



# ON KANSEI AND KANSEI DESIGN A DESCRIPTION OF JAPANESE DESIGN APPROACH

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## ABSTRACT:

*Kansei* design methods are successful in the Japanese industry and academic worlds. Outside Japan, their level of development and recognition is nothing compared with the situation inside of Japan. One of the reasons is that there is currently no comprehensive description of *Kansei* and *Kansei* studies written for the international community. This paper intends to provide such description, to analyze involved cultural differences, and to describe how *Kansei* is involved in the Japanese design approaches. To do so, an overview of main descriptions of *Kansei* is realized and synthesized into a comprehensive and useful description. Thereafter, *Kansei* study objectives and methods are analyzed and their differences with that of western approach. Finally, the implication of *Kansei* in Japanese design is explained. This research intends to improve western understanding of *Kansei*, and to improve mutual understanding in both industrial and academic worlds between East and West.

## I. INTRODUCTION

For many years, the term *Kansei* has progressively appeared in the research literature, and especially the one related to design and connate fields. In Japan, this progression has been correlated with the great development of an industrial technique based on *Kansei*: the *Kansei* Engineering. The current situation suggests that *Kansei* became a mature enough to be considered as an important concept in Japan. However, what is surprising is that the research field of *Kansei* (even the term '*Kansei*' itself) is not yet well acknowledged in the international research community. An illustration of this is that the term *Kansei* is systematically redefined in each paper.

The aim of this paper is to overview the main literature on *Kansei* and *Kansei* studies, and to point out the reason of *Kansei* studies' cultural dependence, and to propose a comprehensive and useful description of *Kansei* to the international research community. Thereafter, the implication of *Kansei* on *Kansei* design, introduced as a Japanese approach of industrial design.

After introducing a short history of *Kansei*, this paper will overview various kinds of definition of *Kansei* in order to extract the main aspects of *Kansei*. This will be the occasion to point out some crucial differences between western and eastern mind, and their impact on *Kansei* and *Kansei* studies. After having described *Kansei*, this paper will focus on a description of *Kansei* studies (objectives and means). These are important for the development of *Kansei* design, and for the introduction of a Japanese design approach.

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## 2. DEVELOPMENT OF KANSEI

Even though the term "*Kansei*" was used in the literature for the first time in 1921 (cf. section 4), the popularization of this term started in 1984 (cf. Fig. 1). As a possible reason for this late popularization, Ueda proposed the publication of two books: "*The Reform of Kansei*" by Kamei Hideo (1983) and the "*Goodbye, mass – How to read Kansei age?*" by Fujioka Wakao (1984), the head of the public relation department at Dentsu. In 1985, the same company published a book titled "*Kansei* consumption, Logic consumption" (Dentsu 1985), arguing that female and teenagers' consumption behavior were not following logic principles, but *Kansei* ones. At this time, *Kansei* was pointed as a new word, reflecting the change of people's behavior toward consumption in the rapid growth of economy of the country. The figure 1 shows the evolution of the

use of the term "*Kansei*" in the literature (Ueda 1999). The increase in the usage of the term from 1984 is obvious.

