundance. But self-regulating mechanisms subvert their tendencies: abundance always is more powerful than scarcity, life more powerful than death and as Schopenhauer would say: the Will is the prerequisite of all representations.

*** Maturana and Varela:**

Maturana and Varela were old-fashioned empirical biologists. They studied the transformation of visual stimuli through the eye and upon the cortex. They failed utterly. But they were able to invert their original worldview based on their own experience as **observers**. In this way they came to the concept of autopoiesis. In my opinion Maturana and Varela were able to give a new name to what Schopenhauer named the Will. In a paradoxical way they label will as autopoietic organization. This “universal” only can be represented through individual autonomous living beings. I don’t know if both biologists were aware of the works of Schopenhauer. But I don’t see it as a random event that Varela in his later works started to collaborate with proponents of the Buddhist experiential worldview, exactly as Schopenhauer was influenced by it.

By including as scientists the observer as an essential part of their epistemology, Maturana and Varela were able as they colorfully pointed out in their Tree of Knowledge to sail between the Scylla monster of representationism and the Charybdis whirlpool of solipsism. “ The situation is actually simple. As observers we can see a unity in different domains, depending on the distinctions we make”. Indeed their solution of the epistemological conundrum is simple: the quotation out of Autopoiesis and Cognition is indeed much shorter than the one of Feyerabend or Schopenhauer. By introducing in a very simple way the observer, they are able to bypass the strange hypostasis of Schopenhauer’s Will and at the same time to clarify the “preferred worlds” of Feyerabend. By accentuating the organizational closure of all living systems, they respect the impenetrability of the black box and nevertheless permit themselves as observers to talk about it. “By behavior we mean the changes of a living being’s position or attitude, which an observer describes as movements or actions in relation to a certain environment.” “ Notions such as coding and transmission of information do not enter in the realization of a concrete autopoietic system because they do not refer to actual processes in it. The notion of coding is a cognitive notion which represents the interactions of the observer, not a phenomenon operative in the observed domain.” “ Autopoietic systems do not have inputs or outputs”.

What meaning do I attribute to these statements in view of what I already mentioned about information and knowledge management, and in

general about the way the concept information is used in business and science? Together with Maturana and Varela I take an explicit non-functionalistic stance regarding organizations and management. When the concepts information and/or knowledge are used in the business environment, they are always seen in function of, or as a result of, as an input or as an output. Management information is seen as the feedback stream between the system to be managed and the manager, with the manager outside the system. If work systems are autopoietic systems, there is only a transfer function between input and output in the eye of an observer. The behavior of the system is not a characteristic of the system itself but a description that an observer makes. A work system swims in a sea of information cq. knowledge, but only “understands” what contributes to its own autonomous maintenance of its autopoietic organization. In simple words: any human being in an organization only understands what it likes to understand, what arouses his *human interest* (Feyerabend) and attributes meaning to it in so far it corresponds with his own liking. Consequently all the efforts to communicate well, to have clear messages, to convey unambiguous information is rather vain, once the epistemology of Maturana and Varela is taken seriously. Central to all information and knowledge processes is the observer, the receiver of it. He/she makes the distinctions in function of what he/she likes to understand, in other words he/she creates meaning relevant to his/her own contingent situation.

In fact, taking the concept of autopoiesis seriously, the emphasis in organizational discourse changes from necessity to desire (Schopenhauer would call it Will). Necessity is directly related to scarcity, desire to abundance. We don't need knowledge or information. As observers we are curious and like to discover more the images we can form of what we call outside reality, but which are in fact nothing else than the realities we construct. The language of functionality is a language of needs the language of abundance is a language of choice out from the plenty. Everything what is called noise, or nonsense or waste from the perspective of necessity and scarcity can become meaningful and the source of creativity from the perspective of choice and desire. Thus there is never a need for information and knowledge there is only a desire for them. When we talk about information or knowledge management, we coin a term that from the perspective of choice means the management of desire. But once we start to take that perspective the mainstream “rational” approach towards management and organization issues gets into jeopardy. The rational approach only is meaningful from the perspective of necessity. But as Varela pointed out in one of his conferences, there is no functional necessity why the gorilla has the face it has, it is his own “choice”. Clearly, this doesn't imply rational choice! As long as we relate information and knowledge management with the functionalistic discourse of externally legitimated necessity and don't

dare to legitimate desire and choice out of abundance in organizations, we are barking the wrong tree. Once we start to take the great diversity of meaning attributing individuals in organizations seriously and accept desire and choice as a given, we have to forget controlling the results of the processes we enable. In fact, through e-mail and other communication means, already now gossip and chatting becomes an essential part of choice processes in social systems. What I name gossip here, is from a standpoint of an observer who is not able to fit his understanding with what he makes out of it. Trying to deny it is limiting the discovery of a greater internal repertoire of understanding. Trying to make sense of it is increasing ones own repertoire of knowledge. Knowledge management is nothing else than a reflective process in trying to articulate ones desire to attribute meaning in what one does with the infinite sea of information, one is swimming in. It only can be a personal process.

