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**Mental space theory –  
an introduction to the 6-spacer**

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# **Mental space theory – an introduction to the 6-spacer**

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## **Preface**

The following is an attempt to introduce to one of the main theories that has been occupying the work of the ECN during the past three and a half years under influence of the cognitive semiotic approach to cdb communication. During this time the author of the present text has been working within the cdb field in Norway, Sweden and Denmark trying to adapt theories of cognitive semiotics to the pedagogical practice in working with cdb and communicative development. This has to a large extent been done in close collaboration with members of the ECN – especially with Anne Nafstad.

## **Shared understanding<sup>1</sup>**

The first time you are presented with a video recording of a congenitally deafblind child who is engaged in a dialogue with an adult, one cannot but wonder: Is this really communication - this apparently coincidental gesticulation and fumbling, this incomprehensive tactile dance between two beings who almost seem as different as if they came from two different planets? Can this be understood by anyone else? Is it at all understandable for themselves? Maybe you recognise a rhythmical turn-taking that reminds of human exchange; and, if one attends carefully, maybe a few movements might be extracted and interpreted as being potentially meaningful gestures or signs.

No matter if you are attempting to understand a deafblind who communicates with his teacher, or trying to book a flight on the phone, the challenge is the same: How is it possible to reach at a shared understanding of what is the intended meaning of the other? From a commonsensical point of view, the question might seem to be: How is it possible for a certain thought inside the head of one person to be transferred to the head of another person without the meaning is lost or distorted? It is this miracle of experienced shared understanding that cognitive semiotics is trying to explain. This is not an easy task, but the work is progressing, and different models have been suggested in the attempt to describe the communication that amazingly enough actually is performed in the world all the time. The present paper will be an attempt at adapting such universal models of communication and meaning to a variant of human communication that suffer from radically extraordinary circumstances, namely the communication between people with cdb and their partners.

In the research on how to describe meaning negotiation, in which a thought is transferred from one person to another, one model has proved to be relatively persistent. This model is based on the idea that we understand the world and each other by integrating different *mental spaces* in an ongoing process

here-and-now. In the following I shall try to explain how this particular model describes the process of integrating mental spaces while trying to “transfer meaning from one person to another” and establishing shared understanding.

Normally, when we are together with another person, we have a more or less shared understanding of the shared situation. We both understand that we are together in the same room, that we sit at the same table, that the chairs are made of wood, and so on. It is not certain that we have the same focus of attention, or that we have the same thoughts when we see or hear, touch, scent, or taste things in our surroundings, but we will never the less, thanks to our alike sensory apparatus and more or less shared cultural upbringing, generate the scenario mentally in a manner that in all practical regards is common. This understanding of a shared situation is the basis of all communication, and is labelled in the literature on mental space theory as *base space*<sup>2</sup>.

One of the things we must agree upon – although maybe without reflecting on it – is the fact that we, in a given moment, mutually direct our attention towards each other, and focus on the intention of the other to communicate. Understanding the situation like this will lead us to coordinate our foci in such a way that we may find ourselves in a shared dialogically structured mental space – a shared dialogical base space. Whenever we experience a shared situation in this way, we will focus the *communicative intention* of the other, and thereby the *signs* (in a broad semiotic sense) that call for our interpretation. We will thus interpret sounds as *words*, movements as *gestures*, gazes as *telling looks*, etc.

What these signs end up meaning to us depend on a number of things. Firstly, the meaning we make of the signs are dependent on our understanding of the *situation* (base space); secondly, it is dependent on the morphology of the sign - that is to say what is *presented* to us; and thirdly, the reference of the sign is dependant on the previous knowledge we have of the use of this particular sign, of situations of this type, and of the world in general – in short our episodic and semantic *memory*. Most of all, the stabilisation of meaning will be dependant on the *meaning negotiation*<sup>3</sup>, which unfolds in the situation and consists of a collaborate work toward a shared understanding of the *relevant* meaning.