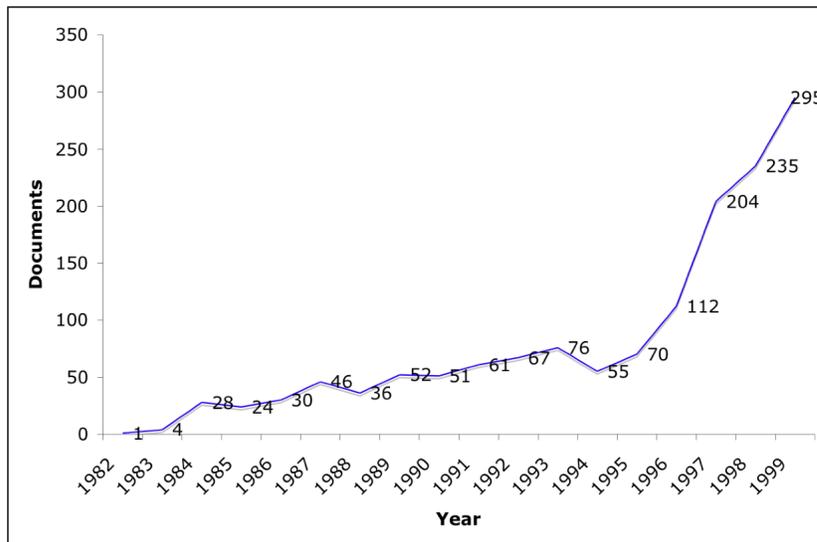


Figure 1: Use of the term *Kansei* per year, from 1982 to 1999

The term *Kansei* appears in the design community thanks to the works of Mitsuo Nagamachi on "Emotional Engineering", and of Kenichi Yamamoto (President of Mazda Automotive Corporation), who used the term "*Kansei* Engineering" for the first time in 1986 during a presentation made at Michigan University. Since then, *Kansei* Engineering was developed in both academic and industrial fields. A permanent cooperation between these two fields made *Kansei* Engineering successful. Companies such as Mazda, Sharp, Wacoal designed successful products thanks to this original method. This current year (2007), the importance of *Kansei* in the Japanese industry had been greatly recognized by the Japanese Ministry of Economy, Trade and Industry (METI): "METI hereby announces the "*Kansei* and Value Creation Initiative" (provisional name), which proposes essential issues that should be addressed in promoting manufacturing and service activities capitalizing on Japanese people's emotional and cultural sensitivities ("*Kansei*" in Japanese). The aim of the Initiative is to enhance Japanese people's lifestyles and invigorate the Japanese economy" (METI 2007). This national promotion program is a major event for *Kansei*, as it is officially becoming one of the main development vectors for the future of the Japanese industry.

The design method of *Kansei* Engineering has developed greatly in the industrial design field, and is now far from being negligible. The Japan Society of *Kansei* Engineering (JSKE), opened in 1998, currently gathers over 1200 researchers and industrials from all over the world (JSKE 2007). The year of 1998 acknowledges also

the starting point of the project Modeling the Evaluation Structure of *Kansei* (MESK), at the University of Tsukuba. This project intention is to expand the *Kansei* research to other fields than *Kansei* Engineering. These new domains of *Kansei* Studies concern topics related to human experience, behavior, communication, creativity, and art, i.e. any domain in which humans subjectivity or sensitivity has an impact. Nowadays, the fields of *Kansei* Information, of Brain and *Kansei*, and of *Kansei* Philosophy are expanding in Asia and in Europe. Also, the First Conference on *Kansei* Engineering and Intelligent Systems 2006 (KEIS'06) identified and proposed twenty different topics including ones related to engineering, philosophy, information, business, design, and robotics (KEIS 2006).

The term "*Kansei*", and the related research fields and industrial activities, are becoming more and more popular in Asia, especially in Japan and Korea. However, the international development of *Kansei*, especially in Western countries, is not as obvious as in Asian countries. The reason, suggested by many people, such as Harada or Schütte, is that *Kansei* is deeply connected to Japanese culture. Therefore, the objective of the present research, introduced by this paper, is to overview the different explanations existing on *Kansei*, to discuss them in order to propose a comprehensive description of *Kansei* acceptable by the existing researchers in *Kansei*, and by the international community. Moreover, this research intends to place *Kansei* and related fields in the scope of design studies. To do so, the authors intend to inscribe *Kansei* in an already existing research field, the one of sensory qualities, and to point out implications in the science of design.

### 3. OVERVIEW OF DEFINITIONS OF *KANSEI*

In this paper, two types of references are being investigated to point out the different definitions or descriptions existing about *Kansei*. The first type of references is the conference proceedings and academic journal papers. These documents often propose a brief definition of *Kansei*, in order to introduce to the reader the research field without attempting to explain *Kansei* in details. The second type of references is the doctoral thesis or longer research reports. This kind of reference gathers more comprehensive and deeper explanations on *Kansei* or related topics. However, they are not read as much as conference proceeding papers or journal ones. A few of them will be quickly introduced here, extracting from them their description of *Kansei* and related fields. Finally, a reflection on what have been extracted from these two analyses will be carried out to synthesize the current literature on *Kansei* and to propose a global description of *Kansei*, required to describe the objectives and the specificity of *Kansei* studies.

### 3. 1. BRIEF DEFINITIONS

Many papers defining briefly *Kansei* can be found in international conference proceedings and academic journals. All these definitions are close to each other, but still not unified. Also none of them claims to be a definite and exact definition of *Kansei*. Actually, they are mostly approximate descriptions intending to provide the reader an idea of what *Kansei* is about, mostly in the scope of the paper research domain (e.g. papers in the domain of psychology will focus on the psychological aspect of *Kansei*). This is actually a first barrier for western understanding of *Kansei*, as these definitions usually come from Asian people who can highly refer to their own culture, whereas the concept explained here do not refer to Western culture concepts. This situation is such mainly because no project had been aiming at establishing an explicit and comprehensively recognized definition of the term *Kansei*. That is the actual project of the present research. Relevant examples of the description of *Kansei* are as follow:

- **impression and sensitivity**
- a **Japanese** [word] which corresponds to **sensitivity of affection**.
- it includes **several meanings** on **sensitive recognition**, such as "**human senses**", "**feelings**", "**sensitivity**", and "**psychological reaction**".
- a **Japanese term**, seems very similar to the English idea of "**experience design**" and "**emotion**".

