

# From Action Research to Dialogue Design

## - mutual learning as a guiding principle

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### ABSTRACT

The paper reports on a large European R&D project on Multimedia And Network In Collaborative Research And Learning (MANICORAL). The project was based on Dialogue Design (DD), which lies within a frame of Action Research and Participatory Design. Action Research is seen as the historical basis for two developments: Participatory Design and Dialogue Research. Participatory Design has focused on research within working life: professional resource building and development of alternative technologies, where Dialogue Research has focused on living conditions: participatory research and proactive technology assessment. In Dialogue Design, these two strands are brought together. However, Dialogue Design differs in a number of essential aspects. In Dialogue Design, the principal object is mutual learning; focus is on the working life of high resource groups developing parts of the technologies themselves. The methods applied and the role of the HCI-researcher as mediator who creates a forum for dialogue are introduced and reflected upon and Dialogue Design is discussed within the theoretical concepts of communication and learning.

### Keywords

Dialogue Design, action research, participatory design, communication, learning, CSCW.

## 1. INTRODUCTION

Action Research is traditionally traced back to the US in the first half of the 20<sup>th</sup> century (Lewin, 1975; Danielsen, 1997). From the 1970s, action research methods have dominated the Scandinavian approach to system development. New participatory methods have evolved focussing on the design of technologies that respond to the lived practice of the users. However, in the same

period, there have been some major changes in the basis for design. The technologies have become more complicated and integrated. "Stand-alone" systems have changed into integrated cooperative, distributed networked systems. Simple text based interfaces have become complex multi-modal symbolic representation integrating multimedia and 3D. Added to that comes that systems are not only developed to automatize low-order skills and routine work any more. On the contrary, the aim is to

integrate technology to support and develop complex and very advanced working processes.

This development within the community of system development and design raises the questions on the methods to use. Can we use the same design methods as developed in the critical era of Action Research and Participatory Design, when the overall aim for our work is changing as well as the user groups – or the domain experts have changed? What do we bring from the history of Action Research and Participatory Design and what do we have to add? Which specific methods should be used, and how should they be organized? Where do we look for further development of the methods? And how do we theoretically conceptualize the design methods we are using?

The paper is dealing with these questions based on the experiences gained in the project, MANICORAL (Multimedia And Network In Cooperative Research and Learning). First, we present the MANICORAL-project, the objective of the project, the actors, and the challenges for the project with regards to design. Second, we revisit the tradition of Action Research, and we operationalize the lessons learned. Third, we look at the techniques and methods used in the MANICORAL-project and suggest Dialogue Design as an unifying approach to reflect the need of a project like MANICORAL. The article is concluded by a theoretical conceptualization of “Dialogue Design”.

## 2. SETTING THE SCENE

MANICORAL (Multimedia And Network In Cooperative Research And Learning) (Nielsen, Duce, Knudsen, Sünkel & Robinson, 1995) was an international R&D-project, involving six European nationalities. It was organized as an interdisciplinary project having participants from four scientific disciplines: natural sciences, social sciences, technology and the humanities. The project ran for two years and was supported by the European Union's 4th Frame programme: Telematics for Research (1996-1998). The aim of the project was to develop a Distributed Collaborative Visualization system (DCV) for a dispersed group of European scientists and to study – on a long term basis – the constitutive influence of the technology on collaborative research.

The system developers were experts in visualization and collaborative systems, the users were researchers within the area of geophysics, and the HCI group<sup>1</sup> were

researchers within the areas of social sciences (sociology) and the humanities (communication and psychology). The users were a group of geophysicists investigating the use and exploitation of Radar Altimetry Data, and their project on Altimetry for Research In Climate And Resources (AFRICAR) was supported by the European Space Agency. The scientists were located in Holland, Austria, Italy, Greece and Denmark. The AFRICAR group had collaborated for many years through e-mail, 1<sup>st</sup> generation web-tools and infrequent face-to-face meetings. The focus of their research was to utilize methods for measuring the distance from satellites to the ocean surface or to the ice surface and more general to study the changes of currents and eddies of the ocean.

