# Study of the image proposal by the KANSEI evaluation method

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Abstract: When we try to tell experience and idea someone that we use language based the "Image". It is important how it express, without producing gap against one's image. This is an ability, which cannot be lacked for the designer engaged in a design or product development. Tying in studying the image from the scientific of view, we propose an efficient design of high precision is the purpose of this paper.

Key words: Image, KANSEI, Image proposal, color, WAT9

# 1. Background and Objectives

The ability to turn a client's idea into an accurate concept is the mark of a skilled designer. Creating a design that matches closely with the image in a client's head has required a designer to sketch numerous ideas and present them to the client. To ensure they can match the client's needs to make their design relevant, designers are constantly evaluating their surrounding, looking inspiration and ideas to further hone their skills. In addition to numerous inputs, designers are also looking for new way to output. Within the last few decades, computers and image editing software has transformed the designer's avenues and capabilities for expression. Nevertheless, no matter how sophisticated the software or hardware the presentation of story and concept behind a designer's ideas to the client becomes as critical to the process as the design itself.

To start the design process, the first step is to communicate thoughts and ideas clearly to the designer so they can formulate a design that matches the original idea. However, depending on the experiences of both parties, gaps or differences can emerge between the concepts imagined by each side. Until now, a technique to accurately confirm the concept imaged by the client (requestor) and that of the designer (creator) has not been thoroughly researched. The gap in understanding may result in the designer creating a concept that only they can understand or comes across as too personal – especially if there are challenges in conveying the reasoning behind the concepts to the requestor. Refining and analyzing the communication of a concept between two parties is the key to reducing the potential gap and misunderstanding between both parties. We have researched a process that helps to close this gap and reduce any wasted effort.

Our aim is to develop a system and process that allows requestors and creators to speak a common language to convey once ambiguous or hard to vocalize concepts. Through the pairing of colors and adjectives and creation of a creative concept analysis method, we can capture the essence of an idea that allows us to consistently measure the sensory perceptions of both parties in an analytical fashion. This in turns leads to a more efficient development cycle and less burden on the creator to guess at what the requestor might want. The proposed method for developing the common grounds on which two parties can discuss creative concepts is detailed in the following sections.

#### 2. Research Organization

This paper summaries the teachings and experiments performed in a specialized design course at the Shizuoka University of Art and Culture. The course focuses on the techniques and methods used to measure our sensory perceptions. To evaluate and improve the creative process for design, the process is broken down into 4 stages to enable the participant to understand their own tendencies and learn the building blocks to effective communication with regards to design as well as coming up with new concepts themselves.

In the first stage, participants create color schemes and image collages related to 9 concepts in order to under their own tastes and preferences. They then compare their results with others to rank and determine which selections mostly accurately reflect the ideal representation of the concept.

In the second stage, the participant takes a survey using the WAT9 software (detailed later) to assign predetermined adjectives (from 5 to 10) to a variety of visual, aural, tactile, gustatory, and olfactory experiences that break down a complicated concept into it's more basic parts. By compiling the data around these various parts we can begin to build the common grounds for understanding complex concepts.

In the third stage, the process is reversed and using the commonalities learned in the second stage, participants are asked to place images they think fit with each of the 9 components for measuring commonalities between perceptions of concepts.

In the fourth stage, the participants utilized the process learned in steps 2 and 3 and apply these skills to the creation of a new concept for a specific product.



Figure.1 Process flow chart

# 3. Analytical Method

#### 3.1 Explanation of Word Association Test 9 (WAT9) Software

To be begin, we conducted a multitude of surveys, asking participants to identify what color they associated with a particular adjective. A database was then compiled of these pairings, but with the color as the key and the adjective as the value. We could then graph the colors onto a grid based on their color values. Replacing colors with the adjectives that were most closely associated with them resulted in the graphs seen in figure 2. Where

there seemed to be little connection between adjectives previously, the underlying color values began to draw connections between seemingly unrelated items. We then classified the graphs into 6 to 10 clusters based on our previous experiences. From this classification process we arrived at the 9 general categories for describing the components of a creative concept. In order to simplify things, we picked 9 Chinese characters to represent the 9 categories: 「AI/愛」「RAKU/楽」「KA/華」「SO/素」「SHU/趣」「KAKU/格」「YU/優」「HIN/品」

 $\lceil RI/理 \rfloor$  were set as "index = keyword". From this point on, the 9 concepts would be used as the common means of breaking down any complex concept into its core components and known as the "Evaluation Method for the Categorization of Sensory Experiences". In addition, we developed the Word Association Test 9 (WAT9) software specifically for the evaluation of these concepts.