These definitions point out first that there is no proper English translation of the term *Kansei*. Indeed the term *Kansei* "corresponds", "includes several meanings", or "seems very similar to" some English terms or expressions. Therefore, no direct translation had been proposed, as different researchers in *Kansei* studies acknowledged.

However, some interesting information can be extracted from these few assertions. Keywords such as sensitivity, impression, feeling, and emotion can be outlined. *Kansei* is definitely related to these concepts concerning human experience. Also the terms of "sensitivity of affection" and "psychological reaction" induct that *Kansei* is an inner process, and probably psycho-cognitive one. To conclude, from these propositions it is possible to infer that *Kansei* is somewhat a human psycho-cognitive process related to human experience. However, these propositions are very limited and not more can be said. To go further in the overview of the literature on *Kansei* description, dissertations or essays on the topic will be analyzed.



Figure 2 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 shows a 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'. Therefore, according to Harada, ***Kansei* is an internal process (a high function) of the brain, involved in the construction of intuitive reaction to external stimuli.** Harada's proposition appears to be too complex and not clear enough to satisfy the aim of the current project. However, it is an important work as it is the first attempt to the objective of defining *Kansei*, and opened as it a path to go further in the common understanding of *Kansei*.

Nagamachi is recognized as the main actor in the creation of *Kansei* Engineering, the first and so far most advanced engineering design method based on *Kansei* considerations. He has described *Kansei* as an "individual's subjective impression from a certain artifact, environment, or situation using all the senses of sight, hearing, feeling, smell, taste as well as recognition" (Nagamachi 2001). To this description Schütte has added the sense of balance (Schütte 2005). The reason of this addition is that Nagamachi's idea is a "total impression", i.e. a consolidation of all sensory impressions that would create a unique and broad "something" which is what the human being feels. This "something" could be referred as "*Kansei*".

The author understanding of these two propositions points out an interesting difference between the propositions of Harada and Nagamachi: Harada defines *Kansei* as a process, and Nagamachi as a result (of this process as it seems). Current literature in *Kansei* studies suggests that *Kansei* is foremost a process, but that its result can be amalgamate to *Kansei* too. Therefore, Lee et al. explains the scope of *Kansei* studies as a part

of human mind processes involved with feelings, emotions and creativity. To clear this point, Lee showed the etymology of the term *Kansei* and compared it to another word: Chisei (Lee 2002).

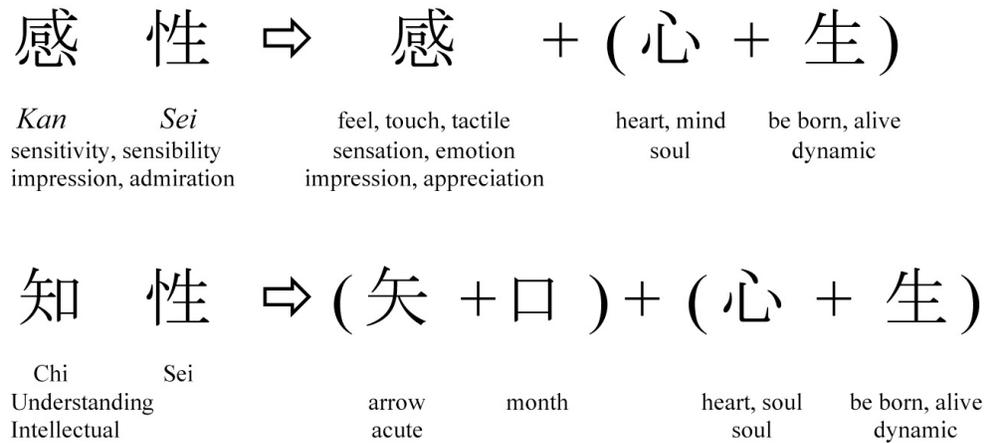


Figure 3: The etymology of *Kansei* and Chisei (Lee 2002)

