
Changing organisations with metaphors

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Abstract

Draws on a consultancy project designed to reduce accident rates in four Danish sugar factories. Presents examples of metaphor use in the project and documents a steady decline in numbers and severity of accidents over time. Hypothesises that the use of metaphors is part of the explanation. Following a multi-disciplinary review of the literature on metaphors, suggests that they can be harnessed in three ways: as tools for conscious, creative analysis; as ways of creating emotions; and as ways of fostering unconscious learning processes. Suggests that the effect in the sugar project is due to unconscious learning. Explains how this can happen and stresses the most important. Proposes that consultants use images, stories, narratives, and fairy tales to a larger degree and put less weight on formal conceptual learning when change is the issue.

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Introduction

One of the puzzling aspects of the consultancy one of the authors conducts using the Stumbling Stone Technique (Hinz, 1998), which he developed, is that it brings about substantial results, but so far it has been difficult to attribute that success to one or more of its elements. After much discussion, reflection and reading we came to think that a particular aspect of the consultant's style, that is his use of metaphors, called for some attention.

The use of metaphors in teaching, coaching and even in the development of organisation studies as a discipline is now well documented (Barley, 1983; Cohen *et al.*, 1972; Morgan, 1980; 1983; Phillips, 1995; Putman *et al.*, 1996; Tsouskas, 1991). There is widespread consensus among these authors that metaphors are far more than mere rhetorical devices that embellish speech and writing.

Metaphors may reach people in ways unknown to literal language and their use seems to trigger the behavioural changes that a consultant may want in organisations. But why is it so, and how does it happen?

In our quest for an answer we will rely largely on what has already been published on the use of metaphors in organisation studies and consultancy work. We will also illustrate how metaphors have been used in practice in four Danish sugar factories and highlight the results which have been achieved there. In the following discussion section we will explore the avenues that may help management consultants and researchers to find their own answers to the questions raised.

Change work in the Danish sugar factories

The Stumbling Stone method was used by the consultant in four Danish sugar factories to support them in the implementation of a work environment project aiming at reducing work accidents to one-third of 1996 levels. The project started in 1996 in collaboration with the National Working Environment Authority. This collaboration lasted during most of 1996. Its main purpose was to bring up the technical equipment to legal standards. This was followed by the implementation of the Stumbling Stone Project (Hinz, 1998), which involved all employees of the four factories during 1997, 1998 and 1999. The Stumbling

Stone Method is one way to establish a Learning Organisation. The Method builds on the assumption that organisations are complex adaptive systems and it provides means to link the legitimate system and the shadow system of the organisation thus tapping into the creativity resource of the employees.

Project activities include management seminars, instruction meetings with all employees department by department. Then a slim project structure is established and there is ongoing follow-up. Depending on the needs of the company, the projects can be focused on quality, productivity and /or the working environment.

After ten weeks the department has learned the Method, tried it out in practice and a good number of the employees are or have been engaged in problem finding and problem solving. The Project now continues with no more formal meetings, but continuous attention from management and consultants is vital.

The process led to significant reductions in numbers of days lost due to accidents taking place in the workplace, as illustrated by Table I.

During the first project-year it became evident to the consultant that accidents do not often happen due to technical conditions but more often due to lack of operator's attention, not taking proper precautions, not being cautious and careful enough etc., in short the critical factor is: how does he run his brain!

With that in mind, training modules were designed that heavily relied on metaphors as illustrated in the examples given below.

Here we will focus on some of the training sessions in order to illustrate how metaphorical language is used during these sessions.

Example 1: Knowing the crocodile

We show employees a picture of a crocodile. The consultant's talk goes somewhat like this:

A crocodile is not dangerous. Of course you have to know something about crocodiles. What they prefer to eat, how fast they can run, how often they feed etc.

You should also be able to recognise a crocodile, not assuming it is a trunk and sitting down upon it to have your afternoon tea. And you should know where crocodiles normally are around.

If you just learn these things and act accordingly, you can establish quite peaceful relationships with crocodiles.

A factory is not dangerous either. Of course you have to know something about factories. It is not a double bed. Nor a trunk.

In fact there are crocodiles in the factory. They hide, they don't feed very often, but when they do, don't be near them!

So: be good at anticipating where crocodiles hide – and take precautions.

After that we train the participants – showing them pictures of workplaces and situations from the factories where accidents have happened and ask them:

What can happen, and what could you do to avoid it?

Later we show them the cow and the fox.

Consultant's talk is along the same line:

We can see of the descriptions of accidents that often we are naive – like cows – however from now on you are rather like foxes, you have fox brains, you avoid like a fox – as a fox – every risk ...

Example 2: Throwing dice

Participant: it is no use taking care. You could get hurt anyway.

Consultant: you could reduce the risk!

Participant: you could never take away the risk.

Consultant: you could reduce it.

Participant: you could get hurt anyway.

Consultant: let us make a deal. You throw a dice. Every time you get "6", I give you 100,- kr. If any other result, you give me a hundred OK?

Participant: no.

Consultant: why, you may as well get a "6."

Participant: no, because ... oh!

Table I Evolution in the number of accidents and days lost (1984-2000)

Year	Number of accidents	Lost days	Lost days per accident
1984	104	918	8.8
1985	130	1,112	8.6
1986	122	1,269	10.4
1987	95	681	7.2
1988	95	883	9.3
1989	120	1,415	11.8
1990	83	740	8.9
1991	87	908	10.4
1992	66	624	9.5
1993	63	635	10.1
1994	63	641	10.2
1995	57	658	11.5
1996	48	671	14.0
Project period			
1997	61	501	8.2
1998	45	256	5.6
1999	49	342	6.9
2000	24	130	5.4

Example 3: The Kamikaze

During a two day conference with management and key personnel (engineers and health and safety trade union representatives) we had, off the record, been told that supervisors sometimes let people run risks to keep up production.

In a session the consultant referred to a nasty example and continued:

... which reminded me of the kamikaze pilots of Second World War.

What happened was that the Japanese imposed severe losses on allied ships by filling small aeroplanes with explosives putting a pilot in, welding the door and letting him steer the plane directly towards an enemy ship.

After this interruption the consultant took up the programme again not allowing any reaction or discussion.

At the end of the seminar the consultant closed thus:

Starting this seminar I referred to the kamikaze pilots of World War Two. Probably your subconscious has wondered “where am I in this picture?” and I anticipate you did not find yourself in any role. Anyway that was history. I suppose you choose much better roles for yourself and your colleagues and employees in the time to come.

Conceptual and theoretical foundations: how do metaphors work?