What by commonsensical standards seems to be transference of meaning from one person to the other, is in the light of these determining factors better understood as a collaborate construction and negotiation of *shared reference* and *shared understanding*.

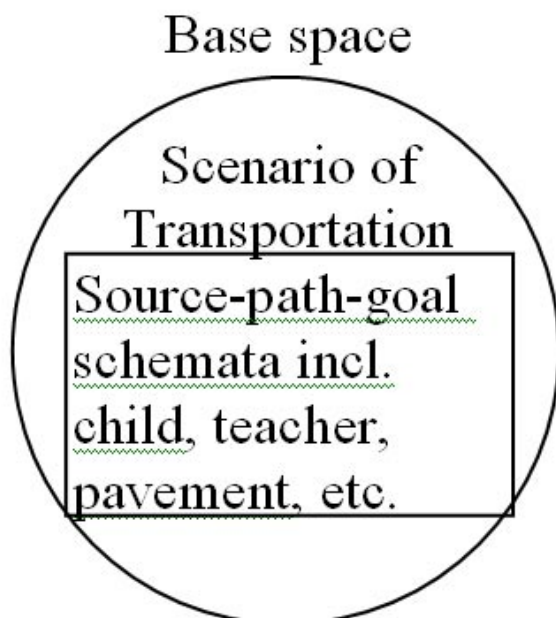
These factors are all commonly recognised and described in various contemporary literatures on communication and dialogicality. In the present paper I will present a cognitive semiotic attempt at fitting all these aspects into a consistent and operational model<sup>4</sup> of shared reference by means of mental space terminology.

## Red mother-cars

In order to illustrate this model, I will present an example from pedagogical practice within the cdb field<sup>5</sup>.

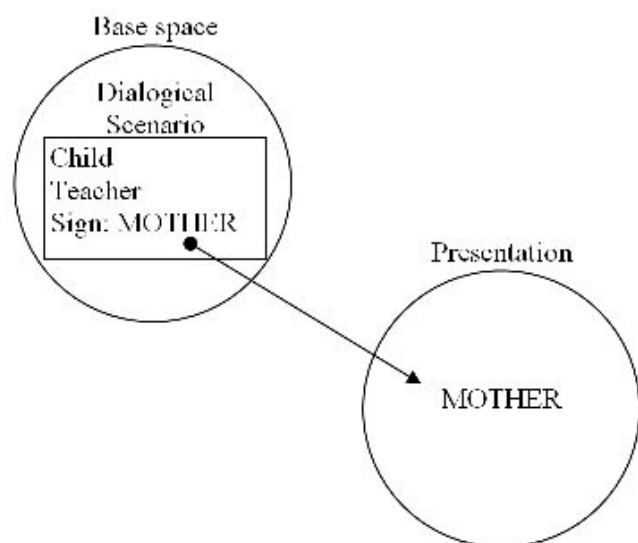
A teacher and a deaf child with severe visual impairment come walking hand in hand. As a result of his sensory impairments the child has very limited linguistic skills<sup>6</sup>. They walk along a street where cars are parked at the side of the street. The child is capable of recognising the “things” by the pavement as cars, and to distinguish what colours they have. At this particular point in time (t1) the two persons share one structuring aspect of the situation: They both understand that their shared focused project is one of “getting somewhere”. They share the understanding of base space as being one of *transportation*. Each of the persons may have additional experiences along the way, experiences that may be totally private and independent of the each other, but the notion of being on the way to somewhere is a shared basic understanding of the situation that structures a shared base space of transportation (see figure 1).

Figure 1. Base space (t1): Transportation



This basic understanding of the situation is suddenly changed (at t2), as the child makes what the teacher interprets as the Norwegian Sign Language’s sign for MOTHER. The teacher understands the situation as if the child is *presenting* a sign. The teacher reacts on the sign as if it was actually presented, and suggests initiating a conversation with point of departure in the utterance of the child. By answering the sign as if it is an addressed utterance, the teacher suggests to redefine base space as a dialogically structured mental space. All speculations on whether or not the intention of the child was actually to address the teacher are discarded as the child accepts the suggestion, and engages in the following conversation. Hereby they have stabilised a shared *dialogical base space*<sup>7</sup>.

