Emotional Design Research of Tableware in Chinese Restaurants

A research on interrelationship of tableware, emotion and culture

by

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ABSTRACT

The process of this study involves conducting empirical tests on consumer's emotional responses toward tableware designs by statistic measurements (PrEmo), including both Chinese and American cultures. The objective to this study is to research the correlation between consumers' cognitive analysis of Chinese tableware designs and their emotional responses. The author proposes that the correlationship between consumers' cognition of Chinese tableware and emotional responses will lead to a new opportunity in the industrial design industry. Fifty-seven people responded from sixty-seven invitations to join the research project at Chinese restaurants in both China and America. Throughout the process of coding and organizing the survey data, a finding shows that there is a connection between consumer sensitivity toward the products and their emotional bonds to the assigned product designs. The data showed that more people in China are expending greater effort in choosing suitable tableware designs compared to the people in the U.S.

Key words: Emotion, Cognition, Culture, Tableware design, Chinese restaurants

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Chapter 1

Introduction

Chinese cuisine has become increasingly common in a majority of countries in the past two decades. The number of Chinese restaurants also has been growing tremendously everywhere around the world, particularly in the U.S. Most of the time, Chinese tableware plays an important role in terms of contributing and emphasizing the pleasure of Chinese cuisine and its attendant dining experience. Not only does this dining experience serve as a complementary product of Chinese cuisine, but it may be seen as a manifestation of the quintessence of Chinese culture. Chinese tableware is described as one of unique among world tablewares by Westerners. This tableware not only compliments the owners, but it also enhances the beauty of the exquisite meals. On the other hand, oriental style tableware design has risen as a new important topic in the industrial design field due to the ever increasing demand for new ideas and products in the market.

Statement of the thesis

This cross-cultural qualitative study of Chinese tableware compares usage at Chinese restaurants in the U.S. and China. The objective of the study and the primary design research emphasis in this study is to find out the correlationship between the rational analysis of Chinese tableware consumers and their emotional responses toward the Chinese tableware they use. The restaurants selected for the study are distributed in various places in both countries (China and the U.S.); both traditional and modern style restaurants were selected in order to increase the probability of a more diverse result. This study approached its objective to research expressive tableware designs and cultural implications in several ways: the comparison of Chinese restaurants in China, the comparison of Chinese restaurants in the U.S., and also the comparisons of the data collected in China and the U.S.

Expressive design, an essential part of industrial design, is highly emphasized in this study. This study measured different styles of tableware designs to explore this topic. PrEmo, a non-verbal measurement, was used to evaluate consumer reaction. PrEmo is an across-cultural

language-independent measurement that can apply in any study to simplify and standardize the process of measuring participant reactions. There were 12 emotional response samples for each tableware design. This was applied to 57 research participants who were asked to pick the closest choices that represented their responses to the tableware design they used while dining . PrEmo is the most suitable method to measure the emotional responses statistically and accurately in this study -- although 12 emotional samples may not seem to represent all the exact feelings of the population. Therefore, the quantification and scalability of emotional feelings is an appreciable challenge in this study.

The better understanding of cultural differences will help industrial design companies produce more effective results in international business and emerging markets. Industrial designers can be encouraged to take negative feedbacks found in the responses made in this study into account for their future design efforts.. Strategists or business analysts for catering industry should also consider connecting greater importance on cultural and emotional concerns when they expand the international market.

A non-verbal emotional measurement and IRB approved questionnaires that incorporated the psychological, neurological, marketing, and economical concerns were used in this cross-cultural study. Research participants' emotional responses toward the product designs were also studied in order to discern some expressive design concerns. We found that sensitive cognition could be considered as a predictor for stronger emotion responses in both positive and negative ways. Apparently, people who have the cultural and historical knowledge about Chinese tableware easily make an emotional connection toward tableware compared to people who do not possess similar knowledge about Chinese tableware.

Significant of the study

According to a previous study, urban Chinese consumers increased their spending on food by an average of 17% per year (Alan Hallman, 2010,) and there is a 45-50% growth in luxury market per year in China (China National magazine) This denotes a significant trend indicating Chinese cuisine has become increasingly popular. . The essence in the success in marketing

Chinese cuisine to the world is not only focus on the taste, but also the business owners' strategies in advertising the image of Chinese restaurants, including such elements as decoration from various provinces in China, interior designs, employee uniforms, and, of course, the Chinese tableware they use in restaurants.

As the Chinese economy has grown positively and rapidly in recent years, Chinese consumer purchasing power has also risen tremendously and resulted many large corporations in food and beverage industry to expand their markets domestically and internationally (such as South Beauty and Jade Garden). These corporations would focus on multiple levels in terms of successfully branding their domestic and international markets. The newest concentration is considering the niche, in this case, the consumer's emotional bonds to products based on cultural diversity. Thus, these corporations need to offer the appropriate tableware that is representative of their company's visions and missions in order to meet the goal of higher satisfaction level of customers from different cultures. The goal of this study is to determine the association between the cognition of Chinese tableware consumers and their emotional responses toward Chinese tableware. This is approached through collecting data to analyze the weak points of each assigned tableware design,; this will allow industrial designers to refer to the data and improve future culturally appropriate tableware designs.

Research background

This research is established within the context of global marketing focused on consumers as well as the information channel (Shoemaker & Lewis, 1999) that plays an important role in global marketing. Cultural Influence on consumer behavior is a social process involving cultural signs and symbols (Bocock, 2000), The present study is highly focused upon the customers' emotional responses, especially where satisfaction isinvolved. Consumer satisfaction plays an important role in finding emotional effects (Rosen & Surprenant, 1998) yet satisfaction is a more complex, affective state rather than something that may be reflected by using a simple cognitive measure (Oliver, 1996; Westbrook, 1987).

Emotion is believed to be a predictor of consumer behavior because people who are under

the influence of positive emotions tend to share the positive experience with others, while negative emotions may result in complaining behavior (Bagozzi, Gopinath, & Nyer, 1999; Liljander & Strandvik, 1997). Several previous emotion and cognition research results are quoted as references, which provide research background information within the fields of psychology, neurology, marketing economy, and design methodology.

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Research objects

The main purposes of this study are to conduct the empirical tests on consumer emotional response to Chinese tableware design and to measure consumer attitudinal response to tableware using experiences to determine if there is a potential relationship linking their cognitive responses and emotions together. This study also seeks to compare tableware designs across two different cultures (US and China), to discern any differences on their emotional reaction based upon facial expression and verbal conversations. Participant responses regarding their feelings aboutproduct design will also be studied for revealing potential emotional design issues. The findings could possibly become useful indicators for future design i considerations and may be instructional for restaurant managers to improve their serving strategy.

Research Justification

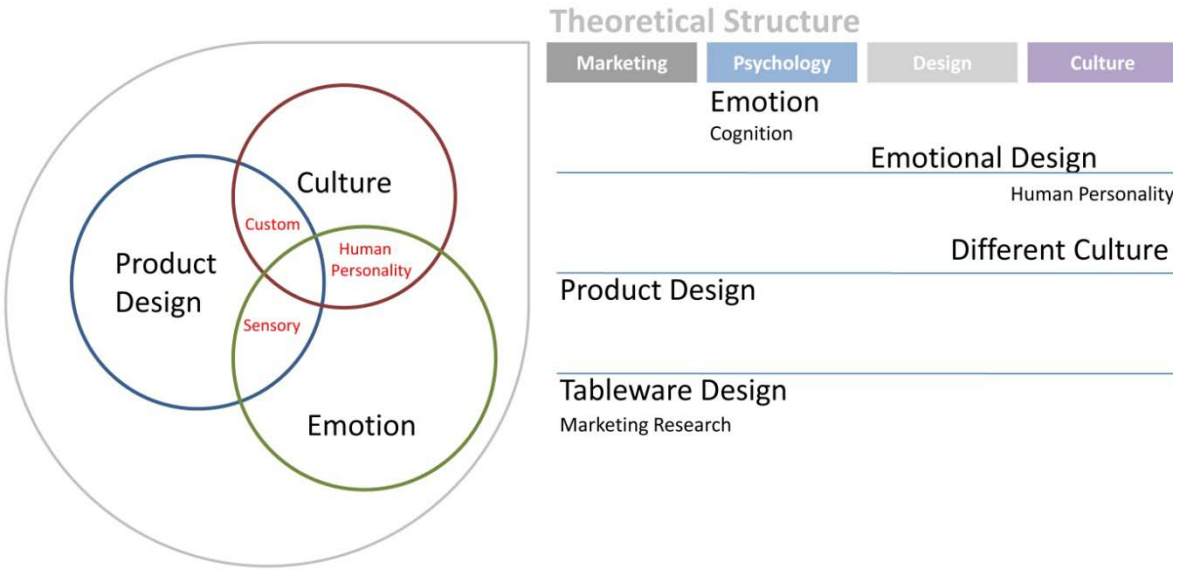

Figure 1.1 Conceptual Framework

In this particular conceptual framework, all three factors: emotion, product design and culture are tightly joined with one another. Human emotion is often thought to be directly related to personality, thus a common factor in human cultures. Therefore, if emotional sensory response s related to human behavior in the cognitive response to different products, then product design could become a recognized part of cultural practice development.

There are four major parts of this theoretical structure. Marketing research of tableware could enlarge all kinds of product design and eventually focus on the global market. A detailed analysis of emotion and cognition is applied in the study to research the culture and emotional issues. The main objective of this study is to compare and determine the relationship between emotional design and culture, assuming that the different cultures will lead to different emotional experiences with the designed products, especially in tableware designs contained in this study.

Hypothesis

Culture difference affects emotional preference in tableware product design.

Consumer attitude contributes to the compliance through emotional responses on product

design. Thus, tableware design influences customer cognition in emotional ways.

Chapter 2

LITERATURE REVIEW

Emotion and cognition

The interaction between Emotion and Cognition from neurology:

The circuitry of emotion and cognition are moderately overlapped. The anatomical fact is well demonstrated in two-way interactions between affect and cognition that is likely to occur in complex mental processes (Davidson, 2000, pp.89). On the other hand, emotion's effect on Cognitive Process Flashbulb Memories Study showed that emotion helps people to remember events in a more detailed and accurate way (Conway et al., 1994). Furthermore, cognitive structures of different emotions ("appraisal profiles") were obtained by having subjects rate a number of emotions or mood words in relation to a number of appraisal components. (Nico H Frijda, 1987)

The major techniques used in this study for the purpose of finding the cognition-emotion relationship are examined and their potential for providing evidence of appraisal rather than knowledge is also evaluated. (Richard S. Lazarus, 1988) Generally, our everyday experiences can leave us little doubt that our emotions can influence the decisions we make, much as the outcome of our decisions can influence the emotions we experience. Yet, the complex interplay of emotion, cognition, and decision-making has received limited systematic attention in empirical research. (Norbert Schwarz 2000)

According to Oatley's explanation, emotions provide a biological solution to certain problems of transition between plans within systems with multiple goals. Their function is to accomplish and maintain these transitions and to communicate them to others and us. In planning, transitions occur at significant junctures when the evaluation of success in a plan changes (Keith Oatley, 1987). Meanwhile, emotions are viewed as having evolved through their adaptive value in dealing with fundamental life-tasks. Each emotion has unique features: signal, physiology, and antecedent events. (Paul Ekman 1992) As a methodology reference, the PrEmo

measurement was applied in this study.

