

Title	The Role of Language within Knowledge Creation Processes
Author(s)	Filippina, Risopoulos
Citation	
Issue Date	2005-11
Type	Conference Paper
Text version	publisher
URL	http://hdl.handle.net/10119/3970
Rights	2005 JAIST Press
Description	The original publication is available at JAIST Press http://www.jaist.ac.jp/library/jaist-press/index.html , IFSR 2005 : Proceedings of the First World Congress of the International Federation for Systems Research : The New Roles of Systems Sciences For a Knowledge-based Society : Nov. 14-17, 2180, Kobe, Japan, Workshop, Session 4 : he New Roles of Systems Sciences for a Knowledge-based Society

The Role of Language within Knowledge Creation Processes

Filippina Risopoulos

Institute of Innovation and Environmental Management, University of Graz,
Universitaetsstrasse 15, 8010 Graz, Austria
filippina.risopoulos@uni-graz.at

ABSTRACT

Today's world is characterized by increasing change at all different levels of the society. Talking about change in the modern, advanced society, a special focus can be put on organizations and therefore connected to individuals as well. Shorter product life cycles and an increasing development of information and communication technologies are the basis for many changes. They all form a challenge for an organization's innovation management. Hence, companies not only need innovation with regard to products or information and communication technologies, but also innovation in thinking and acting – innovation as new social procedures requires a new management of knowledge – especially of the creation of knowledge. However, as regards change at different societal levels which are supportive of innovation and knowledge creation, an important focus is on the issue: how is everything connected? One answer could be: through communication and language.

From a constructivist point of view knowledge has to be discussed as a cognitive process of the human being and implies the skills of one's perception, memorizing, connecting and networking, remembering, active steering of action and active learning. The potential for all these skills can be understood as the basis of individual human knowledge.

In this contribution the focus is on the role of communication and language within a knowledge creation process. Furthermore, the impact of language in knowledge creation processes will be illuminated from a systemic point of view. Dealing with complex problems and systems such as knowledge creation processes can be made easier by using fitting interventions. The knowledge creation process can be supported by different models such as e.g. *the logical levels of change* which help humans to create more awareness for innovations in thinking and acting.

Keywords: Language, Knowledge Creation, Complexity, Problem Solving, Systems

1 THE HUMAN COMMUNICATION

At the end of the 1960s Watzlawick et al. [1] declared that *one cannot not communicate*. This is still valid. Hence, any action – even when it seems to be no action – is communication and is an expression which can be interpreted.

1.1 An observer's responsibility and selectivity

In the situation of a face-to-face conversation between two or more people it is certainly helpful to know how good communication can work by bearing in mind that the analog body language is as important as the verbal digital language. Both have to be congruent so that the speaker appears authentic. The more complex the framework is, the more it is important what kind of language one uses and what words one chooses.

As language is a model for the description of one's experiences and perceptions and not the experience and perception itself, it can be chosen wisely. Luhmann described the characteristics of human communication - expressed through language - as *selectivity*. To communicate means to have a choice between several possible pieces of information. One of the most efficient ways to communicate is to use verbal language, which gives the opportunity to choose from an infinite number of expressions for what the speaker wants to be said. Therefore, every decision for every selection can always be made in another way – it is *contingent* [2]. Luhmann speaks of two actors in three acts. One is the usual *sender* which he calls *alter* and the other is the usual *recipient* which he calls *ego*. These two actors play in three acts which is a *three-digit process of selection*. The three selections of understanding are: information, message and adoption. Information and message are selected by the *sender* (*alter*) and the adoption is made by the *recipient* (*ego*) [2].

The idea of selectivity also implies that the old understanding of sender and recipient is no longer fitting. Hereby it is tacitly expected that a sender broadcasts information to a recipient. Information is treated like a package which is put through pipes [3]. However, information is neither something that can be transported from A to B nor is it something that exists in

books or newspapers or similar media. These are merely information carriers. Information accrues at the person who adjoins something [3].

Heinz von Förster postulates that the relevance of what one says is determined by the person who notices the other's statement [4]. That would mean that the speaker is responsible for what he or she selects and the recipient is responsible for what he or she construes. This is preprogrammed complexity.

