2014

Effects of typographic variables on attitude measures in reading bilingual brands

Ran Bi
Iowa State University

Effects of typographic variables on attitude measures in reading bilingual brands

by

Ran Bi

A thesis submitted to the graduate faculty

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Journalism and Mass Communication

Program of Study Committee:
Jay Newell, Major Professor
Joel Geske
Aili Mu

Iowa State University

Ames, Iowa

2014

TABLE OF CONTENTS

Page

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

First of all, I would like to express the deepest appreciation to my committee chair, Professor Jay Newell, for his continuous help, encouragement and inspiration during my graduate studies and research. He spent a lot of time in guiding me through my research. Without his guidance and persistent help, I would not be able to finish my thesis and earn a Master's degree.

I would like to thank my committee members, Professor Joel Geske and Professor Aili Mu. Thanks for their guidance and support throughout this research. I deeply appreciate the valuable feedback from Dr. Mu, which helped me in understanding the structure of Chinese characters.

Finally, I would like to give my special thanks for my parents and my girlfriend, their love and supports gave me the power to achieve this goal. In addition, thanks to all of my friends' support and companionship. I am very lucky to have you guys around in these two years.

ABSTRACT

This study sought to determine how typographic features in brand name designs impact attitudes of bilingual consumers toward the brand. An online study was conducted with a sample of 210 Chinese students who have studied in the United States for at least one year. Each participant was randomly assigned to one of five groups.

Based on semantic theories and a proposed model of the role of typography in advertising-based persuasion, two hypotheses were explored. This study found that: (1) a prominent Chinese name in terms of type size in bilingual bands had a positive effect on consumers' attitude toward the brand, (2) consumers evaluated brand names with same size Chinese and English names more positively than those with a prominent English name, (3) consumers evaluated brand names with highly ornate Chinese type more positively than those with highly ornate English type and (4) brand names with low ornate Chinese type and low ornate English type were evaluated higher in terms of attitude toward brand than brand names with highly ornate English and low ornate Chinese.

The contribution of this study is to assist international companies in their local brand name selection process by helping them to understand the aesthetic value of Chinese characters in brand name design, as well as to provide practical suggestions for logographic designers and font designers.

CHAPTER I

INTRODUCTION AND PROBLEM STATEMENT

Chinese Characters in a Modern Context

According to the Oxford English dictionary, typography is "the art or practice of printing" and "the style or appearance of printed matter." Skillfully styled and beautiful typographic designs in Western languages are abundant in international design magazines and other publications. Examples of such work are more rare in the Chinese language than in English. Chinese writing in terms of calligraphy has a long history, but in the modern environment, Chinese characters are not often selected as the first choice by local designers for logos and brand names. Li (2014), in his research on modern Chinese typefaces (2014), interviewed about 50 Chinese graphic designers, many of them confessed that they found it easier to design English words than Chinese characters. In addition, he found that 73% of the brand names or logo in China market were composed of low ornate Chinese characteristics.

However, Li (2014) also pointed out that calligraphic typefaces were largely used as logos and brand names in the 30's and 40's in China. In order to understand this contradictory phenomenon, this study investigates the effects of Chinese typographic characteristics on Chinese consumers' attitudes in a modern context.

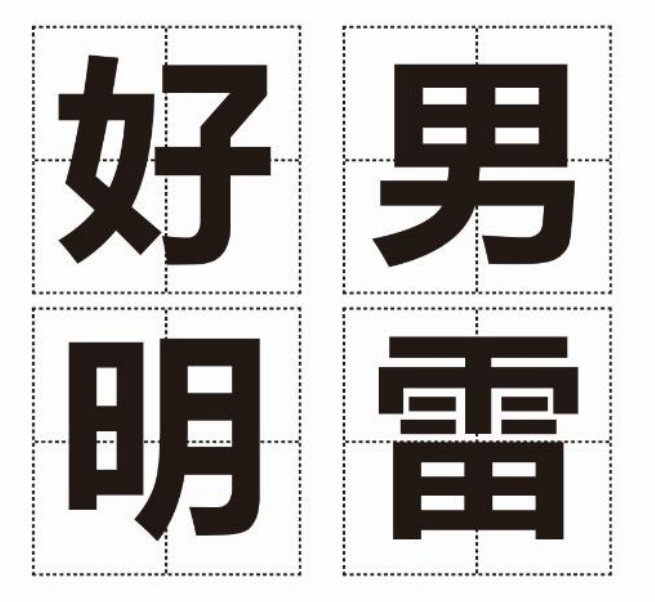
Typographic Features of Chinese and English