Research trends of Emotion and Cognition:

Throughout time, philosophers relentlessly attempt to understand how and why our feelings and emotions come to influence our memories, thoughts, and judgments (Barbule, 2006). For instance:

1960s:

Emotion was regarded as sources of noise in an otherwise rational system of information processing (Eich & Schooler, 2000).

1970s:

The advent of new experimental techniques for studying cognitive processes like attention, perception, and memory still could not reverse the trend that overlooked studying emotion as an object (Houwer & Hermans, 2010).

1980s:

Since 1980s, revival of research interest in the interplay between cognition and emotion has transpired (Izard, Kagan, & Zajonc 1984; Watts, 1987).

1990s:

Because of emotion's potent and predictable effects on tasks as diverse as word recognition and risk assessment, cognitive researchers began to accord emotions with respect in the 1990s (Eich & Schooler, 2000)

2000s:

Increasing research requirements and complexity has led to a renaissance of reconsidering cognition and emotion and how they interplay with each other (Eich & Schooler, 2000).

Today:

Cognitive and neurobiological sciences developments have shown that the relationship between cognition and emotion is more interdependent than separate. (Barbalet,2006).

We first review the main points in the dispute regarding whether emotion is primary and independent of cognition (Zajonc), or secondary and always dependent upon cognition (Lazarus);

then, we will suggest that the dispute is largely one of definition.

Given that definitional disputes seldom can clarify substantive, theoretical points, we suggest employing a variety of questions regarding cognition-emotion interaction. (Thomson Reuters, 2011) Eyewitness-Memory Study shows that the memory may not remain accessible and accurate when people experienced intense emotion during the encoding of an event (Eich & Schooler, 2000).

Importance of emotion in design

Design and emotion have gained significant interest within design practice and design research over the last ten years. Hence, we can no longer ignore the important role that emotions play in the generation, development, production, purchase, and final use of products that surround us. (Deana Mcdonagh, Paul Hekkert, Heroen Van Erp and Diane Gyi ,2004) Based on philosophic aesthetics and through the analysis on reason and emotion of design, it was demonstrated that emotion is an original impetus of art, and reason is a requisite for image generation. Furthermore, in part, human behavior is invariably based on certain philosophic aesthetics (Li ying-tong, Chen han-qing, 2007)

Ausra Burns (2000) demonstrated that emotions affect people's feelings toward the urban environment based on diversity of the environment. More attention has been devoted to the "emotional responses and experiences" that products can bring about rather than on their functionality (Mugge, Schoomans, & Schifferstein, 2009).

We take as our starting point the distinction between two perspectives on products: designer and user. There is often a mismatch between these two perspectives, but both matches and mismatches constitute a major source of the affective reactions that people have to products and their interactions with them. Such reactions are wide ranging and include not only (relatively short-term) emotions but also longer-term reactions such as moods, preferences, and attitudes. (Don Norman, 2003)

Product design that provides aesthetic appeal, pleasure, and satisfaction can greatly influence the success of a product; emotion influences and mediates specific aspects of

interaction before, during, and after the use of a product. These affective states regularly impact how a user manipulates and explores a user interface in order to support a desired cognitive state. (Frank Spillers, 2004)

However, all of these authors shared the realization that all products affect the emotions of users—emotionally neutral products do not exist because there is no such thing as a neutral interface. The truth is any design will elicit emotions from users, or convey emotions from its designer, whether or not the designer intends this or is even conscious of it. Thus, interfaces can be designed for neutrality, but the effect is not neutral in the sense that it allows emotions to be neglected; instead, it is a choice with its own implications (Desmet, P Hekkert, 2009)

In other words, we relate to our environments emotionally. Though design theory sometimes fails to appreciate the complexity and the variance of human experience, for anyone concerned with design, cultivating the ability to recognize, listen, and respond to what people undergo and feel is vital. (Ausra Burns 2000)

Human culture and product design

According to Levine, the general definition of culture is “connoted a process of cultivation and improvement” (Levine, 1917, pp. 6); Matsumoto’s specific definition of human culture is “defined as an unique meaning and information system” (Matsumoto, 2007). Apparently, “culture” has several different meanings. For instance, Alfred Kroeber and Clyde Kluckhohn listed 164 definitions of culture (Hofstede, 1991). There comprise three basic definitions of commonly used culture:

1 A taste based on excellence in the fine arts and humanities. 2 An integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for symbolic thought and social learning.

3 A set of shared attitudes, values, goals, and practices that characterizes an institution, organization, or group.

On the other hand, anthropological culture has two different meanings:

1 The evolved human capacity to classify and represent experiences with symbols, and to

act imaginatively and creatively.

2 The distinct ways that people living in different parts of the world classified and represented their experiences, and acted creatively.

There is no hesitation that design does play an important role in cultural identity as designers gradually realize that contemporary global design does not compare favorably to that of the past (Deana Mcdonagh, 2004). Culture has been all encompassing for centuries, and it is how our ancestors from all civilizations everywhere understood culture. They did not separate cultures from the rest of life and human endeavors, yet mutually reinforcing creativity and productivity (Deana Mcdonagh, 2004). The cultural aspects of products reflect variant social components, from politics, economy, technology, arts, religion, and culture (Neville Stanton, 1998). However, in the research of culture, it is true that special meanings are found in the everyday experience.

Presently, designers also have begun to understand the role of design in culture and to develop the method and process such as ethnography, user-observation, scenario-based design, and the like for applying cultural factors on design. The characteristics of humanity confined to a specific historic background are reflected in the product since the products are created and designed by the human beings to express the information of a specific culture. Aspiration for cultural cohesion and the facts of the global market are balanced in the way that products are designed in synch with the modern rituals of daily life. (Kevin McCullagh, 2007)

The characteristics of humanity in a certain historic background reflect in the product since products are created and designed by human beings to present a special culture. The cultural aspects of products reflect the different social aspects, from politics, economy, technology, arts, religion, and culture. (Feng Wei, 2009) The conception of design culture, its areas, characterizations, and structures were put forward based on the definition of culture and the relation among culture, design and product. The essence, purpose, and cultural property of product design were introduced as well as the culture of the product. The interaction between culture and design was presented. It is emphasized that man can play a critical part in the industrial design, in order to guide product design and enhance the cultural values and trademark

included in products. (WEI Xiao-hong, LIU Zi-jian, 2006)

Considerable data for testing two hypotheses are collected from 159 Taiwanese managers working in six each of Japanese-, Taiwanese-, and U.S.-owned, size-matched, computers/electronics firms in Taiwan. Overall, the results are consistent with national culture influencing these firms design of, and employee preference for, seven management-based controls, though there also are certain anomalies.(Chee W. Chowa, Michael D. Shields, 1999)

The roles are examined what organization design and culture play in the varying levels of success experienced by advanced manufacturing technologies. (Raymond F, Zammuto and Edward J, O'Connor, 1992) One effective tool at the disposal of the designer is the application of suitable metaphors within the design process. In order for a metaphor to work it would need to be localized and culturally rooted (Evers, 2002; Nielsen and Del Galdo, 1996) It has been widely acknowledged that established design approaches (with established standards, rules, and guidelines) often fall short with respect to issues relating to the cultural context. Cross-cultural user research has shown a significant difference in results by testing individuals from various socio-cultural backgrounds on accuracy and duration of task performance, user experience, and user satisfaction. (Siu-Tsen Shena, Martin Woolleyb, Stephen Prior, 2006)

The development of information systems is no longer limited to a few locations throughout the world. They are developed in countries whose business environment and culture are very different. Culture, we suggest, is therefore an important variable in the development process and may introduce its own set of problems, the consequences of which may range from project failure to delayed delivery of working systems. But culture's influence may be indirect, difficult to isolate, and difficult to measure. For these reasons, perhaps, there has been no research that directly addresses culture's role in the systems analysis and design process (Barry Shore, 1995) Nationally and internationally, designers are challenged with meeting the needs of diverse populations, and they are faced with the dilemma of how to integrate culture in the design of information and communication technologies (Patricia A. Young, 2007) A properly internationalized product, which extracts all cultural context, can well contend with multiple languages and cultural conventions (Luong et al., 1995; O'Donnell, 1994; Taylor, 1992).

Culture effect on emotion

Basic human nature is similar at birth; different habits can make us seem remote. (San Zi Jing)

In a recent review of the emotion recognition literature, Elfenbein and Ambady (2002) found that recognition is generally more accurate for perceivers from the same cultural group as the emotion expressers. Several related studies between Asian and American are now completed. In two studies conducted in Hong Kong, we found little evidence for such expresser culture effect. (Sau-Lai Lee, Chi-Yue Chiu, Tsz-Kit Chan, 2005) We tested the hypothesis that "good feelings"—the central element of subjective well-being—are associated with interdependence and interpersonal engagement of the self in Japan, but with independence and interpersonal disengagement of the self in the United States. Japanese and American college students (total N = 913) reported how frequently they experienced various emotional states in daily life. For Americans, the reported frequency of experience was considerably higher for positive emotions than for negative emotions, but for Japanese it was higher for engage emotions than for disengaged emotions. (K Kitayama, HR Markus, M Kurokawa. 2000) We can conjecture something similar happened between China and US.

We propose that different cultural models of agency may influence various aspects of emotions, thus accounting for cultural variance. We must admit that we have always thought of our own emotions as natural, not cultural. The reason, we suspect, is that our emotions were socialized to fit the cultural realities within which we lived for many years. (Batja Mesquita and Hazel Rose Markus ,2002)

Emotions are typically considered to be private, internal biological events. However, emotions may also be regarded as social and cultural processes. Grounded in the emerging field of cultural psychology, research on emotions as social and cultural processes seeks to discover a variety of ways in which culture and the mind interact with and shape each other. (HR Markus, S Kitayama - 1996)

Emotion has represented a tantalizing subject for social scientific inquiry because it

appears to tell us about our true selves; the self that, after all the thinking and interacting are done, feels the welling-up of rage, the tender pangs of love, and the black emptiness of despair. (Tom Boellstorff and Hohan Lindquist 1984)

Culture can affect human personality based on self-congruence especially on human personality (Garolera, Benet-Martinez, & Aaker). Culture is a “packaged” variable. (Whiting, 1976) Cultures are complex systems of shared beliefs, values, norms, and expectations. This shared system of meanings shapes the social environment by influencing social structures, traditions, and informal and institutionalized practices, thereby also influencing individual psychological processes and social behavior. (Larissa z Tiedens, Colin Wayne Leach 2004)

Culture is identified as an environmental factor that affects consumer behavior (Roth, 1995).