The figure 3 was done by Lee during a visit at Delft University of Technology, in Holland, to the attention of western researchers. It "shows the etymology of *Kansei* and Chisei interpreted from the Chinese characters, both of which are processed in human minds when they receive the information from the external world. Chisei works to increase the knowledge or understanding which is matured by verbal description of logical facts. And *Kansei* works to increase the creativity through images with feelings or emotions" (Lee 2002). Note that Lee does not oppose *Kansei* and Chisei. They are two complementary concepts. And the introduction of Chisei here has the unique intention to ease the understanding of *Kansei*. The term Risei (close to "Logic process") would be better as an opposite term of *Kansei*. Lee's explanation on *Kansei* and Chisei brings the talk to the cognitive level. Indeed, *Kansei* (and Chisei) are mental processes (argument that is agreed by Harada, Nagamachi, and all other researchers cited in this paper). That is an important aspect of *Kansei* as it is limiting the area of research to psycho-physiology and cognitive sciences. And the research in *Kansei* information can be also of the interest of design science, as Lee integrates the idea of creativity.

This idea is also raised by Shimizu et al. (2004) who describe *Kansei* as "closely related to sophisticated human abilities such as sensibility, recognition, identification, relationship making, and creative action where the process of binding together these concepts also is part of the *Kansei*". All the terms used by Shimizu are related to cognitive processes. Moreover, *Kansei* is also the "process of binding together these concepts". That is actually a fundamental point of *Kansei*, as explained by many Japanese researchers in *Kansei* studies. *Kansei* should be

more viewed as a global, and probably complex process gathering all the mental processes aforementioned in this paper.

This was actually expressed by Nagamachi, as recalled by Schütte: "Due to psychological background, one sees sensation, perception and cognition as separate processes, but *Kansei* does only exist if they are cooperating" (Schütte 2005). This concept of interdependence of close concepts is very present in Eastern cultures, and the ideological approaches usually prefer it to categorization approaches (which is favored by Westerners). This is clearly explained by Nisbett when describing the implications of the social origins of mind for thought in the modern world, among which are listed (Nisbett 2003, p45):

- Preferred patterns of explanation for events, with Westerners focusing on objects and Easterners casting a broader net to include the environment.
- Habits of organizing the world, with Westerners preferring categories and Easterners being more likely to emphasize relationships.

This aspect of *Kansei* is very important to explain its Japanese specificity, and the reason why *Kansei* studies may be hard to be understood fully by Westerners. The concept of *Kansei* itself may not be complicated to understand for Westerners, but the way *Kansei* research focuses and apprehends *Kansei* may seem very peculiar and unfamiliar to the western research community. In other words, it may not be *Kansei* that may be culturally unconnected, but the way it is thought.

### 3. 3. A COMPREHENSIVE DESCRIPTION OF *KANSEI*

In the previous subsection, most of the attributes of *Kansei* have been pointed out. Now, they will be synthesized in order to provide a simpler, but comprehensive description of what *Kansei* is.

*Kansei* is usually described as a mental function, and more precisely as being a higher function of the brain (Harada 1998). The previously analyzed definitions indicate that:

- ***Kansei* process** gathers the functions related to emotions, sensitivity, feelings, experience, intuition (i.e. sensory qualities related functions (Clark 1996)), **including interactions between them.**
- ***Kansei* means** are **all the senses** (sight, hearing, taste, smell, touch, balance, recognition...) and – probably – other internal factors (such as personality, mood, experience, and so on).

- **Kansei result** is the fruit of *Kansei* process (i.e. of these function processes and of their interactions). It appears to be a **unified perception providing a qualitative meaning and value of one's direct environment**. In other words, *Kansei* result is how one perceives qualitatively one's environment. Therefore, *Kansei* result is a **synthesis of sensory qualities**.