The HCI-group had a number of tasks in the project. One task was to contribute to the development of a methodological and theoretical framework for researching collaboration in a distributed context among knowledge workers. They were also responsible for the study of the influence of the technology on collaboration. However, as the basis for the whole project, they had the role of mediators, initiating interaction among participants, creating spaces for dialogue, ensuring procedures for collaboration and acting as scribes – keeping track of the development in the interaction.

The challenge for the MANICORAL-project, and especially for the HCI-group was how to get this very interdisciplinary, inter-cultural, international and distributed community to work together and to design a distributed visualization tool. Which methods should be used and which tools should be developed in order for the project group to:

- Understand and respect each other?
- Grasp the experiences of the domain specialists?
- Transfer understandings and knowledge gained to each other?
- Trust each other?
- Engage in mutual learning processes?
- Build on each other's ideas?
- Become visionary?
- Design together?
- Work out solutions together?

Looking back, it was a very complex process, like most big European design projects are. However, a first step in

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<sup>1</sup> The HCI group was named HCCC in order to stress the specific focus of the group. HCCC stands for Human Communication, Cognition and Collaboration. The core

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group of senior researchers (the authors) have collaborated for more than 12 years and are located at three different universities in Denmark.

the direction of answering some of the questions raised was taken in the MANICORAL-project. This project became based on Dialogue Design (DD) in which the carrying principal is mutual learning. In the following, the methods applied are introduced and reflected upon, initially by setting them within the frames of Action Research, Alternative Technology, Participatory Design and Dialogue Research.

### 3. FROM ACTION RESEARCH TO DIALOGUE RESEARCH AND PARTICIPATORY DESIGN

Action Research seriously gained ground in the Scandinavian research world in the 1960'ies, starting in Norway. But through close collaboration, the method was adopted in other Scandinavian countries. Gradually, it became a refined, powerful political tool in the hands of progressive researchers to the left cooperating with weak resource groups. Though the borderlines are fuzzy, one could say that Action Research took two roads in the 70'ies. One was Action Research in working life aimed at professional resource building (Bansler, 1987), and the other was concerned with broader problems of living and working conditions of the workers. The figure below (Danielsen, 1997) is an illustration of these two roads and how they have developed.

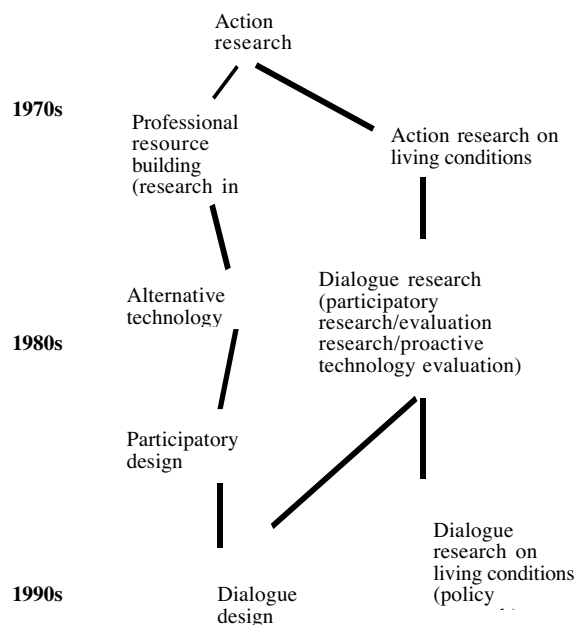


Fig. 1: Some general lines of development from action research of the 1970'ies to the dialogue design of the 1990'ies

#### 3.1 Working life

Action research projects focusing on work sites gradually developed the aim of empowering the workers, through education of the union representatives. It was felt, very strongly, that technology - if not based on critical reflections on consequences - would render the professional qualifications obsolete, and threaten the employment of the workers. Behind this approach, *professional resource building* was the understanding that by empowering the representatives of the workers with knowledge and understanding, they would become qualified players in the technological power game.