Most researchers now agree that emotion-based communication processes are part universal and part culture-specific. Furthermore, there have been lively debates regarding the extent and nature of culture’s influences on emotion expression and recognition, the language of emotion, and cognitive emotion processes. (Nathan Y, David M, Chikako I, Kristie K, and Sachiko T, 2001)

Emotional design of tableware and culture

Tableware design reveals the technology and the industrial processes of an age and the material in vogue. (Jeremy Myerson, Sylvia Katz 1990) Cuisine includes a series of cooking traditions and practices associated with a specific culture. Regional cuisine is often named after the place where its culture originated. The ingredients presented in the food primarily influence the regional cuisine, which are available locally or through trade. Regional cooking laws also have a strong influence on the cuisine. A traditional cuisine is a coherent tradition of practices accumulated from daily life over a long period of time in a specific cultural region.（R.L. Hhobson，1905）

China has begun to lose its special culture characteristics due to the rapid development of

the globalization. Within an increasingly globalized system of design, production and consumption, the research, design and engineering of products are mainly controlled by the outsides forces and for outside markets. The product design is merely the low-value imitation of existing products in the domestic market and the local design is now playing an imitative role. The final consequence is not originality in design, but rather it is on course to become a culture of the copy (Zhang Hongxing 2008). The culture of China is one of the world's oldest and most complex cultures, which includes language, mythology, and spirituality, literature, music, arts, martial arts, architecture, cuisine, and leisure. However, Chinese designers are gradually realizing the importance of the uniqueness of product design and are developing a graphic language that can both maintain China's traditions and incorporate international influences. Nevertheless, majority of the designers try to attain more inspiration from Chinese traditional culture elements into their product designs.

For instance, chopsticks as the most famous Chinese tableware have a long history. Chopsticks originated in ancient China as early as the Shang dynasty (1766-1122 BCE), replacing the fork. (Needham , 1986) The earliest evidence of a pair of chopsticks, made of bronze, was excavated from the Ruins of Yin near Anyang, Henan, dated roughly 1200 BCE. (Lu, Maocun, 2004)The earliest known extant textual reference to the use of chopsticks comes from the Han Feizi, a philosophical text written by Han Fei (c. 280-233 BCE) in the 3rd century BCE. (Needham, Joseph. 2000)

The first chopsticks were believed to use for cooking, stirring the fire, serving or seizing bits of food, but not as dining utensils. Chopsticks were begun used as dining utensils during the Han Dynasty. Chopsticks were considered rather more akin to lacquer ware and more “friendly” than other sharp eating utensils. It was not until the Ming Dynasty that chopsticks had became standard use for both serving and dining.

The metaphor of the two sticks stands for “Yin” and “Yang” in Taichi theory, which means the sky and the Earth. The top one stands for sky, which is more active; the bottom one stands for earth, which is assistant and steady. The finger separates them when using, which means “San Cai” including sky, people and earth. The major three parts in the world are harmony with

each other. That's the original meaning of chopsticks. In that way, people absorb the spirit from the outside world when they eat. (Yi Jing)

Such tableware as chopsticks, fingers, and knives and forks have a cause-effect relationship with ways of thinking. The chopstick belongs to the culture of land agriculture, giving prominence to human relations, and rule by integrity. The finger culture represents the culture of mountainous regions and desert, attaching importance to religion and beliefs. The knife and fork culture is the culture of the sea and business, advocating democracy, freedom, and human rights (CAI De-gui and TIAN Chen-shan 2007)

Besides, regional cooking laws also have a strong influence on the cuisine because a traditional cuisine is a coherent tradition of practices accumulated from daily life over a long period of time in a specific cultural region (Jeremy Myerson 2008). There are two views to consider during the design of ceramic tableware. One of the views is the relationship between food and tableware, which the beauty of ceramic tableware lays in the form that represents the features of food. Beautiful tableware not only has a specific aesthetic appearance, but it is also complementary to the food. The other view is from the relationship between culture and tableware. For instance, materials are selected which have particular meaning in this special cultural region; the features of local architecture may be integrated into the design of tableware. Consumers from different cultures may have a different response to specific product types. This sensitivity has a relationship with the consumers' age, gender and the cultural significance of the product category. As designers, we are not only required to consider the user's physical and technological needs but also aware of the user's social and emotional needs. In other words, we must research users, watch them, listen to them, understand them... this is going to be very important for the future of design".(Feng Wei,2009)

The consumer will appreciate a product reflecting his/her own culture. Therefore, it was suggested that design should be recognized in a special cultural development strategy. (Zhao Ying, 2011) The consumer psychology in one culture, which is quite different from the others, should be studied so that the tableware satisfies the psychological need of consumers.

(Wenwang Jin, Pei Wan, 2009)

Chapter 3

METHODOLOGY

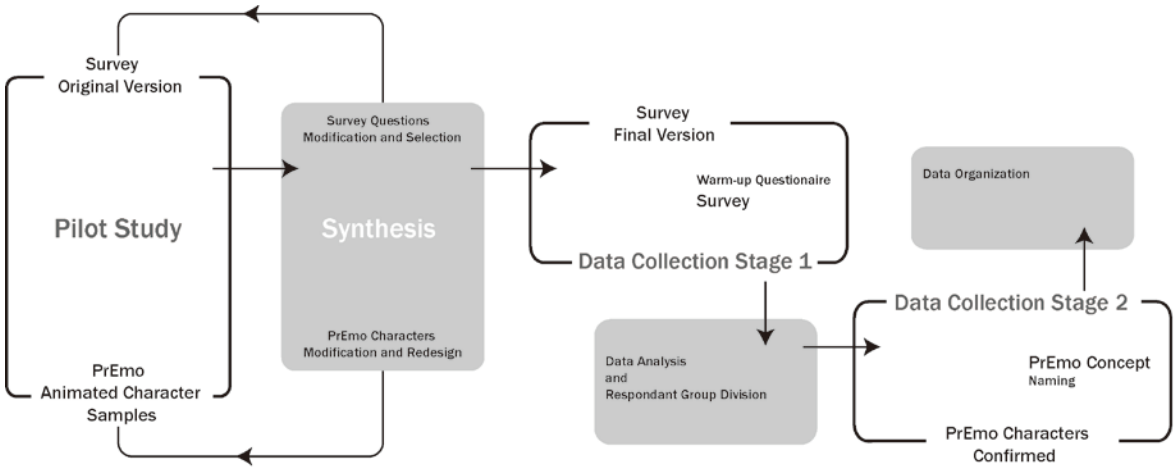

Figure 3.1 Design of Research

As the table shows, there are four steps in this research process: pilot study, synthesis, and data collection stage 1 and 2.

In the pilot study phase, both PrEmo animated characters samples and an original survey questionnaire were prepared. The PrEmo characters and the survey questions were modified and redesigned for the purpose of the proper way to express the study's objective. Then, the survey questions were also rewritten and 10 questions were chosen for inclusion in the final version survey: 3 warm-up questions and 7 primary questions. After selecting the list of the targeted markets and restaurants, the respondents were randomly chosen and divided into groups by their sensitivity to tableware. The fourth step involved confirming the PrEmo characteristics and to organize the data. .

Pilot Study

In order to explore consumer reactions, both qualitative and quantitative surveys were applied. The questionnaire could provide all the interviewers an overview of their emotional response toward the tableware. There were10 questions total, which were 3 warm up questions,

7 primary questions in two language versions (Chinese and English), focusing on tableware choice, product usage, and degree of satisfaction.

Then, PrEmo, an emotional measure instrument, was selected for the quantitative survey.

PrEmo is a non-verbal Instrument developed by the SUSA group. There are 12 emotion-based selections, which could be used to interpret emotion through animated characters. These animated characters were printed out and made into small pieces of sticky notes for consumers to choose to represent their reactions toward the various tableware designs.

Figure 3.2 Pilot study

Sampling Strategy

Figure 3.3 Target distribution

Several major brands of restaurants among the biggest cities in China such as Beijing, Shanghai, Guangzhou, and Tianjin were chosen to launch this survey. Generally speaking, Chinese restaurants in today's society prefer to use the least expensive and most convenient ways to run their businesses. For instance, disposable bamboo chopsticks are commonly used in

the majority of restaurants because they are convenient and low cost. The down side of disposable bamboo chopsticks is that their use is not environmentally friendly and also is not suitable for children to use. However, there are still a considerable number of upscale restaurants that prefer to sustain the old fashioned dining culture by using authentic and reusable tableware. For that reason, I chose some well-known restaurants that do serve proper Chinese tableware, which would fit the intent and scope of this research project.

Eight restaurants from four major cities of China were selected to launch this survey: Beijing, Guangzhou, Shanghai, and Tianjin. Fortunately, the majority customers agreed to participate in the survey; meanwhile, the associates and managers from the selected restaurants also offered their professional assistance to make the survey successful.

The participating restaurants included:

Beijing Quanjude Restaurant: 44 East Jiaomin Street, Dongcheng district, Beijing, China

Shanghai Suzhehui Restaurant: 300 Fangdian Road, Pudong district, Shanghai, China

Shanghai South Beauty Restaurant: 168 West Lujiazui Road, Pudong district, Shanghai, China

Shanghai Daiguanshan Restaurant: 269 Wujiang Road, Jing'an district, Shanghai, China

Tianjin Goubuli Restaurant: 16 North Shuishang Road, NanKai district, Tianjin, China

Guangzhou Yufumatou Restaurant: Hai'oudao, Panyu district, Guangzhou, China

In addition, several popular Chinese restaurants in Arizona also were chosen to launch the survey in the United States. Some of these restaurants have been in business for many years in the state and the rest are newly opened restaurants. These restaurants are popular among both Chinese and Americans communities regardless of their duration of taking place in the business. Again, the associate teams and managers of these restaurants offered their assistance to cooperate in making the survey successful.

The participated restaurants were including:

Mekong Palace: 66 S Dobson Road, Suite 120, Mesa, AZ, USA

Szechwan Garden: 5055 West Ray Road, Chandler, AZ, USA

Jade Palace: 9160 East Shea Boulevard, Scottsdale, AZ, USA

We randomly approached to Chinese and American customers and invited them to participate in the survey by taking the PrEmo emotional measurement and completing the questionnaire. This study aimed to make a comparison of tableware design across two different cultures and to determine whether there is any emotional difference regarding their dining experience with respect to their feeling construction and expression.

Questionnaire

There are two sections of questions (10 in total): 3 warm-up questions, 7 primary questions.

Warm-up Questions

What kinds of tableware do you like the best?

What kind do you use most frequently?

How do feel about the popular tableware?

The warm-up questions do not directly relate to the main purpose of the study yet were used for easier responses to the later and more specific questions. These questions would help the participants to get into the interview mood comfortably, easily, and could provide a brief overview of the tableware design field.

Warm-up questions are normally required for use in surveys in order to help people to prepare themselves what may be unexpected to them later in the survey. Previous experimental survey results have shown that questionnaires with warm-ups are exceptionally useful for those people who are unfamiliar or uncomfortable with the field of survey and research. However, it is not recommended that warm-up questions to be too long or too many in number. Thus, these three questions could help in dividing the design parts of tableware in the survey from questions that are general in nature to those that will yield more specific data later.

