

## Research on Application of Kansei Image of Culture in Big data of Product Design

(Full Paper)

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### ABSTRACT

In pursuit of internationalization and globalization, the multinational corporations have begun to take into account the cultural differences between different regions for their product design and marketing strategy. This paper further clarifies the difference between the Kansei preferences and tendencies of consumers through the discussion on the relationship between products and the Kansei demand of consumers with different cultural backgrounds. In addition, in this paper, the Kansei demand of consumers will be learned through collecting the Kansei images of customers with different cultural backgrounds and learning about the differences of Kansei image affected by different cultural backgrounds and the Kansei factors such as the thoughts and feeling preferences of consumers under the influences of local cultures. Then, the factors affecting the Kansei demands of consumers with different cultural backgrounds are correctly analyzed, which will be helpful for the designers to master these design elements and apply them into product shape and functions, thereby designing the products that meet the consumers' expectations and improving the additional values of the products.

*Keywords:* Big data, Innovation language, Culture, Kansei image, Product design

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### INTRODUCTION

Innovation language of product design is no more a new topic, but innovation language is forever a target pursued by designers in their research and development of new products. The reason why today's enterprises are confused in their research and development of new products is nothing. But the rapid development of science and technology, it has brought a new bottleneck to their product development. On the other hand, consumers have increasingly high requirements on products with the progress of the times. Design requirements have also changed. After consumption shifted from product-orientation to customer-orientation, the concept has emerged where consumption is led by design.

A good design can transform our feelings, consciousness and future science and technology in the environment into design elements and endow the products with a new design language, which is an embodiment of future values. Will designers realize factors of a concept, organize the data and create a concept in their sub-consciousness? There must be some creative language. The conceptual application of product design cannot avoid the "language". In some sense, concept is also language and can only be expressed with language. As long as a concept is applied in conceptual design, language must be used. Particularly when different is used to express a new concept, a language needs to be invented. In product design, we not only use simple daily language to create expressions, but the development of a new concept itself is a painstaking process. When related highly abstract terms of each field are involved, it is important to combine the terms that make you feel good. At the beginning of product design, the terms for the development of a concept are used to express the creative thinking. This requires a mood like the original impression sketch for the "invention of a new language". This is also what of innovation language needs to be studied by product designers.

### FORMATION OF CONCEPTS WITH NEW LANGUAGE OF PRODUCT DESIGN

By analyzing the cognitive theories for product modeling and creating new and diversified imaginations of the future, product semantics explores the possible future with foresight and systematic research. In designing products, it is combined with the research theoretical architecture of ergonomic system. Through design survey, the data undergoes preliminary statistical analysis, factor analysis and clustering analysis. Under the model of quantitative analysis, the perceptual image in the heart of customers will be explored, thus positioning the perceptual image in product design.

Product semantics is a science studying the significance of product language. Its theoretical architecture can date to the "research on symbol application" of Germany Ulm Institute of Design in 1950 and can even be traced to the theory of mark initiated by Charles and Morris from Chicago New Bauhaus Institute of Design. The concept was explicitly initiated by Professor K. Krippendorff of the US and Professor R. Butter of Germany in 1983, which was defined in "Product Semantics Symposium" held by IDSA at Cranbrook Academy of Art of the US in 1984: Product semantics is a science studying the symbolic characteristics of the forms of artifacts in the use scenarios and how they are applied in industrial design. It has departed from the conventional design theory that simply classifies human factors to ergonomics, widened the category of ergonomics, and not just considered physical and psychological functions of human as in conventional ergonomics, but introduced design factors to our psychology, processing technology and uses of technology. As the society develops and progresses, materials become extremely diverse and the levels of consumption are further refined, our demand for the spiritual

functions of products will grow. Other than conveying its functions, product's model will also convey the cultural connotation of a product through its semantic characteristics and reflect the modernity and value orientation of a specific society. Just as Pierre Guiraud, a famous French symbolist said, under a lot of circumstances, we are not buying specific products, but are hunting for the symbols of fashion, youth and success.

