より良いユーザー体験のためのデザインプロセスにおける「感性」

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How to Benefit from ‘Kansei’ in Design Process for Better User Experience

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Based on the Japanese notion of ‘Kansei’, this research explores two sets of interrelated questions: 1) What are the ways in which the anticipated user experience, namely the emotional responses of target users, deliberately influence the design decision-making process? 2) How can Kansei help designers to predict these responses more precisely, and which methods and tools can help them to do so? The research findings in this article is more concerned with the broader understanding of design, the design/creative process, and its prospective influence points regarding the implementation of the Japanese ‘Kansei’ philosophy in the design process, which bares great potential for the improvement of User Experience design – a cross-disciplinary perspective to all fields of design. The article concludes with an extended model named “Emotional Response Sensitive Design Process” that provides guidance and tools supporting a ‘Kansei-induced’ design decision-making process.

Keyword ——— *Design Process, User Experience, Decision-making, Emotional Response, Conceptual Design.*

Highlights

- A 'Kansei-induced' model "Emotional Response Sensitive Design Process" is proposed.
- The model may increase the predictability of the end-user's emotional response in the design decision-making process.
- It may also lead to a higher user satisfaction, thus to a better 'user experience' – a cross-disciplinary design concept.
- In the future, the model should be evaluated in reality of design process application.

1. Introduction

When designing, designers always try to make better decisions from current situations in anticipation of the user's experience of future. The design community of today is raving about User Experience (UX) design and all its benefits, and how it has and is still changing the way we are designing in *all fields of design*. While it is covering a vast array of other areas, UX design is the *process* of creating design products or services that provide meaningful and relevant experiences to users. Its roots go back to human factors and ergonomics, the fields that, since the late 1940s, focused on design systems that address the user's experience (Holtzblatt & Hugh 2013). Later, with the proliferation of workplace computers in the early 1990s, user experience became an important concern for designers. According to Donald Norman, who coined the term 'user experience' and brought its emotional and cognitive importance to a wider audience ("UX Design Defined" 2016), the term has spread widely, so much so that it is starting to lose its meaning (Merholz 2007).

More recently, Desmet and Hekkert (2007 and 2009) proposed the framework of 'product experience' indicating that the research initiatives should not be so much driven by the desire to understand the relationship between users and products as such, but driven by the need to improve design and design processes. They argued that it is possible to distinguish patterns, both in the types of affective product experiences and in the processes that underlie these experiences. It is subsequently suggested that these patterns can be of value for designers, because they can be used to facilitate the designers' structured attempts to 'design for experience' that is, attempts to deliberately influence the experiential impact of new designs. However, they did not detail how these patterns might be used in the conceptual design process.

On the other hand, based on the Japanese origin word, 'Kansei Engineering' is a method that was developed to find relationships between product experience, including expectations, needs and feeling, all of which together form Kansei, and product properties, in order to use these properties to design products that elicit desired experiences (see e.g., Schütte, 2006). Even though it has great potentials, mostly product developers, industrial designers and engineers have so far utilized the impactful theory of Kansei. To open up to other disciplines of design, thus to facilitate the designers' deliberate attempts to 'design for better

user experience', there is a need to improve the conceptual design process by mapping Kansei related questions onto the various stages of the design process.

This research has two main objectives based on two interrelated driving questions: 1) How can we anticipate the emotional reaction, in other words 'Kansei', of the target-user in the design decision-making process? 2) And, what are the methods and tools to predict these user reactions more precisely? This article will start with an inquiry into the ideology of the Japanese ancient word 'Kansei' and what beneficial impact it could have on the conceptual design world of UX to lay the groundwork for the further explorations that will link Kansei to the Western concept of the design process. Then, it will analyze the design process model of Aspelund (2010) that will be adopted in this research as a base for discussion. The main idea is to find linking points of Kansei in order to conclude this article with an extended model of design decision-making process named "Emotional Response Sensitive Design Process" that might allow all forms of design work (without limitations to the industrial design) to benefit from the methodology of Kansei, thus allow designers to get a better understanding of the emotional impact of their conceptual design decisions on their end-users.

