Designing with Kansei at a Metaphorical Level

A Kansei Design Method Overview

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1. INTRODUCTION
Explorative design projects often require knowledge creating from various fields such as engineering, psychology, history and so on… In such interdisciplinary context, the knowledge sharing issues are numerous, concerning not only explicit knowledge but also tacit one. Briefly, it affects tacit knowledge sharing since personal experience is partly coming from the activity in the discipline. Explicit knowledge sharing is also affected since it involves concepts or methods that may be defined differently for each ontology of involved disciplines (i.e. the same word may mean different things in different disciplines). An extensive explanation of these issues had been written in previous publication [1].

In order to minimize these difficulties in the interdisciplinary design process, a method has been developed by the authors. In this method, the knowledge sharing system is based on the SECI Model [2]. The difficulties cited above-mentioned are solved by bringing the shared information at a metaphorical level, thanks to the introduction of a tool called the Evoked Metaphor (EM). This paper intends to introduced briefly this design method and to explain how to set it up.

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2. THE DESIGN PROCESS
In a classic approach, design process is structured on two major sub-processes transforming ideas (most of the times related to “user’s needs”) into artefacts for the real world: the top-down design analysis, and the bottom-up design synthesis (cf. C. Owen [3], and Figure 1).

The inclusion of the metaphorical level modifies the design process. The first part of the process (design analysis) does not really change, but its output is used differently. Instead of passing directly from the design analysis to the design synthesis, a shift to the metaphorical level is required to build the EM. Then, after the EM is built, continuous comings and goings between the design and the metaphorical levels are operated for the EM to support the knowledge sharing process in the workgroup. This design process, including the EM, is a Kansei design process, in which the role of the EM is actually to be a medium for the knowledge flow in the group. Thus, the Kansei design method appears to be an adapted and efficient tool for better knowledge sharing abilities of the interdisciplinary design group.

3. THE EVOKED METAHPOR
The EM is a metaphor related to the project on which the interdisciplinary design group is working on. It is defined as a set of intuitively transferable successful information and operating laws. The EM is based on intuition and its process, which are supporting knowledge sharing in the interdisciplinary group. The main requirement for this metaphor is that members can understand it and interact with it intuitively. In other words, this EM would be an image analogue to the current problem, which each member would be able to understand not due to their disciplinary skills, but thanks to intuition. However, one of the most important aspects to be considered while
designing the EM is its analogy between the EM and each of the disciplines’ points of view involved in the design group. This analogy means that the discipline has to be able to validate the structure of the EM and its processes in full. Each evolution in the description of the EM should be in accordance with each discipline’s paradigm. Any contradiction should be corrected in the EM in order for it to be validated it completely by each discipline. If the relation between the analogy and the EM respects the constraints listed in these two ways, then the EM is said to be successful (Figure 2).

4. CREATING THE EVOKED METAPHOR
As the design method relies on the SECI Model, the EM operative process follows one loop of the SECI spiral. Therefore, the constructive process is based on four major steps, to which is added one step aiming at raising to the metaphorical level (cf. Figure 3):
- **Socialization – EM Project Creation**: Actually, this step is common to all design projects. It is the one when the design problem is stated and when the designer(s) may decide to use the EM or not. This step is a socialization as it is establishing the environmental and human context for the launch of the design project.
- **Externalization – Design Project Deconstruction**: This step aims at extracting information from the primary definition of the design project. This is a fundamental step as it provides the raw material for the elaboration of the EM. To do so, the design project is described precisely, and then is split into sub-projects, which are themselves recursively split into basic project elements. Each of these elements (such as the objective, the possible operations, the contexts of use, the relation of the design with other designs - other tools, other systems, other software...) is also described precisely.
- **Shift to the metaphorical level**: In order to format previously extracted knowledge for the EM requirements, all conclusion or key aspects should be “translated” into intuitively understandable explanations. It is very probable that this step requires not only a strong effort of vulgarization, but also an effort of hindsight and abstractiveness on the vulgarized content. This information is actually the fundament of the EM, as it provides not only the necessary information to start the project, but also many clues to orientate the construction of the EM.
- **Combination - EM Concept Construction**: As each basic element of the project has been “translated” into a basic element of the EM, the current step is to “resynthesize” the project, using the metaphorical content. This step is a reconstruction of the design project definition, but on the metaphorical side. As a result, the EM is shaped and is relevant for an intuitive understanding and an interdisciplinary participation to the design project.
- **Internalization - EM Validation**: The last step is used as a first validation of the EM. The exchanges between members of the interdisciplinary group are used to internalize it (transfer from explicit knowledge to implicit knowledge) and to validate it by each member.

5. CONCLUSION
This method needs to be tested, thanks to design projects to be done within the coming year. They will help to improve and validate this method.

As further considerations, the validation process of the EM should also be described more precisely, to ensure the relevancy of the EM all along the design process.

REFERENCES