Generally the conceptual design language of products promotes our current demands from the perspectives such as futurology, ergonomics, design psychology and logic. Thus products suitable for our demands in the future will be created. In terms of the relationship of request and reliance between the human and the nature, scientific methods such as timing, quantitative and qualitative ones are employed to explore the rational positioning of human society development by modern science and technology. The track of human development is affected by its ideology. In the position study of perceptual image in future product design, perceptual language of futurology is extracted and employed in design.

### IMAGE EXPRESSION OF CULTURAL SEMANTICS IN PRODUCT DESIGN

"Culture" is a common term in daily life. In China, the term "Culture" refers to the meaning of humanistic education; while in the West, the semantic difference between Culture and Civilization was not clear until the 19th century. But no matter in the East or in the West, there is no obvious standard definition of the term "Culture".

#### Relevant Discourses In The East

According to the saying *Ci Hai*, Culture refers to "Culture and Education". It is interpreted in general terms as "Human society from barbarism to civilization, the achievements of its efforts, and are manifested in science, art, religion, morality, law and customs, habits and other complexes, which is called Culture".

The term "Culture" is mentioned in the book of Cultural Anthropology (Liu, 1991). Although it has a wide meaning in modern science, culture can be referred to as a combination of politics, economy, belief, morality, art, literature, customs and all the abilities and habits to become a part of society. From this point of view, culture and human life are inseparable, it can also be said that culture is a set of inherent life style generated by a group to adapt to the environment.

Semiotics is a phenomenon in which social and cultural phenomena are grasped as symbols and explore the meaning hidden behind it. Scholar believes that when symbols involve language, utensils, tools, symbols, works of art and human behaviors, these symbols will constitute the hardware and software of a society, thus constitute a cultural world (Li, 1998).

Another scholar, defines culture as a kind of essential existence, whose role permeates all human social relationship patterns, religious beliefs and behavior patterns, as well as various objects and tools it produces and use (Chen, 2002).

#### Relevant Discourses In The West

According to the saying Cambridge Encyclopedia, culture is the lifestyle of a group, which includes behavior pattern and ideas handed down from generation to generation, such as the group's beliefs, values, languages, regimes, economic activities, as well as instruments, technologies and art forms.

Scholar E. B. Taylor (1871) defines the overall meaning of culture as: "Culture contains a complex whole of all kinds of knowledge, beliefs, art, morality, law, customs and any abilities and habits that other people required as members of society." This complex whole simply means that it represents people's lifestyle, which is a combination of acquired behavior patterns, ideas, attitudes and artifacts (Hall, 1959 & Hofstede, 1997). Culture can also be a way of solving problems between communities, through collective thinking and taking joint actions to solve problems in daily life (Trompenaars, 1998).

Thomas (1985) defines culture from the cultural concept of history. Culture as a descriptive concept can refer to the accumulation of wealth created by human beings: books, paintings, architecture and so on. Through generations of people, language, customs, etiquette system, ethics, religion and morality are established. From the above viewpoints, culture is formed by historical experience, values, traditions and environment. Culture influences how people behave, look at the world, how to express themselves and how to think (Ever, 2001).

In the research of cross-cultural field, scholar Marcus (2001) proposed in the user interface research that when the term "Culture" is used in relevant researches, its cultural significance is mostly related to "Lifestyle".

In summary, although there is no standard definition of culture, it can be found from the interpretations and opinions of these scholars at home and abroad that, broadly speaking, "Culture" refers to "Lifestyle". Lifestyle becomes the culture through the accumulation of the time, and culture is presented by the lifestyle and the way of using objects. Therefore, in the cross-cultural research, in order to clarify the essence of cultures in different countries, we can cut-in from the lifestyles of different countries and to understand their cultural differences. The cross-culture of this study is to conduct the cross-cultural research on the most representative mobile phone products in the lifestyle. It can further summarize the similarities and differences by virtue of the views, perceptions and preferences of different cultures on the use of mobile phone products.