2. What is 'Kansei'?

'Kansei' is a Japanese term used to express personal impression towards artifacts, situations, and surroundings. It is a word suggested by many people like Harada (1996) or Schütte (2002) that is deeply connected to the Japanese culture, and there is no "direct" translation of Kansei into any other language. Therefore, Kansei has different interpretations in various literatures, and generally referred to as "sensitivity", "sensibility", "feeling" and "emotion" (Nagamachi 1992; Ishihara et al. 1993; Harada 1998; Yoshikawa 2000). Psychologically, Kansei also refers to the differences and common features in the mental state of people where knowledge, emotion, and sentiment are harmonized (Nagamachi 2003). For example, it is said that a person is rich in Kansei (感性が豊かな人-*Kansei ga yutakana hito*). Based on that understanding, in 2007, the Japanese Ministry of Economy, Trade and Industry (METI 2008) greatly recognized the importance of Kansei in the Japanese industry, and initiated the national program "'*Kansei' and Value Creation Initiative*" proposing the essential issues that should be addressed in promoting manufacturing and service activities "*capitalizing on Japanese people's emotional and cultural sensitivities ('Kansei' in Japanese)*" (Araki 2007). The aim of the initiative was to enhance Japanese people's lifestyles and invigorate the Japanese economy.

However, rather than the integrated senses, Kansei also refers to the five senses (i.e. vision, hearing, smell, taste and skin sensation). Harada (1998) further described Kansei as a higher mental, therefore implicit function, of the brain. Kansei begins with gathering the related sensory impressions such as feelings, emotions, and intuition. These are collected through the means of the five senses. If the

human senses are stimulated, they will trigger psychological cognition based on perception, judgment, and memories. In the scenario of going into unknown territory, vision, smell, taste, and the resulting cognition would form a judgment on whether it is "a friendly environment", and if it is or feels "safe". This is Kansei! The Kansei advances from cognition, which is based on contributing sensations (Figure 1). In that sense, the English word most correctly corresponding to Kansei might be Jean Piaget's 'Schema' defining style or attitude of receiving senses. Nagamachi's research has the similar nuances. Don Norman's Emotional Design (2004) has also similar attributes to *Kansei*.

As a result, the Kansei process itself cannot be measured directly. What can be observed are not Kansei, but the causes and the consequences of the Kansei process (Nagasawa 2004). Therefore, Kansei can only be measured partially, by measuring sense activities, internal factors, psycho-physiological as well as behavioral responses (Harada 1998; Nagamachi 2003; Ishihara et al. 2005; Lévy et al. 2007).

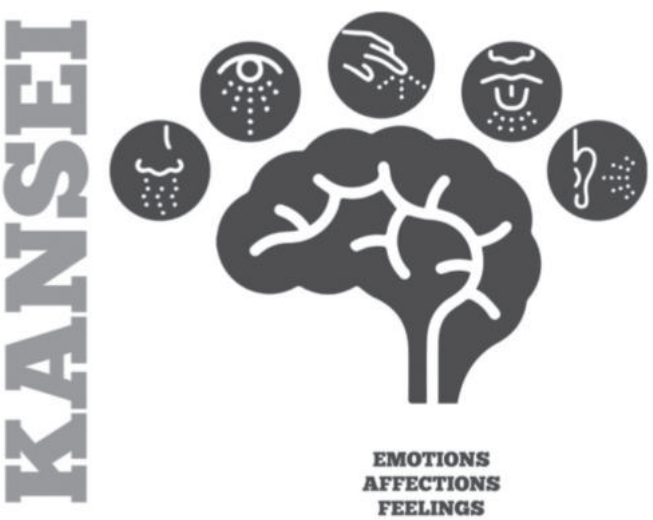

Figure 1. Definition of Kansei – The Internal Process of Kansei

The term 'Kansei' generally refers to an organized state of mind, which withholds emotions and images towards physical objects, such as products or an environment. For example, "luxurious", "elegant", "flashy", "young", and sentence structures as in "that dress looks luxurious and elegant", or "that car looks flashy and youthful" are all Kansei words describing feelings towards a certain visual impulse. Kansei is generally expressed in the form of adjectives, nouns up to short sentence structures (Nagamachi 2003). There is one general differentiation of Kansei. If a Kansei is an occasional change or impression, it is referred to as "trend-related Kansei". If a Kansei practically does not change, it is called "a fundamental Kansei". Emotional and cognitive experiences towards any type of design product have been recognized as the primary factor of consumer satisfaction (Norman 2004) and market success (Nagamachi 2004).

2.1. Analysis and Detention of Kansei

For many years, Japan has been ahead in developing new, innovative and successful industrial products. Their design process heavily relied on their sensitivity towards the consumers' implicit needs, in other words on the concept of Kansei. By implementing the techniques that we know as "Kansei Engineering" (KE) today. The principles for the implementation of Kansei involve several technical steps (Figure 2). These steps are custom-tailored to the research project, and can utilize tools and methods from different disciplines, such as marketing, psychology, and statistics. Kansei studies typically consist of both qualitative and quantitative research methods. There are various ways of utilizing the KE techniques (Nagamachi 1992; Camurri et al. 1999; Yamada et al. 1999; Takama et al. 2001; Bouchard et al. 2003; Guerin 2004; Ishihara et al. 2005; Schütte et al. 2005a, 2005b; Lokman et al. 2009; Barone et al. 2009), and there are multiple ways of obtaining the desired information through the conduction of a focus group (Matsubara et al. 1999; Kim et al. 2003), self-report system (Schütte & Eklund 2001; Ishihara et al. 2007a;

Figure 2. Definition of Kansei Engineering

Lokman et al. 2009), and ethnographic techniques (Shaari & Ab-Whab 2010). Regardless of the obtaining strategy, the main aim is always the emotional aspect of the consumer or user experience with current products, or product concepts.