During this period of political awareness, cooperation between unions, researchers, computer scientists and students increased significantly. Unions founded research and supported a wide perspective of academic research projects. However, many of the projects within the professional resource building strategy were defensive in relation to the "impetuous of data technology". Gradually, a new strategy of *alternative technology* evolved the aim of developing tools for the workers, the underlying agenda being design of technology which would enhance the workers' professional qualifications or even enhance living conditions (Cooley, 1987; Ehn, 1988). An example of this strategy is the UTOPIA-project<sup>2</sup>, where computer scientists and typographers worked together. Prototyping strategy resulted in a close cooperation with users - as the link to the actual construction process. It also ensured an offensive and critical constructive approach, and alternative technology became a transition concept from action research to *participatory design*. (Greenbaum & Kyng, 1991). During the 90'ies, Participatory Design has undergone several transformations, and one direction seems to be a functionalistic action research, where the primary focus is systems which *must* work. (cf. The MUST-method) (Bødker, Simonsen & Kensing, 1997). This change is also due to the technological development from simple data processing to multimedia, netbased communication, etc. This poses a challenge to R&D in system development and design where new methods for user participation, new tools and new theoretical foundations have to be developed.

<sup>2</sup> In Great Britain the alternative production conducted by Mike Cooley, a former engineer at Lucas became prototypical. In Denmark, the strong movements in favour of alternative energy may be seen as a very concrete example of alternative production within the area of living conditions. Today, this has become a profitable business and holds a strong position on the world market with the production of windmills.

### 3.2 Living life

The basic attitude in *Dialogue Research* grew out of a focus on and belief in dialogue between experts and laymen at dialogue conferences. The laymen saw the experts as resources from who they, through questions and discussion, could acquire sufficient understanding and knowledge for developing their own recommendations to local politicians, administrators, governments, etc. concerning a given policy<sup>3</sup>. Future workshops (Jungk, 1986) and scenario workshops were among the methods used, and the laymen group was constituted to represent the population of a given community: officials, politicians, citizens, school children, people from supply companies, from entrepreneur and financial sectors, etc. (Ruus, 1984).

The conception of the process was that of dialogue, perceived both as the fundamental tool, and as the process, through which mutual understanding can be reached. The role of the researcher was to act as midwife for the process. The task was to help with coordination, setting up dialogue workshops and communicative ethic rules in order for the participants to discuss and negotiate between them. Furthermore, the researcher was to act as a critical co-player (expert) in the project without taking the lead. (e.g. Duelund, 1991).

Dialogue Research as a method was also embedded in *proactive technology assessment* (Remmen, 1991), not as traditional product evaluation, but as a dynamic process assessment taking place during the course of a project. This implies that the researcher is in a continuous dialogue with the participants, and it includes the presentation and discussion of findings, in order to influence and guide the process. The locus of control and influence is the acting participants. The dialogue researcher does not participate in the experimental work but observes the processes and reports the observations to the actors. This is opposite to the action researcher who takes action together with the actors. One could say that the role of the dialogue researcher is that of a scribe keeping record, and that of a storyteller recounting the ongoing process. In this approach lies the essence of Dialogue Research – which was also a deliberate attempt to put distance to action research, which was criticised for being too little research and too much action (Nielsen, 1996). Setting up fora for dialogues and acting as negotiator for the different interests within a project became a task of the researcher. In this work, the discourse ethical principles on *communicative actions*, as

formulated by Habermas (1991) became the epistemological inspiration for the approach (Duelund, 1991).

## 4. THE METHODS WITHIN THE MANICORAL-PROJECT

As the project evolved, it became clear for us that in order to get the project to work we had to put special effort into the communicative acts and into the process of mutual learning between all the participants. We had to seriously reflect that the MANICORAL-project was a special kind of action research, due to the fact that:

- All the participants were knowledge workers and high resource groups with regards to educational and technological skills
- It was a truly interdisciplinary project between equal groups: domain specialists, HCI-people and system designers.
- The design should support the practice of researchers of natural sciences collaborating on complicated research within Altimetry.

Our answer to this became methodological – to unify the methods from Participatory Design and Dialogue Research in a concept, which we label “Dialogue Design”. The concept stresses, that we focus on *dialogue and mutual learning* as the tools and the process through which mutual understanding can be reached.