Primary Questions

Are you satisfied with the tableware that you were using?

Is there any design issue about which you are concerned as the most important of choosing tableware?

What would be the main reason for you to choose your answer?

Will you consider alternatives if the same product you preferred is more expensive?

Will you consider keeping using the same style of tableware?

What reason influences you to purchase new products?

Do you think tableware design helps to influence your dining experience very much?

These primary questions contained two main yes-or-no questions that directly related to the purpose of the research. These questions could help to regroup all the customers according to their responses and then discuss them separately while the other warm-up questions were used for helping interviewees to formulate their opinions clearly. Additionally, the participants' preference in style and price are also the factors to be considered in these questions because of their usefulness in market research analysis and future design implications.

Based on the questions, all the interviewees were categorized into two groups: people who are aware or highly cognizant of tableware design in their dining experience – the sensitive people, we call them "tableware fans"; and people who not aware or cognized of tableware design – the insensitive people, we call them "not tableware fans." There were two styles of features for interviewees to reflect their emotional feedbacks toward the tableware designs. After that, they were invited to use the PrEmo animated characters to show their emotions.

PrEmo Measurement

Figure 3.3 PrEmo Measurement

12 basic emotions 6 positive and 6 negative

The PrEmo measurement instrument was developed by SUSA group. According to SUSA, “Emotional design is to design a product or service with the intention to evoke predefined emotions” (SUSA group).

PrEmo is a language-independent measurement that not only can be applied to minimize the across-culturally Influence from cognition but also can be used to avoid of the issues involved in translation errors in different languages. All the interviewees were briefed about picking the emotion samples that best represented their responses to the questions from these twelve selections. By employing this survey instrument, accurate and believable data could be computed and organized while avoiding ambiguities that could otherwise arise from the conflict of different cultures.

Furthermore, animated characters can be modified or re-designed based on cultural difference or preferences. PrEmo normally utilizes stickers, which offer different facial expressions that are highlighted in different colors for easy recognition.

This study contained 6 positive PrEmo emotions designed with a black background and another 6 negative PrEmo emotions with a white background. They were designed for easy

recognition, and to be easily distinguishable from one another. The interviewees had the equal opportunity to pick one out of 12 PrEmo emotions stickers for their responses. They were also allowed to pick the same emotions stickers more than once to answer the questions. It appeared to be an easy way for the interviewees to participate in the survey through the “matching game” compared with the traditional paper questionnaire. Therefore, PrEmo is such a fun “do-it-yourself” intrigue that brings out the passion of people to participate in surveys.

All 6 positive PrEmo samples were shown in one stripe, and the other 6 negative PrEmo samples were shown in another stripe, therefore allowing the interviewees to compare each single one of the samples and pick the most representative one.

Figure 3.4 PrEmo Samples

Some other quantitative research methods are also used in data analysis such as Numbers of Emotions Reported (NEP) curves of different groups and cultures, P/N value bars and spider charts, etc.

Chapter 4

DATA ANALYSIS

Data Collection

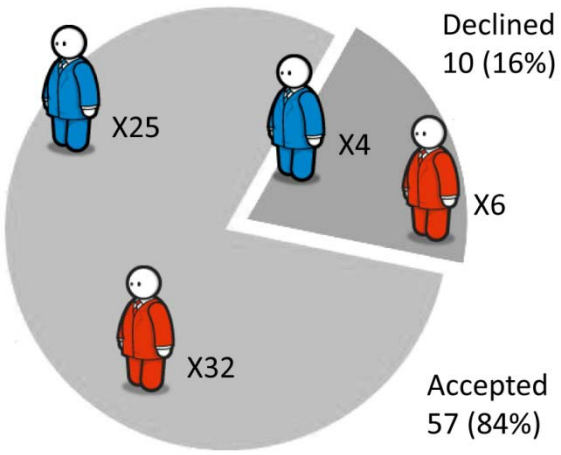

Figure 4.1 Respondents distribution

67 people were invited to participate in the study (38 in China; 29 in U.S.).
57 (84%) people (32 in China; 25 in U.S.) accepted my invitation.
10 (16%) of those invited declined to participate (6 in China, 4 in U. S.).

Data regrouping

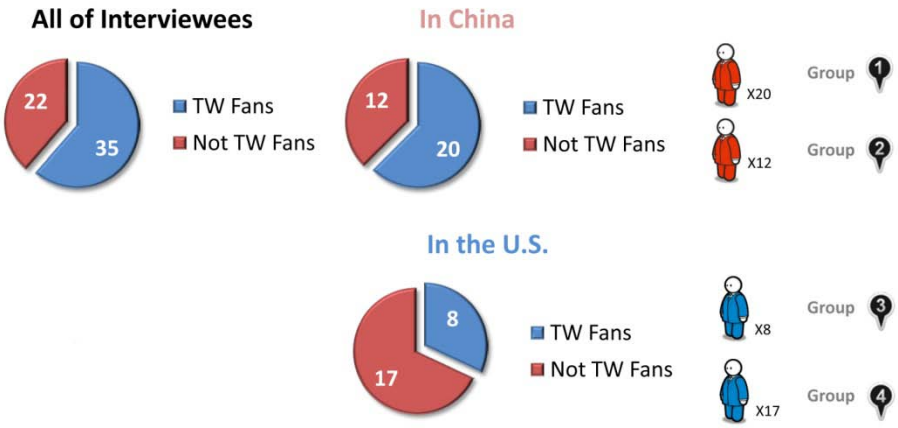

Figure 4.2 Data Regrouping

Pie charts are used in this study to show the data computed from the primary questions in the questionnaire.

The main concern in analyzing the data from the survey is the degree to which the participants think the tableware design influences their dining experience.

Based on the responses, majority of the participants mentioned they strongly think it does. There were a few who responded with further supportive information, which is their habit of choosing specific tableware for different dining environments. In this case, these people were categorized as “tableware fans” or “sensitive to tableware.”

The rest of the participants mentioned they are not concerned about tableware design nor do they think it influences their dining experience. This was generally because they would rather just focus on the taste of the food they ordered or other factors such as the services, the restaurant atmospheres, and the hygiene of their dining experience. In this case, these people were categorized as “not tableware fans” or “Insensitive to tableware.”

Based on the data gathered from the entire questionnaire,

28 interviewees are tableware fans.

29 interviewees are not tableware fans.

20 interviewees of 32 in China are tableware fans.

12 interviewees of 32 in China are not tableware fans.

8 interviewees of 25 in the US are tableware fans.

17 interviewees of 25 in the US are not tableware fans.

It could be seen that there are less tableware fans than not fans in total. In addition, more people are sensitive to tableware in China, and it seems more people are insensitive to chinaware in Chinese restaurants in the US.

Then all the respondents are divided in four groups to compare with each other later on:

Group1, tableware fans in China

Group2, not tableware fans in China

Group3, tableware fans in the US.

Group4, not tableware fans in the US.

Analysis tool

Figure 4.3 Emotion Distribution PrEmo Analysis

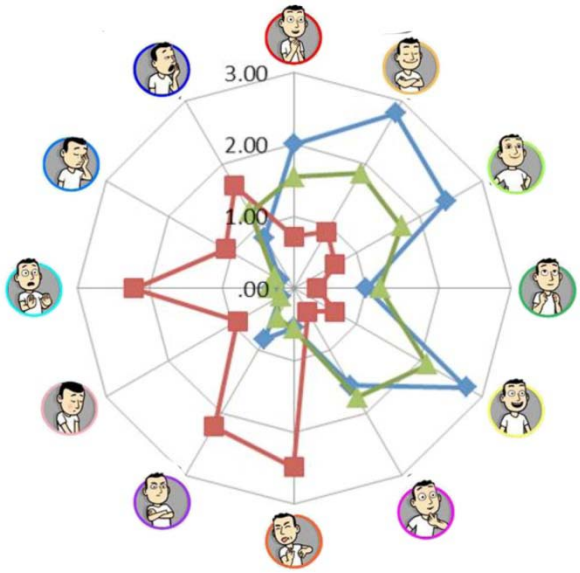

Figure 4.4 Emotion Distribution Spider Chart

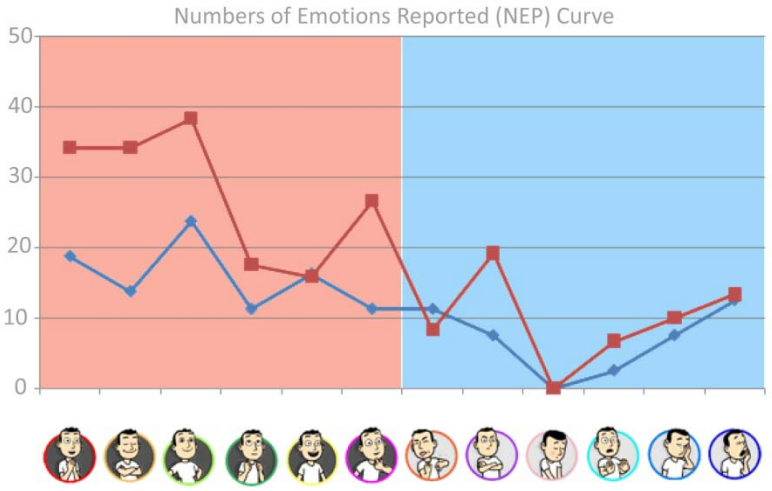

Figure 4.5 Number of Emotions Reported (NEP) Curve

Two variables of PrEmo data were being analyzed:

- Emotion Distribution Diagram

- Emotion arrangement by percentage in sequence Comparison will be made for four groups and two cultures.

All the PrEmo samples were arranged in a line, the 6 positive PrEmo emotions are in the left, and the 6 negative PrEmo emotions are in the right. A chart diagram is used to show how many samples they choose for each of the design features. Different samples are shown in different colors, which could easily visualize the distribution of the emotions. With this setting, it could be compared easily with each other. The specific number of interviewees was marked beside each bar to provide an accurate comparison.

Later, a spider chart was created to combine all different groups together in a single map to provide a better and easier distribution in understanding and comparing the results. In addition, the spider chart indicated that the larger area of the shape on the spider map is the stronger emotional reaction they have among the interviewees.

These two analysis tools supplement each other. The first tool shows an overall view of emotional distribution of each design. The second tool compares people's emotion in different groups or cultures by each single PrEmo sample. Both China and the U.S. flags were used as the

icons to show the country distribution on this emotional sequence and percentage curve.