KE has been reported to create a number of successful consumer products emerged in Japan: Mazda's sports car, the Miata; the Good-Up Bra made by Wacoal; and Sharp's Liquid Crystal ViewCAM are to name some of them. These products have been very successful over the long term and have helped set a new trend in the industrial design field (Nagamachi 1999).

However, the concept has been mainly applied for the product development and industrial design, and its deep insight and ideology have not been investigated enough in other areas of design. Why? In a world where UX is the buzzword, and Kansei could serve as such a potential tool to anticipate responses of the audience. It is surprising that its benefits for the design decision-making, that have been successfully implemented into the design process for product and industrial design, have not been utilized in the field of conceptual design up until this day. As conceptual design work and its process are gaining importance through the mounting interest in UX, it is necessary to find new methods that allow a more successful outcome, through target group insights and anticipation. As Kansei provides such a method that has not yet been utilized effectively enough in other design fields, it can lead the conceptual design process to a more tailor-made user solutions for all forms of concept design.

As the main aim of this article is to conclude its findings into a model that allows designers to inflict their decision-making processes of conceptual design work with a greater focus on the response of their target users, greater anticipation of the Kansei can lead to a more positive UX. A "perfect world" example makes the potential of Kansei even clearer: If we could anticipate the Kansei of our target group to its fullest, a designer could understand needs and expectations of a target group, and could therefore serve directly to those needs, which would result in the ultimate UX. So, in order to find effective methods that allow designers to consider and act upon these needs, which directly relate to Kansei, it is essential to find strong and meaningful impact points of Kansei upon the design decision-making process.

3. The Development of the Design Process Concept

After looking into the meaning of Kansei and understanding its beneficial impact for anticipating users emotions, let us now focus on the design process itself. As discussed above, through the greater anticipation of the Kansei, a more positive UX can be created. In order to tap into these benefits and to find effective methods that allow designers to consider and act upon these anticipated emotional responses, which directly relate to UX, it is essential to discover strong and meaningful linking points of Kansei upon the concept of the design process. The main idea is to find the extended model of the design process in order to conclude this article with a concept of a 'Kansei-induced' design decision-making process.

However, before the analysis of what way emotions are affecting the decision-making process of designers, it is necessary to know the development of the design process concept from the past. Goldschmidt (1991) explored the design process and its relationship with corresponding design outcomes. Different theories have supported her findings. The aim of many design scholars was to find some effective concept for the designers to follow serving as a depiction of their path of creation. The general idea was that the design process could be divided into different stages. Archer (1965) was the first to introduce such design process model named the Analysis-Synthesis model. Archer's model was based on a division of three main stages of the design process: Analytical, Creative, and Executive Stages. His idea was that the analytical stage described the phases of problem analysis and that the creative and executive stages described the phase of design synthesis. Based on this model, he claimed that designers firstly analyze the issue at hand extensively for then to most effectively synthesize the solution. As this concept was mainly focused on the cogitative approaches and rational steps, later Jones (1984) expanded Archer's model by linking it with intuitive, experience, and rigorous logical approaches. His expanded Systematic Design Method suggests that the design process includes both logical analysis and creative thought, throughout the process of problem solving. His guideline of the concept application was a three-stage design process divided into Analysis, Synthesis and Evaluation. The general idea behind this concept was that designers come up with ideas and solutions while considering real life limitations and logical judgment. Soon, it became evident that these design models were mostly based on logical flow with a linear process. Luckman (1967) reconsidered the ideas of Jones' concept and fused it with observation data of the actual working process of designers. His main suggestion was that in real design practice the three-stage systematic design concept is not a linear process, then rather a continuous cycle of repetition of the stages. This process was determined by a repetitive translation of information, which included requirements, constraints, and experience into potential approaches and evaluation during the entire design process. This resulted in the argument that after all the design process is a non-linear practice.