Figure 2. Base space (t2): Dialogue



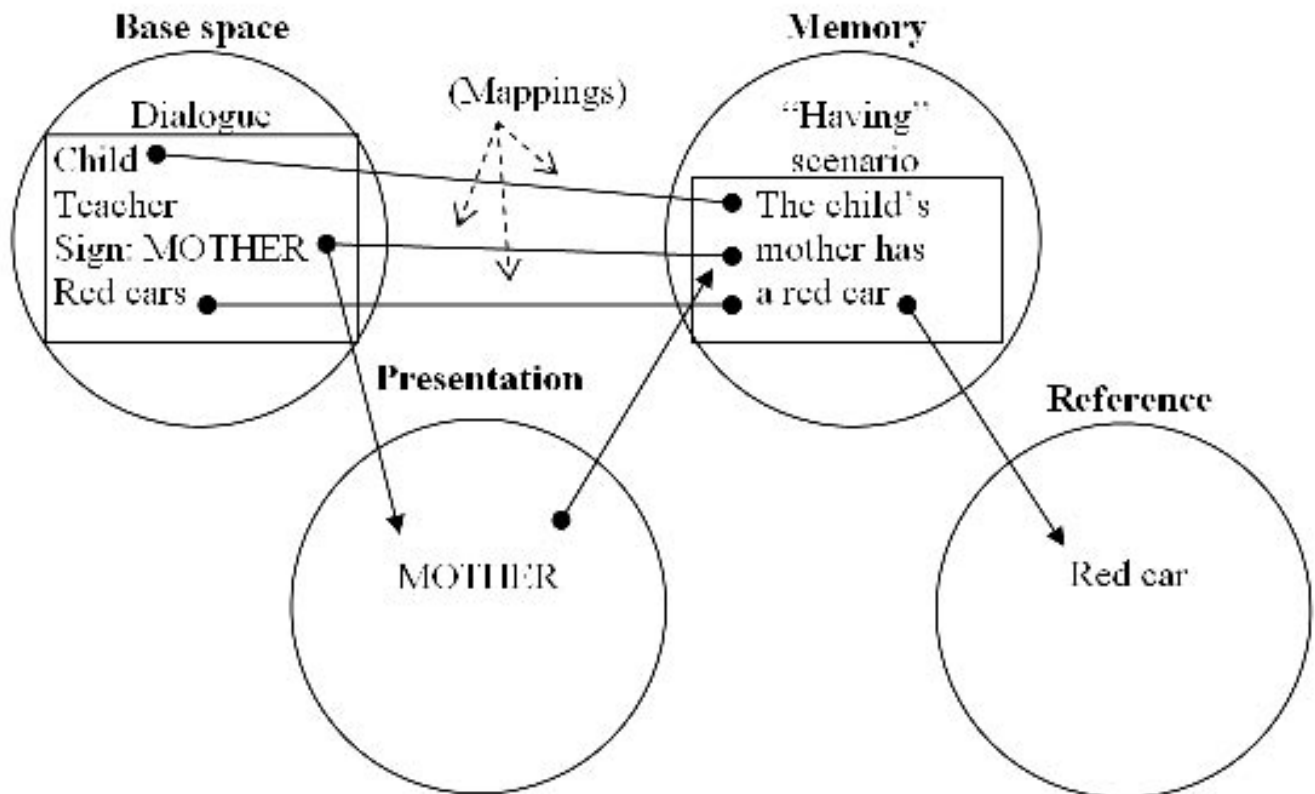
This redefinition has various consequences regarding what is focused in the situation. Now the focus is to negotiate what relevant meaning this reference to “mother” might have in this context. Is the child tired and “wants his mother”? The child does not seem tired, but on the contrary, cheerful and communicative. A lot of different interpretations are suggested to the child without any display of agreement from the child. The teacher gives up on trying to understand the utterance, and they continue their walk, until the child repeats the sign MOTHER, and the séance repeats itself. This happens a couple of times along the way until the teacher discover, that the child only present the sign when they pass a red car. Suddenly the red cars by the pavement must be reassigned a new value in the scenario, as they enter into the dialogical space. Just before, the cars were merely landmarks for their progression in the transportation scenario, but now they are as well significant parts of the utterances in the following negotiation of the meaning of the utterance: MOTHER. Now we can address the problem of finding out what this initial utterance might have meant.