It may not be possible to isolate a particular phenomenon (telling fairy tales) from a range of other phenomena to which it is linked (socialising with clients, credibility through past experience and success, provision of a professional service with good support material, ongoing follow-up) all of which produce an effect on the eventual outcome of a consultant’s activity (successful reduction in accidents in the sugar factory project). Our hypothesis is however that the use of metaphors is a key success factor. This is consistent with the findings made by several researchers who highlight a range of benefits associated with metaphors, even though their approaches were clearly embedded in different disciplines.

Our review of the literature suggests that we can cluster the use of metaphors in three important functions, which can then be hitched to the consultancy wagon. The first function associated with metaphors reflects a conscious analytical – however not necessarily “rational” – process. It is indeed often argued

in organisation science that metaphors can be used for creative understanding and sensemaking. The second function that is associated with metaphors in the literature is their emotional dimension. Metaphors generate experiential meaning and appeal to individuals’ feelings. This aspect has been discussed frequently in management literature and more particularly in marketing where metaphorical language is widely used. The third function associated with metaphors is their ability to fuel action. Here the underpinning research essentially stems from developments in psychology and our current understanding of the unconscious mind.

The next section of the paper initially discusses the conceptual foundations of metaphors, then we will discuss the benefits that can be derived from their use by focusing on each of the functions introduced above.

Definitions

A strong interest in the use of metaphors emerged as organisation culture recently came to the forefront of management debate and practice, but as Barley (1983) pointed out, the research origins stretch further back and can be linked to progress in modern social sciences in anthropology and semiotics in the late 1950s and 1960s. The main focus of the researchers involved was to find out how people in organisations socialise, develop shared meanings and communicate among themselves.

Much of these research streams can be traced back to philosophical debates on the nature of knowledge, as in the work of Emanuel Kant (see Calvin, 1996), the morality of the use of tales as in the recently re-edited work of Jean Jacques Rousseau, in his *Rêveries du Promeneur Solitaire* (1998).

In fact one could go even further and refer to Aristotle (Calvin, 1996). For our purpose it is however sufficient to note that in the quest for knowledge and for understanding of human learning processes, narrative fictions, tales, and metaphors had their place in debates.

The central point in these debates, irrespective of the social sciences arena in which they took place, is that metaphors are important means of communicating, therefore of expressing knowledge; they are also important means of generating new understandings of social phenomena, thus of generating knowledge.

Language, stories, myths, icons, symbols, and even behaviours, rituals and events are all

primary means by which signification occurs in organisations. While acknowledging the wide range of signs and meaning generating processes that have been identified by Geertz (including for example metaphor, metonymy, hyperbole, oxymoron, rhythm, alliteration, irony, inversion, etc.), Barley points out that three forms, metaphor, metonymy and opposition are the dominant processes. Although Barley's approach relies on semiotics, the definitions and explanations he provides are simple and clear enough to be adopted by researchers and practitioners, who (like us) are essentially concerned with management, consultancy and organisation studies.

According to him, opposition is the process by which one meaning is generated by focusing on an opposite or contrasting meaning. He refers for example to the red traffic light: we derive its meaning from what it is not, i.e. the green or orange light. A similar rationale applies to our understanding of up and down or of vertical and horizontal. When we refer to a "crown" to mean a king or queen, or to "white coats" instead of medical doctors, we use metonymy. Indeed "the classic definition of metonymy in rhetoric is: a quality or aspect standing for the entity of which it is an attribute" (Barley, 1983).

Finally, metaphor is "signification by similarity or analogy" (Barley, 1983). The practical issue is to differentiate metonymy from metaphors, and here Barley offers us a rule of thumb:

A metonymical signification occurs when expression and content are both part of the same domain, or context, whereas metaphorical signification mixes domains and context (Barley, 1983).

In practical terms, white coats and doctors are part of the same medical domain (metonymy). But we can use a metaphor based on a sailing boat, that is light and manoeuvrable, uses a renewable source of energy – the wind – and leaves no trace behind it to refer to a flexible corporation, that has assessed the environmental impact of its use of resources and its production processes so that it does not pollute the environment or recycles the waste it generates (Stead and Stead, 1996). The business and the sailing boat belong to different domains, yet there is a meaningful analogy between their respective mode of operation (metaphor).

We accept that our preferences in definitions will not necessarily reflect the

positions of all influential writers in this area. For instance, Morgan (1983) focuses on irony (rather than opposition) and presents it as a type of metaphor. According to him:

Irony, . . . , is a reflective form of metaphorical imagination that involves the interplay of opposites, and creates insight through paradox and contradiction (Morgan, 1983).

Despite such differences, Morgan's broad conceptual perspective on metaphors, according to which, "metaphor creates meaning by understanding one phenomenon through another in a way that encourages us to understand what is common" (Morgan, 1983) is consistent with Barley's and applicable to our empirical focus.

The use of fairy tales – often in the shape of examples from real life – plays an important part in the Stumbling Stone Method. Fairy tales as suggested by Rousseau are truths in disguise. Indeed beyond the fictional situations and mesmerising characters there is a story-line that is simple truth.

While the fairy tales are not metaphors *per se*, it is our ability to find in them these "simple truths" through analogy and identification that give them their metaphorical value and impact.

Metaphor as a tool to support conscious creative understanding and sensemaking

Reference to the use of images and stories in management is predominant in the work of Gareth Morgan, Karl Weick and Secher-Marcussen and Speirs. They adopt different perspectives but their concerns meet in their desire to shed light on means of understanding organisational reality in other ways than rational analysis popularised in the classical school of thought in strategic management for example.

Between 1980, with the publication of "Paradigms, metaphors and puzzle solving in organization theory" in *Administrative Science Quarterly*, and 1993 with the release of *Imagization: The Art of Creative Management*, Gareth Morgan's contribution to our understanding of metaphorical language has been very significant, as it moved away from theory building to a greater focus on practical implications for the daily activities of managers.

A key argument of his is that metaphors are essential in creating meaning and can be traced in every concept we use (Morgan, 1980; 1983). He points out that those who promote the use of literal language in

organisation studies overlook the fact that many of the words currently accepted as part of the conceptual jargon in organisation studies (i.e. what is seen as “literal” language) rely on a number of metaphorical shifts in meaning. Strategy is a typical example. The meaning of the word shifted over time, as metaphorical analogies were constructed between contexts. It is therefore no surprise that *The Art of War* from Sun Tzu, the Chinese ruler who lived more than 2,400 years ago, is nowadays used in management teaching.

Morgan shows in his early work on metaphors how they underpin different management paradigms and associated schools of thought:

... schools of thought in social sciences, those communities of social scientists subscribing to relatively coherent perspectives, are based upon the acceptance and use of different kinds of metaphors as foundation for inquiry (Morgan, 1980).