Hillier, Musgrove and O'Sullivan (1984), on the other hand, proposed that the act of problem solving is the main responsibility of designers. As they said that problem analysis was depended on more than cognition and the problem analysis enclosed designers knowledge, they argued that design is an activity of conjecture and analysis. The conjecture mode describes the designer's cognitive process for synthesizing the concept and then using artistic approaches (analogy, metaphor, sudden flashes of insight etc.), to find new ideas. Whereas, the analysis mode describes the designers rational and scientific thinking process in order to analyze the consequences of these new ideas. The Conjecture Analysis model later inspired Akin (1998), to propose a study that argued, that the design process should include physical and mathematical, as well as the personal knowledge and skill-set which enable designers to solve multi-constraint design problems. Meanwhile, Csikszentmilyi (1996) suggested a different methodology of the

design process that consists of multi-directional research and thinking processes. His design process is defined in five steps: *Preparation*, where problems of interest are emerged; *Incubation*, in which ideas are further developed at the level of consciousness as well as connections being made; *Insight*, where a more complete concept is being thought out; *Evaluation*, which describes the actual decision-making of the most valuable concept/idea; and *Elaboration*, where the insight is being turned into a physical object. In his opinion, the design process model is a generally well-structured path leading to creation. Nevertheless, there are harsh critics, which argue that the design processes cannot be standardized. Austin and Devlin (2003), for example, proposed that the design process is a process of discovery. The aim of the process might be something predetermined, however, the path that lead to that aim is unknown. They claimed that the creative problem solving process is a non-sequential, nonlinear approach, and that there is no such concept that could clearly define steps or stages, due to the fact that it involves new resources as well as innovative thinking. Their hypothesis was strengthened by Best (2006), who endorsed Austin and Devlin's studies. Best pointed out that the design process is depending on different needs of clients and users. Therefore, it has been realized that the design process is more diverged from the early concepts, and the current belief postulates a more multi-directional and non-linear process approach, mimicking also the real-life design practices and processes.

4. Revisiting Aspelund's Design Process Model

After reviewing how the idea and therefore the design process concept have developed over the last decades, this section will now analyze the design process model of Aspelund (2010). In this research, his work will be adopted as a base for discussing how and in which way Kansei could improve the user's anticipated emotional reactions.

Norman (2004) and later Desmet and Hekkert (2007 and 2009) already recognized that the processes and patterns of Kansei-like user experience towards any type of design product are thoroughly intertwined by several aesthetical, emotional and cognitive factors. Once defined, these can be further used to facilitate the designers' structured attempts to 'design for better user experience'. Similarly, in recent years, design approaches such as '*Rapid-Prototyping*' and '*Participatory Design*' (*'Co-Design'*) have gained ground in relation to design processes where user participation, stakeholders involvement, and prototypes make it possible to test different types of factors concerning the use and implementation of the solution and properties concerning size, weight, balance, feel etc.

Aspelund's work was chosen, because it is one of the well-illustrated design process models including the participatory and prototyping stages, and taught at over 40 universities in the U.S. alone. Even though it might be arguable if a stage-structured model really captures the complex design process in all details, it is necessary for this research, as the content offers firstly a theoretical structure to reflect on

methodology, and secondly allows conclusions about a general design thought process of a designer.

According to Aspelund, design is a personal activity or journey from “the world of imagination” to “the world of objects” (pp. 1-9). There are three purposeful activities of Ideation, Development and Production, composed of seven sub-activities of Inspiration, Identification, Conceptualization, Exploration/ Refinement, Definition/Modeling, Communication, and Production, that a designer must carry out to successfully complete this journey (Figure 3). These seven sub-activities will be revisited in the remainder of this article with a specific attention to potential design considerations towards the anticipated emotional reaction of the audience, specifically for print media advertisements. Aspelund’s ideas and methodology of the design process will be described and replenished in a way, so that later on links to the findings of the survey in the second part can be easily made.