Data organization

1. Emotion Distribution bar analysis

Participants responds: This provide a clear view of each specific data and also provide a more convenient way to view data distribution patterns for researchers

Figure 4.6 Tableware fans in Quanjude Restaurant, Beijing, China

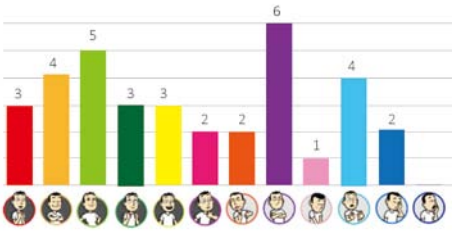

Table 4.1 Tableware fans in Quanjude Restaurant, Beijing, China

Figure 4.7 Not Tableware fans in Quanjude Restaurant, Beijing, China

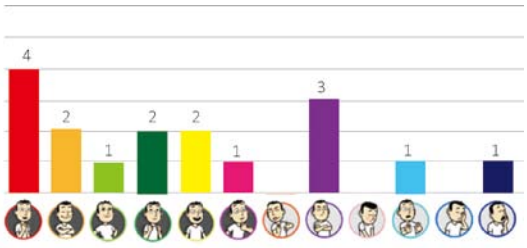

Table 4.2 Not tableware fans in Quanjude Restaurant, Beijing, China

All research subjects used the same kind of tableware in the same restaurants. We compared the two different groups with their sample choices. The larger the sample choice showed in the picture, the greater amount of the same type of sample choice was likely selected by people. To keep the balance of different numbers of different groups, the number of people was then divided by the ratio of the number of samples. For instance, there were overall 5 “Tableware Fans” (TF) and 6 “Satisfaction” samples were picked; and there were 3 “non-tableware fans” (NTF) and 5 same sample choices were picked. As a result, “NTF”s showed more satisfaction in that tableware than “TF”s even though the amount is smaller by comparison. We could compare the differences through the different groups of people between TF and NTF to find out the relationship of cognition and emotion toward product design.

In this method, we could summarize the different emotions showed in different cognition levels of people in term to determine the people who are more sensitive to tableware may show

different emotions when compared with the people who are insensitive to tableware. In addition, different specific design features, which dramatically emotion concentrated in one point are highlighted to reveal some design implication in the future.

Figure 4.8 Tableware fans in Quanjude Restaurant, Beijing, China

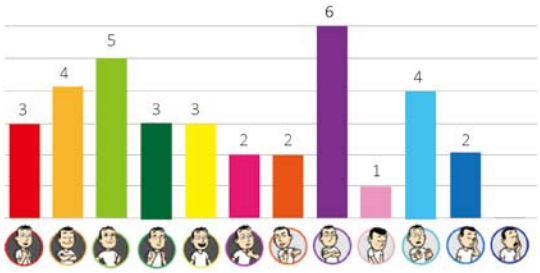

Table 4.3 Tableware fans in Quanjude Restaurant, Beijing, China

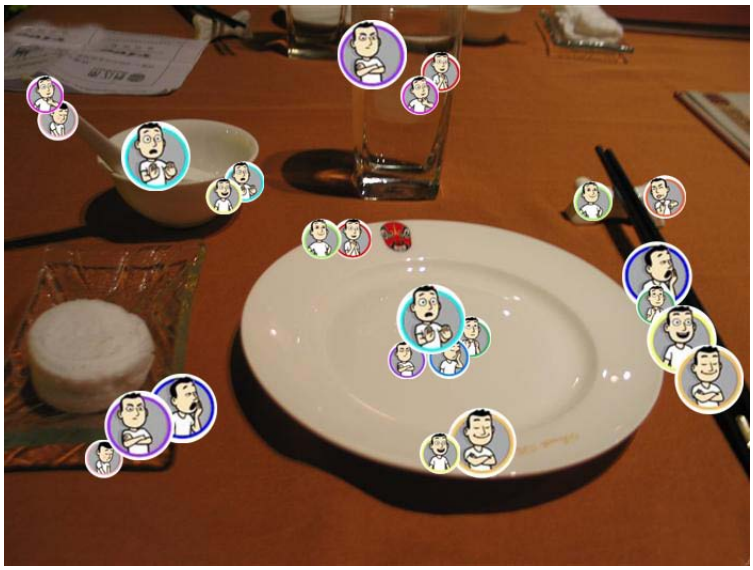

Figure 4.9 Tableware fans in Southbeauty Restaurant, Beijing, China

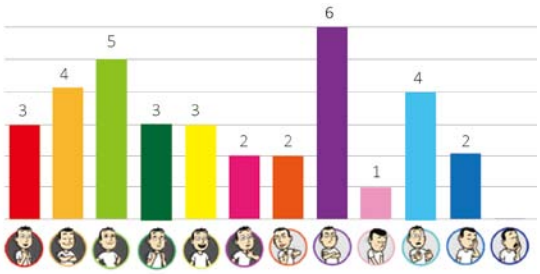

Table 4.4 Tableware fans in Southbeauty Restaurant, Beijing, China

We could find out which kind of tableware intrigue positive emotions most through the different tableware and also focus on which design part of tableware attracts most TF and NTF.

Both “tableware fans” and the “non-tableware fans” group in previous pictures clearly demonstrated people’s variable preferences to different styles of tableware. Through the comparison in the pictures, we could distinguish the different emotions from the same cognition level but different design features. In the end, we summarized the result of which kinds of design are suitable to different kinds of people.

2. Spider Chart analysis

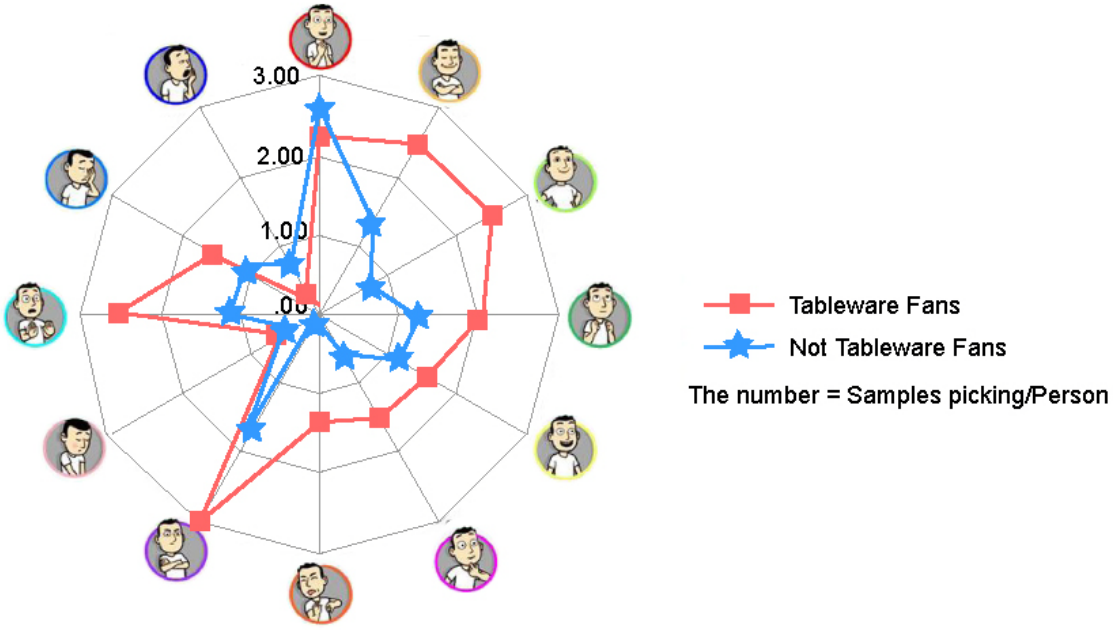

Table 4.5 Quanjude Restaurant, Beijing, China

The area of “tableware fans” is larger than “non-tableware fans” in the above spider chart. This information indicates people who are highly knowledgeable regarding tableware have stronger emotional feedback compared to the others. For “tableware fans,” they showed positive emotions slightly more than negative emotions. The highest frequency samples in this group are “angry” and “refuse.” The “non-tableware fans,” showed positive emotions to a greater degree than negative emotions and the most frequent sample is “satisfied.”

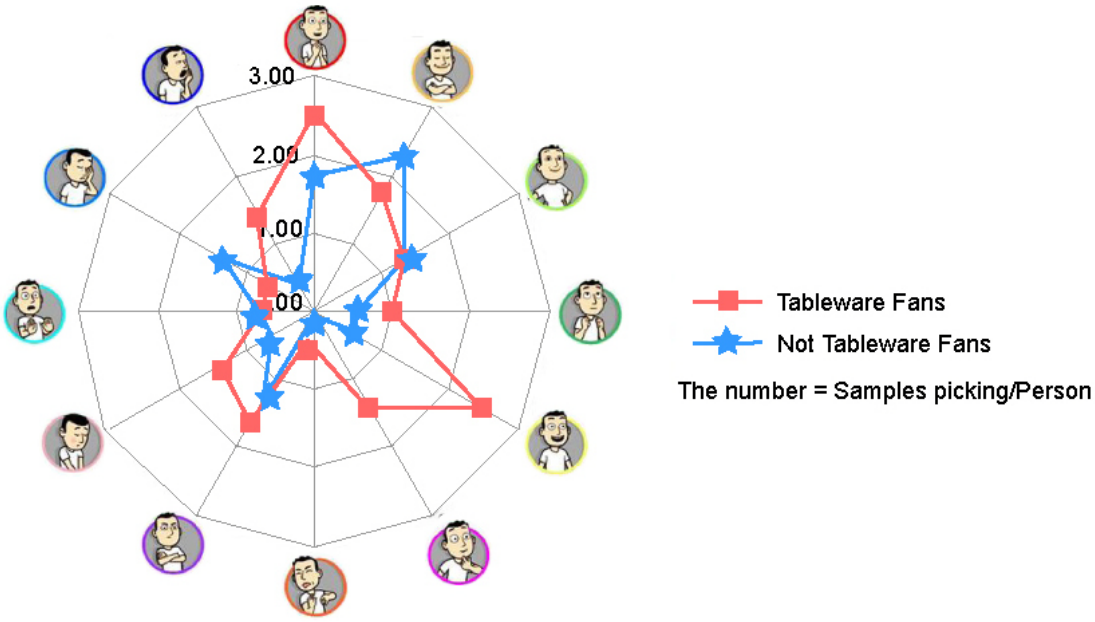

Table 4.6 Goubuli Restaurant, Tianjin, China

In this spider chart, the area of “tableware fans” is larger than the area of “non-tableware fans.” This information indicates people who are highly knowledgeable about tableware have stronger emotional feedback compared to the others. For “tableware fans,” they showed positive emotions more than negative emotions and the most frequent samples are “satisfied” and “joy.” The “non-tableware fans,” they showed positive emotions considerably more than negative emotions and the most frequent sample is “pride.”