Furthermore, human communication is characterized as cybernetic matter. Maturanas theorem *all that can be said is said from an observer* was adjusted by Förster to *all that can be said is said to an observer* [5]. With this he makes a connection between three items: the observer, the language and the society. Two observers use the human language to design a society. This recalls the old relationship between the rooster, the hen and the egg. Nobody knows which came first and which followed but all three are needed for them to exist.

1.2 Complexity of language and structural coupling

The human verbal language is one of the most efficient media for communicating. It is a digital language (one uses one word after another) and offers a huge range of possible expressions. The human body language analogically conveys symbols which describe human perceptions and experiences. It can be said that the human language is the fundamental medium of human communication and is on the one hand used to build up complex frameworks and on the other hand used to reduce complexity [6].

However, language itself is not able to take any distinction. It proceeds on the assumption that words and the things which are described with these words are identical. Consequently, language fails to make a distinction between the *map* which appears in an individual brain and the *territory* it refers to [7]. The relationship between words and things, map and territory has indeed a very similar but not an identical structure. Words can – as a matter of fact – develop their own structure which shows the territory it refers to totally incorrectly [8].

Generally, the human language is accompanied by the human consciousness and is essential for the significance of communication [6]. Beliefs, feelings and perceptions are signified through language values. Language is a tool for structural coupling [6] between consciousness and communication [9]. Structural coupling primarily means being selective. To eliminate

a vast amount of information through which one is affected by the environment is the precondition for dealing with those few things the human brain is able to absorb [11]. One could say that reduction of complexity is a condition sine qua non for building up complexity again. Structural coupling functions can be explained easily with e.g. listening and watching. Human ears and eyes have a mere spectrum of perceptions which reduce those things which are able to be heard or seen. This is as a protection against information overload. Due to a selectivity which occurs physically, didactical effects can appear and complex structures can be built up. To reduce the complexity which appears through human language a conscious selection of a certain language with carefully chosen words is helpful.

In that context structural coupling means that language excludes a lot to include less, and for that reason language itself becomes very complex [6].

In most cases it depends on the context but even in everyday conversations a permanent process of reduction and construction of complexity takes place. Different languages challenge abstract situations as much more. However, the distinction of different languages is not only related to different nationalities (English, Spanish, Italian) or exclusively based on different language levels (everyday talk, science talk, baby talk) but also depends on one's identity.

In most cases problems appear as a result of complex communication. Problem-solving is always a process of change. First of all one has to realize that there are problems and in a second step one has to find out where those problems come from. After one has found out on what level problems arise one can learn how to deal with them.

As mentioned above, language is a medium to describe one's experiences, perceptions, one's inner state etc., in short: to describe one's picture of the world. One could also say, *the picture of one's world is what one knows* (or from a constructivist point of view: ... *what one seems to know*).

Independent of explicit knowledge such as e.g. organizational knowledge or educational knowledge etc. or individual tacit knowledge such as emphatic knowledge etc., in most cases knowledge is expressed with verbal language.

Before I discuss the strong role languages play in knowledge management and knowledge creation processes I will amplify Nonaka's and Konno's concept

of Ba [12] which describes a place where knowledge is created within an interpersonal process.

2 NEW CREATION OF KNOWLEDGE

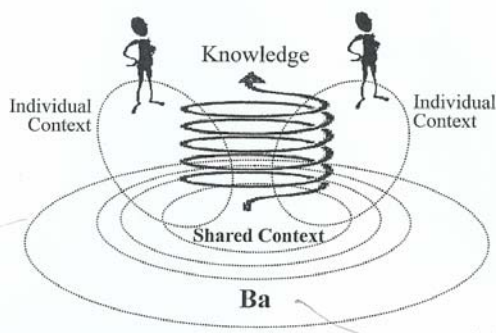
Knowledge is one of the most important sources individuals, organizations or societies deal with. It assures the individual's and society's survival and determines its position within a group or larger society. What a person knows determines an individual's identity – concerning tacit and explicit knowledge. Individuals are the smallest units within organizations and also responsible for its functioning.

2.1 The concept of Ba

The *knowledge management* most academics and business people talk about often means merely *information management*. The organization very often has been viewed as an information processing machine that takes and processes information from the environment to solve a problem and adapts to the environment based on a given goal. This static and passive view of the organization fails to capture the dynamic process of knowledge creation [13].