We must turn to what *memory* the child and the teacher share of mothers and cars, and of experienced links between members of the two categories. The teacher knows that the child’s mother has got a red car. This knowledge is retrieved from memory as a ground on which to build a connection between the sign MOTHER and the red cars. Both in the here-and-now situation in base space and in the remembered “mother has a red car” scenario, the elements of ‘mother’ and ‘red car’ are seen as connected in a meaningful relation. Such significant similarities between elements and/or relations across different mental spaces are termed *mappings* in the mental space theory.

These mappings are necessary generative factors in the model. We might formulate the rule, that the more mappings you can chard out, the more likely your analysis is to reflect what actually goes on in the minds

of the participants in the conversation. Another rule would be, that any “emerging” element or structure that cannot be accounted for as stemming from one of the two primary phenomenological spaces (*base space* and *memory space*), nor as a result of blending elements or structures in these spaces, weaken the credibility of the analysis<sup>8</sup>.

Figure 3. New elements (red cars) become significant in base space



We now see that the child uses the sign MOTHER with reference to the red cars, and in this manner labels the red cars MOTHER. In a certain sense the sign simultaneously signify “mother” (opening a whole range of possible meaningful associations) and “red cars”. Such a mental mixture, wherein the sign simultaneously mean two different things, we call a *blend*.

It is intriguing how a sign in this manner may mean two things at the same time. Such a double meaning must be closely related to something in the here-and-now situation that makes it meaningful. In other words, such a blend requires some sort of *relevance* from the situation in order for it to stabilise into a coherent sharable meaning that may be understood by both the one that presents such a blend, and the one trying to figure out what is meant.

Above we saw that the cars were assigned new value in base space. Now we know what this new value is; they are cars in a special “mother-way” with regard to them being red. Thus the cars are *categorised* as

mother-cars because they are red. They are cars of the same kind as the car of the child's mother. Stating this relation between MOTHER and the red cars is relevant first of all as a tool for understanding the environment by way of categorising the phenomena that we encounter; we need to create order in the world to make it comprehensible.

Additionally, the utterance has a social relevance in the here-and-now situation. It might be intended as a declaration, as in “this is a mother-car!” or as a question: “is this a mother-car?” The communicative function of the utterance must be determined by additional observations in the context. In this case it is obvious, that the child intends to tell something – at first to him self, and afterwards, after the teacher has commented on the sign, to the teacher. The utterance may be something like: “(Look,) mother-cars!” Another way of describing this utterance is that MOTHER is a predicate for the cars.

