ASSOCIATIVE IMAGES AS A COMMUNICATION TOOL TO IMPROVE THE DIALOGUE BETWEEN DESIGNERS AND END-USERS

In this paper we describe a communication tool able to support a dialogue between designers and users. We also present our reflections about what our experiments with various dialogues in participative design have taught us about the shortcomings of verbal dialogue, and what happens when using alternative means - words and pictures - when communicating. This tool is a means by which the construction of a design dialogue can be undertaken. The particularity of this dialogue is that the communication media used by the participants is a combination of associative pictures and verbal language. We argue that verbal dialogue alone is unreliable and has to be complemented by other media. Also, we discuss the possibilities revealed by experiments that pictures catch people’s imagination and that they can be used as representations for future ideas. Language and imagery are investigated in the paper, a theoretical approach is presented and arguments are developed to explain our procedure. Using a dialogue with imagery has also made us rethink about when a planning and design process actually starts. If we intend to change basic habits, we must start earlier than we normally do by deconstructing our concepts and reconstruct them together in the specific situation.

The paper contributes to the discussion on two issues investigated during the 9th international symposium of the ISSA Research Section on design process and human factors integration (Nice, France, 1-3 March 2006): “participative design” and “design practices - how to build bridges between designers and end-users”. This contribution is our experience from research experiments involving the end-users in changes affecting their own environment. It is one in a long row of such experiments in the Scandinavian tradition of inviting citizens to voice their opinions about major changes in the built environment, in residential areas (Olivié 1973), at workplaces (Ahlin 1974; Steen and Ullmark 1982; Granath 1991) or in public spaces in the urban landscape (Birgersson 1996).

Participation and dialogue are common concepts in different discourses, for example, in politics, management, design and planning. They refer to slightly different ways of involving people and are used in different situations and contexts. We are related to the specialist field of architecture and town planning, and within this broad practice we are...
involved in the design and planning of workplaces. Our research tradition, which has developed in close connection with town planning and design projects, has been focused on improving existing or creating new workplaces.

Our field of research is the dialogue between participants with different backgrounds, professions, knowledge, etc., involved in a change process. It is based on a long research tradition at the School of Architecture, Chalmers University of Technology, in Göteborg, Sweden, formed by a number of researchers interested in workplace design, user participation in design processes, as well as the development of entrepreneurship in connection with urban regeneration. This research tradition thus started in the spirit of the 1970s with the idea of supporting the rights of the employees to argue and be heard in matters affecting their working environment.

During the 1980s and 1990s, researchers from this unit had several opportunities to participate in processes involving changes initiated by large and semi-large companies such as Volvo, SKF, Ericsson, Bil & Truck or local authorities. During these two decades, the researchers encountered many different problems and successfully tried out different solutions in a given situation. From this perspective, communication involving the participants with different backgrounds, professions, knowledge, and sometimes different cultures. Consequently, the situation of change is characterised by a mixture of perspectives of the world.

The objectives of the 9th international symposium of the ISSA Research Section, as stated in the schedule, were ‘to look beyond the technical dimension dictated by an engineering-driven approach that focuses on the technical design and control of production systems, with little consideration given to the users’ (Sachs, Granath et al. 1981; Granath 1991; Birgersson 1996; Lindahl 2001; Rehal 2004).

Knowledge within architecture and in particular within the design of workplaces is embedded in specific situations and as a rule should not be generalised. Therefore, we have turned our interest towards knowledge about the process of finding good solutions for specific situations. From this standpoint, we have questioned generalised expert knowledge and look upon design as a shared process involving a range of competences from different disciplines and different practices in a given situation. From this perspective, communication involving the end-users is also problematic.

THE PROBLEMATIC OF USER PARTICIPATION

The asymmetrical communication within the design process

![Diagram showing the asymmetrical communication within the design process.](image)

The discipline of the architect

The users communicate with the architect by means of verbal language

The architect responds

Users’ disciplines

Communication by means of verbal language between the users

The architect’s sketches or a range of questions carried on in many different manners. The dialogue may be a discussion around the architect’s sketches or a range of questions posed by the expert and answered by the users. It could also be conducted as an inquiry or as an interview conceived and directed by the specialist in order to collect information about the users’ reality - their needs, wishes, representations, etc. All these kinds of dialogues have been and still are used by experts in order to establish communication with the end-users, the goal being of course a well-designed product at the end of the process.