At the end of the 1990s Nonaka and Konno introduced *the concept of Ba* [12] and described it as follows: *The concept of Ba* is considered to be a shared space for emerging relationships and the creation of knowledge. It is a concept that unifies physical space such as an office space, virtual space such as e-mail or teleconference, and mental space such as shared experiences or ideas.

Ba – which roughly means *place* – is the context shared by those who interact with each other, and through such interactions those who participate in Ba along with the context itself evolve through self-transcendence to create knowledge. It is a system with open boundaries for interactions amongst individuals [12].



Ba as shared context in motion [13]

The four types of Ba are described as follows [12]:

- *Originating Ba* is the place where individuals share experiences, feelings, emotions and mental models. It is defined by individuals and face-to-face interaction. From originating Ba emerge care, love, trust and commitment, which form a fundament for knowledge conversation among individuals.
- *Dialoguing Ba* is defined by collective face-to-face interaction. It is the place where the mental models and skills of individuals are shared, converted into common terms, and articulated as concepts. An individual's tacit knowledge is shared and expressed through dialogues amongst participants.
- *Systemizing Ba* is defined by collective and virtual interactions. It mainly offers a context for the combination of existing explicit knowledge, as explicit knowledge can easily be transmitted to a large number of people in written form.
- *Exercising Ba* is defined by individual and virtual interactions. Here, individuals embody explicit knowledge that is communicated through virtual media, such as written manuals or simulation programs.

Knowledge is the basis of any interaction. As regards the selectivity of communication as Luhmann describes it (see above), knowledge becomes knowledge when a message (previously selected information) is interpreted and understood by somebody. Knowledge has the active and subjective nature represented by such terms as *commitment* and *belief* that is deeply rooted in individuals' value systems [16].

However, one must not forget that knowledge is articulated through language. Therefore, the language used must be considered at all times.

People within an organization may speak one national language but at the same time speak totally different languages. There is a manager's language which is different to a worker's language. It is safe to say that managers have their own language, not only because they are doing a different job, but also because they might act in a totally different environment.

Now the two groups of people (e.g. managers and workers) need to understand the leading idea of the company, they need to understand each other despite their unequal language and they also have to be able to handle some difficult communication situations. Therefore, there is a need for a common language which leads to a collaborative cognition for solving problems.

Generally, managers or people in leading positions meet the challenge to understand different identities. Good communication is assured when people use an equal language and the more the language is a positive one the better outcomes are achieved.

To achieve this it is important to train people (managers and other people in leading positions) in certain skills and teach them tools for better understanding. One of these tools could be the model of the logical levels of change.

2.2 Logical levels of change

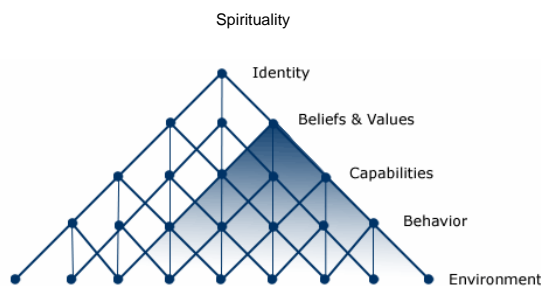
A popular and very simple model which includes some important elements to consider in any change context is called *the logical levels* also known as the *logical levels of change* and *the logical levels of thinking*. It is part of the techniques of *neuro linguistic programming, NLP* [14]. This model is very useful for assisting with or understanding change from an individual, social or organizational point of view. It was developed by Robert Dilts and is based on the *neurological levels* proposed by anthropologist Gregory Bateson. He pointed out that in the processes of learning, change, and communication there were natural hierarchies of classification. The function of each level was to organize the information on the level below it, and the rules for changing something on one level were different from those for changing a lower level. Changing something on a lower level could, but would not necessarily, affect the upper levels; but changing something in the upper levels would necessarily change things on the lower levels in order to support the higher level change. Bateson noted that it was the confusion of logical levels that often created problems [15].

The logical levels form a hierarchy in which each level is progressively more psychologically encompassing. Although this model has come under criticism for its logical incoherence it is a very helpful tool in change processes since it is simple to remember and can be applied in any area. It is not only comprehended by psychotherapists.