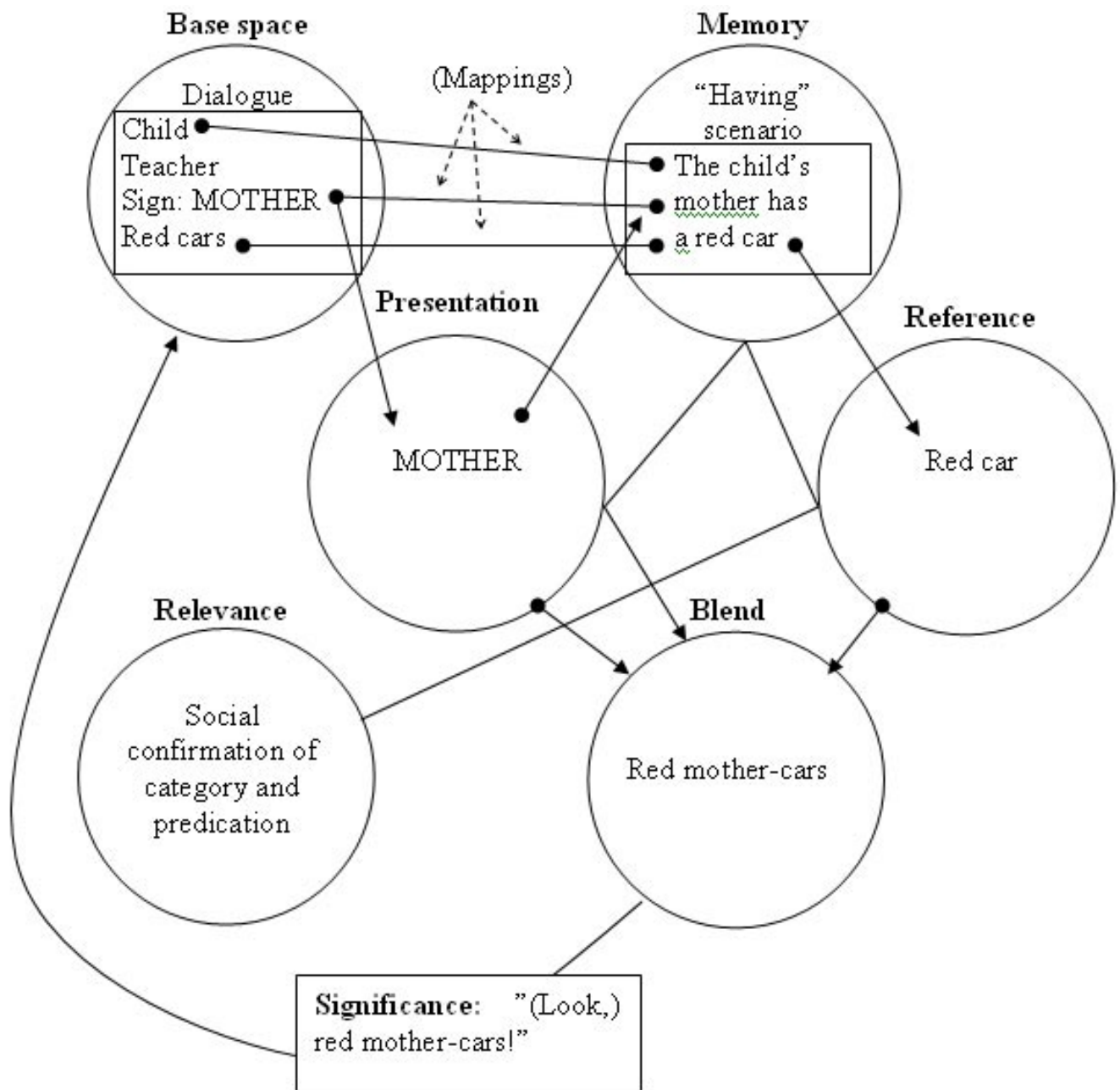
In the situation the sign functions as a declaration of the fact, that the cars should have the predicate mother-cars, which at the same time is sought stabilised as a socially shared category: We share the understanding, that there is such a thing in the world as a category of mother-cars to which these cars belong. This aspect is the here-and-now *relevance* that stabilises the *blend* between “MOTHER” and “red cars”.

It is tempting to translate the utterance into more “normal” language. And a multitude of possible translations into English are possible. We might choose to translate it to “look, the cars are red just like my mother's car!”, or “my mother has a car like that”. No matter how we choose to translate such fragmentary utterances into “normal” language, the danger of over-interpretation is present. The danger may none the less be avoided if you stick to determining the function and relevance of the utterance in the here-and-now negotiation of shared meaning, and decline from over-normalisation of the utterance form<sup>9</sup>.