# 3.2 Explanation of the 9 Concepts

The Chinese characters and the classifications they represent are best categorized as "RAKU/楽 dynamic; "HIN/品" static; "SO/素" natural; "KAKU/格" artificial; "AI/愛", "SO/素", and "YU/優" light/ bright; "KA/華", "KAKU/格", and "RI/理" heavy; "AI/愛", "RAKU/楽", and "KA/華" gorgeous; "SO/素", "SHU/趣", and "KAKU/格" moderate; "YU/優", "HIN/品", and "RI/理" fluent. (figure 3)

#### 3.3 Using the WAT9 Software

First, the user sets the theme and then chooses the most appropriate adjectives from a list of 117 that they think matches a specific concept. After the participants' responses have been recorded, the results are displayed in a variety of visual styles. Figure 4 shows the results displayed for a test concept. The number of selections for each adjective are tallied and displayed in descending order. The graphs at the top of the screen display the data visually. The left most graph shows the distribution of the adjectives by their corresponding concepts whereas the ribbon of color in the middle simply displays the same data in a linear format. The graph on the right shows the deviation of the adjectives selected to describe the concept from the mean that is represented by the gray circles.



Figure.2 117 adjectives

Figure.3 9 concepts



Figure.4 Results display (WAT9)

# 4. Creating Concepts Using the Evaluation Method for the Categorization of Sensory Experiences

# 4.1 The First Stage: Confirmation of an individual's sensitivity

The first step in developing a creative concept is to evaluate an individual's preferences and tastes to understand their deviation from the norm. Our sense and sensibilities are developed over time from a wide range of influences, from different experiences with the natural environment, culture, and family. Whether you were raised near the ocean, in the mountains, a warm environment, or a cold one, each of these factors plays a role in shaping how one associates with different colors. Using the data collected from our experiments, one can compare their own perceptions of color with the general consensus and determine where they are the same or different.

In the first step is to create color schemes and image collages to begin to understand one's own sensory perceptions. First the group creates these schemes and collages based on 9 core concepts. The group then convenes and compares the results of all members to identify common themes found in the subject matter, texture, color, or other characteristics of the group's selections.

#### (1) Color Schemes

To determine the range of colors for an individual, we create two color schemes; one scheme contains 3 colors and the other contains 9 colors. Creating a polychromatic scheme can lead to an objective understanding of the test subjects color tendencies. Colors surround us at all times during our waking hours and influence our visual perceptions. In particular, the color combinations from everyday things such as clothes, makeup, food, and interior design make a strong impression on us. Therefore, the test subjects will associate colors with adjectives from the 9 images in a way that draws upon their daily and lifetime experiences with colors in their surroundings.

#### (2) Collages

Elements other than color (shapes, patterns, subjects) cannot easily be separated from the colors that are typically associated with them. So with the creation of a smaller 5cm by 5cm collage and an A5-size collage based on the 9 core concepts, we can determine the participant's senses associated with composition.

# 4.2 The Second Stage: Analysis and Understanding for the Measurement of Commonalities in Sensory Perceptions

Humans process the environment around them using their five senses: sight, smell, hearing, taste, and touch. Amongst the five senses, sight is estimated to account for 83% of the information that humans process. Therefore the concepts that we create are heavily influenced by our visual perceptions.

In the second stage of analyzing the sensitivity common standard, we measured the perceptions created from the five senses of the participants. The WAT9 software was used to survey the test subjects on basic shapes, three-dimensional shapes, patterns, fonts, tastes, smells, touch, and 8 types of music. The sample findings from a part of these surveys are detailed in the following sections. In particular, the sections show the results from the visual perceptions of basic shapes and the shapes of plastic bottles.