We believe that the dialogue is the foundation in participation and has a broader meaning than just being a means of producing a good artefact. It is a practice that can constantly be developed within an organisation. Participation involves a dialogue between people with different backgrounds, skills, professions, etc. acting together in order to change an existing situation into a better one. The dialogue is then an arena where different views, visions, representations and languages meet. It is in itself a process of design. It is in this dialogue that society and social realities are constructed and transformed. To understand the mechanisms that constitute such a dialogue in design is the main purpose of this paper.

Our experience regarding user participation in workplaces has taught us that dialogue in design processes involving users has several problems to deal with. A dialogue between experts and users encounters communication barriers due to their different knowledge and rank. In addition, in matters concerning design and planning, it is also problematic that different means of communication are used. In this respect, the dialogue is asymmetrical; the users express themselves verbally, while the architect/planner responds graphically with draft sketches, plans, etc. Furthermore, the users do not constitute a homogeneous group. They have different backgrounds, professions, knowledge, and sometimes different cultures. Consequently, the situation of change is characterised by a mixture of perspectives of the world.

Sometimes architects and researchers start a development process by listening to what the users have to say about the planned transformation of their environment. Often as a quick response to the users, the architects’ drawings and the planners’ plans are introduced. It is noticeable when this happens that these graphic representations have a hampering effect on the ability of the users to develop their own representations. They also tend to regard them as fixed solu-
tions, even if they are still intended as mere sketches. From this point onwards the users’ reflections about the situation tend to be framed by the sketch and become mainly concerned about variants of the solution presented or its details (Ullmark and Granath 1995).

Also, we have to take into consideration the fact that the users mostly do not have well thought-out ideas about how they would like to change their environment and seldom get the opportunity to really reflect about their situation when changes in their environment are about to be initiated. In most cases, the design process is conducted by an expert who gathers knowledge in verbal form via questionnaires or interviews, or the reactions from a drawing or plan, about the users’ experiences, desires, needs and visions. The expert is expected to be the right actor to be able to translate verbal demands into spatial configurations. Furthermore, if the users are only expected to answer questions, without having the time or the means to reflect about their situation, or the possibility to confront their views with other users, then their imagination will be somewhat constricted. It will be difficult for them to conjure up solutions for their problems outside the limits of what they are already able to directly express.

Another problem is the unreflecting use of a common language. We tend to believe that we can communicate on almost everything with anyone with help of everyday language. We are not really aware of ambiguities intrinsic in the language. Language is not merely a channel through which information about underlying mental states and behaviour or facts about the world are communicated. It also shapes our social world, our worldview (Winther Jørgensen and Phillips 2002). The phenomenon of language will be examined later on in this paper.

CONCEPTO, A TOOL FOR DIALOGUE BASED ON A COMBINATION OF IMAGERY AND VERBAL UTTERANCE

To avoid the difficulties described above a communication tool, Concepto, has been elaborated from a set of experiments that simulate the dialogue in the initial phase of the design process (Rehal 1997; Rehal 1998; Granath 2005). Experiments were conducted using printed pictures to facilitate the users’ ability to articulate them. The pictures are in this situation used associatively, which means that the blocking effect caused by graphic representations does not occur.

Concepto is merely a dialogue-based method in which pictures are associated to key concepts that catch the situation of change. It consists of a picture database with the support of a trained facilitator. The images that constitute the tool are photographs illustrating common situations, things and phenomena. A large part of the picture collection is made of photographs that we, or our colleagues, have taken. The rest has been bought in from commercial picture databases.

To carry out a dialogue according to the Concepto method, one needs a facilitator – a person who can conduct the dialogue through the different stages and support the participants. The dialogue basically contains two situations involving reflection. The individual one, which occurs when each participant selects pictures to which they associate concepts related to problems or possibilities involved in the
proposed situation of change. The common one, in which the participants develop a common understanding that can be a basis for further development work. If there are many participants involved, or if they are from different disciplines or have different backgrounds, then it is preferable to start the common reflection with subgroups, gathering people with the same background or knowledge. In this case the dialogue will be carried out in three stages. A first stage for the individual choice of pictures. A second stage for a discussion within the subgroups, where a common understanding is developed and illustrated with images. A third stage in which a new dialogue is initiated to develop a broader common understanding between all the participants, based on the contributions from each subgroup.