The message stemming from that piece is clear: no matter where particular researchers and practitioners would locate themselves, the critical point is that the multiplicity of metaphors, acting like different lenses, is needed. They shed different lights on organisational reality, enhance our understanding of that reality (Morgan, 1980).

More recently Morgan (1993; 1997) focused on the ways in which metaphorical devices, images, in particular, can be used to multiply perspectives on particular business situations giving managers a wider range of options.

According to Morgan imaginization is an interpretative process, in that a situation is considered through different images. Imaginization helps us to stay open to continuous self-organisation because it allows for an increasing variety of interpretations and reinterpretations of our situation and goals.

Thus, metaphorical language not only enhances the “academic” understanding and debates in organisation science, but it also enriches the range of tools and techniques available to managers:

This ability to invent evocative images or stories that can be resonated with the challenges at hand and help motivate and mobilize people to achieve desired goals or to cope with the unknown, is becoming a key managerial skill (Morgan, 1993).

With *Sense Making in Organizations*, Karl Weick (1995) follows a similar line of

argument: given a past moment, a present moment and a connection between the two, we can make sense of the present. According to him, our understanding of the present is underpinned by our use of “stories”. These act as templates: past events or circumstances led to a set of outcomes; because the present situation bears similarities with that past “story”, a similar type of outcomes may be expected:

... a good story, like a workable cause map, shows patterns that may already exist in the puzzles an actor now faces, or patterns that could be created anew in the interest of more order and sense in the future. The stories are templates. They are products of previous efforts at sensemaking. They explain. And they energise (Weick, 1995).

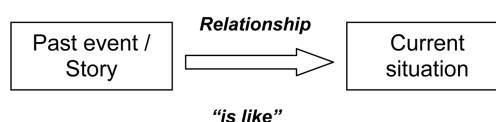
However using stories in organisations can sometimes be problematic. For example, lack of prototypical past moments, can impede the search for meaning (Weick, 1995). Further, Weick states that most models of organisation are based on argumentation rather than narration even though most organisational realities are based on narration:

This means that people are often handicapped when they try to make sense of organisational life, because their skills at using narratives for interpretation are not tapped by structures designed for argumentation (Weick, 1995).

Further, it should not be forgotten that a “normal” story is never carrying the total and objective truth. Stories are always subjectively interpreted selections of what “really” happened. The processes of selection and interpretation uniting separate elements to a meaningful entity achieve this: Weick talks about narratives as “products of severe editing”. This, however, should not be surprising because people who build narratives of their own lives use hindsight. Typically they have access to some felt outcome that can guide them retrospectively as they search for an efficient causal chain capable of producing that feeling of meaning (see Figure 1).

The issue is whether such subjective interpretations of events are useful tools for understanding organisational reality and

Figure 1 Sensemaking components



mobilising resources. Weick's answer is unequivocal: not only do we "function" better in organisations when using narratives as opposed to rational analysis, but we also need stories that are relevant as opposed to accurate. A relevant template is more powerful in sensemaking than a comprehensive rational analysis:

The point we want to make here is that sensemaking is about plausibility, coherence, and reasonableness. Sensemaking is about accounts that are socially acceptable and credible (Weick, 1995).

What Karl Weick mainly refers to in his work are stories experienced in the past by people telling these stories or stories that are passed on in an organisation from generation to generation. This leads us to suggest that fairy tales may function as the past moment, in other words that they can become the frame for sensemaking – be it a folk fairy tale, an artificial fairy tale as well as an anecdote from the organisation's own history.

A rather creative way to use metaphors is to create future "realities" by painting a picture in peoples' minds that will make them behave (see Figure 2).

Secher-Marcussen and Arnfred (1998) show how a relief organisation (NGO) creates the picture of crisis in order to raise funds for its campaigns. The picture is made of "wishful thinking", relying only on rough "guesstimates":

The plan is portraying the environmental problematique in a superficial and non-complicated way as if it was self-evident that the masses were to be mobilised ... (Secher-Marcussen and Arnfred, 1998).

Sensemaking and creating images of the future are thus processes that heavily rely on exformation. Exformation (represented in Figure 3) is the process that gives value, depth, complexity and meaning. This is achieved as individuals carry out a series of selections from large amounts of words and pick up the few that are needed to transmit meaning. At the other end of the communication link, the receiver has to select among several possible interpretations. She/

Figure 2 Images of the future

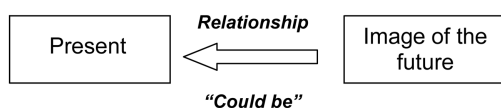
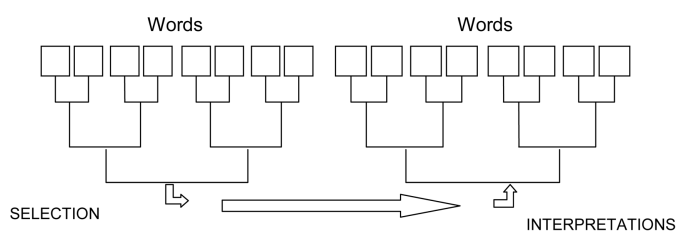


Figure 3 Creating meaning through exformation



he, therefore, reconstructs a meaning, reflecting her/his own associations.

The point here is that the amount of information one can transmit is limited while the range of options for words (bits) (to create one specific meaning) is virtually unlimited. So what is the implication for our perceptions of reality or possible futures? Exformation allows simplification. The creation of templates may generate deep meanings. Good fairy tales "contain" much exformation. They are crystals.

Both Karl Weick and Gareth Morgan are interested in the creation of meaning in organisations; in particular they recommend alternative tools to appreciate and understand the present.

Morgan emphasises the metaphorical value of images as they foster creative analysis and allow the organisation to operate as an open system capable of transformation. Weick highlights the importance of organisational stories. These stories act as templates from the past for the present fostering sensemaking. In some ways the two previous approaches are brought together by Secher-Marcussen and Arnfred (1998) and Secher-Marcussen and Speirs (1998) who argue for the use of simple images as templates for understanding possible futures and generating action in the present. Despite differing viewpoints, the approaches supported by these authors rely on metaphors as meaning generating processes, which are inherently conscious and deliberate.

However, these conscious, deliberate approaches depart from traditional rational analysis, logic and "scientific inquiry" in that they are primarily means of fostering creative understanding. In short, the five benefits associated with metaphors that can be drawn upon during a conscious process are as follows:

- (1) Multiplicity of creative interpretations.
- (2) Openness to novelty.
- (3) Narration.