Methodologically, the project drew on three main sources:

- Ethnographic and qualitative methods to *understand* practice
- Constructivist design methods in order to produce *a vision* for practice, and
- Decision methods in order to *negotiate* the design

In the following, we will shortly present the methods used in MANICORAL based on the above mentioned structure.

### 4.1 Understanding practice - baseline data - requirements capture

In order to design the DCV-system, the system designers need to have some requirements to work from. On the other hand, requirements capture must derive from a deep understanding of practice. Therefore, the design of the DCV-system has to be closely integrated with everyday research practice, and to build on the lived experiences of the domain experts.

On the basis of this, we have been inspired by a general ethnographical framework (Blomberg et al., 1993; Randall et al., 1994; Høyrup, 1993; cp: Nielsen, Dirckinck-

<sup>3</sup> The slogan was: “This is much too complicated to hand over to experts”

Holmfeld, Vendelø, 1996). Based on different techniques, such as field observation including video recording and still life photography; informal interaction techniques, semi-structured interviewing techniques and document collection, the following activities and forms of practice have been studied:

- Mutual interviews among all participants on the understandings and goals related to the project
- Studies of daily practice in the local research community of the AFRICAR-community
- Studies of (physical) meeting cultures in the AFRICAR-community
- Studies of (virtual) meeting cultures in the AFRICAR-group mediated by CSCW-tools
- Mind Taping to reflect on the experiences from the virtual meetings

These baseline studies have been documented in internal working reports. The work has been reported to all the participants in the project using various dissemination techniques: presentations, experiments and video-reply. The baseline studies have contributed to an understanding for:

- The other participants' motives and goals related to the projects
- The different cultures among the main groups in the project and the potential conflicts and interests in the project.

Furthermore, the studies and activities have contributed to build up:

- The first steps regarding trust and respect for each other
- The establishment of a common ground between the participating groups regarding ways of working, main methodological approaches, however also an evolving consciousness and accept of the scientific and cultural differences in the groups.

Finally, these techniques have also contributed to:

- A grasping of the experiences of the domain specialist,
- A transferral of requirement captures from the domain specialists and HCI-researchers to the system designers.
- The evolving of a mutual learning culture based on an interest in learning from each other.

Regarding the second last bullet, we found later that we should have used the video techniques much more constructively and offensively in order to transfer requirement captures to the system designers. (See

Dirckinck-Holmfeld, 1997). We focussed too much on validating and documenting the existing practice of the research group through written analysis. However, we could have used the video material much more offensively as material to "teach" about critical design issues and to create stories and scenarios for design.

#### 4.2 Visionary practice – forays of dialogues - requirements capture

Developing a CSCW-tool and a DCV-tool for a group of domain experts means developing for an unknown future. Rich visions about that future are important as there are no straight forward solutions. Therefore, a number of scenarios must be constructed. This scenario process must continue over time, and allow for more focused visions of the domain experts. The process of working with scenarios is very essential as borders of the possible/impossible in technology are pushed and the visions also become clearer.

Therefore, requirement captures done without opening for visions among the domain experts may result in too conservative requirements. As such, we see the HCI-researchers as a sort of change-agents, and the approach as basically a change-methodology - changing the present for a possible future.

In order to be able to produce rich visions and to share the visions in the group, we have used different techniques in the MANICORAL-project:

- Mind mapping, in the process of producing the application for the project
- Mutual interviews in order to grasp the dreams and visions of all the participants
- Future workshops to formulate the first visions for the project
- Training sessions to learn about the possibilities within the new technologies and to learn about human communication and collaboration strategies
- Experiment sessions: implementing and testing out a CSCW-tool among all the participants in a natural research setting
- Scenario design sessions

The vision creating techniques have played different roles in the project. Generally speaking, it might be stated that the group of domain experts and also the group of system developers were not used to working with vision techniques. Consequently, all the methods were important in order for the participants to "release fantasy" and to gain new ideas for working with visions. So, besides helping to produce visions, the techniques also produced an understanding for new methods of working – taking own and others' experiences and visions seriously. Furthermore, the techniques produced shared ownership –



both of the process and of the design. The vision techniques produced another set of requirements, which the system developers had to reflect in the design.