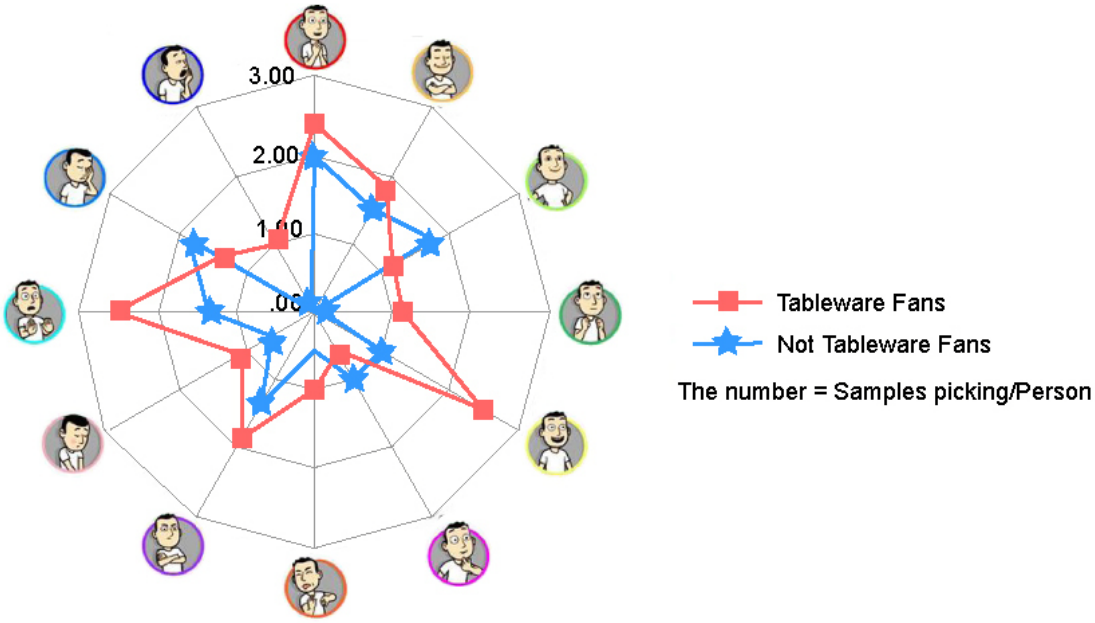

Table 4.7 Southbeauty Restaurant, Beijing, China

This spider chart showed the area of “tableware fans” is larger than “non-tableware fans,” which indicates the people who are highly aware of tableware have stronger emotional feedback compared to the others. For “tableware fans,” they showed nearly equal amount of positive and negative emotions; the most frequency samples is “joy”. “Non-tableware fans” showed positive emotions slightly more than negative emotions and the most frequent sample is “desire.”

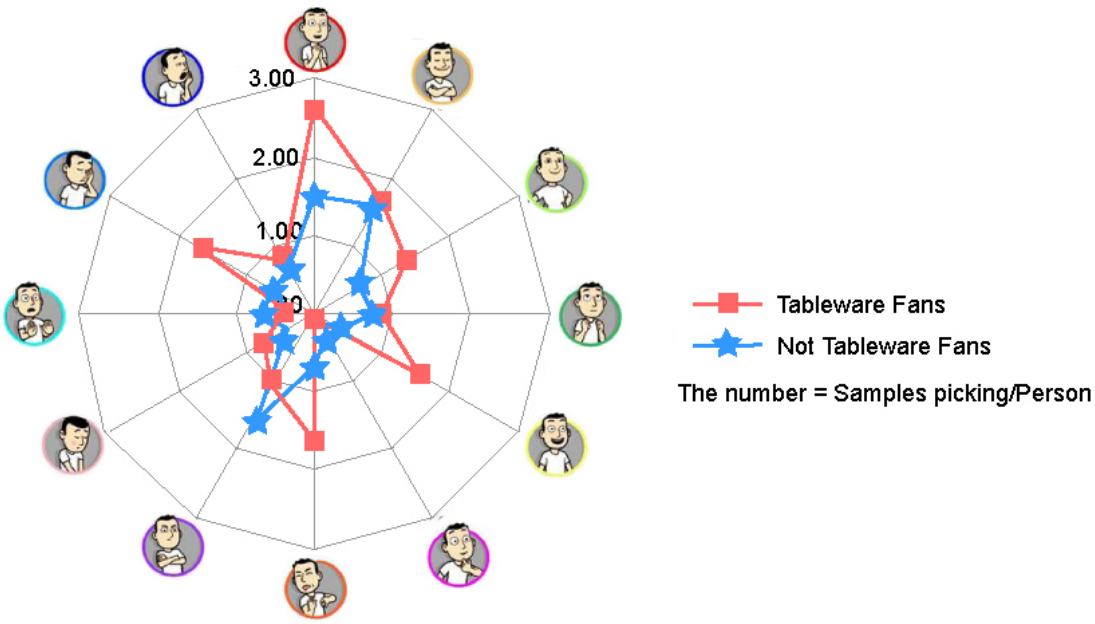

Table 4.8 Daiguanshan Restaurant, Shanghai, China

This spider chart showed that the area of “tableware fans” is larger than “non-tableware fans,” indicates people who are highly knowledgeable of tableware have stronger emotional feedback compared to the others. For “tableware fans,” they showed positive emotions more often than negative emotions and the most frequent sample is “desire.” For “non-tableware fans,” they showed positive emotions more than negative emotions and the most frequency samples are “angry” and “desire.”

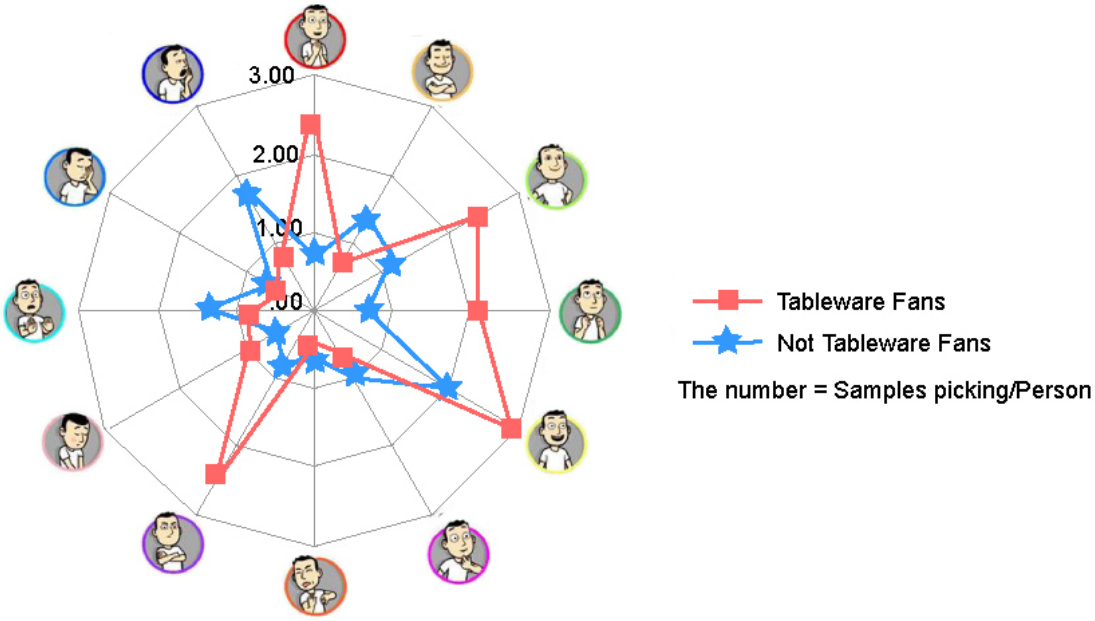

Table 4.9 Suzhehui Restaurant, Shanghai, China

In this spider chart, the area of “tableware fans” is larger than that of “non-tableware fans.” This indicates people who are highly aware of tableware have stronger emotional feedback compared to the people who are insensitive of tableware. Tableware fans” showed positive emotions more than negative emotions, and the most frequent sample is “joy.” “Non-tableware fans,” showed positive emotions more than negative emotions and the most frequent sample is “joy.”

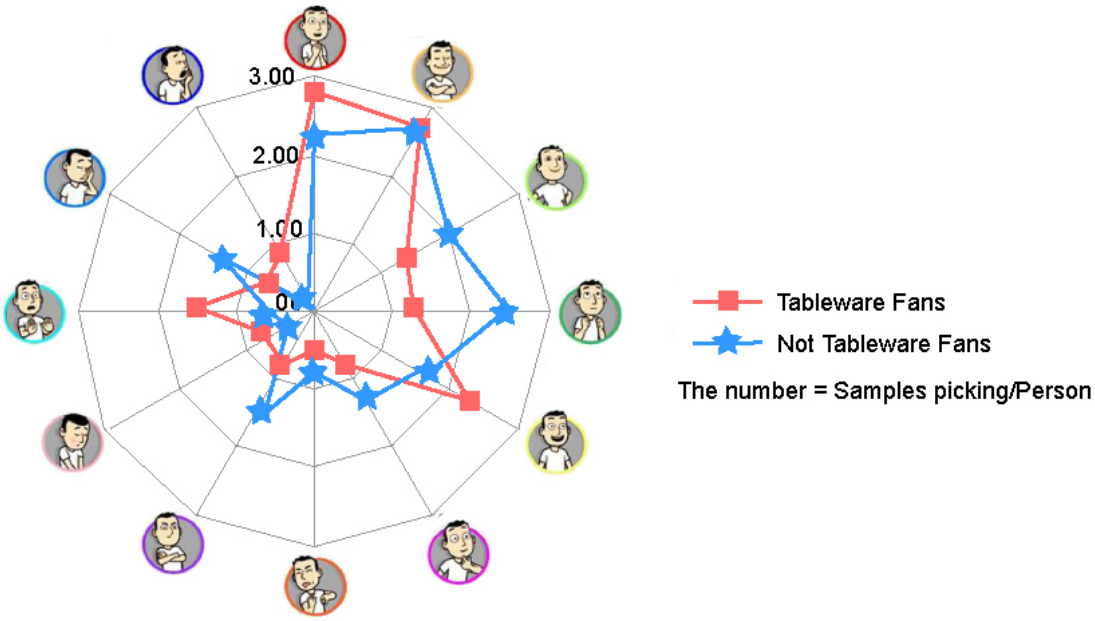

Table 4.10 Mekong Palace Restaurant, AZ, USA

In this spider chart, the area of “tableware fans” is approximately equal to “non-tableware fans.” This indicates people who are highly knowledgeable of tableware have similar emotional feedback compared to the people who are insensitive of tableware. “Tableware fans” showed positive emotions to a much greater degree than negative emotions, and the most frequent sample is “desire.” “Non-tableware fans” also showed positive emotions to a much greater degree than negative emotions, and the most frequency sample is “hope.”