Products can convey two kinds of information to people, one is rational and informative information, such as product function and material itself; the other is perceptual information, such as product shape, color, usability and so on. Simply put, the information conveyed by the external shape of the product is not only a pure visual aesthetic feeling, but also carries value judgment, operation function, cultural information, brand image and so on. Krippendorff & Butter (1984), a scholar of product semantics, interprets the product semantics as “The implied meaning and symbol of the object in the psychological and social use level”, and believes that designers should pay more attention to and consider the environmental symbols in the cultural, social and psychological levels when designing products.

Dejan & Souza (1998) put forward the relationship among designers, consumers and products, and define it at the cultural level. They believe that the cultural background elements of consumers will have an impact on design, and emphasize the interaction between culture and products. Therefore, design is not only the knowledge and imagination of designers, but also the cultural concepts of designers when they are engaged in design, which comes from the understanding of consumers' lifestyle and is affected by their cultural backgrounds.

Robert Melody A (2001) puts forward a cross-cultural perspective in the article of Border Crossing and explores the changes in the behavior and value of successful products for users through research. He believes that to globalize the products, it is necessary to break down the boundaries and differences of borders on race, society, and culture and also believes that it can stimulate better design through the study of different cultures and understanding the demand of consumers for products.

Saint (1993), a scholar at the Royal Melbourne Institute of Technology (RMIT) in Australia conducted the quality analysis of products from different countries and summarized the conclusions as shown in Table 1.

Table 1: Quality Analysis of Products in Different Countries (Data Source: Cai, 1994)

Country	Product Quality Description
Germany	Precise, reliable, scientific, status, position, superiority. The complex and rigorous structure of German makes its thinking very organized, and so does the life culture.
USA	High-tech, practical rural atmosphere, western spirit, large size, gorgeous, exaggerated, gorgeous. The vast territory and abundant resources form its arrogant attitude focus on packaging and colorful entertainment.
France	Noble fashion style and style.
Italy	Showy, avant-garde, surprising and inspired by designers. Religion makes it bold, and family values make it a special taste in its traditional craftsmanship.
Japan	Delicate, lightweight, detail-oriented, value-for-money. Its decision-making mode belongs to the crowd brainstorm and considers it highly detailed.

The product design in different countries is deeply influenced by their culture. Over the accumulation of the time, unique cultural aesthetics have been formed. Local people also have a set of their own aesthetic appreciation standards for products. According to the design culture of different countries, we can clearly distinguish the differences between European and American countries and Asian countries. However, as the world tends to understand the eastern culture, the aesthetic standards of product appreciation will be different for the representatives of the both sides of the Straits, Japan and Korea, even if Asian countries and East Asian cultural circle.

How to systematically analyze and explain the connotations of different cultures has always been the goal of scholars. Scholar Hofstede (1997) believes that there are quite obvious differences in people's attitudes, tendencies, emotions and expressions among different countries or nationalities, and these differences are rooted in culture.

### Cultural Dimensions

In order to understand the traits of different cultures, Hofstede studied the cultural features of IBM employees in 64 countries from 1978 to 1983. The research results show that there are patterns for cultural differences in different countries. Hofstede believes that the differences originate from different values. Therefore, it is described as five Cultural Dimensions as follows:

- Power Distance:** Refers to the degree to which people respect and accept the unequal phenomenon of power distance in a culture. A culture with a high power gap tends to be centralized and vice versa, to be equal.
- Individualism vs. Collectivism:** Refers to the degree to which people define themselves in terms of the group or organization they belong to in a culture. It refers to the tendency toward Individualism or Collectivism in the culture.
- Masculinity vs. Femininity:** Refers to the degree to which people distinguish between roles and expectations of both sexes in a culture. Masculine culture refers to the traditional gender difference traits, rational, extroverted and oriented to substantial interests; Feminine culture refers to break down gender differences and overlap gender roles, emotional, family-oriented, introversion and affection.
- Uncertainty Avoidance:** Refers to the extent to which most people prefer to deal with unclear and unpredictable situations

with formal and explicit activities in a culture. The higher the score of Uncertainty Avoidance, the more the ethnic group tends to be satisfied with the status quo and tends to escape unclear things.