The human brain, and in fact any biological or social system, is organized into levels. It has different levels of processing. As a result one can have different levels of thinking and being. When a person wants to change his or her behavior, he or she needs to address these different levels. The same thing will be true inside a business system where there are different levels of organization.

From the psychological point of view there seem to be five levels that one works with most often:

- (1) The basic level is one's environment, one's external constraints.
- (2) One operates on that environment through one's behavior.
- (3) One's behavior is guided by one's mental maps and one's strategies, which define one's capabilities:
- (4) These capabilities are organized by belief systems - and
- (5) beliefs are organized by identity and
- (6) Spirituality/purposes are for a larger system.



Logical levels of change

So when a person is experiencing a difficulty, what one might want to know is whether this difficulty is coming from his or her external context, or whether he or she does not have the specific sort of behavior required by that environment. Is the reason for the behaviour the fact that he or she hasn't developed the appropriate strategy or map to generate that behavior? Is it because he or she lacks belief, or has a conflicting belief that interferes with his or her life or his or her outcome? Finally, is there some interference at the level of identity of the whole system [16]?

These become very important distinctions for anyone working in the areas of learning, communication or change.

2.3 Problem-solving within the logical levels of change

Everywhere in organizations and in everyday life problems are solved, either in teamwork or in dialogues or in other arrangements. However, in at least some cases there are notes taken about the knowledge for procedures, relationships, strategies, barriers, etc. At one point everybody realizes they have seen a certain problem in former projects but nobody knows at this time how to deal with it. Knowledge and experiences are not accessible for all. The existing knowledge is not shared and not stored; knowledge has to be acquired again and yet again. Then the process of not-knowledge

starts again. It is not noticeable who was exactly involved and who has therefore become a knowledge carrier about solutions and the processes which lead to these solutions. It is seldom documented who exactly was involved in the solution process and who exactly conceived which solution knowledge and turned it into practice. Nobody knows which people have already had experiences and in what form knowledge exists.

The model of *the logical levels of change* is very useful for assisting with or understanding change from an individual, social or organizational point of view. Helpful questions have to be asked first:

Questions corresponding to logical levels

<i>Environment</i>	Where? When? With whom? Where, when and with whom does a person display his or her behaviors? What are the external influences?
<i>Behavior</i>	What? What is a person's behavior?
<i>Capabilities/Strategies</i>	How? How does a person go about doing things? As an individual or company, what are the capabilities, skills, strategies or action plans?
<i>Beliefs and Values</i>	Why? Why does a person do something? What does a person believe in or value? As an individual, a person may believe he or she can do anything he or she chooses. Or a person may value honesty. From a company perspective, the company may value good customer service and/or the well-being of staff.
<i>Identity/Mission</i>	Who? Who is the person as an individual or company? What role does the person play to achieve his or her purpose? How does a person think of him or herself as a person/organization – i.e. I am a successful person.
<i>Spirituality/Purpose</i>	Who else? For whom? This can be viewed as a person's connection to a larger system. If a person is an individual or company providing coaching tool

services, what impact is the person having within his or her community, where he or she lives and works, the NLP community, his or her culture and the culture of others, ...?

To write down answers to all these questions might help to develop a certain strategy for finding goals or making change processes.

A sustainable process might be started by applying this helpful model. Making a change at a lower level may, but not necessarily, affect an upper level. How about a change of the physical layout of the offices? This is change at the level of *environment*. This will be long-lasting only if the change is in alignment with the higher levels. Or maybe staff are told to perform in a different way (*behavior*) without receiving the necessary training (*capability/strategy*). Unfortunately, this happens far too often. When money becomes tight, the first thing cut is the training budget! Again the change will most likely not be long-lasting.

However, a change at an upper level (*belief*) will have a distinct impact on the levels below it: If a person sees him or herself as a successful leading person (*identity*), then it is very possible that he or she will hold the belief that he or she can easily get a training budget through within the next board meeting or even create a business of his or her own, which might have an impact on the market (*purpose*). To change a person's identity first, e.g. one wants to be the owner of a company; the consequences for the lower levels are tremendous!

Practising this model of the logical levels could take place in *ba*, which could be consciously brought about .