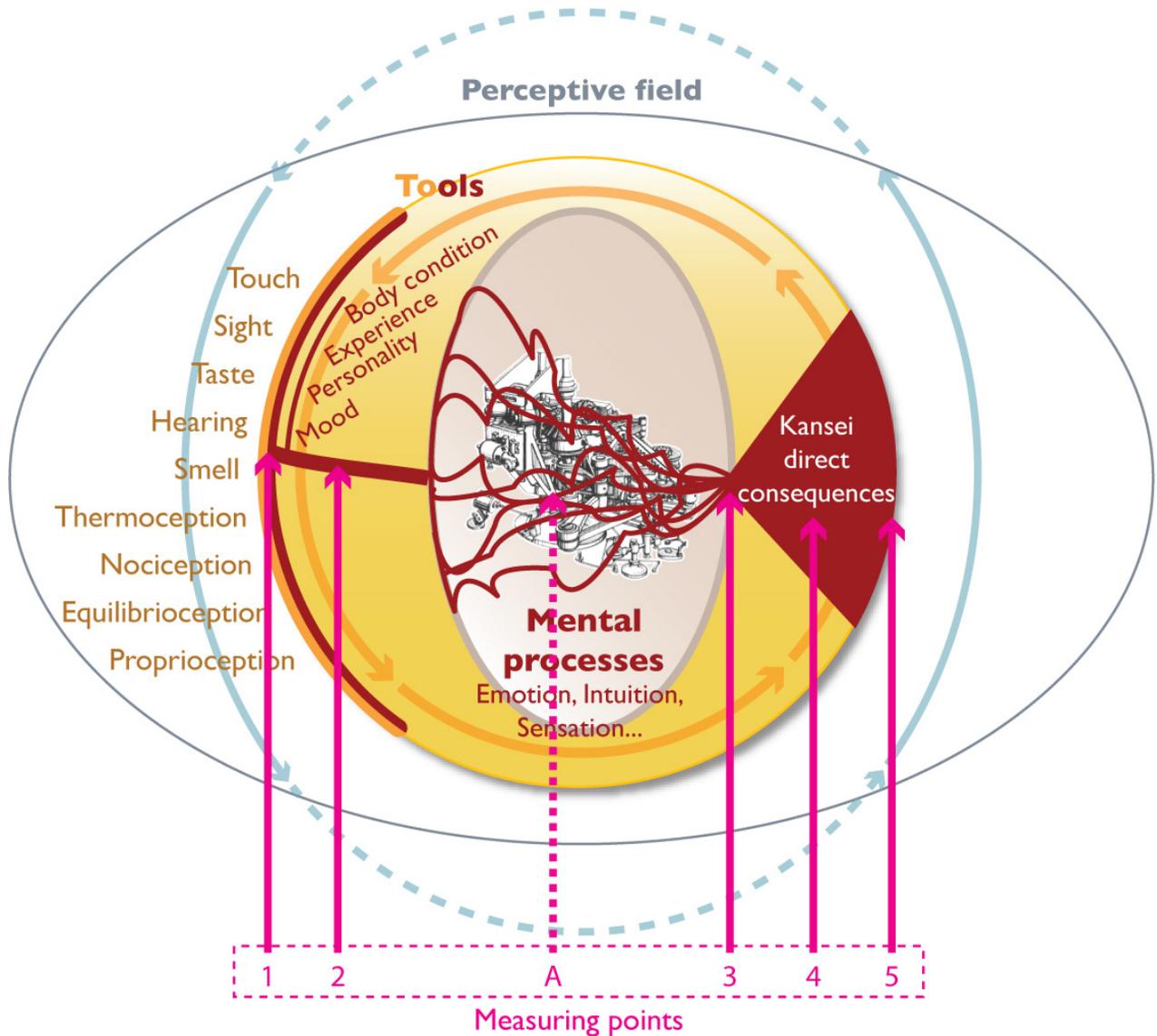


Figure 4: Comprehensive view on *Kansei*

Strictly speaking, the *Kansei* is only what has been characterized as *Kansei* process, i.e. a high function of the brain. *Kansei* means and *Kansei* result precede and follow *Kansei*, and influence each other. Figure 4 intends to describe the *Kansei* process. In the perceptive field (Malherbe 2000), a situated subject (represented by the

circle) behaves. His/her senses (on the left side) perceive the environment. Senses' information is provided to the brain (the ellipse inside the body) to process *Kansei*. It is also highly probable – yet not proved – that many internal-body factors (such as body conditions, experience, personality, mood, and so on) influence *Kansei*. All this information providers are the tools (or means) for *Kansei* process. This process is complex and is not to be described here. The nature of *Kansei* result is still mental (i.e. neither physiological nor behavioral). However, consequences of *Kansei* can be observed at a psychological, a physiological, and a behavioral level (on the right side). Also, it is to be noted that both the perceptive field and the body are dynamic elements. Therefore, this entire description should not be thought as a linear pattern input/process/output: *Kansei* is influenced by and has influence on the mood, on the personality, on the experience, and on the environment (by the subject behavioral reaction).

This description, proposed by the authors, has the advantage to provide information on the nature of *Kansei* process, of *Kansei* means, and of *Kansei* result. Also, an aspect of *Kansei* clarified in this description is the permanent and necessary link of *Kansei* with the environment (i.e. the perspective field). As suggested previously by Nisbett's explanation on the implications of the social origins of mind for thought in the modern world (cf. subsection 2.2. and Nisbett 2003), *Kansei* is cast in a broader net including environment.

The three aspects listed at the beginning of this section are important to comprehend *Kansei*. Therefore, *Kansei* studies intend to understand how *Kansei* process works, how senses and human internal factors influence *Kansei*, and what method can be used to evaluate *Kansei* result.