- (e) Long-Term Orientation vs. Short-Term Orientation: Refers to the extent to which people are influenced by certain values such as thoughts for a long time in a culture, that is, the degree to preserve their own cultural and etiquette traditions. Taking Asian countries as an example, Confucius's Confucianism occupies an important position.

Table 2: Hofstede's Dimension of Culture Scales  
(Data Source: <http://www.geert-hofstede.com/>, 2003)

Culture	Power Distance	Individualism	Masculinity	Uncertainty Avoidance	Long-Term Orientation
	PDI	IDV	MAS	UAI	LTO
China	80	20	66	30	118
Japan	54	46	95	92	80
South Korea	60	18	39	85	75
Taiwan	58	17	45	69	87
USA	40	91	46	62	29
Asia(China, Japan, Korea, HK)	60	24	55	60	85
World	55	43	50	64	45

From Hofstede's research results, as shown in Table 2 above, we can find that in the PDI dimension, China has the highest score, which reflects that China's current society is still inclined to centralization; in the IDV dimension, Japan has the highest score, which indicates that Japanese nationality tends to individualism; in the MAS dimension, Japan has the highest score, which indicates that Japanese society tends to be masculine and rational. In addition, Taiwan tends to be both emotional and rational in this part; in the UAI dimension, the scores of Japan and Korea are higher, which shows that Japanese and Korean nationality tend to be satisfied with the status quo in the face of uncertainty avoidance; in the LTO dimension, the scores of all four countries are quite high, which clearly shows the extent to which countries in Asian region have been influenced by traditional ideas for a long time.

Cultural Dimension Theory is widely used in the analysis of differences between countries. In the study of how cultural factors affect interface design, Scholars Evers & Day find that cultural preferences do affect users' acceptance and satisfaction for products.

### Cultural Marker

Different from the viewpoint of cultural dimensions, scholars Barber & Badre (1998) defined the term "Cultural Marker" in the study of cultural features in interface design, which refers to commonly used and possibly preferred interface design elements in the certain ethnic groups. Cultural markers can be regarded as the individual feature markers of interface design elements, including colors, fonts, symbols, etc. It is believed that cultural markers will directly affect the user's operational efficiency. Therefore, through the identification and analysis of cultural markers, it will help to understand the differences in the interface design between different cultures.

### THE ROLE OF NEW LANGUAGE IN R&D OF PRODUCTS

The research of future design leads consumption. For the R&D of products, this is actual an issue of contemporary culture and technological creativity. Viewed from today's design, designers must have a deep insight of the entire society's cultural background and have a clear knowledge of the development status of such areas as politics, economy, technology, national culture, the people's aesthetic accomplishment and international exchange. ( shown as Table 3)

Table 3: Analysis and Its Basis Theory  
(Data Source: Collated by This Research)

Analysis Item	Basis Theory	Analysis Method
Values	Cultural Dimensions	Research, In-depth Interviews and Field Study of Relevant Scholars
Preference of Visual Elements	Cultural Marker	The Eye-catching Features of the Products Selected by the Audiences
Perceptual Demand of Product Image	Kansei Engineering	Sensory Assessment of Adjective Vocabulary by Audi

Designers should think of the trend of design. Only from this height can they grasp the development trend of society. But the guidance of the trend is usually difficult for us to grasp and predict, which results in the lagging of a series of links of products

such as R&D, production, sales and feedback. Futurology and ergonomics, two emerging scientific knowledge system will provide us with certain help. The two theories are taken as objects of research and practice and are applied in the R&D of future product design to solve the human's confusion in life and work and grab the early opportunities of the market.