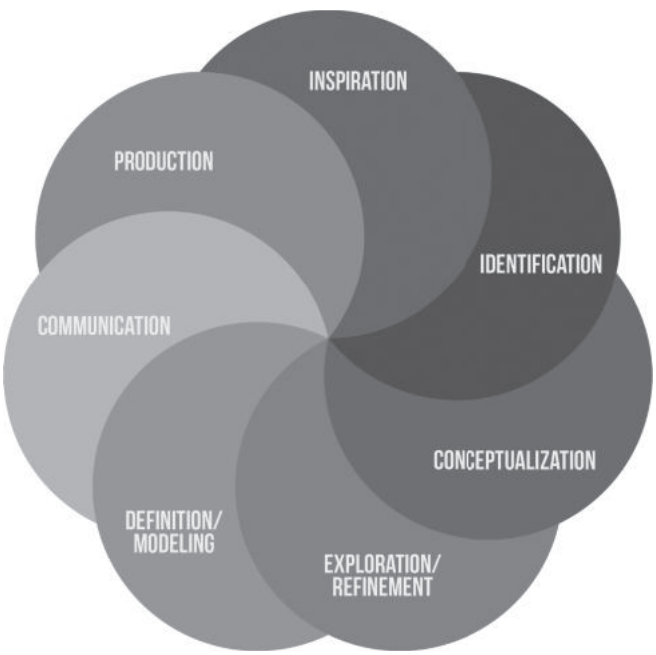

Figure 3. Representation of the Design Process

Aspelund’s design process starts with Inspiration (p. 18). It serves as the first stepping stone for the journey of creation. In fact, two activities, Inspiration and Communication, occur and reoccur throughout the design process. Inspiration has to be actively sought for, rather than waiting for it to happen. Designers should choose their source of inspiration carefully in order to steer the force of the inspiration in

a direction that leads to the most beneficial path for their creative process. They should be continuously on the look out for stimulations leading to a broader and more multifaceted inspirational approach. Playtime for their mind and spirit are also important tools to boost ideas and channel inspiration.

The main focus of the second stage Identification is the constraints that a designer faces when creating a brief or concept for a design project (pp. 40-64). After finding inspiration, it is mandatory to boil down the phantasy to a real life project that meets a multitude of constraints both 'inherent' and 'imposed'. Identification of the design problem, that needs solving by the designer, is the key element of this stage. Each problem has its own list of constraints, some more fixed than others. The inherent constraints summarize the essential nature of an object and determine its characteristics, therefore define the functionality of the designed object. On the other hand, the imposed constraints encapsulate a much lager and complex section of constraints, therefore describe as choices made by the designer that determine the end-result of the project, which are non-essential elements of the objects nature. These areas are mainly determined by needs and desires of either the end-user, or the designer, or the producer. This stage is the first touching point of influence of the end-user on the actual design process. The end-users can be a client, but also users, viewers, inter-actors, makers, co-creators, or even people that are just indirectly affected by the design work. What is firstly the intent and what do we want our potential end-user to know, learn or feel about our product or brand? So, understanding the end-user, therefore the viewers/target group the design work is directed to, be an elementary part of creating an end-result that meets these goals. According to Aspelund, the end-user constraints as inherent constraints are the most obvious, as these needs and wishes are directly impacting the design decision-making process.

This third stage Conceptualization evolves around the idea of understanding the design idea to a deeper level and with such a clarity that transforms it from being an idea to gaining actual tangibility (pp. 71-91). What constitutes a good design concept? Communication of non-existent designs and making creative thoughts understandable for others, as well as self-assessment of the quality and possibility of execution of the design idea are core for this stage in the design process. Designers should also explore the benefits of making environmental friendliness as an inherent constrain of their projects. It is essential to communicate the idea by utilizing the Gestalt concept through filling the gaps of the idea and intuitively forming a totality, or Gestalt, of the design project concept. Employing effective tools like brainstorming make thoughts and ideas visual, and utilize these in a playful, non-judgmental and error-free personal zone.

The fourth stage Exploration and Refinement explores methods in order to refine concepts and come to a more conclusive and whole concept (pp. 98-110). How should designers further explore and refine their concepts, by examining and questioning everything? Their methods of support can be focus group studies, such as Observing, Testing, Sketching, Reflection, as well as Dialogue with different people that can provide a better understanding of the target audience and a more holistic concept outcome.

Turning back to the core interest of this article, this stage provides another linking point of the emotional response of the target audience and the possible influence on the design decision-making process. The idea of dialogue with the target group can be utilized in a very effective manner in order to verify if the design meets the goal and if emotional triggers have been used in the right way before stepping into the definition and modeling stage.

In the fifth stage Definition and Modeling, Aspelund explores the necessary steps of creating a 'real-life' object of design, that maintain the refined concept, while fulfilling the constraints of the project in the previous stages (pp. 118-134). The idea of distinguishing what the design project/object exactly is, can be considered as the primary decision-making process within the design process itself, and one may say as the primary function of a designer. Having influenced by Maslow's "Hierarchy of Needs" (Maslow 1954), Aspelund addresses here different levels of design needs, such as Functionality, Reliability, Usability, Proficiency, and Creativity, that have to be dealt with in the process of defining a design concept and making it viable (p. 120). Another stimulating method introduced by Aspelund in this stage is the "Anatomy of a Design": How essential is it to understand the elements of the design, as well as their serving functions? Analyzing the purpose of these elements is the focal point of this stage. He separates the elements of design into two major groups. The first group contains the elements that are connected to the physical appearance and the second group deals with the intangible assets and elements of a design, such as philosophy and emotional responses. "The idea contains more than just a shopping list of things; it is greater than the sum of its parts. Designers need to consider what the statement is in each case" (p. 125), Aspelund explains. The statement can be physical, material, but also and more importantly it can be an emotional statement, or relationship with a viewer/audience/user. This method is highly relevant, and can create real benefit when fused with the ideology of Kansei.