This is my understanding of what social systems and social interactions are about: we make our choices with whom we like to interact and whom we like to avoid in order to work on our understanding of the abundance we have in ourselves. In Peter Checkland's terms: we maintain wanted relations and try to avoid unwanted ones. This process is not necessary. As the gorilla its face, human beings as a species have made the choice of complex organizations as an expression of its desire. Functionally organizations are absolutely superfluous, survival is possible without them and there is no reason why they should survive. Organized work, the division of labor is the way we human beings make sense of who we are and what we like or dislike. Once in organizations scarcity and necessity becomes the ethos, they start to loose meaning. And one form of creating scarcity is to try to control the meaning creating processes of its members by trying to limit functionally the information and knowledge available. Propaganda as well as censoring is nothing else than futile efforts to control the meaning creating processes of the members of a social system. Until now in human history these efforts never could last during a long period.

We are unable to experience by proxy or in other words experiences cannot be transferred. Knowledge transfer only means to confront someone with his/her own repertoire of discoveries to be made. Sometimes this is an enjoyable process, sometimes a painful one. Although we should like to avoid the last one, we have no control over the effects upon others of what we do when we share our own repertoire with them. That is the reason why knowledge transfer should be interactive, between persons. Electronic interactions are unguided missiles. It is only the observer, the receiving end of the interaction who decides what the meaning of the message is. A small idealistic organization collapsed completely because its members had decided to

rely mainly upon e-mail correspondence as a way to save travel expenses. In the shortest time misunderstandings were galore all over the place. In all communication processes misunderstandings are bound to appear, just because the receiver is making up his own mind. In fact, good communication is built upon misunderstandings. But the parties involved in it must be able to experience one another, and not only the content of their messages, to deal with these processes. Paraphrasing Stafford Beer: the system may not like what is said to it, but may like what it sees. Maintaining an enriching, non-functional relation can be a stronger desire overcoming the pain of being confronted with ones own not understanding. And so we come to the last part of this text: the primordial myths regarding knowledge.

4. The Tree of Knowledge and the Tower of Babel.

The interpretation (what I read) in the two Biblical stories is naturally colored by my worldview. Nevertheless, I want to point out that these mythical texts are essentially generative texts. This means that they were written for interpretation. The immense number of commentaries which have been written, the number of translations from the original Hebrew, which only can be read as interpretations may be seen as legitimating it. Furthermore, I have been working with the original Hebrew texts since 30 years, which in fact gives me more degrees of freedom than if I only worked with one translation.

*** The mixed blessing of the eating of the tree of knowledge**

And when the woman saw that the tree was good for food, and that it was pleasant to the eyes and a tree to be desired to make one wise, she took of the fruit thereof, and did eat; and gave also unto her husband with her, and he did eat. (Genesis 3:6)

In three different ways the tree is linked to desire. The basic experience of eating is immediately linked to the esthetic experience and even to the spiritual experience of wisdom. Without eating, the two other experiences don't exist. It is an animal, the serpent, *more subtle than any beast of the field*, who is confronting the woman with the possibilities which are linked to the eating of the tree. Maturana and Varela state that all living systems are cognitive systems, or as Schopenhauer puts it are moved by the Will. We are quite far away from the preponderance of rationality and objectivity, separating the human subject from the animal objects. Even an animal can broaden our repertoire of self-discovery, because we can ourselves get in touch with the animal (vegetal, mineral) in us. Thus there is no virtue-all reality here, but the tree of knowledge where good and bad are inextricably linked with one another. Trying to implement knowledge management systems as if they only will contribute to

improvements without any negative consequences is exactly the temptation of the serpent: *ye shall not surely die; for God doth know that in the day ye eat thereof, then your eyes shall be opened; and ye shall be as gods, knowing good and evil.* There is nearly no literature about knowledge management that refers to changing power and ownership relations once knowledge is let free in an organization. As if it only will contribute to organizational performance. No, once knowledge makes the observer stance possible, he/she starts to make “unitary” distinctions, as between system and environment or between good and evil. Knowledge breaks the rules. As Genesis continues, the promises of the serpent become real: *and the eyes of them both were opened, and they knew that they were naked.* Once, one has eaten from the tree of knowledge, one is confronted with what is missing, with what one doesn't know. One discovers one's nakedness. Desire and curiosity become endless, infinite as God. And thus we become immediately aware of our finiteness, of time and death. As the great German artist Joseph Beuys wrote: the foundation of human creativity is his conscience of death. Survival is not an issue any more, only meaningful life. Promoting knowledge management as an arm in the struggle for competitive advantage and survival, don't take into account that survival is not any more an issue for those who know. Knowledge workers have much more freedom of choice to go away from their organization, when it doesn't correspond anymore with their desires. It is only when death has come into the life of Adam and his wife that: *and Adam called his wife's name Eve; because she was the mother of all living.* (Not of all surviving)