## 4. KANSEI STUDIES

### 4.1. ORIGIN OF KANSEI STUDIES

According to Lee et al. (Lee 2002), the issue related to *Kansei* was addressed for the first time in 1742 by the German philosopher Baumgarten. His study published in *Aesthetica* (1750) did not intend to focus only on Aesthetic as a theory of fine art, but also to work on *cognitio sensitiva* (sensitive awareness). However, his work did not have any direct link with the Japanese *Kansei*. This link was created in 1921, in a translation work of the *Critique of Pure Reason* (Kant 2003) by Teiyu Amano. He used the term *Kansei* to translate the expression “*Sinnlichkeit (cognitio sensitiva)*”. Similarly to *Kansei*, the term *Sinnlichkeit* does not have a proper and direct translation in English. Schütte, being a German citizen, explains it as “the perception based on senses in contrast to the abstract perception of the mind without sensory input” (Schütte 2005). Therefore,

Sinnlichkeit is a human ability to receive an image (of an artifact or of a situation) that cannot be grasped by reason. In Kant philosophy, Sinnlichkeit is one of the fundamental processes when a human being interferes with the real world. Only from the sensitive experience, involving Sinnlichkeit, can be output any affirmation of the palpable (or tangible) reality.

What is differentiating Sinnlichkeit and *Kansei* is their cultural and philosophical backgrounds. The implication of this background can be introduced by Nisbett's suggestion: "Confucianism has been called the religion of common sense. Its adherents are urged to uphold the Doctrine of the Golden Mean – to be excessive in nothing and to assume that between two propositions, and between two contending individuals, there is truth on both sides. But in reality, Confucianism, like Taoism, is less concerned with finding the truth [what Western philosophy are more concerned about (note from the author)] than with finding the Tao – the Way – to live in the world" (Nisbett 2003, p.15). The differences are mostly inherent to the philosophical goal of cultures and by consequences of the global understandings and interests of the terms by each culture. Whereas the intentions of Baumgarten and Kant are to determine the essence of Sinnlichkeit (and related concepts) and to integrate it in their respective philosophical project, the intentions of *Kansei* studies are mostly to apprehend and to improve the effects of *Kansei* on human beings and their environment (i.e. the world).

This difference, related to culture and philosophy, is the reason why *Kansei* and *Kansei* studies may be hard to be understood by westerners: the vision and the project are unfamiliar. Japanese approach on *Kansei* studies does not intend to determine the essence of *Kansei*. This "western" approach would be actually inappropriate since *Kansei* is intrinsically overlap with one's environment and experience. In other words, when one's environment and experience change, one's *Kansei* changes too. Consequently, *Kansei* evolves permanently, and any deterministic approach on *Kansei* process seems impossible.

Therefore, current researches in *Kansei* studies aim at determining how *Kansei* process works (also called "measuring *Kansei*"), and how to take advantage of this to improve the world (partly handled by *Kansei* design and related fields). The authors insist on the fact that the interrogative pronoun "why" is not used, but "how" is.

## 4.2. MEASURING KANSEI

Unfortunately, as other high functions of the brain, *Kansei* process cannot be measured directly (measure which would be at the point A in Figure 4). What is observed is not *Kansei* but the causes and the consequences of the *Kansei* process (Nagasawa 2002). Therefore, *Kansei* can be measured only indirectly and partially, by measuring sense activities (point 1 in Figure 4), internal factors (point 2), and psycho-physiological

and behavioral responses (points 3 to 5 – with a high risk of over-interpreting results output from psychophysiological measurements). In the scope of *Kansei* studies, sense activities are measured by evaluating the impact of a specific sense stimulus on brain activity. Physiological measures are done by evaluating responses to specific external stimulations. Responses can be physiological or behavioral (measured by electromyography (EMG), heart rate, electroencephalography (EEG), event-related potential (ERP), or Functional magnetic resonance imaging (fMRI)... or expressive (body or facial expression). Psychological measures can be done by personality tests (such as Eysenck 1964), semantic differential scales method (Osgood 1969), or other questionnaires.

An example of physiological measurement based *Kansei* study is "the clarification of relationship between driver perceptions while driving and vehicle motion characteristics" done by Zhang et al. (2005): "As an experimental methodology, we performed repeated tests of acceleration and braking (under certain conditions) during vehicular linear movement, during which changes in vehicular motion characteristics were noted as well as measurements taken of each driver's brain wave patterns. From this data, we extracted significant levels of left-right brain frequency fluctuations showing driver comforts at certain intervals. Through regression analysis of time series data, we were able to obtain measurements of the contribution of each vehicle motion characteristic to driver comforts".