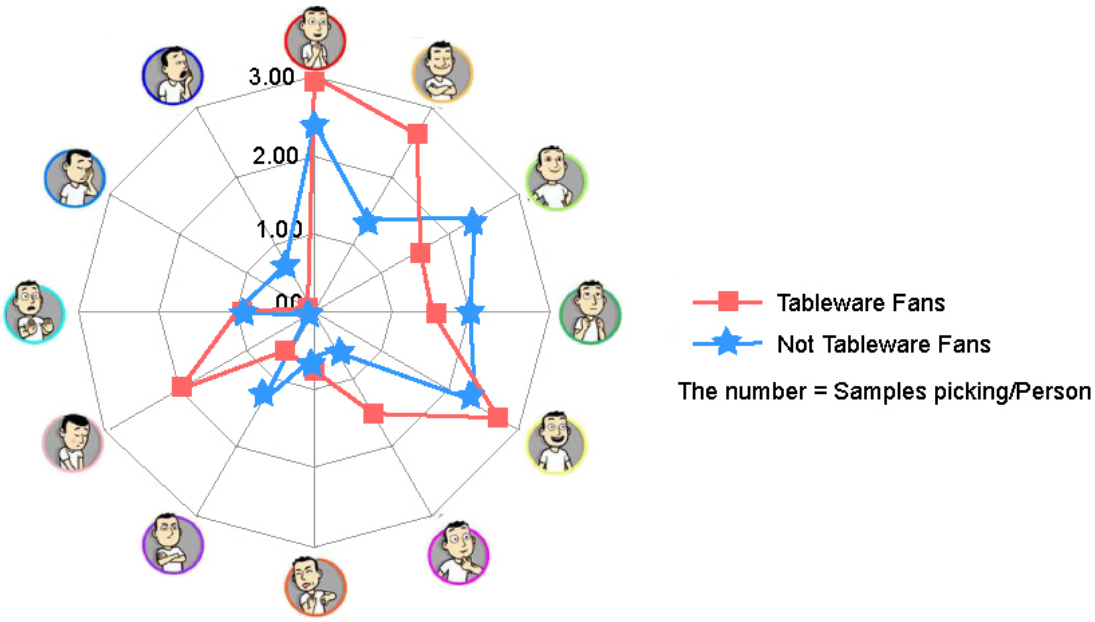

Table 4.11 Szechuan Garden Restaurant, AZ, USA

In this spider chart, the area of “tableware fans” is approximately equal to “non-tableware fans.” This indicates people who are highly aware of tableware have similar emotional feedback with the people who are insensitive of tableware. For “tableware fans,” they showed positive emotions to a much greater degree than negative emotions, and the most frequency samples are “desire” and “joy.” “Non-tableware fans” also showed positive emotions to a much greater degree than negative emotions and the most frequent samples are “desire” and “pride.”

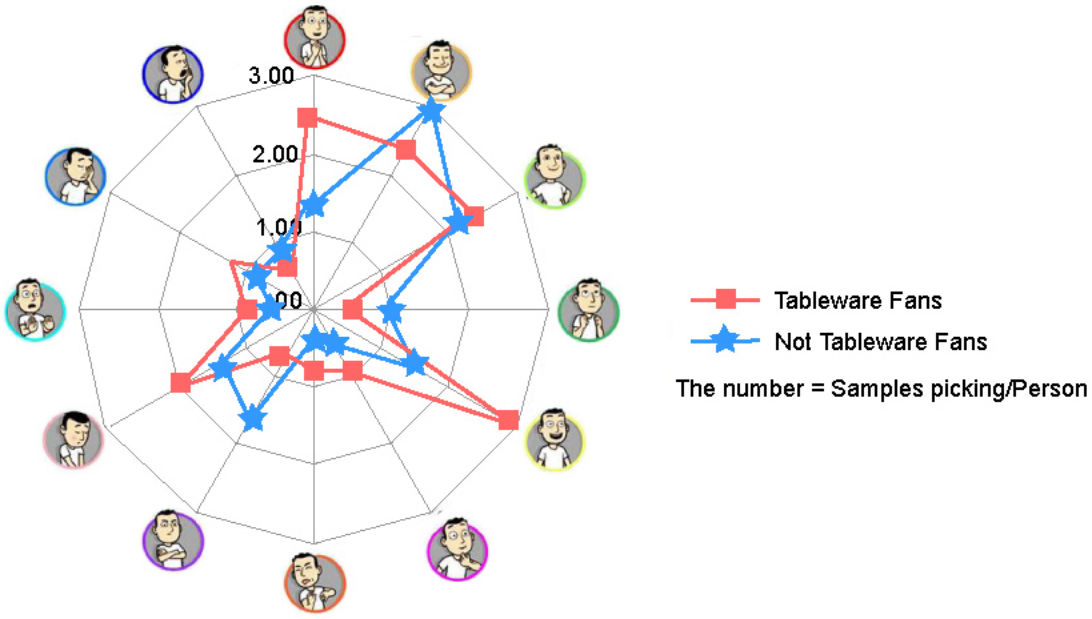

Table 4.12 Jade Garden Restaurant, AZ, USA

In this spider chart, the area of “tableware fans” is approximately equal to “non-tableware fans.. This indicates people who are highly knowledgeable about tableware have similar emotional feedback with the people who are insensitive to tableware. “Tableware fans” showed greater positive emotions than negative emotions, and the most frequent sample is “joy.” “Non-tableware fans” also showed positive emotions in much greater numbers than negative emotions, and the most frequent sample is “satisfaction.”

3. Numbers of Emotions Reported (NEP) Curve analysis

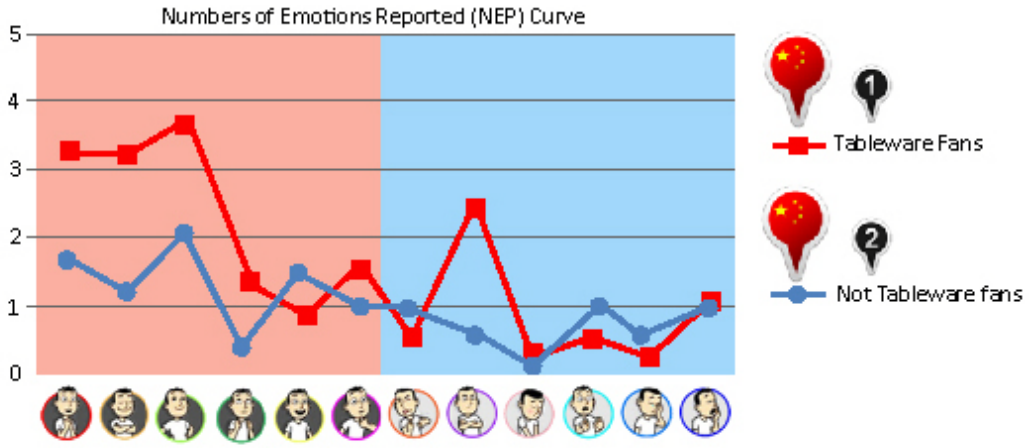

Table 4.13 NEP Curve of Chinese Interviewees

The above NEP (Numbers of Emotions Reported) curve shows that the red line (group 1) is much higher than the blue line (group 2), which indicates the Chinese "tableware fans" have stronger emotions than the Chinese "non-tableware fans." For Chinese "tableware devotees," the left part of the curve is higher than the right part, which suggests they have more positive emotions than negative emotions. On the other hand, for Chinese "non-tableware fans," the left part of the curve is somewhat higher than the right part, which suggests they have slightly more positive than negative emotions.

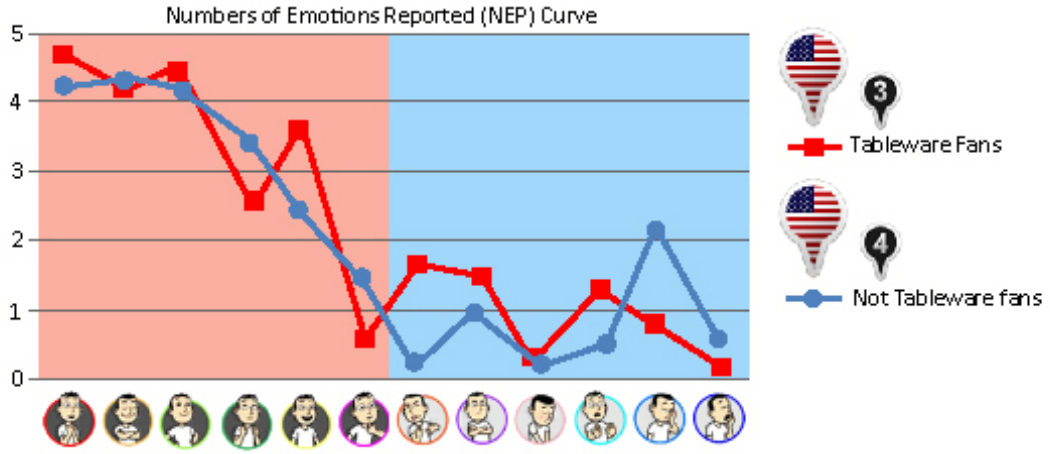

Table 4.14 NEP Curve of American Interviewees

This NEP (Numbers of Emotions Reported) curve shows that the red line (group 3) is approximately similar to the blue line (group 4), which indicates the American “tableware fans” do not have much stronger emotions than American “non-tableware fans. For American “tableware devotees,” the left part of the curve is much higher than the right part, which suggests they have considerably more positive emotions than negative emotions. On the other hand, for Chinese “non- tableware fans,” the left part of the curve is much higher than the right part, which suggests they have many more positive emotions than negative emotions.

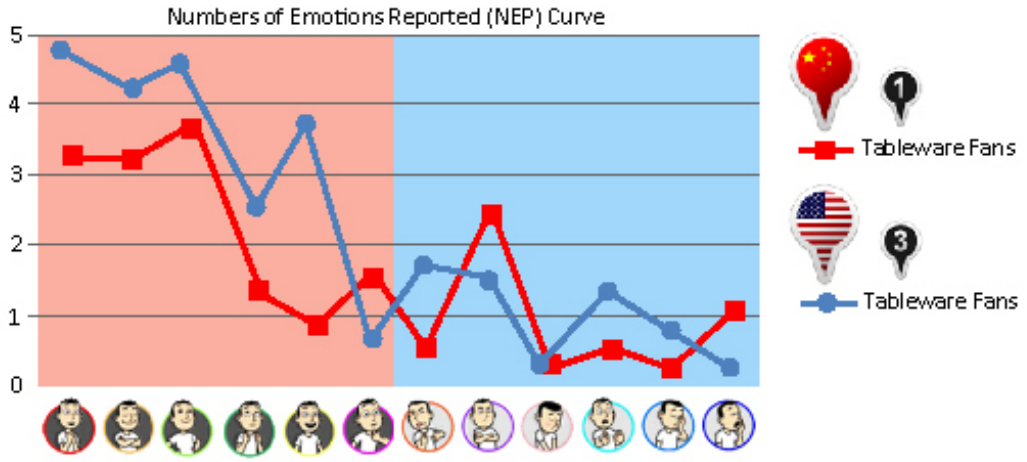

Table 4.15 NEP Curve of Tableware Fans in China and the US

In this table, the NEP (Numbers of Emotions Reported) curve shows that the blue line (group 1) is much higher than the red line (group 3), which it indicates the American “tableware devotees” have stronger emotions than Chinese “tableware fans”. For American “tableware fans”, the left part of the curve is much higher than the right part, which suggests they have much more positive emotions than negative emotions. On the other hand, for Chinese “tableware fans”, the left part of the curve is much higher than the right part, which suggests they have much more positive than negative emotions.