The writing system of English differs vastly from that of Chinese. English belongs to an alphabetical system in which the writing unit, a word, is composed of equally spaced letters, and different words are separated by additional spacing to form sentences (Yen, Tsai, Chen,

Lin, & Chen, 2011). Like most languages, English relies on an alphabetic script in which letters represent sounds, so that readers of English tend to subvocalize written words (McCusker, McCusker, & Hillinger, 1981). However, Chinese characters originated as pictures that were simplified and refined into pictographs and finally into the modern characters (Wong, 2000). This logographic writing system uses the characters as the writing unit, with the unit of writing represents an idea or abstract thought without regard to sound. English, in contrast, uses letters of the alphabet that can be combined into words and create a visual record of the spoken language (Carter, Day & Meggs, 1993). Also, the structure of Chinese characters has its own typographic system. All characters are constructed from basic units, or strokes. Characters vary greatly in complexity in terms of the number of strokes, which consist of dots, lines, and hooks. As shown in figure 1, a simple Chinese character can appear as a component element of complicated or multi-element characters. Because of this special structure, the reader of Chinese must visually distinguish upwards of 7000 Chinese logographs, each of which represents a specific meaning.

Regarding the significant differences between these two writing systems, although extensive empirical research has examined the effects of different typographic characteristics in English and in Chinese, few studies have investigated how these typographic characteristics affect readers' attitude toward a brand in a Chinese/English bilingual context (Zhang & Schmitt, 2001; Tavassoli & Lee, 2003).

Figure 1. *Characters with Multiple Elements*



Bilingual Consumers and the Chinese Market

In many countries around the world, bilingual consumer environments are becoming increasingly prevalent. These environments have two key characteristics. First, consumers have grown up with a native language (the so-called dominant language) and in addition have learned to speak and read another language (the so-called non-dominant language). Second, through the media and other commercial channels, these bilingual consumers are exposed to bilingual stimuli that use both the dominant and the non-dominant language.

Most of the world's people speak more than one language (Tavasolli & Nader, 1999). For example, in many parts of the world, people speak English as a second language, so although there are only 322 million native English speakers worldwide, an estimated 1.3 billion people speak English as a second language. Because of China's large population,

Chinese is also considered one of the most influential languages in the world. In addition, China has the largest number of people who speak English as a second language. For example, all Chinese college students are required to take at least one English course every college semester, and any college student, in order to graduate, must pass the CET the College English Test.

Research has identified reasons why people speak a second language in addition to their native language. (1) They may have moved to a different country. (2) They may need to communicate with individuals from other cultures within their country, or they may conduct business or travel for pleasure in countries where their native language is not spoken (Milroy & Muysken, 1995). In the latter case, the primary reason for this phenomenon could be that, for example, those who can communicate to people western countries are greatly needed by the Chinese market.

Along with this trend, international companies have begun to pay attention to the translation of their original brand names in other markets. For instance, U.S brand names in the Chinese market usually consist of both an alphabetic (English) and logographic (Chinese) name. The reason for presenting the English name along with a Chinese translation is that the English name can provide more information about the product and the company, and even helps the company to promote its original brand to consumers. To create the Chinese translation, companies often engage multiple parties, including marketing managers, naming agencies, corporate identity firms, advertising firms, customers, and distributors (Javed 1993; Shipley, Hooley, and Wallace 1988). Research has shown that the choice of a brand's local translation has a crucial influence on consumers' motivation to process the brand information. Zhang and Schmitt (2001) studied people's attitude toward different local brand

name creation methods. They proposed a framework of the brand-name creation process that consists of three aspects—phonetic (sound), semantic (meaning) and phono-semantic by (sound plus meaning) and concluded that there is a significant relationship between brand attitude and brand name creation method.

In summary, with the rapid growing of the Chinese economy, more and more Chinese consumers can be seen as bilingual consumers. Along with this trend, international companies are increasingly likely to present their original brand name and the translated name together.

Description of the Study

This study used an experimental design to investigate the effects of typographic features on Chinese/ English bilinguals' brand attitude. The two typographic characteristics that interested us were type size and type ornateness. Different type sizes (40pt/ 20pt) and typefaces at different levels of ornateness (high ornate/ low ornate) were used. The results are expected to assist international companies interested in the Chinese market in their local brand name selection. Whenever a company introduces a brand into a foreign market, one of the most important decisions is the choice of a local brand name (Schmitt & Pan, 1994). The visual aspect of the brand logo is particularly important in the Chinese market, since Chinese characters have their own aesthetic attributes. Typeface and the size of the characters could possibly affect consumers' perception of the brand. Therefore, examining Chinese/ English bilinguals' brand attitude would be most helpful for business trying to establish their brand in the Chinese market.