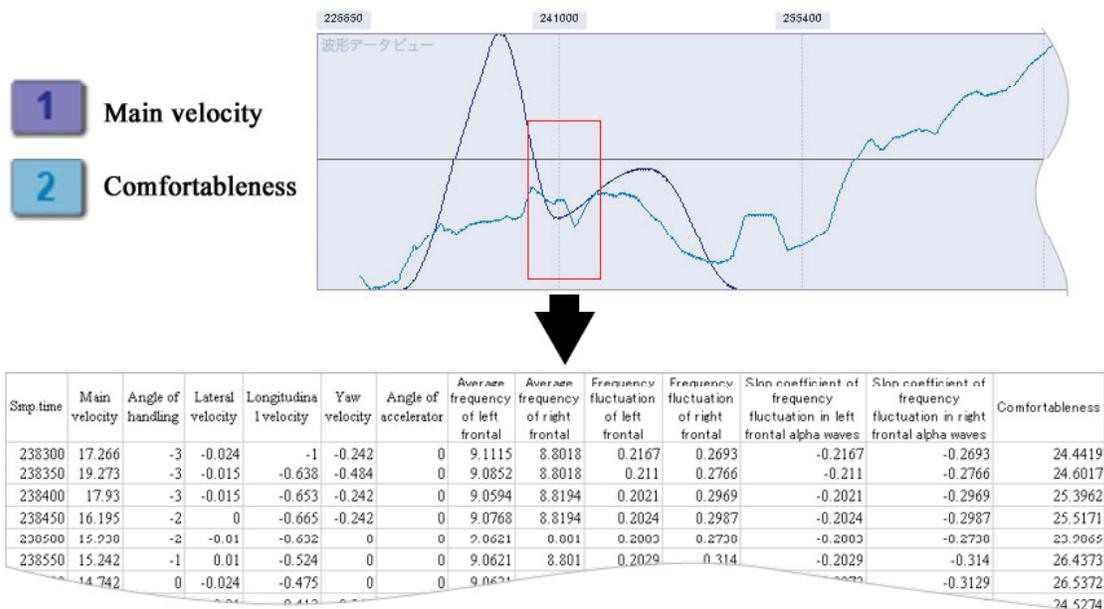


Figure 5: data extraction for comparison between driver perceptions while driving and vehicle motion characteristics (Zhang 2005)

An example of psychological measurement based *Kansei* study is the method developed by Kang to measure users' Kodawari (Kang 2003). Kodawari is defined as the "level of *Kansei* preference towards things in the environment". For example, a person with a high Kodawari will make numerous and firmed decisions towards possible choices in one's environment. A person with a low Kodawari will have a tendency not to take decisions. To evaluate the Kodawari of subjects and determine the personal and environmental aspects influencing Kodawari, personal information were considered and psychological tests were realized (Eysenck personal inventory (Eysenck 1964)). Then subjects were asked firstly to select few benches (shown on pictures) they would preferred to sit on, and secondly to group benches according to personal criteria they expressed after the grouping. Results pointed out various possible criteria influencing Kodawari (gender, personality, blood type...). Also it was suggested that designers and non-designers people had different Kodawari.



Figure 6: Scenery of the experiment (Kang 2003)

## 5. KANSEI AND DESIGN

The involving *Kansei* consideration in the design process is from the beginning a motivation of *Kansei* studies. Indeed, the interest of Dentsu and Mazda (followed by many Japanese companies) in *Kansei* had an objective to determine new design and marketing approaches for company's development. The first noteworthy event for *Kansei* design is the creation of *Kansei* Engineering method during the seventies. Since then, many projects using *Kansei* Engineering have been successful internationally. Also, other fields of research focusing on *Kansei* have been created in order to extend the knowledge on *Kansei* and the potential of *Kansei* for industrial and commercial activities. Currently, new *Kansei*-based design approaches, called *Kansei* design, are being developed.

On a *Kansei* study point of view, the main difference between *Kansei* Engineering and *Kansei* design is that the earlier one intends to link product objective characteristics with the user's *Kansei* result (expressed by *Kansei* words), and the later intends to link *Kansei* process with design methods and outputs (objective or subjective ones). Therefore, *Kansei* Engineering involves more quantitative means, and *Kansei* Information may work also with qualitative approaches.

## 5. 1. KANSEI ENGINEERING

*Kansei* Engineering is "first and foremost a product development methodology, which translates customer's impressions, feelings and demands on existing products or concepts to design solutions and concrete design parameters. Secondly, it shows how *Kansei* is translated into design" (Schütte, 2005).