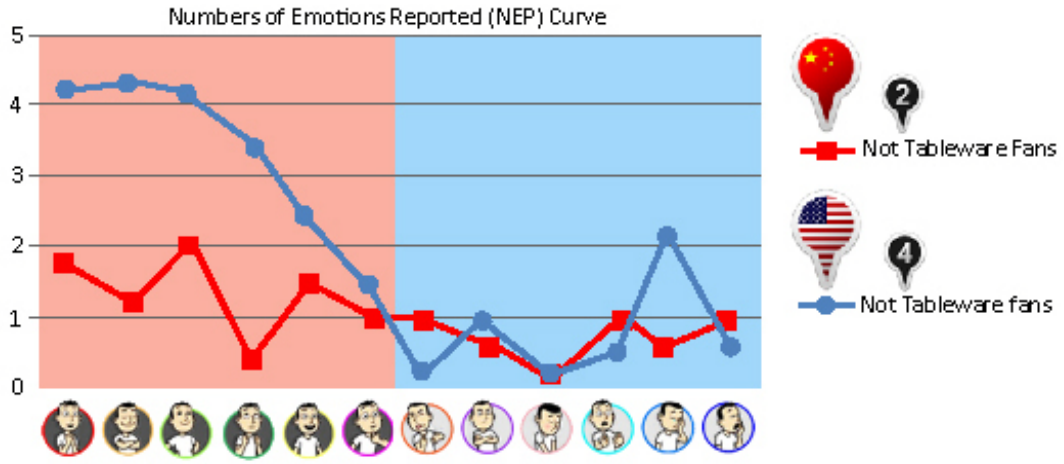

Table 4.16 NEP Curve of Not Tableware Fans in China and the US

In this table, the NEP (Numbers of Emotions Reported) curve shows that the blue line (group 4) is higher than the red line (group 2), which indicates the American “non-tableware fans” have stronger emotions than Chinese “non-tableware fans.”. For American “non-tableware devotees,” the left part of the curve is much higher than the right part, which suggests they have more positive than negative emotions. On the other hand, for Chinese “non-tableware fans,” the left part of the curve is slightly higher than the right part, which suggests they have slightly more positive than negative emotions.

4. Design features analysis

In order to discover the nature of emotional design response to different tableware, we simply divided the tableware into two groups: traditional style and modern style. For the restaurants that serve china plates and wood chopsticks, we labeled them as the “traditional tableware”; for the restaurants that serve plastic plates and plastic chopsticks, we labeled them as the “modern tableware.” Then, we compared the emotion differences of the “tableware fans” and “non-tableware fans” toward the two types of tableware.

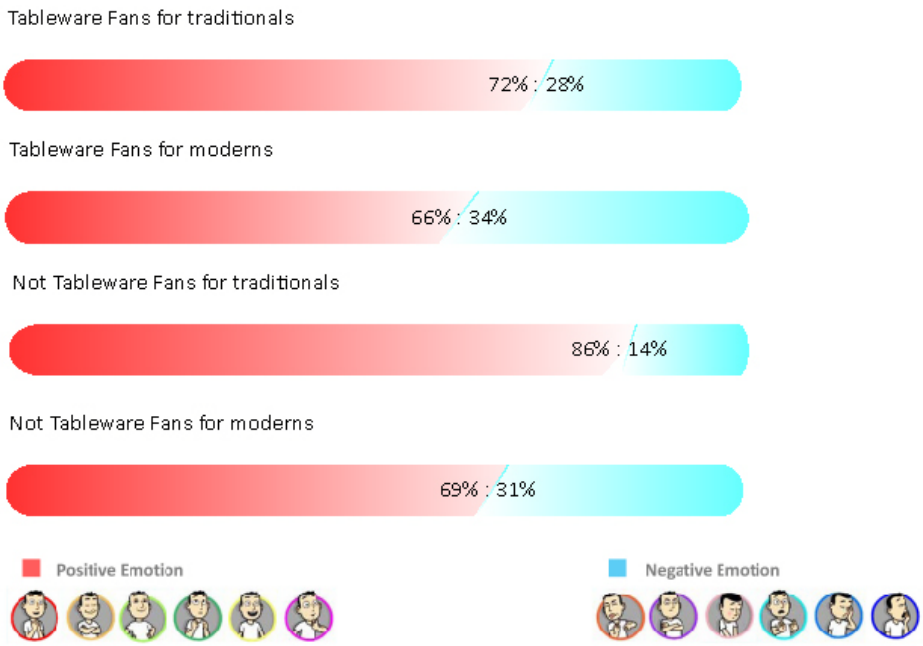

Table 4.17 Style preferred ratio analysis

In this analysis, we easily divide all the twelve emotions into two groups: 6 positive emotions and 6 negative emotions.

This table shows both “tableware fans” and “non-tableware fans” preference toward traditional tableware. It suggests that “Non-tableware fans” rather revealed more positive emotions in traditional tableware than the “tableware fans.”

Chapter 5

DISCUSSION

Summary

After the data analysis is completed, we observed that there are some inner relationships between cognition and emotion and that culture effects also influence the emotion of customers.

1. Overall, customers who are sensitive to tableware (highly aware of tableware design) reveal more emotional feedback (both in positive and negative) compared to those who are insensitive (little or no knowledge of tableware design) to tableware.
2. Overall, customers are more likely to show more positive emotions than negative emotions when dining with designed tableware.
3. In summary, both “tableware fans” and “non-tableware fans” do prefer to use “traditional tableware.” “Non- tableware fans” particularly show more positive emotions in “traditional tableware” than “tableware fans.”
4. Chinese respondents are more sensitive (62%) in their cognition of tableware design compared to American respondents (32%).
5. Chinese “tableware fans” show much stronger emotion than “non-tableware fans”; however, this distinction is not obvious in the respondents in the U.S.
6. Chinese “tableware fans” show more positive emotions than “non-tableware fans”; however, this distinction is not obvious in the respondents in the U.S.
7. Overall, American respondents show more positive emotions than Chinese respondents in both groups.

Discussion

When it comes to emotional displays (especially when we focus on more specific parameters such as emotional expression intensity or strength), similarity on Emotion expression based on “basic emotions are expressed and perceived in similar way across cultures” from Ekman (1972) seem no longer to be a hard-and-fast rule anymore. After all, the finding of culture differences does affect personality, social value (Garolera, Benet-Martinez, & Aaker, 2001),

cognitive style (Fang & Rau, 2003), and behaviors (Maehle & Shneor, 2010) have been confirmed in previous studies. In this study, culture differences are believed to influence emotion expression intensity on product design.

Limitation of this study

First of all, there are a limited numbers of respondents, so that the data may not be adequate. Then, the research locations are not distributed equally throughout China and the U.S. We were only able to choose several larger cities in China and only a few in central Arizona in the U.S. for this research; therefore, the data could not represent the emotional feedbacks for all Chinese and Americans populations. In addition, we could not eliminate environmental influence factors, such as the respondents possibly being affected by the service or decoration of the restaurants when evaluating the tableware. Since this is a cross-cultural study, translation limitation is another issue of the research. PrEmo is a proper tool for this study. Although this non-verbal measurement could eliminate the translation error from different emotions, the questionnaire is done in two languages for two different counties might cause different comprehension toward the main intent of the survey.. Also, twelve emotion samples may not be sufficient to reflect accurately the emotions of all respondents. Additionally, the samples stickers are possibly slightly too small for some users to distinguish from each other. Since we gathered appreciable amounts of data, slight miscalculations may have occurred when counting the data; but, we try the best to reduce mistakes to get the most credible results.

Future research direction

In future research, the PrEmo data collection stage needs to be done in a larger sample size; more locations and different levels of restaurants both in China and the US may include in the future research in term to determine more cultural influences. Thus, more specific divisions of respondents and restaurants may apply beyond just two groups. Future research may also keep track of each respondent emotional feedback regarding different times and locations in order to avoid environmental influences.

Deeper separation and independence between cognition and emotion can be discerned if we compare the emotion data report by both verbal and non-verbal instruments. We cannot ensure every interviewee will accept PrEmo measurement easily; therefore, more choices should be presented to consumers than just the 12 PrEmo stickers used in this research. The selection of Non-verbal emotion measurement instruments needs to be seriously considered and emotion measurements need to be made in two or more instruments together in order to collect more accurate research data.

Future implication

For design implications, the result shows that groups prefer traditional chopsticks and plates. The plastic chopsticks and glasses have been reported drawing more negative emotions than positive emotions. Most users in the study show their interests in LOGO printed tableware, which indicates brand design is a compelling and important part of tableware design. Designers shall take these features into account in their future design attempts. And, even if the shape of tableware for China seems to have been consistent for a long time, tableware pattern needs to be changed to improve and be more aligned with emotional functions of the consumer.

For strategic implications, restaurant managers need to devote more attention to the company's selection of tableware for purchase and the tableware services they use. They can purposefully make some changes to some of their tableware selections by analyzing the customer responses. Throughout the research, we know that some restaurants continue to use the same uninformed tableware purchased from the same tableware leasing companies, which ultimately might result in being less competitive against other restaurants. It is encouraged that restaurants combine and balance their tableware selection and the restaurant style together to create their own unique style and approach. In addition, strategists for catering industry should attach greater importance on culturally-based issues when they expand the international market. The deeper understanding they possess on cultural differences, the easier and more effective their internationalization work will be.

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APPENDIX A

QUESTIONNAIRE OF THE SURVEY

A survey of tableware users' emotional measurement

Warm-up Questions

What kind of tableware does you like best?

What kind do you use most frequently?

How do feel about the popular tableware?

Primary Questions

Are you satisfied with the tableware that you were using?

Any issue you are concerned regarding the design as the most important of choosing tableware?

What would be the main reason for you to choose your answer?

Will you consider alternatives if the same product you preferred is more expensive?

Will you consider keeping using the same style of tableware?

What is the reason to influence you to purchase new products?

Do you think tableware design helps to influence your dining experience very much?

APPENDIX B

LOCATIONS OF TARGET RESTAUANTS

List of research locations of this study

Beijing Quanjude Restaurant: 44 East Jiaomin Street, Dongcheng district, Beijing, China

Shanghai Suzhehui Restaurant: 300 Fangdian Road, Pudong district, Shanghai, China

Shanghai South Beauty Restaurant: 168 West Lujiazui Road, Pudong district, Shanghai, China

Shanghai Daiguanshan Restaurant: 269 Wujiang Road, Jing'an district, Shanghai, China

Tianjin Goubuli Restaurant: 16 North Shuishang Road, NanKai district, Tianjin, China

Guangzhou Yufumatou Restaurant: Hai'oudao, Panyu district, Guangzhou, China

Mekong Palace: 66 S Dobson Road, Suite 120, Mesa, AZ, USA

Szechwan Garden: 5055 West Ray Road, Chandler, AZ, USA

Jade Palace: 9160 East Shea Boulevard, Scottsdale, AZ, USA