When a coherent structure that contains all of the above-mentioned aspects of meaning is mentally present to both partners in the conversation the sign can stabilise into a shared meaning. This shared meaning is what is fed back to base space as the *significance* of the utterance. Figure 4 is a model of how such *shared understanding* might be construed in this example with the mother-cars.



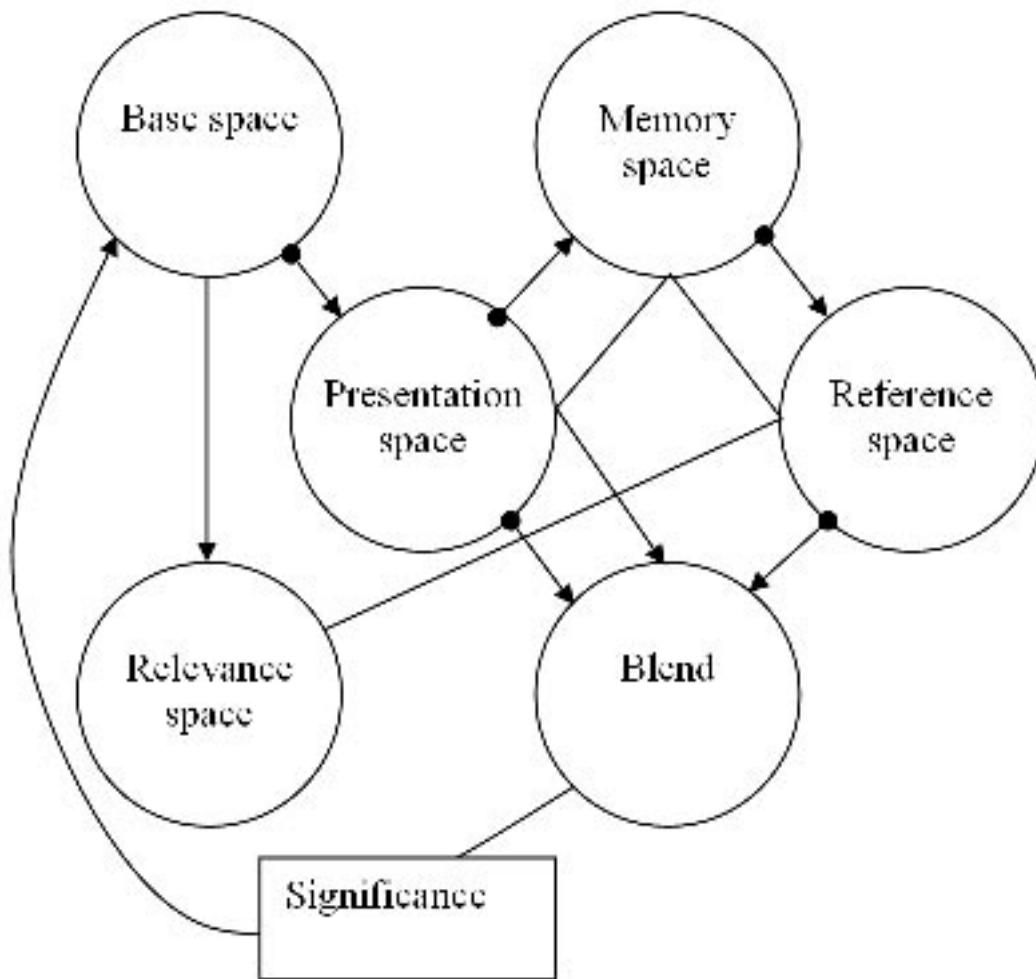
Figure 4. The mental structure of significance



## The 6-spacer

This model may be generalised into a universal model of how shared understanding is obtained in communication. These six spaces seem to cover the relevant aspects one has to consider when analysing meaning. The general model – or 6-spacer – as it is presented in figure 5, will thus contain the six aspects: base space, memory space, presentation space, reference space, relevance space, and blended space (or blend).