The sixth stage deals with creating a successful communication of the concepts and design message. The art of communicating an idea is what design itself is about and due to this rudimental connection it is considered as one of the key issues of design. Aspelund makes clear that communication is where the main responsibility of a designer lies, to make sure that this message that is created, or coded, can be decoded correctly by the target user and put into the relevant context. Once again, Aspelund points out the importance of understanding the needs and expectations of target audience, and creates another strong linking point of design process and decision-making with the anticipated emotional perception of the user in mind. Again and more evident than before, the linkage of considering what and how the message is conceived and understood by the audience is a part of the design process at large.

The seventh and last stage of the design process, according to Aspelund, is Production (pp. 169-181). In this stage, he emphasizes the importance of the interaction of designers and the production team, as well as to benefit from their experience and knowhow. His main advice is to not underestimate the gain of

focusing on creating a prototype, which can serve the purpose to finalize the overall concept and idea. The decision-making process of this stage is all about handling final choices and sending it off for production. Experience earned through each design process of every project leaves a designer with more fuel for the project to follow.

5. Discussion: Emotional Response Sensitive Design Process

The article has so far actively sought the links of the ideology of Kansei and the Western design process concept. In this section, the most effective impact points of Kansei on the design decision-making process will be discussed, with the goal of creating a model, which allows designers to focus their design process on a more user emotional oriented experience. Based on Aspelund's Design Process, the different stages of importance will be discussed in more detail as in the previous section (Figure 4). Idea is to manifest and explore the possibilities of Kansei for the design process and how it can enhance the UX from an emotional standpoint.

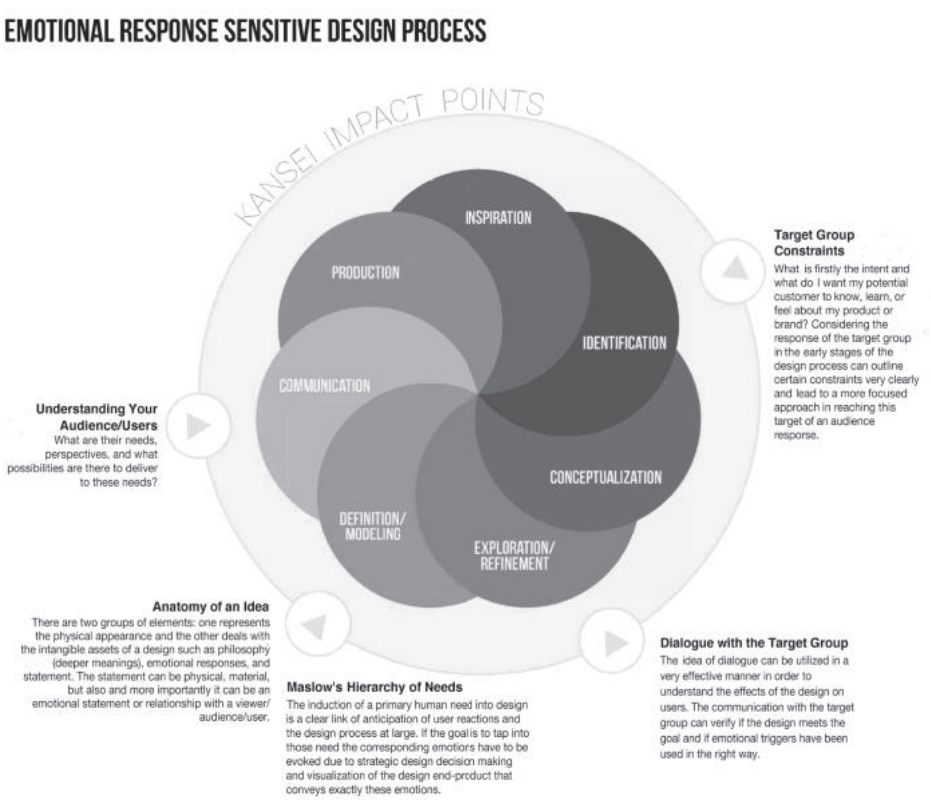

Figure 4. 'Kansei-induced' Design Process "Emotional Response Sensitive Design Process"