- (4) Relevance.
 (5) Simplification of situations, creating templates for understanding.

Metaphor as a tool to create warm (useful) emotions towards the organisation

My love, you are like a rose
 Your marble breast . . .

Yes, poems! The metaphor is a means to access “intuitive, embryonic perceptions and understanding” (Inns and Jones, 1996). We showed in the previous section how metaphors can support conscious creative understanding in business. Here we focus on another key function of metaphors: the creation of experiential meaning, through emotions and feelings.

Höpfl and Maddrell (in Grant and Oswick (1996)) show that “emotion”, “movement”, and “motivation” share a common etymological root (L. *movere*, to move). We have seen earlier, that metaphors allow us to understand the present with stories of the past once we can establish a relationship (such as A is like B). The shift that occurs in sensemaking reflects how movement can be achieved with metaphors. They argue that:

It is in the relationship between movement and metaphor with the latter as the vehicle for such movement or carriage, that the possibility of exploring motivation (as movement), emotion (as movement), passion (as bearing and as phoria) and expressive behaviour (as metaphor) becomes apparent. Metaphor is about movement (Grant and Oswick, 1996).

They further state that:

Movement, therefore, is a significant aspect of metaphor as is the notion of something moved, something which has to be borne or carried. This is the phobic role of metaphor, where form is subjected to the weight of meaning. Metaphor bears (carries) meanings which confer identity on the social subject and via a series of metaphoric progressions moves the subject from one position to another (Grant and Oswick, 1996).

The importance of this analysis is best exemplified by the reliance on metaphors in marketing and religions. Poems, like metaphors, can generate “gestalt, emotive, and holistic understanding of the subject” (Grant and Oswick, 1996). Metaphors as poetic pictures bring a shift in our experience of the world. They create our reality and may shape our actions:

Metaphors are, we suggest, important because they signal to us and make explicit that there is

no absolute world “out there”, but that we are actively engaged in constructing meanings from our own frame of reference and experience. *The way we interpret phenomena determines our actions* (Grant and Oswick, 1996) [emphasis added].

Also marketing of everyday products (like household cleaning material!!) draws on the same means of motivation as evangelical efforts to acquire new members for their congregation (Hopfl and Maddrell, 1996).

Which reminds us that:

- Marketing exists.
- Churches exist.

Both make heavy use of metaphors – and both work. You will not have to inspect many TV-ads to realise that metaphor is a vital part here.

In conclusion, metaphors, motivation and emotion share a common etymological root: to move. The emotions and feelings generated by metaphors can stimulate action in a subject. The process departs from conscious creative understanding in that it no longer relies on analysis but on emotion. In the next section we will pursue this third key function of metaphors: their ability to fuel action through their impact on the unconscious mind.

Metaphor as a tool to reach the unconscious and bring about change in action patterns

There is a strong tradition in psychology to stress the important role of the unconscious part of the personality, when the target is personal development and therapy. We argue here that fair attention should be given to this aspect of the learning process, individual as well as organisational, in organisational change work. Two sources will be brought in, namely the Austrian Freud-student, psychiatrist C.G. Jung, and the US hypnotherapist, Milton Erickson. And we will briefly bring in the concept of preconscious processes.

C.G. Jung (1996) points to the two kinds of thinking: One is directed, logical thinking with words and verbal concepts. It is goal directed and tuned to reality. It is also tiresome! The other is what happens when we do not think logically:

Image piles on image, feeling on feeling, and there is an ever increasing tendency to shuffle things about and arrange them not as they are in reality but as we would like them to be (Jung, 1996).

While “word thinking” is conscious, much “image thinking” is unconscious or preconscious. There is no doubt that image

thinking is older than word thinking. And Jung’s hypothesis is that much of the image material carries symbolic meaning which to a certain extent is common for mankind: only 80 generations separate us from ancient Greece. So our minds do not work that differently! Hence Jung develops his concept of archetypes: images common for all human beings as symbols of important facts and experiences in our life and personal development.

And perhaps our conscious, abstract thinking and word processing, logically reasoning mind is exactly that young! While image thinking may count its age in millions of years (the first known cave paintings are probably 36,000 years old).

In his early work, Jung (1921) described four functions of the personality: thought, feeling, intuition and sensation. We experience the world with our sensation and intuition. Through sensation we get a grip on reality, we notice a new dress, we see that the furniture in the living room has been rearranged, while we were away on business. Through intuition we discover opportunities: to the child the stick is an aeroplane, the salesman’s “nose” tells him to check the financial situation of a new customer one more time. Thought and feeling help us to evaluate and sort our impressions of events: they can be logically right or wrong, or they can feel good and right or wrong, inappropriate, tactless, out of context. Jung placed these four mental functions in a cross. Thought opposite feeling, intuition opposite sensation.

He further argued that one of the functions will be dominant within the individual. And the function placed opposite this on the cross will thus be the least developed. If, for instance, my primary function is thought, my function of feeling will be suppressed.

Intuition and sensation would then be second and third or vice versa. This has been expressed in symbols over the centuries. The fairy tales are full of examples.

The suppressed function is the key to the subconscious areas. The areas one sets aside. The areas that lie in shadow. Marie-Louise von Franz (1984), student of Jung and researcher on fairy tales, writes:

The inferior function tends to behave after the manner of such a “fool” hero, the divine fool or idiot hero. He represents the despised part of the personality, the ridiculed and un-adapted part, but also the part which builds up the connection with the unconscious and therefore holds the secret key to the unconscious totality of the person.

In the example of Jung we did not randomly pick thought as the dominant function. Many managers may be like that. This implies a suppressed function of feeling. And this, of course, carries consequences for their management style – and thus the entire organisation. The risk they face is that they design and seek to realise a rational corporation, a work of engineering, a machine.

But the driving forces of the employees are feelings. This is where the energy is housed. There is no use for good steering if there is no petrol in the car. Metaphors may provide that petrol.

Milton Erickson (1998) takes another, simpler way: he claims basically that the personality consists of two parts:

- (1) Consciousness.
- (2) Unconsciousness.