### 4.3 Decision Techniques - from requirements capture to requirement specification

In the MANICORAL-project, we wanted the requirement specification to be a result of a mutual dialogue between the different actors: The HCI-group, the domain experts, and the technical experts. In other words, the specification really has to be a melt between the different perspectives and possibilities. This is a very difficult process.

We are dealing with very sophisticated choices to be made between different groups of experts where none of the groups may make themselves judges before each other. Those choices to be made must therefore be founded on "the better argument". In order to help that process, we have worked with different techniques which we label decision techniques:

- Reporting and analysing the findings
- Participatory design sessions building on scenario design
- Dialogue and decision meetings

The overall aim for these techniques are to implement some tools in the design – and development process, which supports all the participants in the central decisions regarding the project. The different techniques can be used to throw light on which decisions to be made as well as they offer alternative methods for making decisions. The participatory approach ensures that the design reflects the experiences and the visions of the domain specialists and that the solutions are worked out together. The techniques supplement each other, however the most important tool was the participatory design sessions building on scenario design, which very specific highlighted the design issues to negotiate.<sup>4</sup>

The above mentioned types of methods and techniques<sup>5</sup> make up the basic structure within Dialogue Design. We see the richness of methods as well as the way the methods are structured as very productive for a visionary design. The richness of methods ensures that the phenomenon is worked upon from many angles and that the design builds on the experiences of the domain experts. The different communication techniques have

moreover challenged the domain experts on how to communicate and collaborate and this has stimulated them to expand on their ideas and visions for the distributed collaborative visualization system (DCV) – also far more, than the system developers could technically afford.

## 5. DIALOGUE DESIGN

The idea for the unifying concept of Dialogue Design grew out of the work in the MANICORAL-project. Methodologically, we partly draw on the traditions of Action Research in form of Participatory Design, and partly Dialogue Research (see fig. 1). Shared with these traditions is the focus on *dialogues* as the essential tool for reaching common ground, which is especially unfolded in the approach of Dialogue Research, and in functionality and references to the lived practice, which is in particular focus within Participatory Design. However, the methods applied in the MANICORAL-project also differs from the above mentioned approaches in a number of essential aspects.

Where Action Research historically favoured the under privileged groups, Dialogue Design is supporting knowledge workers. The domain specialists are high resource groups (regarding educational levels, technical skills, positions, etc.), and they themselves are developers of technology (they write their own software). This means, that they are not typical "users" with less resources than the system developers. Oppositely, there is a symmetric relation between all the actors involved in the design process: the domain specialists (the AFRICAR-group), the HCI-people and the system developers. They all have an academic background and are involved in research and have prior knowledge of and are experienced users of advanced technologies. Added to that comes that all have entered the project by their own wish and choice and have economic resources to cover the participation.

To sum up, Dialogue Design can shortly be characterized as a sort of participatory design aiming at a functional and pragmatic design which responds visionarily to the daily work practices of the domain specialists. From dialogue research, Dialogue Design has borrowed the concept of dialogue as the basic tool and process for working together. The role of the dialogue researchers (here: the HCI-group) has been to set up fora for dialogues, to function as mediators and to function as critical partners in the requirement specification process on human communication, collaboration and visualization.

### 5.1 The concept of dialogue

The concept of dialogue is, like Dialogue Research, (Duelund, 1991) borrowed from Habermas and the concept

<sup>4</sup> For further description of the participatory design techniques see Nielsen & Lindgaard (1997) and Carroll (1995)

<sup>5</sup> Most of the applied methods and techniques are described in Nielsen, Dirckinck-Holmfeld & Vendelø (1996)

of communicative action (Habermas, 1991). Said in a popular way, the communicative action is a true dialogue between “rational arguing” participants regarding *comprehension, truth, rightness and trustworthiness*. There are no hidden agendas, and participants meet with open minds and with the understanding that *the best arguments* will win (for a more precise definition see Habermas, 1991 p. 86 - 99).