The first thing to do in order to start a Concepto dialogue is to formulate the questions that embrace pertinent aspects of the actual design situation and that will involve relevant concepts to discuss. Once the questions are formulated and the groups constituted, the participants have to look through Concepto’s picture collection to relate images to the key concepts. This individual reflection is the first stage – the self-reflection - in the Concepto communication tool.

The next step in the first stage is the presentation of the individual selection of pictures. Here the participants display their images on a wall so that the whole group can see them. The participants present their images individually and motivate them.

The second stage begins when all individuals have presented their images to the other participants within the subgroup. A dialogue with others starts. This common reflection consists on a free discussion around the images within each subgroup.

The third stage proceeds like the second with the difference that it is the subgroups’ contributions that are discussed, not the individual ones. It is also a common reflection, but in the form of an interdisciplinary dialogue.

The basic hypothesis is that the associative use of pictures images enriches communication and supports participants to better express that which is tacit, implicit or difficult to articulate verbally. The tool has to fulfill two major conditions. The first one is that it must be used from the very beginning, before the designer makes any proposal. The second condition is that the use of verbal language, as we use it in everyday communication, must be reconsidered, because it is unreliable and cannot be used straight off in the dialogue within a design process. In our research we chose to complement verbal language with imagery without disowning the fact that other media can be foreseeable. We do not use images because, as the well-known maxim affirms, “the image tells more than a thousand words”, which is partially a false statement, but rather because “the words too tell more than a thousand pictures”.

**Some examples**

During our research, we witnessed situations all the time where a participant associated a concept to an image that surprised the other participants in the dialogue process. Let us take as an example, the concept of flexibility. The number of pictures that can be associated to this can only be limited by the imagination of the participant. In one of our experiments, one participant chose a picture of a woman mountaineer struggling on a sheer rock face, to illustrate what she (the participant) had earlier verbally expressed as a need for flexibility in her workplace. The word flexibility can in this case be misleading for the architect who only takes into account the participant’s verbal expression. The architect will interpret flexibility as something that deals with spatial configuration. The word flexibility refers to different things in the architect’s world of concepts, than it does for a user talking about his or her work situation. In our example, the lady who took up flexibility in the discussion commented her picture with some lachrymose expressions: “barriers are there to be overcome”, “one can lose the grip”, “people are flexible...” (Rehal 1997).

Another example is the concept of bad air, formulated verbally by participants to describe their work environment. This was interpreted by the interviewer as “the bad quality of the physical air” in the building. When the participants were asked to show pictures that illustrate what they mean by bad air, they chose pictures that show what bad air is not. They explained that bad air is the absence of openness. Feeling the seasons, the weather and the colours of nature, that is what they are missing in their workplace. Their pictures were photographs illustrating open landscapes and ocean (ibid.).

We also experienced a situation in which concepts were given different contents by different professions. This happened in an experiment conducted with students and staff during the preparation of the design of a multimedia centre at the university. The three people with physicist backgrounds that were going to work in the centre represented the clients in the design situation, as well as the future users with similar backgrounds. The students in the experiment were from the Chalmers University of Technology and represented the future users of the multimedia centre, but also designers involved in such a design task. Both groups agreed that multimedia and communication were the key concepts that had to be investigated in order to develop a good vision of the future multimedia centre. These concepts are widely used. At the time of the experiment, we did not realise that these concepts could mean such different things for different groups of people, and that misunderstandings of a whole design concept might occur. The experiment
showed this might be the case.

For the physicist staff, the multimedia concept was firmly associated with data processing and the computer. Most pictures chosen by the staff showed computers or pictures of phenomena simulated by the computer, or pictures processed by a computer.

The student architects, on the other hand, do not have any picture associated with data processing. Their pictures mostly illustrate human activities, such as work, games, leisure and human contact.