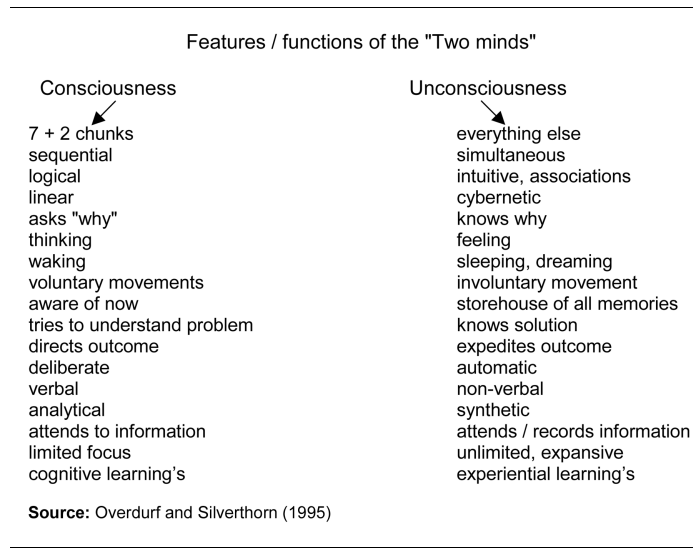
The characteristics of these two minds are summarised in Figure 4.

Milton Erickson developed his theory over 60 years and has worked with more than 30.000 clients. He is one of the important models that have been studied as ground for development of Neuro Linguistic Programming (NLP).

Milton Erickson saw the unconscious mind as a “storehouse of all that is helpful and beneficial, as well as a storehouse of emotions, habits, and patterns that may no longer serve the individual”.

Milton Erickson believed that solely working through the conscious mind would be narrow and limited in scope. Only by

Figure 4 Features/functions of the two minds



getting in touch with the storehouse, will you be in contact with all your resources.

Indeed we perceive many impressions which enter our central nervous system and act there without ever having reached the threshold of consciousness.

Tor Nørretranders (1991), a Danish scientific novelist, brings actual figures: our consciousness only has time to perceive one millionth of the impulses we receive.

But this becomes even more obvious through the studies of Benjamin Libet, who in 1979 published a landmark paper on what he called “Subjective referral”. In a series of experiments he demonstrated that conscious awareness occurs only about a half-second (500 milliseconds) after the time a stimulus is introduced.

This makes sense, in that it takes time to develop the electrical activity which eventually results in conscious awareness.

But:

Even though a half-second elapses from the time a stimulus is introduced to the time we are conscious of it, it appears to us as if no delay in awareness has occurred and we are accurate at identifying the time and the stimulus. We make a subjective referral back in time based on our unconscious kinaesthetic memory of the initial stimulus. What this means is we probably do everything unconsciously first! (Overdurf and Silverthorn, 1995).

Milton Erickson accordingly finds hypnosis a useful tool “because it suspends and bypasses normal conscious limitations.” “Helping the patient get out of his own way” is how Erickson describes it (Overdurf and Silverthorn, 1995). The conclusion by Erickson and all the “Ericksonians” is obvious: be as indirect as possible, in this way creating choice for the client bypassing his defence mechanisms, which normally will be activated if you try to press, sell hard or encourage directly by imperative language mode like: “You shall, will, ought to”, etc.

Obviously one way to be indirect is using metaphors. Perhaps the most elegant! We will here bring two examples of Erickson’s work (1998).

The first is not a true metaphor, but it serves to demonstrate Erickson’s indirect working philosophy. It is an example of “indirect suggestion”. Erickson comments on a student who has demonstrated change work on a client (colleague) in a seminar.

Example 4: Indirect suggestion

Milton Erickson (1998) says:

Victor explained that he wanted to have the task of introducing the total situation. He spent some time in a general discussion directed not only to the gentleman on the platform, but to the entire audience, which included any others who might volunteer.

Victor said something to the effect that he was going to use a technique that is useful even with resistant subjects. What does that mean?

First, it classifies the volunteers as not resistant, and second (it establishes a positive expectancy): if it is a technique that is successful even with resistant subjects, then it really ought to be very successful with a subject who isn’t resistant. In other words, Victor implies success by use of his indirect suggestion.

The example speaks for itself: in order to move, to facilitate change in action patterns, you should be indirect, only addressing the unconscious minds thus avoiding, bypassing any possible conscious filters or rational evaluations process.

The following extract illustrates how Milton Erickson uses metaphors to help the client/student to reframe her life situation thus creating new options.

Example 5: Fixing biological teeth

There is the woman who has had the experience of motherhood, and who is now going through the menopause. She is depressed, she is weak, she just doesn’t see any purpose in life. Somehow or other you manage to get her into a sufficiently light trance so that she is able to listen, at least in part, to what you say.

You begin to reminisce about the time her first baby cut his teeth, and about that awful, despairing attitude that little baby had:

There was nothing but pain and distress, that he could foresee, for all the rest of his life. That is all – just the pain, distress and agony of cutting those teeth. But it was a biological process, and he went through it. He got some teeth, and he could eat some solid food.

Then you raise the question to the mother:

Maybe you are cutting a certain kind of biological teeth in this menopause of yours? What do you suppose you will be like after you have completed the menopause? You are fixing biological teeth.

What have you done? You have spoken to her in the language of her own experience. You have drawn an analogy that is weighted by the love she had for that baby of hers. She is awfully concerned about her depression. But now she is going to think about her depression

in terms of that little infant who was so depressed about that endless task of cutting teeth (Erickson, 1998).

To us this is a masterly piece of change work, cutting out theoretical mandarin and going straight into the reality of the client.

Our conclusion is that it is fair to consider that metaphors may be useful levers for change because they tap into the unconscious minds of the clients/students.

The metaphor however has not so often been used in organisational change work. So maybe some of us will try that. We don't really know when you will do that!

Anyway it is quite eye-opening that major schools of psychotherapy of this century use pictures, symbols and metaphors as basic material: Freud's psychoanalysis, C.G. Jung's analytical psychology, Milton Erickson's hypnotherapy and NLP – Neuro Linguistic Programming.

Preconscious processes

Legend has it that in 1957 in a cinema in New Jersey, Coca-Cola sales during the performances boomed. It was found that the cinema owner had put hidden messages into the film rolls (hidden because they were of such short duration that the guests did not perceive them consciously). Though probably a legend, subliminal perception has as a matter of fact been proved experimentally.

Preconscious processes can influence emotional judgements and can lead the way to the concept of priming: subjects tend to take preference in matters earlier presented subliminally for them (Gade, 1997).

A classic experiment was carried out as early as in 1931 by Maier:

The subject was put in a room where two ropes were hanging from the ceiling. Other objects were available: cables, tools, stocks, rings.

The job was to tie the ropes together. Most of the subjects found three ways rather fast, such as using a cable to bring the ropes together.

After each solution Maier encouraged them to find new methods.

One solution was more difficult than the others. If a subject did not find it, Maier "occasionally" walked around in the room and "occasionally" pushed one of the ropes causing it to swing.

Most persons took less than one minute after this cue to find the new solution: to tie a

tool to one rope, swing it and get hold of the other rope. And the point: when the persons afterwards were interviewed and asked how they found the pendulum solution, none of them reported remembering that the critical clue had played a role.