For example, the form design language of products is an important way to create images of products, which can create a certain atmosphere through the dimensions, shapes, proportions of products and their mutual relationships, thus arousing different emotions such as exaggeration, implication, fun, joy, relaxing and mystery in customers so that they will have a psychological experience and feel a sense of intimacy and success, and a certain image of the products can be established. A symmetrical right-angled geometrical shape can highlight the preciseness of a structure, which can create a solemn, peaceful, elegant and lively atmosphere. A round can highlight the concept of harmony, sameness and inclusiveness and create a complete and free atmosphere. A curve can create a dynamic model and make the audience feel the strength of life, which can create a heated, free and warm atmosphere. A free curve is close to the natural form and full of life elements, which can create a simple, natural and environment-friendly atmosphere. A smooth curve is properly flexible, with rigidity in flexibility, which is suitable for the rhythmical and simplistic effects pursued in modern design. The unusual asymmetrical beauty can create a magical effect and bring an extremely great visual shock and avant-garde sense of art to the audience. With model methods such as variation and asymmetry, we can create an avant-garde and pioneering atmosphere. The symbolic significance of modeling semantics is also reflected in such aspects of products as rank, quality, fun and fashion. To name some examples, exquisite details can reflect the excellent quality and craftsmanship of the products. Through the overall modeling and locality modeling, the grade and uniqueness of a product can be reflected. In the design of electrical appliances, machinery and hand tools, the modeling semantics can also express the symbolic significance of safety. The complete and plump overall form, the structure with a fine workmanship and detail treatment will all bring a sense of safety. A rational size and a safe design to avoid wrong operation will make one feel safe psychologically and physiologically.

Table 4: Initial Adjective Vocabulary  
(Data Source: Collated by This Research)

Japan	Taiwan	Korea	China
Textured	Technological	Innovative	Digital
Functional	Fashionable	Thinness	Portable
Quick-adaptable	Tasteful	Compact	Top-level
Minimal	Simple	Fashion	Elaborate
Charming	Delicate	style	Trendsetting
Convenient	Durable	Colorful	Individual
Individual	Brand-new	Handy	Flimsy
Adorable	Popular	Particular	Fashionable
Frivolous	Spiffy	Function	Eye-catching
Epochal	Distinct	Smart	Noble
Progressive	Individual	High Tech	Intelligent
Original	Laconical	Curvaceous	Classic
Easy	Light	Smooth	Boutique
Secure	Lovable	Palmary	Reserved
Angry	Classic	Shine	Luxurious
Exquisite	Ultrathin	Cute	Elegant
Gorgeous	Senior	Charming	Cute
Expressive	Young	Sport	Alternative
Advanced	Commercial	Crazy	Dynamic
Lineal	Leisure	Magic	Cool

From Table 4, we can see that the adjective vocabulary of the same meaning varies slightly from each other in terms of the words used in different countries. From the preliminary view of adjective vocabularies that describing the functional level, "Technological" is used in Taiwan; "Digital" is used in China; "High Tech" is used in Korea; "Functional" is used in Japan. It will result in different usage of adjectives, and has a great relationship with its cultural background and language diction. From the perspective of Japan and Korea, The development of its product research and development is relatively faster than that of Taiwan and China, therefore, it belongs to new technology and new function at the functional level. In addition, China uses the meaning of "Digital + Technology" in its diction.

In addition, this study is used to test the adjective vocabulary of emotional preference, and the initial selection is good-looking and like. The difference between the two words is that the taste may feel that the product is "good-looking" but not necessarily "like" by the individual. Therefore, the final adjective vocabulary will be confirmed after the experts have discussed them.

It is important in design language that design of "spiritual domain" and "soft service" is based on such viewpoint and a correct sequence. The key to the application of design language is uniqueness, universality, truthfulness, consistency and specific fields. Conceptual design methods have such characteristics such as design, concept and business planning, which will become fixed methodology as well as the direction of joint efforts of a company's management, decision-makers and designers. After

all, there is a lot of gap between design language and the unpredictable market changes. Designers can shorten the gap through the expression of design language, which was difficult to be achieved by conceptual designers in the past.

In the 18th century, the German aesthetic scholars' proposition on the concept of aesthetic feeling was based on the aesthetic experience of the subject's perceptual capacity and they believed that aesthetic feeling was not only derived from the experience of daily life. The feeling and judgment of aesthetic feeling are also different from each other, and will be related to personal preferences, life fields, knowledge and so on.