#### (1) The analysis of the commonalities in sensory perceptions as it applies to basic shapes

The complex natural and artificial objects that make up an environment are composites of many basic shapes such as triangles, squares, and circles. 10 basic shapes were selected to be options in the survey: star, circle, square, triangle, rectangle, heart, oval, diamond, octagon, and hexagon. (See Figure 5)



Figure.5 10 basic shapes

In figure 6 you can see the results of survey that asked test subjects to associate the shapes with adjectives and then grouped into the 9 basic concepts that make up our sensory perceptions. The results showed that shapes with many curves were associated with the concept of "AI/愛". Conversely the angular shapes (triangle, diamond, square, rectangle, octagon, hexagon) were "RI/理" and "KAKU/格". Within the polygonal shapes, those with fewer angles such as triangles and diamonds were associated with "HIN/品", whereas shapes with many angles were associated with "KAKU/格". The object with the most angles, the star, was associated with "RAKU/樂". In the case of the star, we estimate that the star is thought of less as a basic shape and more as a symbol that represents a concept, hence it's tendency to be classified as "RAKU/樂". In general, the shapes with rounded lines and fewer corners were thought of as ""AI/愛", whereas the straight line and angular shapes tended towards "RI/理" and "KAKU/格".



Figure.6 Results of basic shapes survey

# (2) Analysis of the commonalities in sensory perceptions of plastic bottle shapes

The WAT9 software was also used to survey participants on an object familiar to them from everyday life, the plastic bottle. To understand the connections between three-dimensional shapes, we selected the 10 plastic bottles that vary in shape show in figure 7.



Figure.7 10 plastic bottles

The relationship between curves and straight lines was observed to be a similar distribution to that of basic shapes. Bottles like #8 and #10 that had patterns or decoration in the lower half were associated with "KA/華". In forms like bottle #7 that were composed of curved lines and hemispheres, the adjective "SHU/趣" was associated.



Figure.8 Results of plastic bottle shapes survey

# 4.3 The Third Stage: Creating the 9 Components of a Concept

In third stage, participants, in order to fully grasp the characteristics associated with each of the 9 core components of a concept, are asked to focus on two themes: natural and artificial objects. The participant then picks 5 items for each component until they have 45 total. The results are arranged into the grid so the classifications are obvious. For each component, the characteristics such as shape, color, size, etc of the chosen items are evaluated to see if they fit match with each other. If the chosen items for a component match and strike a good balance from an objective perspective, then it is a confirmation that the classification of the components was done well.

# (1) Natural Objects

Natural objects are things such as flowers, fish, vegetables, and fruits that exist in nature. The participant picks one of these types of objects and then chooses 45 items that will be classified into the 9 components. For example, if "flowers" is selected, then the participant would select items such as roses, marigolds, dalias, dandelions, or

sunflowers up to 45 and the classified into the 9 components. If there is an component that no items can be selected for, then it is left blank.

# (2) Artificial Objects

Artificial objects are things made by humans. Modern day paintings and music were used to represent artificial objects in the experiments. From 9 images, the participant picks one image. They then evaluate that image from by look at characteristics like the color scheme, composition and motifs and then arranging those into the components. For music, the participant does an image survey for 10 songs. From the 10 songs, they will then select one song and create a collage based on their impressions of it. The song is broken into four parts and the collage created from that.

#### 4.4 The Fourth Stage: Practical Application of the Method

In the fourth stage, we used 2 specific products to test the creative process resulting from the use of our sensitive common standard. The two products were small drinks and facial lotion. The test subjects could pick one of the two products and then a new concept was developed for that product using the process. To create a more practical concept, the collage resulting from the music in the third stage was used to represent the client's thoughts.

# 5. Future Tasks

We have concluded from our research that the use of the detailed processes and WAT9 software can empower even those without much design experience to create concepts that will closely match to a client's expectations. The WAT9 software also allows terminology and ideas that were previously considered to be ambiguous to be converted into quantifiable units, such as color. This has made it easier to compare one idea against another and reduce the gaps in perception between two parties.

In the future, this process could be applied to the planning and building of a brand concept or a corporate image strategy. There have been considerable achievements up until now, but in order to be even more effective, research will need to be done on how this process can affect a company's bottom line. In the future, understanding the process of turning the senses into a quantifiable asset will certainly help marketing departments bring concepts to market faster and understand what resonates with their clients.

# 6. References

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