This seems to indicate that we often are unconscious of our cognitive operations and that the only thing consciously known, is the result of these processes.

The early experiment is confirmed by later work with abnormalities of consciousness such as amnesia, neglect, and implicit knowledge (Gade, 1997). Priming is a key concept to explain what happens when sensation becomes action.

In a way, subliminal perception is evident: if we receive 11 Mio. bits per second and process 14 of them consciously, what happens to the rest?

So thinking may after all be unconscious! Albert Einstein wrote:

Words or language as they are written and spoken do not seem to play any role for my way of thinking. The psychological entities, that build up thinking, are certain signs and more or less clear pictures (Nørretranders, 1991).

Maybe we don't know anything about our thinking, only of its preparation and products!

Going back to our communication trees (Figure 3): the branches grow up into the unconscious/subliminal area. Now, is contact – direct communication between unconscious areas possible? Of course! We read each other every day: face muscles, voice tone, gestures, etc. We also talk about therapeutic contact and "rapport". Words are only part of what is going on. Confidence is established by communication on the unconscious level (Nørretranders, 1991). That is the real trick.

Our conclusion is that the metaphor may be a primer. It increases the probability that the individual will change behaviour by establishing patterns and increased readiness outside consciousness.

Can we explain this? Why do metaphors work?

In this section of the paper we review the arguments and evidence put forward in explaining the way metaphors work. We initially point out that images, fairy tales are part of our lives since our very early age, they

bypass defensive barriers we may have, they therefore are powerful educational tools.

Then, drawing on the work of Wheatley we suggest the use of an analogy with morphogenic fields so that we see some tales as archetypes of the human specie as a whole. Finally, we draw on neuro-science to present key evidence that supports the three “functions” of metaphors.

Early socialisation

As mentioned in the Sugar factory case, the whole animal farm is mobilised: crocodiles, foxes, cows etc.

When did the students first meet these animals?

Right! Before they could speak. On their mothers’ lap. We have all been there, haven’t we? Eagerly turning the pages and shouting strange sounds “muh”, “mææh”, “kykeli-kyyh!”

Seeing these animals again takes the participants right back to a special time – before school, before concepts, abstract ideas, before logic, personality structure and defence. For most of us: back to a happy time, an active time, a time of learning, research (action research!) and discovery. Deep and resourceful layers of personal history.

The participant will not realise this in the training situation, but we are there, and the traits we in childhood connected with the cow, the fox and the crocodile are activated consciously and/or unconsciously.

We know these early socialisation programmes and we can use them:

There are crocodiles in the factory. Be careful. See them in time. Avoid them. Take your measures.

(We here of course depend heavily on knowing the cultural background of the participants. A Hindu team would have other connotations regarding cows than the average European!)

Metaphors as “archetypes” or “morphogenic fields”

In *Leadership and the New Science*, Margaret J. Wheatley (1994) creates some very strong metaphors for organisations based on chaos theory and related landmarks of natural sciences of this century.

One is about morphogenic fields:

In relativity theory, gravity acts to structure space. The reason objects are drawn to earth is

because space-time is curved in response to matter.

Rather than a force, gravity is understood as a medium, an invisible geometry of space (Wheatley, 1994).

Space is perhaps not empty but may be filled with invisible fields that affect the behaviour of species:

Morphogenic fields are built up through the accumulated behaviours of species’ members. After part of the species has learned a behaviour, such as bicycle riding, others will find it easier to learn that skill. The form resides in the morphogenic fields, and when individual energy combines with it, it patterns behaviour without the need for laborious learning of the skill (Wheatley 1994).

This perspective is very useful in reframing our understanding of organisations, in particular for the development and dissemination of a corporate mission. This in turn affects the way we perceive our roles in organisations:

In the past, we may have thought of ourselves as skilled crafters of organisations, assembling the pieces of an organisation, exerting our energy on the painstaking creation of links between all those parts. Now, we need to imagine ourselves as broadcasters, tall radio beacons of information, pulsing out messages everywhere (Wheatley, 1994).

Can anyone think of a better way to do this than telling stories containing strong metaphors?

Referring to the work of Ahmed Durre, Secher-Marcussen and Arnfred (1998) highlight the importance of mythologies in every culture. Although these may be perceived by the modern mind as irrational, they in fact embody “different styles of consciousness” (Durre, 1995, quoted in Secher-Marcussen and Arnfred, 1998); they are a testimony of the rich and diverse human psyche.

Secher-Marcussen and Arnfred (1998) stress the point:

Thinking and arguing in terms of stories and tales may be more to the point, and closer to “how human minds actually think” than scientific rationality.

We find it plausible to believe that some fairy tales are crystallised stories not of an organisation but of humankind, not experienced by a person but by all persons who lived, not passing on a message between two “generations” but from the genuine first generation of conscious human beings on

earth. In that sense we can think in terms of archetypal tales: they carry a basic message common throughout the globe and common throughout generations. Maybe even despite cultural differences.

Functions of the brain

While the above arguments were of a philosophical kind, we now turn to natural sciences to explore whether they may contribute to our understanding of the three functions of metaphors. For that purpose, we initially draw on the work on brain processes of Calvin, who shows that metaphors act as physical short-cuts between domains of knowledge.

This provides some of the scientific grounding for people like Morgan and Weick, who focus on conscious creative analysis and sensemaking. We then draw on the work of Brockstra (building on principles that can be traced to the work conducted by Paul McLean between 1947 and 1993). Here we show how the three brains, the neo-cortex, the limbic system and maybe the reptilian brain are fairly independent systems, then highlight the importance to reach the limbic system and the reptilian brain to achieve sustainable change in behaviour.

We also show how the neo-cortex (therefore probably consciousness) can be bypassed in the generation of action. This latter section provides some of the grounding for our view that metaphors can generate useful emotions and that they can reach the unconscious effectively, before neo-cortex processes stimuli.

Neuro-physiologist William H. Calvin (1996) presents a theory of how networks of neurones work when we think. His theory will not be elaborated here; however, on his way he makes some points that can enrich our discussion.

He quotes Derek Bickerton:

The more consciousness one has, the more layers of processing divide one from the world . . . Progressive distancing from the external world is simply the price that is paid for knowing anything about the world at all. The deeper and broader [our] consciousness of the world becomes, the more complex the layers of processing necessary to obtain that consciousness (Bickerton, 1990 in Calvin, 1996).

The point is that theory creates distance – “layers of middlemen” standing between our consciousness and what may be “out there”.