During the interdisciplinary dialogue, the two groups, while confronting their respective pictures, became aware of what the ‘multimedia’ concept really represents for each group. This experience confirms that the concept of multimedia is a diffuse one. For the staff of the library, with physicist backgrounds, the computer and data processing provide the opportunity for the physicist to visualise physical phenomena that up to now can only be represented by a mathematical language. For the student architects, visualisation is an obvious part of their profession, as they work with images all the time. From their point of view, ‘multimedia’ seems to stand for human communication in its various forms. The images together with the discussion narrowed the gap between the views of the participants. The library manager said at the end of the experiment, “we’re talking the same language… of course multimedia isn’t only computers… we have to take advantage of new technology without losing the human contacts, …”. An architectural student said after the experiment, “It’s incredible… just write a formula on the keyboard, and you can see it on the screen”.

Finally this experiment made it possible for both groups to exchange their points of view and to be aware of the limits of their own way of representing the world.

The use of images with an associative character as a complement to the common language surmounts the difficulties of communication due to the language barriers between the various disciplines involved in the process. A method using pictures in the early stages of a design process has turned out to give the participants an opportunity to reflect about and articulate pre-conceptual ideas, firstly for themselves, secondly for each other in order to develop a common understanding and vision. A number of experiments showed that this method does not only resolve the interdisciplinary communications problem, but also stimulates reflection at the level of the single actor. By seeking a suitable image, the actor releases himself from the verbal framing of a concept and better apprehends what he/she tries to express.

By introducing pictures, around which the participants associate the problems and possibilities involved in the changes they are facing, we have observed that the users acquire an instrument that allows them to ‘reflect with the situation’ (Schön 1983). This is rather like what the designer and architect do when sketching to find the form for a new structure, the new artefacts to be built. Using such a dialogue that allows everyone to ventilate their thinking aloud, the participants seem to reach a mutual understanding of the situation and formulate a shared strategy in a more stringent way than through a dialogue only using words. The interesting thing is that this means more opportunities for real change, involving both the users and the designers.

THE DIALOGUE PROCESS

At the beginning of the development of the Concepto method we focused on the communication process between the participants in the design process. We distinguished, on the one hand, the interdisciplinary communication between users from different disciplines restricted by linguistic barriers, and on the other hand, the communication between the architect and the users restricted by the asymmetry of the means of communication i.e. words versus the...
architect’s drawings and sketches. Firstly, after practicing Concepto, we became aware that the whole process is more complex than assumed. In fact, behind the interpersonal dialogue there are communication processes running at the individual level. This discovery made it clear for us that the communication process in question can be described as a mixture of three dialogues: an inner dialog, a self-dialogue and a dialogue with others.

The “inner dialogue” occurs in a “black box” and is not observable from the outside. Here, one can say that the subject “is thinking”.

The “self-dialogue” is an externalization of the inner dialogue. The idea or the concept is expressed by means of a sign, an image. The latter does not replace the idea or the concept, but represents it. The representing sign, in this case the image, is a means of reflection for the thinking subject. The image provides feedback to the subject. Here, one can say that the subject “is thinking aloud”. A good example is when the architect is sketching. Other professions or users might think aloud using key words on a paper, picking images or body languages. Everyone uses representations and can develop this task to facilitate a dialogue with themselves. In this process, the idea is expressed and externalized, making it possible to reflect again, to re-express it and so on.

The “interpersonal dialogue” rests on the preceding dialogue. Once the idea or the concept is expressed and represented by signs they can be perceived and interpreted by other subjects. In this case, there is a message and the answer or the reaction that the interpreting subjects provide is used as a feedback by the author of the message. Here, one can say that the subjects “are thinking aloud together”.

The inner dialogue is continuous in the world of thought. It forms the basis for the other dialogues and coexists with them. It is implicit and will not be discussed here. The other two dialogues are explicit and it is by learning how to know and handle them that it is possible to develop adequate methods and tools for a participative design process.

A dialogue by means of images and words goes through several levels. At the individual level, the participant communicates with himself/herself by means of pictures in order to concretise a problem or an idea that he/she thereafter communicates to the other participants. They interpret the message and send back reactions that serve as a feedback to the individual. He/she reviews the problem or the idea, re-articulates it and so on. In this manner, the group develops common concepts and a shared understanding.