On the whole, aesthetic response is a series of processes of accepting perception, conducting cognition, generating love and finally making preference judgments according to the observer's different personal attributes; aesthetic ability is influenced by everyone's living environment and various social factors, which results in everyone having different aesthetic experiences and preferences for the same thing. Further, it can be said that things with aesthetic appearance can satisfy people's basic needs, bring people a pleasant psychological condition, and also promote people's pleasure when using products.

In the book of Aesthetic Judgment Development Research , it is mentioned that there are four main principles for the selection principle of stimulants in the aesthetic judgment(Cui, 1992).

- (a) Exemplary Principle: Aesthetic stimulants must be recognized as the most valuable model work so as to have the possibility to trigger the in-depth judgment.
- (b) Principle of Cultural Differences: A complete theoretical framework of aesthetic development should cover cultural differences. When selecting aesthetic stimulants, the representative works of different cultural traditions should be included. (Table 5)
- (c) Principle of Style Differences: Selecting aesthetics stimulants should include works of different styles, so as to observe whether the respondents have unbiased appreciation attitude.
- (d) Principle of the Evolution of the Times: Selecting aesthetics stimulants should include the style developed by the evolution of the times.

Table 5: Adjective Vocabulary of Different Cultures  
(Data Source: Collected by this research)

Culture	China	Japan	Korea
Common Adjective Vocabulary	Classical	Classical	클래식 Classical
	Style	Style	스타일 Style
	Individuality	Individuality	개성 Individuality
Adjective Vocabulary1 (Technical Level)	Technological	Textured	혁신 Innovative
Adjective Vocabulary2 (Emotional Level)	Tasteful	Charming	정취 Charming
Preference Vocabulary	Favorite	好きだ	좋아한다 Like

### EXPLORATION OF NEW LANGUAGE FOR FUTURE PRODUCT DESIGN

The innovation language for product R&D includes visual form, man's behaviors, green design, etc. By analyzing the connotation of corporate culture, business strategy and design philosophy, manufacturing level, etc., various product symbols are encoded. Together with the forms, colors, texture, ergonomics and technological factors of products, we will express the functional elements of the products and illustrate the characteristics of products. For example, the visual form of products is a conveying medium loaded with information. The form factors of products endowed by the designer are an accumulation of experience of designers over the time, which show the basic nature of general design symbols. A good product image is established based on an intermingle between the form of the product and semantic symbols of functions to reflect the product spirit behind the material surface of visual forms. It is conveyed through the imagination of users in product psychology and satisfies the sub-consciousness of users in the interaction between man and products. While satisfying the demands of users, it can fulfill the emotional values of the product. Nowadays what is worth mentioning is environment protection, which has become one of the important design languages in the contemporary era. Green design is a design philosophy and method with an aim to save resources and protect the environment. There are also design language in other fields such as fashion style, national characteristics and traditional characteristics. Special cultural factors can also become an element of design language. Preciseness and safety will also be transformed into images and functions by the designers through the aforesaid semantic expressions. Meanwhile, designers will explore the potential of semantic symbols, blend the themes such as humanity,

technology and environment protection into the design semantics to convey the care of designers about the society and their pursuit of a bright future.

While designers are integrating the functional and aesthetic requirements of products, they also comprehend the design language and fully grasp the demand resources of future design. Through an investigation of perceptual image of products, they find out the preferences of customers in images. By adopting a model combining the depiction of connotation and extension, they will confirm the form characteristics of the product and apply statistical analysis to raise and discuss the concepts of product model and perceptual image, establish a matching model for perceptual image between users and designers and explore the key techniques and research methods. Finally, we will find out the correspondence between the perceptual image in the mind of customers and the product form Table 6. New values will be infused into products by blending man's perception into the product design to innovate the design language.