But nowadays we also know that middlemen are often disposed of. You can do without them. In thinking or rather experiencing we also often wish for a short cut. Here the metaphor is helpful:

The power of metaphors, poetic similes, Aesop’s parables, analogies, maps, and economists’ models is that they permit us to carry out reasoning within a familiar domain and subsequently map our findings back to the domain of interest.

The Macintosh desktop metaphor, allowed people to operate in the familiar realm of folders, documents, and trash cans rather than having to think about those pesky directories, files, and deletions (Calvin, 1996).

How important it is to be able to work with metaphors is stated thus:

We often talk of rational thought as if it were just the algorithmic manipulation of such symbols. We go looking for computational elements in the brain that could accomplish such logical operations with virtual objects. This, alas, leaves no room for guessing or imagination. Our inadequate container schemas have boxed us in (Calvin, 1996).

These points clearly underline our section on conscious creative analysis.

Brockstra (1996) provides an approach which can be traced back to the work of Paul McLean between 1949 and 1993. Brockstra points to the three parts of the brain:

- (1) *The reptilian brain* providing breathing, eating, sexual behaviours, territoriality, intimidation of the opponent and formation of social hierarchies. It has very limited capability for learning.
- (2) *The limbic system* – a later paleo-mammalian formation – is an integrated system receiving information from the inner and outer world and processing it leading to experiences of feelings and emotions. It has some capability for learning, primarily through operant conditioning. It contributes considerably to the formation of personal identity.
The limbic system controls (among other things) emotions and blood pressure, breathing, heartbeat, body chemistry balance and temperature. That is why you can read emotions on body language.
- (3) *The neo-mammalian formation, neo-cortex.* Seat of verbal communication, intelligent learning, problem solving, creativity.

However, recent research modifies this picture. Patterns in reflex behaviour can be

changed. Robert Zacharie (1996) states that peripheral skin temperature, heart rate, salivation and galvanic skin response can be changed voluntarily through mental imagery.

So images can reach and influence that part of the brain.

It is also food for thought that the limbic system is the seat for the emotions. This seems to sustain Milton Erickson's model of the mind (Figure 4) including that images and emotions have a close relationship.

Word thinking may thus mainly be carried out by the neo-cortex while the job of image thinking seems to be carried out by several parts of the brain : in the neo-cortex (probably mainly right hemisphere) and in the limbic system.

This may be the fundamental reason why change of attitudes, habits and culture is best done by accessing many parts of the brain via images, intensive group sessions, hypnosis and other non-abstract tools. Maybe art has similar effects: a moving concert or poem, a good opera or act, or a strong painting (which by the way also is an image) can bring about change directly without conceptualisation.

Brockstra sees the three brains as relatively autonomous, together forming a loosely coupled system. Here is an example:

Neo-cortex: I have to quit smoking.

Limbic system: I get furious when you tell me!

Reptilian brain: I continue the habit!

Feelings are housed in the limbic system as mentioned. The limbic system also seems to be involved in emotional body reactions: behaviour, autonomous nervous reactions and endocrine activity. Learning, change and action is facilitated if this part of the brain is involved. Further, the problem of right vs. left brain functions is a neo-cortex matter. A creative development may more probably take place, if both hemispheres are involved.

This is exactly the trick and the distinction. Metaphors may provoke left-right-co-operation and thus fuel creativity.

They also activate the limbic system (maybe specially fairy tales and the like) thus enabling instant learning and action.

We can sum up our discussion of the brain in the model depicted in Figure 5.

The two processes outlined in the diagram are very different brain functions. By "bridging" we refer to the process by which a stimulus is creatively interpreted through

analogy. The notion of bridging is linked with Morgan and Weick's work: we understand a situation by referring to something we know (either because we have experienced it – as in organisational stories – or because we are familiar with it in other ways – as with fairy tales). This process can be compared to de Bono's (1997) concept of lateral thinking: we compare realms and we operate in neo-cortex.

The notion of transfer is referring to processes where neo-cortex is bypassed. This occurs when metaphors create emotions and lead to action.

Mental training for sports people concentrates on "positive self-programming", that is controlling emotions of the limbic system ensuring they are positive. Positive emotions yield better performance.

According to McLaughlin and Loehr (1986), the limbic system reacts on a mental image as it would on reality. It cannot really tell the difference. Experiments with persons imagining sports activity show body reactions similar to the real activity. No wonder mental imagery has become a cornerstone in training. Detailed knowledge of brain functions is still developing, and the following paragraphs summarise aspects of Gade's (1997) work. The insights referred to are mainly obtained by studying fear conditioning and it is yet to be demonstrated that other learning processes show the same patterns.

According to Gade, a sensory stimulus reaches the thalamus, a sort of relay function through which all nerve fibres on their way to the cortex pass. The thalamus sends that signal in two directions: towards the neo-cortex and towards the amygdala in the limbic system. (The relay function of the thalamus is not neutral. Thalamus adds a special flavour – colour – in unknown ways to the signal.)

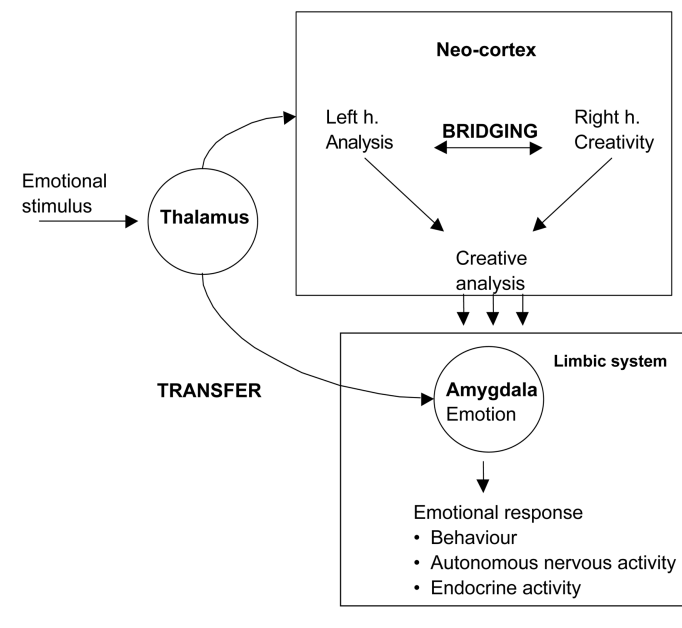
The amygdala also receives the signal – from the same sensory input – from at least three parts of the neo-cortex where it has been processed. The simultaneous signalling from neo-cortex and thalamus means that the amygdala, key centre in the emotional circuit, in reality *receives the signal from the thalamus before the signals arrive from the neo-cortex.*

This may explain why we feel before we think, and why emotions are so difficult to control.