Figure 5. The 6-spacer: Mental space network of shared significance



This model suggests an explanation of how it is possible to obtain shared understanding. In our everyday life this goes on totally un-noticed, and we have no need for the model. But when communication breaks down, or is very hard to establish, the mechanisms of the 6-spacer forces themselves into our consciousness. When the systems break down, we need to give it a closer look.

### Asymmetries

When you try to communicate with a congenitally deafblind person you find yourself in a situation where everything is hard to understand, and the system is at risk of breaking down at every utterance. If we then look to the model in order to find the “error”, we find many aspects that may “go wrong”. As long as two persons have sufficiently symmetric access to the contents of the six spaces, they will experience shared understanding in the communication. If, on the other side, one or more of the spaces are asymmetrically accessible for the two persons, it will influence their mental construction differently, causing an experience of not sharing the significance and meaning of the utterances.

A major challenge when trying to optimise communication with persons with cdb is to map out and compensate for such asymmetries in the 6-spacer. Some of these asymmetries are more obvious than others. For instance, the *presentation space* contains a huge asymmetry because of the sensory impairment of the person with cdb: Is that person able to see, hear, or feel the presented signs, and does the partner attend to the relevant aspects of the tactile gestures and signs of the cdb person? Other asymmetries are less obvious, and thus harder to relate to. Asymmetries in *relevance space* regarding what the cdb person intend by an utterance, and asymmetries in the shared *memory* of experiences with the use of signs are but two examples of many.

The question is how these different asymmetries affect the co-construction and negotiation of shared meaning. One very important challenge in the years to come, both in research on deafblind communication, and in pedagogical practice, will be to study exactly how cdb-specific asymmetries affect this meaning negotiation between cdb persons and their partners, and how we may help forth more symmetric 6-spacers in our communication with cdb persons.

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<sup>1</sup> Most of the following has been published in a Danish version (Ask Larsen 2004). In addition, a preliminary version of this text has already been published (Ask Larsen 2005).

<sup>2</sup> E.g. Ask Larsen 2003:14ff and Brandt & Brandt 2005

<sup>3</sup> A full discussion of the dynamics of *meaning negotiation* in a dialogically structured base space would take us to far here. See Ask Larsen 2003:20ff.

<sup>4</sup> The 6-space model, as I shall present it here, has already undergone some clinically based testing by the students at MENTAK at HIST, by the teachers at the School for the Deafblind at Skådalen, and by the author and Anne Nafstad in their present project at Skådalen (see below). It's usefulness as an analytic tool seems so far to be obvious, and the analyses are reported to be of good clinical use. See documentation to come: Ask Larsen & Nafstad: **Documenting Cdb Linguality**, project report, Skådalen, Oslo (expected ultimo 2006), and the planned collection of papers from MENTAK, HIST.

<sup>5</sup> I wish to thank Liv Holmen, teacher at the School for Deafblind Children at Skådalen in Oslo, for letting me use this example of hers for this purpose.

<sup>6</sup> For a discussion of the differences between linguistic skill and linguality as a cognitive potential, see Nafstad & Ask Larsen (2003).

<sup>7</sup> Recursively defined from first sign that is understood as addressed.

<sup>8</sup> This in turn provides us with a tool for analysing the cognitive schematic competence and potential of the cdb child. Any schematic structure that is necessary for understanding how a shared meaning is construed must be part of the child's organisation of mental space, and must thus be derived from one of the two contexts: The environmental (base space) or the mental (memory space). That give us theoretical support for the analysis of what cognitive competence underlies this organisation of mental space - at least at the point in time where the child understands a sign, utterance, intention, situation, or any other meaningful structure. In other words, the mental space analysis as it is performed in the 6-spacer, shows us what cognitive organisation the child must be able to participate in, during the analysed sequence of meaning negotiation.

<sup>9</sup> In some pedagogical settings it might be adequate to encourage such an "over-normalisation" of the utterances among the partners of people with little or no formal language. Focus on the meaning of seemingly very simple utterances may bring forth variations and complexity that otherwise might evade the partners, and thereby help forth an understanding of the profoundly communicative character of all social "behaviour".



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