*“The concept of communicative action refers to the interaction of at least two subjects capable of speech and action who establish interpersonal relations (whether by verbal or by extraverbal means). The actors seek to reach an understanding about the action situation and their plans of action in order to coordinate their actions by way of agreement (Habermas, 1991 p. 86)... An actor who is oriented to understanding in this sense must raise at least three validity claims with his utterance, namely:*

- *That the statement is **true**(...) and that the content mentioned are in fact satisfied*
- *That the speech act is **right** with respect to the existing normative context(...), and*
- *That the manifest **intention** of the speaker is meant as it is expressed” (ibid. p. 99, our accentuation).*

The coming together of researchers and developers from eight European countries demands a dialogue oriented approach – like that of Habermas - if the project is to succeed. The participants have each their language and cultural heritage, and at the same time they carry with them the very different understandings and world views embedded in their scientific disciplines,

## 5.2 Dialogue as a mutual learning process

The ideal of Habermas’ communicative action requires that the dialogue process is a mutual learning process. In a true dialogue, participants will challenge each other’s fundamental understandings of truth, norms, and trustworthiness, because of conflicting perspectives and experiences. As such, dialogues are the means to rearrange, renew, and reorganize fundamental assumptions, and learning is therefore fundamentally embedded within communicative action. As Habermas states:

*“The concept of argument is closely connected with the concept of learning.... Rationality is only random as long as it is not coupled with the ability of learning from mistakes, learning from the confutation of hypotheses and the failure of interventions” (Habermas, without year, p. 44, own translation)*

This implies that when the participants in the MANICORAL-project challenge each other’s basic understandings through various dialogue techniques and

reorganize the fundamental assumptions and perspectives, then mutual learning takes place.

Mutual dialogue and mutual learning is therefore the key concepts in Dialogue Design. Argyris (1977) makes a distinction between single loop and double loop learning, which seems to correspond to the distinctions Piaget (1992) makes, when he speaks of assimilative and accommodative cognitive processes. Single loop learning and the assimilative cognitive process means that the learner adjusts and corrects and yet does not challenge his/her fundamental understandings. Instead new information is transformed and fitted into already established schemes and understandings. Double loop learning and accommodative cognitive processes, on the contrary, truly challenge the established understandings, and the learners’ basic assumptions are changed. Thus existing schemes and understandings are accommodated to fit the new insights. Moreover, double loop learning and accommodative processes embed the cognitive qualification which makes critical reflection (and self reflection) possible.

Dialogue Design, as a method, aims at double loop - and accommodative learning processes. In order to make a visionary design, the challenge is to re-assess the conditions for the design and to adapt to new ideas and visions. In that process, the challenges, provocations, inspirations and ideas coming from the different professional groups in a truly, inter disciplinary, collaborative process are essential.

## 6. DIALOGUE DESIGN AS MUTUAL LEARNING – SUMMING UP ON THE PRINCIPLES

On the basis of our experiences gained in the MANICORAL-project, we may summarize the principles for dialogue design in the following statements<sup>6</sup>:

- Dialogue Design is fundamentally a mutual learning process between professionals. The professional groups have distinctly different tasks to perform and play different roles in the design project. However, they are all equal, when it comes to resources to put into the project.
- Dialogue Design is committed to the following three aspects: 1. To understand practice. 2. To work with visions. 3. To work with decision-making methods which integrate an understanding of practice with a visionary design (i.e. integrating 1 & 2).