(Maybe this also explains why funny things happen in organisations and marriages!)

The area in the amygdala receiving the thalamus signal reacts on input "with

Figure 5 Model of the bridging and transfer processes



emotional meaning”. This is the part of the amygdala, where learning/conditioning takes place.

Most experiments have been made with animals, but humans have also been studied. Gade (1997) mentioned that bilateral activation of the amygdala was taking place even if the input (fearful facial expressions) was not perceived consciously! Also merry faces activated the amygdala directly from the thalamus.

The amygdala is able to process these inputs simultaneously and thus functions as the bridge between intelligence and emotions.

The amygdala is also the doorway to behaviour and endocrine activity (Gade, 1997).

Thus brain physiology seems to confirm the existence of two different processes: on the one hand the transit of a stimulus from the thalamus to the neo-cortex then to the amygdala; on the other hand the transit of a stimulus from the thalamus directly to the amygdala.

If the neo-cortex is firing, the outcome is analysis or at best creative analysis (bridging). Or maybe wild creativity. If the amygdala is directly activated by the thalamus, we get a transfer to emotions and actions. In the case of transfer, neo-cortex activity may add to the process, but often in a modest way. For example, it can delay eating even though your blood sugar level is low and you experience hunger (see Figure 5).

We look forward to more brain research and anticipate further confirmation of this distinction, which strengthens our hypothesis that theory may generate intellectual challenges, but if learning and change are to take place, we must ensure that the amygdala is activated – and that job can be done, among other things by metaphors.

Reflections on the sugar factory cases and implications for consultancy activities

So what lessons from earlier parts of the paper can we use in consultancy? This section of the paper initially mentions the ethical issues that are involved in stimulating people’s feelings and unconscious, showing that the use of metaphorical language can be constructive as well as destructive. We then argue that, in the sugar factory cases, two of the three metaphorical processes identified are at work (the creation of warm feelings and reaching the unconscious), and that creative analysis has no influence on the outcome of the change project. Drawing on these reflections, we then propose a set of basic approaches for the use of metaphors in consultancy.

Focus on ethics

We have seen in earlier sections of this discussion paper that metaphorical language can have tremendous bearing on people’s behaviour, particularly as it reaches their feelings and the unconscious mind.

We need to remind ourselves here of the ethical responsibility of those who use metaphors. Indeed the use of metaphors can be used in constructive ways, but it can also be abused. Seen by cynics as manipulative devices metaphors can create feelings of hatred, for example.

Examples in recent European history are legion.

It goes without saying that it is the responsibility of the consultant to ensure that the needs of the clients are met and that the process and objectives are morally sound.

A retrospective understanding of the impact of metaphor in the Sugar Factory cases

Suppose that in a change project we want employees to behave in safer ways in order to decrease accidents and reduce the number of

off-days due to accidents. We could work out procedures, explain the rules, threaten people with being laid off, force them to wear helmets etc.

It may however be more efficient to talk to them in the following terms:

You are now a very clever animal. Choose one for yourself. A fox, an eagle, a pheasant, a squirrel – you choose.

And now – having the brain and senses of that animal – you can imagine being this animal – you know that you are very prudent and careful not to be hurt.

And you will behave in a way that wild animals do – always taking measures to avoid any risk. So you know now that you will be perfectly safe thanks to your brain and senses, your ability to foresee and prevent accidents . . .

The words are simple, the pictures in people's minds probably sharp and lively, colourful and with movements, there is no discussion material as food for the left brain.

On the basis of the discussion so far and our experience, which of the processes described as bridging and transfer are operating? As a reminder, we distinguished them earlier as: Process 1. Bridging between realms, fields and activating mainly left and right parts of neo-cortex as a tool for conscious creative analysis.

Process 2. Transfer from stimulus to the emotional parts of the brain in order to change attitudes towards the issue at hand.

Process 3. Transfer from stimulus to the unconscious mind resulting in changes in action patterns.

In the sugar factories, there have been observations to support that something special happens when the consultant skips the theory and tells a story: the participants always become utterly quiet and signal with their body language intensive listening.

Now as to Process 1: Bridging. The use of metaphors in the sugar case is not in the least used as a ground for conscious analysis.

There is not even an attempt to engage in creative analysis as recommended by Morgan.

It is our impression that to suggest creative analysis with a metaphor as the starting point will turn the blue-collar participants off. They are very practical people. It takes inventive energy to engage them in an ordinary brainstorm. Conscious creative analysis has no bearing on the results achieved in the sugar factories.

There is no space for it in the training meetings, it does not pop up spontaneously in the sessions, and it is also a very unfamiliar activity for the blue-collar people who constitute the largest group of participants. They rather tend to “think with their hands”.

As to Processes 2 and 3: there is no doubt in our minds that both of these processes are involved: attitudes towards working environment and personal safety are reported significantly changed, the mutual helpfulness has increased – and accidents have dropped, especially the severe ones causing long absence.

Implications for consultancy activity

So, if we now contemplate the implications of these discussions so far and broaden our perspective, we suggest that metaphors may be used as:

- The short cut. Explanation e.g. compare electricity to water.
- As a model: to understand the brain, compare with a computer.
- The generative metaphor: parallel processes as you handle threats and opportunities in a case that is not yourself or your own organisation. Having dealt with the problems in the foreign connection, you can transfer the learning as you are handling an unthreatening situation, there are no defence mechanisms, e.g. used in case study method.
(Note, for example, that 98.3 per cent American management books consist of 1 per cent theory and the 99 per cent stories about presidents and vice presidents having said and done wonderful things with remarkable outcomes.)
- The creativity generator. To add to the options of your organisation compare it to a family, a brain, a prison, a deterministic, complex system and a dissipative structure.
- The therapeutic metaphor: the history told brings about changes in the listener's mindset subconsciously.

In conclusion, when we give people an image, we plug into the large, old part of the brain and are wired together not only with individual memories and fantasies but with those of mankind. When we see a movie, most of the impact on our feelings is due to factors

we do not notice (the light, the music, the tempo, etc. etc.) And that is of course the trick. When we elicit images in the brains of delegates and students, we get much more work done – and image thinking is not tiresome!

We also see the importance of metaphors in contributing to enrich and reframe current interpretation of the situation, thus offering new interpretations and stimulating new and different lines of action. However, that process is not relied upon in our cases.

The key implications for consultancy activities can therefore be summarised in the following points:

- Instead of a theory, give them a story.
- Instead of a scientific explanation, give them a picture.
- Instead of a cause-effect analysis, fuel their emotions.
- Instead of concepts, show them acting characters.
- Instead of abstract laws remind them of their own inner wisdom.

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