3 CONCLUSION

Innovation as new social procedures requires a new management of knowledge. This means management of human knowledge and has to be discussed as a cognitive process which implies the skills of one's perception, active steering of action and active awareness. A new management of knowledge is connected to change processes and these are connected to communicational procedures and, last but not least, connected through the human language.

Change processes are mostly initiated by either individuals or small teams, but the focus of change is one which goes beyond that small unit. Considered systemically, it is directed towards the entire

organization, or towards other organizations. A change project might be related to a community, a region or an entire society, and, yes: to the world as a whole. It is hard, or maybe impossible, to really understand what drives larger social systems – sometimes one just has to start doing something. This might help to reduce or increase the complexity of a system in order to understand better and to find leverage for change.

If two individuals get together and exchange a dollar, they each walk away with one dollar. If the same individuals get together and exchange an idea, they both walk away with two ideas (*Thomas Jefferson*).

4 REFERENCES

- [1] Watzlawick, P.; Beavin, J.; Jackson, D. (1967) *Pragmatics of Human Communication. A Study of Interactional Patterns, Pathologies, and Praxodies*. W.W. Norton & Company, Inc., New York
- [2] Luhmann, N. (1984) *Soziale Systeme. Grundriß einer allgemeinen Theorie*, Frankfurt a. M.
- [3] Förster, H.; Pörksen, B. (2004) *Wahrheit ist die Erfindung eines Lügners. Gespräche für Skeptiker*, Carl-Auer-Systeme Verlag, Heidelberg
- [4] Pörksen, B. (2002) *Die Gewissheit der Ungewissheit, Gespräche zum Konstruktivismus*, Carl-Auer-Systeme Verlag, Heidelberg
- [5] Förster, H. v. (1993) *Zukunft und Wahrnehmung: Wahrnehmung und Zukunft*, in: Schmidt, S. J. (Ed.): *Wissen und Gewissen. Versuch einer Brücke*, Frankfurt a. M.
- [6] Luhmann, N. (2002) *Einführung in die Systemtheorie*, Carl-Auer-Systeme Verlag, Heidelberg
- [7] The whole life of an individual is stored in its subconsciousness. That means that every single experience characterizes a person individually. Hence, one can say that every individual has his or her own map of life. This map helps them to orientate but it is still just an image of their individually experienced reality. It can be seen as a street map which is just an image of a certain territory.
- [8] Hampden-Turner, Ch. (1996) *Modelle des Menschen. Dem Rätsel des Bewußtseins auf der Spur*, Hemsbach 1996
- [9] Structural coupling is the term for structure-determined (and structure-determining) engagement of a given unity with either its environment or another unity. It is *...a historical process leading to the spatio-temporal coincidence between the changes of state... [10] in the participants*. As such, structural coupling has connotations of both coordination and co-evolution.
- [10] Maturana, H. R.; Varela, F.J. (1984) *Der Baum der Erkenntnis. Die biologischen Wurzeln menschlichen Erkennens*, Bern, München
- [11] Nowotny, H.; Schmutzer, M. E. A (1974) *Gesellschaftliches Lernen. Wissenserzeugung und die Dynamik von Kommunikationsstrukturen*, Frankfurt a. M., New York
- [12] Nonaka, I.; Ryoko, T.; Konno, N. (2000) *SECI, Ba and Leadership: a Unified Model of Dynamic Knowledge Creation*, Long Range Planning, Vol. 33, 5-34
- [13] Nonaka I.; Konno, N. (1998) *The concept of Ba: Building for knowledge creation*, California Management Review, 40, No. 3
- [14] NLP stands for Neuro-Linguistic Programming, a name that encompasses the three most influential components involved in producing human experience: neurology, language and programming. The neurological system regulates how our bodies function, language determines how we interface and communicate with other people and our programming determines the kinds of models of the world we create. Neuro-Linguistic Programming describes the fundamental dynamics between mind (neuro) and language (linguistic) and how their interplay affects our body and behavior (programming).
- [15] Dilts, R. (1990) *Veränderung von Glaubenssystemen*, Junfermann 1993
- [16] Gomez, P.; Probst, G. (1999) *Die Praxis des ganzheitlichen Problemlösens. Vernetzt denken, Unternehmerisch handeln*, Bern, Stuttgart, Wien