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Towards a definition of *Kansei*

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Introduction

The term of *Kansei*, as used and defined later in this paper, was born in Japan and became progressively a recognized term in both academic and industrial worlds. Various definitions have been proposed in English papers for international conferences or journals. But all of them acknowledge their own imprecision or even their own incorrectness. When trying to develop correctly the study of *Kansei*, on international academic bases, this lack of precise definition is an obstacle that researchers in this field have to solve quickly.

The current paper introduces the starting point of the reflection carried on the definition of *Kansei*. This project, started in April 2006, is leading a comprehensive understanding of *Kansei* and *Kansei* Information. It aims at determining a precise definition, mainly based on western philosophical concepts or on oriental concepts for which western understanding is strong.

Two Current Definitions

As told in the previous chapter, many definitions have been introduced in many papers for the terms *Kansei* and *Kansei* Information. They are all very close to each other, but none of them claims to be a definite and exact definition. This is at the origin of a real barrier for the western understanding of the term *Kansei*. because so far no project had been aiming at establishing an explicit and comprehensively recognised definition of the term *Kansei*. However, among all these definitions mentioned previously, two of them seem to be interesting: the first one was presented by Harada (1998) and is based on an experimental and statistical approach, and the second one was presented by Lévy (2005) and is based on a literature approach.

Statistical approach

Looking for a comprehensive definition of *Kansei*, Harada collected definitions of the word *Kansei* provided by researchers involved in the research related to *Kansei*, and analyzed the responses statistically. The figure 1 shows the resulting graph of the cluster analysis made on the keywords output from researchers' answers. The axis X (axis 1) is interpreted as a logical-psychological axis and the axis Y (axis 2) as a subjective-objective axis. Then, Harada proposed five major dimensions of *Kansei*:



- *Kansei* is a subjective and unexplainable function.
- *Kansei*, besides its innate nature, consists of the cognitive expression of acquired knowledge and experience.
- *Kansei* is the interaction of intuition and intelligent activity.
- *Kansei* is the ability of reacting and evaluating external features intuitively.
- *Kansei* is a mental function creating images.

This proposition of definition of *Kansei* shows the multi-dimensionality of *Kansei* and is composed of multiple elements such as 'subjectivity', 'expression of the inner (knowledge and experience)', 'intuition and intelligent activity', 'reacting toward external stimuli', 'reflective images'. Then, *Kansei* is an internal process (or function) of the brain, involved in the construction of intuitive reaction to external stimuli.

Literature approach

When a human receives an external stimulus (received by one of the five senses), it is perceived intuitively (a good presentation on intuition was introduced by de La Garanderie (1995)). Then the perceived information is conceptualized by comparison with knowledge or experience acquired for a long time, inducing a reaction (see Figure 2). Note that Lee (2001) proposed a supplementary step between the comparison and the reaction ones. Indeed, he added that the human creates subjective image by interacting between intuition and intelligence. According to the study presented by de La Garanderie on intuition, I consider that this step should be integrated to the former one (conceptualization). Also I argue that the image is not the only material that can be used by human, but also words. Images are used in the case of intuitive conceptualization by visual modality, and words by auditory or verbal modality.

This process shows the need of various disciplines to approach *Kansei*: design is concerned with the creation of artifacts which are perceived; cognitive sciences are concerned with the information processing; psychology is concerned with people's knowledge and experience; anthropology and behaviorism are concerned with human reaction and behavior.

In most of the English literature, *Kansei* is assimilated to subjectivity (or related words such as emotion or affect). As notices Yoshikawa (2000), subjectivity is different from *Kansei* in the way that subjectivity does not include only mental feature, but also all individual differences in processing results. *Kansei* is a Japanese word that does not have proper equivalent in English. I would describe it then as close to 'mental sense of subjectivity', being a higher order function of the human brain. This cognitive function is taking part to all cognitive processes in which subjectivity is involved.

Kansei Information is the part of *Kansei* studies that is interested in the way human brain processes information. When human captors (eyes, hears, nose...) receive a stimulus, they transform it into electric current sent to the brain. This electric current is chronologically the first information *Kansei* Information is interested in. Any information entering the brain provokes a cognitive process which ends on a brain reaction. This reaction may not have a consequence such as visible or conscious behavior, but still, it does exist. *Kansei* is involved in this



process starting from the first information arrival and ending on the reaction. *Kansei* Information is aiming at figuring out this process.

Current State

The definitions previously described are among the most significant currently. However, it is clear that none of them is satisfying yet the problem of the current research. Thus further research has to be done on the definition of the term *Kansei*.

The interest of this research project can be seen at the intersection of many research fields, of which meeting suggests new directions for the research on *Kansei* and for the development of design methods and applications. Indeed, *Kansei* study and *Kansei* Information are at the origin of a trans-disciplinary research project in which participate researchers cognitive science, in neurology, in psychophysiology, in disability science, and in industrial design. The common project is to understand the neurological, psychological, and psychological processes related to human *subjectivity* or *sensitivity* and then to propose applications, especially in industrial or informational design. It is important to notice here the imprecision in the previous sentence of the two terms in italic, as the precise term would be *Kansei*.

Further considerations

The objective to explain some Japanese concepts, such as *Kansei* or *ba* (Nishida 1992), has been achieved many times. In this sense, there are already many *bridges* between Japanese concepts and western ones, which can be used both ways. These bridges will be largely used in this project. Among them the work realized by Varela (1992) marks the starting point of this research.

This paper is highly speculative and introduces an ambitious research project, in the sense that this is a very broad one. Many research domains may be involved in this project and none of their contributions should be minimized. This concern will be the basis of this problem approach: create a broad community on the topic, open on various fields with a highly interdisciplinary behaviour. This community is supported on Computer Supported Cooperative Work (CSCW) tools.

Anybody interesting in this research can freely contact the author.

Acknowledgements

This research is part of the 21st Century COE Program, sponsored by the MEXT (Monbukagakusho), aiming at structuring *Kansei* as a science, at the University of Tsukuba, Japan.



References

- Harada, A., On the definition of *Kansei*. In Modeling the Evaluation Structure of *Kansei* 1998 Conference, volume 2, page 22, 1998.
- de La Garanderie, A., *L'Intuition - de la perception au concept*. Bayard Editions, Paris, 1995.
- Lee, Kun-Pyo. Culture and Its Effects on Human Interaction with Design: With the emphasis on cross-cultural perspectives between Korea and Japan. PhD thesis, University of Tsukuba, 2001.
- Lee, SheungHee, Akira Harada, and Pieter Jan Stappers. Pleasure with products: Design based on *Kansei*. In Pleasure with products: Beyond Usability. Taylor and Francis, 2002.
- Lévy, Pierre, Interdisciplinary Design for the Cyberspace by an approach in *Kansei* Information - Methodology and Workgroup Communication Tool Design pproach in *Kansei*, Doctoral thesis of the University of Tsukuba, December 2005.
- Nishida, Kitaro. *An Inquiry into the Good*. Yale University Press, 1992.
- Varela, Francisco J., Thompson, Evan T., and Rosch, Eleanor. *The Embodied Mind: Cognitive Science and Human Experience*. MIT Press, 1992
- Yoshikawa, Ayumi. Subjective information processing: Its fundation and applications. *Biomedical Soft Computing and Human Sciences*, 6(1):75–83, 2000.

Figure Captions

Figure 1: Scatter Graph of Keywords of Kansei definition (Harada, 1998)

Figure 2: Process of Kansei