Table 6: Culture Traits and Symbolism of Artifacts Products  
(Data Source: Chen Meicen, 1992)

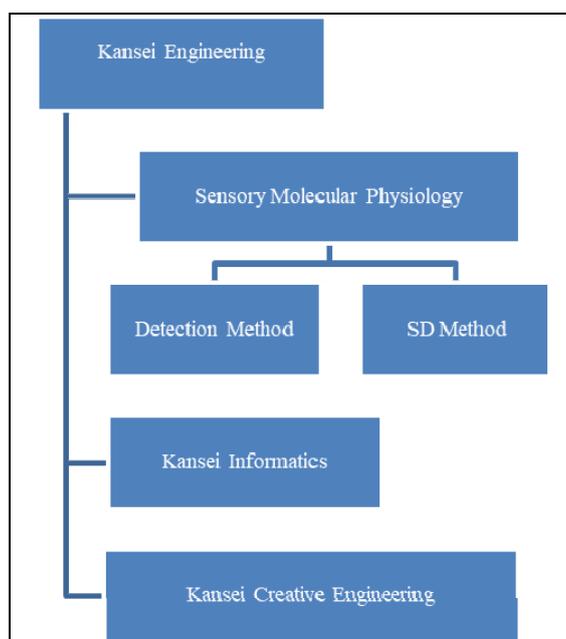
Type	Description
Shaping Traits	Nature shape, geometric form composition, borrowing modification form.
	Symbolization: Through the evolution of the times, the organic and geometric forms in shaping are often endowed with new meanings.
Material Traits	Local common product materials will be used in different materials according to regional differences.
	Symbolism: It likes the material of gold and represents the symbol of wealth; diamond is the symbol of nobility and magnificence.
Shape and Structure Traits	The use of utensils and changes in the concept of related things will change the shape and structure of the utensils.
	Symbolism: Shape and structure can reflect the social significance and philosophical thoughts at that time. The shape of inner circle and outer square alike represents the cosmology of ancient philosophy.
Colour Traits	The color habit of a region culture can be seen from its nationality. If the national character is full of ebullience, its product color is often bright and colorful; if the public emphasizes seriousness and precision, its product color tends to be conservative and pure.
	Symbolism: Different cultures have quite different views. Yellow, for example, represents dignity and elegance in the East and has a positive connotation; while in the West, it tends to have a negative connotation.
Structure Traits	In addition to function, the external structure of the objects is followed by the pursuit of aesthetics.
	Symbolism: The East and the West have different views on the structural proportion. The West pays more attention to the proportion of gold, while China also integrates the advantages of organic curve for the curve of artifacts in addition to reasonably calculating its proportion.
Life Behavior Traits	Life behavior becomes a unique culture through the accumulation of the time, and the image of its behavior and the utensils used will also become the representatives of culture.

By applying semantic differential and statistical methods in Kansei engineering, we will establish a scientific norm for product modeling based on the product images preferred by users, thus explicitly exploring the relationship between the product images preferred by users and product model, so as to facilitate the unfolding of design conception scheme (Figure 1). Meanwhile, under the precondition of guaranteeing product's functional demands, we will coordinate the internal mechanism and external image of products so that materialized technical design and artificial industrial design will be unified organically in product design. The product design thought which blends material functions of products into their overall model and image has facilitated the upgrade of product design concept and innovative design of products.

Nowadays the issues on innovation language at the following levels are to be studied by enterprises:

- (a) The concepts of new perception such as comprehensive values.
- (b) Improvement of the internet era and demands of customers.
- (c) The emerging of complex systems such as robots and universe fulfillment.
- (d) The necessity of effective design techniques in the era where there are a lot of cultural contents.

Considering that these are essential to the design of 21<sup>st</sup> century, we need new design directions. We will initiate new design directions based on the conceptual design and create new language leading design for designers.



Source: This study.

Figure 1: Schematic Diagram of Kansei Engineering Application.

### CONCLUSIONS

The innovation language of future design is developed to adapt to the objective situation of rapid development of science and technology and address the challenges faced by the human society from economy, politics, culture and technology. Through far-sighted thinking, future design aims to lead the welfare of people today and future generations which have not yet come true. It can be said that innovation language of design is a series of unique methods. Through the methods and theories, the “design mechanism” will be unfolded. Therefore, the application of conceptual design language and theories is an important part of the overall theory development. The innovation language of conceptual design will lead the comprehensive and strategic design mechanisms.

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