Its structure can be described as an association of many existing techniques. Each technique participates to a global project of connecting user's *Kansei* and product physical properties. The specificity of *Kansei* Engineering is that the method is not dependent of any specific technique: changes or even replacement of techniques do not affect the global structure of *Kansei*. Therefore researchers in *Kansei* Engineering often try to improve these techniques in order to obtain more relevant and exploitable results in faster and less expensive ways. Major evolutions occurred so far were mainly related to the greater and greater use of information technology (databases, computers, Internet, and virtual reality), and more efficient mathematical models (statistical and predictive ones).

*Kansei* Engineering is a successful design method, extensively developed in East Asia, and in development in many other parts of the World. Noteworthy design successes had been possible thanks to this method. The literature on the method is also numerous, and Schütte's dissertations on it are highly recommended ones (Schütte 2002 and Schütte 2005).

## 5. 2. KANSEI INFORMATION DESIGN

The project Modeling the Evaluation Structure of *Kansei* (MESK) marks the beginning of another approach of *Kansei*-related design. *Kansei* Information Design is interested in *Kansei* process, *Kansei* means, and *Kansei* result in order to propose new design methods, new design knowledge, and new design evaluation methods. Therefore, whereas *Kansei* Engineering is part Engineering Design, *Kansei* Information Design can be considered more as part of Industrial Design and Design studies.

One of the recent Design methodologies developed thanks to *Kansei* Information is the Evoked Metaphor Design methodology (Lévy 2006): To the design process is added an "Evoked Metaphor" (EM) that levels up the content of the communication between design group members at a metaphorical level. The EM is an interaction place (based on the theory of *ba* (Nishida 1992) and on the SECI Model (Nonaka 1998)) in which a metaphor, analog to the design project, is built. The consequence on the design process is that any aspect of the design project can be explained and understood intuitively. Therefore, the EM enables each member of the workgroup to participate to every steps of the design process and to communicate with other members. This creates an efficient interdisciplinary dynamics and the realization of fully interdisciplinary projects. In this research, the way *Kansei* processes information is crucial.

More fundamental researches for design studies are also treated in *Kansei* Information studies. That is for example the case of studies on color perception: Yang (2007) observed that more and more non-designers are creating websites, mostly without education in colorization techniques. In order to create a virtual colorization assistant, he observed non-designers' behavior when coloring, associated it to subjects' life circumstance and their color preference (local, environmental, cultural features of their living area), and compared with the same observation but for designers. He observed that whereas designers use a narrower variety of colors and refer more to the colors of Nature, non-designers expand number of used color and refer more to their own experience (in natural or artificial environment). He also observed that personal experience (living circumstances) is influencing colorization.

## 6. CONCLUSION

*Kansei* is a concept inscribed in Japanese culture that is used as fundament for an academic field and of a creative industrial activity. However, whereas both of them have been successfully developed in East Asia, their presence in Western countries remains comparatively limited. The reason for the unbalance between east and west is due to two reasons. Firstly, the term *Kansei* is understood by Easterners thanks to cultural means, which are not existing in Western cultures. Secondly, the *Kansei* study methods rely also on Eastern cultural approach, which is unfamiliar to Westerner. Because *Kansei* design techniques are becoming important in the worldwide successful Japanese industry, because many research communities (even in western countries) are getting more and more interested in *Kansei* and *Kansei* studies, and because understanding a Japanese design approach may open new horizons to other countries' industries and research institutes, clarifying *Kansei* and *Kansei* studies to westerners is a promising project. This research targets this objective.

To do so, an overview of *Kansei* definition has been done in order to extract the main aspects of *Kansei*. It appeared that the concept of *Kansei* itself is not so difficult to explain (and thus to understand), in spite of cultural differences. However, the approach of *Kansei* studies is more challenging for the western community to apprehend and to accept.

This paper proposes a history and a structured description (process, means, and result) of the way *Kansei* is currently used in the research community. Thereafter, the objective and the methods of *Kansei* studies are presented, and the cultural difficulties for Westerners to correctly understand them were pointed out. Finally, the way *Kansei* is involved in design approach in the Japanese industry and the Japanese research community were introduced.

This paper provides already a useful and comprehensive overview of *Kansei* and *Kansei* studies. However, as further considerations for this project, the authors of this paper will ask other eastern and western researchers working on *Kansei* and related fields to comment and to make suggestions for a refined description of *Kansei* and *Kansei* studies. It is only when the community will accept fully the proposed overview, and will refer to it as a widely recognized description that the project will be considered as a successful one.

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