5.1. Identification

This stage mainly deals with the analysis of inherent and imposed constraints of a project. These constraints are the main driver for a multitude of decisions, that influence the design concept, as well as the final outcome heavily. By creating constraints, the designer set the framework of the concepts. If the goal of the designer is to evoke certain emotions through the design work, it is valuable tool to consider those in the early stages of the design process. By laying out the intended emotional respond of the target audience in this stage, the designer can explore and shape the identified constraints according to these emotional response aims of the design work. This will not only allow a more focused approach, but by making it an inherent constraint the imposed Kansei can be fused with the very nature of the design concept. This technique allows designers to firstly consider, explore, and later refine the intended Kansei, and make it an essential part of their design process. Due to this, a more satisfactory UX can be initiated, or designers can drive the UX. This means that through the Kansei constraints, a designer can actively influence and drive the emotional response of the target audience, and therefore guides the emotions of the user along a certain target Kansei.

Questions that guide the processes of the Identification stage:

- *How do I want the user to feel about the message of this ad?*
- *How do I want my user to feel about the brand?*
- *What are the values I want to communicate through this design work?*
- *What message am I sending via this print design?*
- *What do I want the user to learn about my product/brand?*

Answering these questions will firstly clarify the aimed Kansei for the design work and in a second set will allow the designer to infuse and shape the inherent as well as imposed constraints for the project accordingly.

5.2. Exploration and Refinement

This stage has the goal to firstly confirm the totality of the concept, and secondly to ensure that the concept meets its target. There are a variety of different methods that support the stage. There are two methods of interest, regarding Kansei, which are Dialog as well as Reflection. Dialogue can be utilized in a very effective manner in the context of inflicting the design process with the ideology of Kansei. This method allows designers to understand, test, and discuss the emotional effects of the design concept on users, with the potential users/target group called “focus group”. Due to the dialogue, designers can verify or pretest their Kansei design concepts. Usually, the focus group is confronted with the final prototype of the

product, which already costs the company a lot of time and money. The major advantage of introducing this method so early on in the design process is based on the working process of the chosen design. Rather than producing and experimenting with different materials, for example in print design, mock-ups are much easier, faster and cheaper to create. This advance should be seized in order to create more targeted and successful emotional messages. Adjustments of the concept elements, that deliver confusion, misunderstanding, and wrong interpretation, are an essential part for this stage that still allows flexibility and changes. The communication with the focus group can identify, if emotional triggers have been utilized in the right way and send a consistent and understandable message. Pretesting will lead to a more successful outcome as well as saving time and money.

Questions that guide the processes of the focus group dialogue in this stage:

- *How does this print media or ad make you feel?*
- *What is the message?*
- *How do you feel about this brand/product now?*
- *What are the values you connect to this design work?*
- *What could you learn about this product/brand?*

By letting potential viewers answer these questions, an understanding of the effectiveness and comprehensiveness of the Kansei can be formed. In a second step, deviant results can lead to necessary adjustments of the concept that will have an immediate effect on the preciseness of the target Kansei.

The second method of Reflection links this stage to the constraints manifested in the stage Identification. The idea of reflection, in regards of making a more Kansei oriented design concept, is to revisit these constraints and ensure that all of them have been met. By revisiting those Kansei constraints, a misstep or oversight can be easily detected and corrected. The idea is not to loose sight of the essence of the project and to reevaluate if constraints, and in particular Kansei constraints, have been sufficiently paid attention to.

Questions that guide the processes in this stage:

- *How have my Kansei constraints influenced the concept?*
- *Which elements reflect decisions I have made based on a Kansei constraint?*
- *How am I communicating the desired message?*
- *Which tools am I utilizing in order to convey the Kansei?*
- *Does every element of my concept fulfill the purpose of the targeted Kansei?*

By questioning the current design concept and the decision-making process that has lead to it, the designer can reevaluate individual decisions and their effect on the overall design concept and its message to the viewer.

5.3. Definition and Modeling

This stage mainly focuses around the design needs of a design concept and the objectification of a concept into a real 'thing'. Particularly for the example of this article of creating a link between the ideology of Kansei and the design process at large, this stage poses an elementary function in the process. There is a clear connection between the functionality of a design concept and Maslow's Hierarchy of Needs (Maslow 1954) as the main aim of design work evolves around the idea of creating a consumption urge. The proven effect of this method has already been demonstrated in the area of Product Design by several empirical researches (Yalch and Brand 1996; Bloch 1995; Kotier and Rath 1984). By creating an urge through the print media, for example, a designer evokes a lot more than just the buying urge. The designer induces the viewer with certain initial emotional responses, so that a certain Kansei, that leads to the urge of consumption in a second step. Kansei, therefore, enables the designer to create an instant reaction of emotions that fullfill the criteria of the first design need. As Maslow's Hierarchy of Needs is linked to motivations that are infused in the human nature, the correct utilization of Kansei can tap into those human motivations, due to the correct stimulation of instant emotional responses. So, as it becomes more evident, the strategic usage of Kansei can lead to a more effective outcome of the functionality feature of a design work.