This type of communication is not only a transfer of information between individuals. The choice of images, that is browsing through photo-catalogues or choosing prints from a pile of pictures, is a design process in itself. This act seems to help the lone individual to think and develop ideas in a more complex way than it would have been possible to do with solely verbal language. It was noticeable that in some experiments visionary aspects were more accentuated when images were presented, as compared to when only words were used. The participants expressed many more and varied aspects with the help of images than when expressing themselves in the customary verbal language. The users of the environment in question are often astonished as to how the pictures make it easy for them to find topics that they have not thought about before browsing through the pictures (Rehal 1997).

IMAGERY VERSUS NARRATION

In everyday life, illustrative and verbal communication are used parallel, complementing each other, for instance, as in a documentary film, a sport’s programme on TV, advertising or in an instruction manual. However, one can also deliberately use them in sequence i.e. one after the other, for educational or rhetoric purposes. In order to increase attention and curiosity, a lecturer may choose to speak...
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It became clear to us that the combination of picture and verbal language can be used in different ways and to different ends. The picture is not submitted to a system of rules as words are. It provides more room for creativity and imagination in communication. At the level of the dialogue between different professions, the picture can bring to light the participants’ different ways of seeing and 30 each others’ points of view. It also pays attention in this kind of dialogue to the fact that the picture at the individual level stimulates the participant and supports the establishment of a self-dialogue, in the same way as sketching does for the architect.

A THEORETICAL APPROACH

There is a fundamental difference between discussing a concept verbally, and discussing it with the help of imagery used in an associative way. We tried a semiotic approach to better understand the difference between word and picture, but did not stop there. It is not the mechanisms of meaning that interest us, but rather the various effects that different manners to accommodate verbal language and pictures have on the participant’s faculty of imagination, expression and understanding.

Let us approach language as such to understand why. Language is a system of symbols founded on conventions shared by individuals within the same linguistic unit. Every language is incomplete with regard to each individual and only exists in its totality in the speaking masses (Barthes 1985; Saussure 1987). Although different social groups in a society practice the same language, they do not make the same use of it.

Words in a language acquire their true senses in the use individuals make of them within a specific praxis (Wittgenstein 1953). Words do not signify phenomena or things but concepts (Ibid; Saussure 1987). The concept cannot be encompassed by a word in an absolute and incontestable manner. The word “light”, for example, is not used in the same way by a physicist, a painter, a photographer, a prisoner, a politician or an architect, and does not designate the same concept in all these cases.

Thus, language is a sophisticated communication tool constituted as a system of rules; internal rules (grammar, syntax,
The design process seen as a successive construction of a language that ends in a real artefact

**FIGURE 6**

**CONCLUSION**

Conceiving an artefact starts with an activity of conceptualisation. The concepts are our creation, and they are instruments by which we can see the world and transform it. They are always developed through communication in our social activities within communities, professions, cultures or just a group of people doing something...
The artefact can thus be seen as a language in constant construction during a process of change (Ehn 1988), from words, to graphical representations, to newly-built structures. The final product is a confirmation of this process, but also the beginning of a new one. We always start in the middle, thinking has no beginning (Deleuze 1995). This construction is an act of design that, as we attempt to show, is achieved at different levels and is enriched by the participation of a wide variety of people involved. These have knowledge to bring into the process and are concerned by its results. Thus, design is not just an expert matter. Introducing new means, like images, into a process of change opens up possibilities for such participation, for developing a democratic practice that brings to light hidden worlds that can help human activity to acquire an image of their future environment.

We mean that not enough attention is devoted to what happens to the participants during a design process in research dealing with participative design. We argue that the participants develop themselves during their attempts to think aloud, reflect on and acquire an image of their future environment. Our research experience has drawn attention to the relevance of the rights of users to not just be heard, but to think aloud and to design the environment and at the same time change themselves. The right to think aloud, that is to design, is not just a result of making processes of change more knowledgeable and democratic; it is also what helps to develop democratic practices.
BIBLIOGRAPHY