<sup>6</sup> In the work on conceptualising Dialogue Design, we have been very much inspired by the work on communicative planning, cf. Pløger (1998)

- The fundamental tool in Dialog Design is the dialogue and a basic competence within mutual learning. The communicative action in Habermas' sense is therefore in the center.
- Since communication, learning processes and decisions take place within a field of many different life worlds, practices and authoritative systems, the design process should take into consideration this complexity and be capable of thematizing – in this case – basic scientific, cultural and methodological differences between the professional groups. This kind of communication demands respect for meanings and values and must aim at the “translation” that exists between the different discursive communities.
- Dialogue should not only be about finding the “common denominator”. The process must be critical to the system and self-critical in relation to own practice. Thereby, Habermas' demands to find comprehension, truth, rightness and trustworthiness. Therefore, it is particularly important to be critical (both in terms of oneself and the group) towards which discourses are created through the communicative process.
- The communicative process demands that fora for dialogue and mutual learning processes are constructed. Additionally, it demands multiple communicative codes. E.g. factual analyses are supplemented by artistic productions, experience-based scenarios, mock-ups and exercises so that the emotional as well as kinetic acknowledge forms are integrated with the symbolic.

Preparing a development and design process as dialogical and as a mutual learning process demands a series of challenges to the group of HCI-researchers:

- They must be able to establish different types of fora for dialogues and mutual learning using different modes of communication and interaction
- They have to have a deep understanding for different discursive communities and seek to obtain a mutual understanding of the design by trying to capture the “ways of reasoning” behind the competing views without devaluing or excluding views before they have been investigated
- In the analysis, they have to have much insight in the task domain as well as communicative legitimacy to reconstruct and to present the interests of the different partners. Furthermore they have to be able to mediate the negotiation process between conflicting interests.
- Generally speaking, the role of the HCI-researchers in the design process is to act as midwife for the

complicated process of communicative action and mutual learning.

The above is based on the normative premises that it is possible, through the ideal of communicative action, to critically process and exceed the power relations and cultural boundaries that exist in an interdisciplinary, inter-cultural, cross-national, cross-generation and cross gender group as MANICORAL. Or to put it differently, because of the heterogeneity of MANICORAL, it is essential to focus on the dialogue and the conditions for mutual learning in order to come up with a new design.

## 6. CRITIQUE OF THE HABERMAS INSPIRATION

The basic premises for a dialogue and learning concept based on Habermas are that it makes sense to revitalize rationality (through the communicative action) as the organizing principle.

To a large degree, we can support this as it, in its utmost consequence, points towards a vision full of hope, that of a future of peace. A society where dialogue, not war and weapons, is the tool for solving conflicts truly shows a (very high) level of cultural development. However on a specific level regard Dialog Design, we have to add – as many criticising Habermas - that it is a very idealistic approach because, very often, the conditions for communication without dominion are not present.

In the case of MANICORAL, it is however necessary to establish an ideal about communicative action, partly because research is about seeking the truth and partly because of the *very interdisciplinary* nature of the project. How can we judge between the different interests in the project without leaning on the “the better argument”?

Another critique deals with the fact that Habermas builds upon a sort of rational discourse. However, in order to come up with something radically new, you have to open for other ways of action - e.g. tacit knowledge (Polanyi, 1983) or utopian imagination (Nielsen, 1996). Therefore, it can be pointed out that in addition to the communicative dialogue, a multitude of acknowledgement and communication forms must be included when dialogue researchers wish to construct dialogue-workshops that may open for opportunities and “move” the design process. From a.o. psycho-analysis, we know that there are other communicative ways besides words to include if optimal free associative thoughts are to be possible. Here, aesthetics and art plays a particular role.

We find it essential to theoretically unfold this critique of an entirely Habermas-inspired dialogue concept in a further work which is however besides the scope of this article. In the concrete methods with which we have worked under



the heading of Dialogue Design, we have, however, taken this into consideration in several ways. As an example, we have consciously worked with vision techniques and involvement of aesthetic and kinetic communication forms

## 7. CONCLUSIONS

The paper suggests Dialogue Design as the unifying concept for an interdisciplinary and intercultural design approach. The concept draws partly on lessons learned from action research - methods such as Participatory Design and Dialogue Research and partly on the specific experiences from the MANICORAL-project. Dialogue Design is a systematic way of organizing different participatory design methods: understanding practice, vision work and decision processes. Dialogues, based on communicative action and mutual learning are the basic process tools. Dialogue Design builds on the prerequisite that all the participants participate equally and share the same level of intellectual and symbolic skills. The role of the HCI-researchers is to act as midwives in the complicated process of communicative action and mutual learning.

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