Questions that guide the processes in this stage:

- *Which needs of the Maslow hierarchy is my design concept addressing?*
- *What emotions express the targeted Maslow need the best?*
- *In what way am I addressing the target Maslow motivations in my design concept?*
- *Does my product or service exceed the basic functionality and addresses higher-level motivations than those available ones?*
- *Which physical effects of my design express the motivation?*

The second technique for inducing the general design process with the ideology of Kansei in this stage is the review of the anatomy of the founding idea of the design concept. The process of this technique includes the general analysis of the different elements of the design firstly from a physical stand point, which can include considerations like material, form and production, but also secondly from more mythological, psychological and emotional points of view. The idea is to reconsider different elements of

the design and evaluate them based on their emotional and mythological meanings on their own as well as an element of the entire body of work. It is essential to understand the connections between different elements of the design work and physical parts of the design, and their impact or evoking emotional response for the audience. This very much responds with the essence of KE. Rather than a consumer experiment in the production stage of the design process, like KE suggests, this review method of the Anatomy of the Design allows a self-driven pre-KE test. The anatomy of the idea concept is about analyzing the body of design work based on different aspects and evaluating these and their emotional value or response. This way designer can develop a more emotion sensitive design technique that saves time and money throughout the design process throughout different disciplines.

Questions that guide the processes for the anatomy of the idea method in this stage:

- *What are my physical elements?*
- *Why did I choose these elements and what purpose are they fulfilling?*
- *What emotional as well as mythological reason do these elements have?*
- *Do they serve the purpose of my proposed Kansei expectation?*
- *Is there any other elements (such as material, color, type, shape, form, proportion etc.) or a different variation of this element that would serve the purpose of the proposed Kansei in a better way?*

5.4. Communication

Communication of a finished design concept is an elementary part of the process. A product or design can be as good as it gets, but if people are not communicated with properly it is all not worth it. So, this stage is very much about understanding how and in what way a design has to be communicated to its target group. In fact, this consideration of communication is something that should be a constant concern during the entire process of the design project. Serving to the needs of a target group is very much connected to the idea of Kansei. These needs and perspectives can be expanded upon. This factor weighs in even more heavily as we are not just trying to create an urge to buy a design product or service, but in most cases also try to create a long-term end-user relationship with the brand of this product or service. Thinking about it in this way that the feeling of satisfaction is a strong one, serving to the needs of the client becomes certainly a matter of Kansei. As explored above, UX is not only link to the user friendliness, but also the connecting emotions with a design as they contribute to the entire experience of a user in a big way. So, when thinking about the communication of these addressed needs and ideas that are fundamental in the design have to be communicated in a way that speaks to the target audience.

Questions that guide the processes in this stage:

- *What are the needs that my design is fulfilling or speaking?*
- *What emotions are connected to these forms of needs?*
- *In what way are these emotions connected with the pursued Kansei of my project?*
- *How can these emotions be addressed in the communication of the design?*
- *What is the core message/slogan of the design work and how does that message correspond with the targeted Kansei?*

6. Conclusion

This article concluded the research on the possibility of fusing the Japanese philosophy of Kansei with the Western idea of the design process into an extended model. This model was built based on the ideology and the experience reports of Kansei and Kansei Engineering, which have been widely used in the fields of product development and industrial design. The idea is to make the benefits of Kansei available to all fields of design through implementing different methods and techniques into the design process. The main aim remains to increase the predictability of the end-user's emotional response. Therefore, the model was named "Emotional Response Sensitive Design Process".

Moreover, creating a better design work that firstly appeal to the target group and secondly may lead to a sustainable end-user relationship is the goal and should be the major driver of any design project. Kansei can function as a useful tool in many different forms of methodologies throughout the design process, and create a more successful outcome of the design project. This is simply because the base of Kansei is to deeply understand the emotional instincts and relations of the end-user, and if this is correctly rooted into the design process, a more focused and tailor-made solution for the specific target group can be created. Therefore, throughout the later half of this article important linking points have been turned into useful methods and tools that may help designers to focus the design process approach more on the emotional communication of the design work, and make the Kansei of their end-user an inherent part of the process. Further research should evaluate and confirm all of these assumptions in reality of design process application with the goal of understanding the questions like whether there is any interest and need for such model within the design community, or whether the proposed techniques should be carefully examined through specific lenses to help inform the designers conscious experience and thereby the design processes.

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