This ancient myth helps us to understand that knowledge is not a good in it self, it is always a mixed blessing for the optimists and a mixed curse for the pessimists. Because as Maturana and Varela state in their tree of knowledge: all doing is knowing, and all knowing is doing. Because we are dealing with autopoietic systems, whatever we do has wanted and unwanted results. The distinction of wanted and unwanted, or between good and evil is out of control of the one who acts. It belongs to the meaning that others attribute to it. The purely functional (wanted output) of knowledge and knowledge management has a very primitive perspective upon what knowledge encompasses. The old myth of the Tree of Knowledge appears to be much wiser than most of the knowledge management literature.

*** The Tower of Babel**

And the whole earth was of one language, and of one speech. (Genesis 11:1)

And they said. Go to, let us build us a city, and a tower whose top may reach unto heaven; and let us make us a name, lest we be scattered abroad upon the face of the whole earth.(Genesis 11:4)

The first time I made the link between the myth of the tower of Babel and information systems was during a visit with the students in information management. Two of them were standing before Breughel's famous painting of the tower of Babel. One of the said to the other one: that is exactly what we are trying to do with information systems in organizations. We try to implement one language and one speech, and the results of it are well illustrated by the half built, half ruined tower we see on the painting.

Because of the view upon information and knowledge that is preponderant in the IT world, diverse meanings attributed to a definition are to be avoided. Ambiguity doesn't belong to the world of clear-cut zeroes and ones. Thesauri and data dictionaries are tools that are meant to avoid ambiguities. When the responsibility of the quality of information is laid down in the sender and the receiver is seen merely as a passive receiver of input, it is normal that unity of language and speech is necessary. Mediated information and knowledge is bound to be objective and only understood in one way. But as Maturana and Varela pointed out: knowing is action and action is knowing. The builders of the tower of Babel try to test their unique language and speech by trying to do something with it. It is beautifully ironic that the Bible text is using the first person plural (or is it a majestic plural) to express the building intention: *let us build us a city and a tower and let us make us a name.* When the word "we" is used in groups, I am always attentive who the speaker is referring to. Mostly it is a hidden I. When there is only one language and speech the tendency is to take away the voices of the other ones by saying we. Surely if the rationale behind the usage of the word we is anxiety: the anxiety that I loose control and that the system will be *scattered abroad upon the face of the whole earth.*

This leads to the futile efforts to build a knowledge tower. Knowledge, when separated from experiences and meaning creating processes, objective knowledge generates the illusion that it is additive. Surely, the mainstream view of knowledge in organizations, but also in science is that it consists of bricks that can be placed one upon another. The concept of storing knowledge, of having knowledge banks is very similar to the intentions of the builders of the tower of Babel. Once this knowledge is put into use by various parties and each one of them necessarily has to form its own meaning from it to be able to make sense of his/her own interactions with others and with the environment, the beautifully planned concept falls apart.

When one starts to understand a “best” practice by interacting with different users of it, one becomes aware how differently this practice is realized in various contexts. Feyerabend and Schopenhauer are not far away. Even a simple instruction gets interpreted in quite different ways. Many conflicts in organizations arise because of the illusion that an instruction can be understood only in one way, the way the sender meant. The idea that understanding in action is quite different with cognitive understanding, because of the *human interest* or the desire or the will of the one using it starts to interfere cannot be accepted in a framework of objective knowledge. If then the fact that someone else will not understand what I understand is seen as a threat for the cohesion of a social system and creates anxiety in the one who tries to control the meaning of the other ones, scattering will unavoidably succeed. The myth of the tower of Babel learns us that if one tries to create scarcity of meaning and tries to build upon it, ruin is in the air. On the contrary, when one accepts the scattering, the abundance of meanings and tries to cope with it in action, cohesion is not jeopardized.

The managerial tenet that before one can start to take cohesive action, one necessarily has to achieve beforehand a unity in understanding, in language and speech, is bound to fail. Only when one starts to act together with others, to create a common experience, a common language can be generated. This language may be called rich or abundant, because it gives to its users the freedom of interpretation: the experience of having done something together is a guarantee that misunderstandings due to these different interpretations can be dealt with upon a common ground. This ground keeps the system together in spite of the multiplicity of voices. Knowledge is fortunately scattered all over the place, because people is scattered all over the place. And this scattering, this richness and abundance is the prerequisite for meaningful and constructive interactions. Uniformity kills, diversity creates.

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