Results of the study are also expected to help marketers and graphic designers in choosing the best visual combinations of Chinese and English. In particular, the results

provide suggestions for marketers and designers as what kind of strategy they should use in brand promotion. The study will also help international companies achieve better understanding of Chinese consumers and Chinese market.

Purposes of the Study

The research objectives of the study were to (a) investigate the situations under which typographic cues in advertising serve to influence consumers' attitude toward brands in a Chinese/English bilingual context and (b) shows the applicability of traditional English typography to the Chinese case.

CHAPTER II: LITERATURE REVIEW

Bilingual Processing of Brand Information

Visual cues may be of particular importance for bilingual individuals (Pan & Schmitt, 1996; Tavassoli 2001). Bilinguals tend to have a higher level of awareness of the arbitrariness of language than monolinguals have, because they can use two different words to communicate the same concept (Bialystok, 1988, 1991). Therefore, bilingual individuals seem to prefer to rely on pictures, which are a language-independent representation that can aid in information processing (Hung & Tzeng, 1981; Schmitt, Pan, and Tavassoli, 1994).

Additionally, bilinguals must frequently switch from one language to another. In this switching process, relying on words or lexical representations will not be efficient, since knowing two languages may lead to interference between the two lexicons (Miljkovitch, 1980; Ransdell & Fischler, 1991). To examine this situation, researchers have conducted empirical studies in both the United States and Mexico. Subjects were asked to complete the questionnaire based on a Styles of Processing Scale (Childers, Houston, & Heckler, 1985). This measure distinguishes individuals who prefer to process information visually from those who prefer to process verbally. The result of this analysis confirmed the proposition that bilinguals tended to rely on imagery and visual representation as information processing aids.

Since reading Chinese is dominated by visual-based processes, we may argue that the nature of the Chinese language determines that Chinese-English bilinguals rely on visual cues more than other bilingual groups do.

Several studies provide empirical evidence to support this proposition. Tavassoli (2001) finds that Chinese consumers are more sensitive to visual features of written words. Compared with readers of English, readers of Chinese are more likely to remember the print

color of a brand name and are more influenced by a color match among brand names in brand evaluations (Tavassoli 2001).

Pan and Schmitt (1996) also found that Chinese readers are more sensitive to features of a script than English readers are, whereas listeners of English are more sensitive than Chinese listeners are to features of a speaker's voice. Specifically, Pan and Schmitt found that attitude ratings provided by Chinese consumers were more sensitive than U.S. consumers to the match between the femininity or masculinity of fonts for feminine (e.g., lipstick) or masculine (e.g., motorcycles) products. In contrast, U.S. listeners were more sensitive than Chinese listeners to the match between the product class and the sex of the presenter in auditory communications.

All of these articles share the same assumption that visual attention is heightened in processing of logographs. For a language with built-in logographical features, this paper argues that the (re) presentation of Chinese written characters in an ad increases its visual effect for bilinguals and affects the brand attitude of bilinguals more significantly than any other attribute.

The Influence of Visual Features of Words in Information Processing

Most marketing communications consist of three primary components: a visual image, a verbal message, and a voice used to convey the verbal message. For example, in television and online media, visuals are often coupled with a verbal message delivered by an announcer's voice. In print advertising, however, visual images are commonly combined with a written verbal message, in which, the physical appearance of the written words become the "voice" that conveys meanings. For example, Unnava, Burnkrant, and Erevelles (1994) noted that "people exposed visually to the Wendy's trademark may remember the font

used by Wendy's restaurants, and this may contribute to the belief that they make old-fashioned hamburgers" (p.148). The visual features of English letters and words can communicate ideas, as can Chinese written characters.

Four elements of design are of particular interest with written English: line, weight, orientation, and size. A study by Childers and Jass (2002), on how typeface semantics affect brand attitude, provided a clear explanation of these typeface elements. The line is the basic element that gives form to a letter and determines the style of the type. Weight of a style of type refers to the volume of white space its letters replace with ink within a contained area. The weight of the lines in a type style may vary from "light" to "medium" to "ultra bold." Orientation refers to the vertical position of a type style. The final stylistic element of a typeface is size. The overall size of a style is determined by the sizes of the three components: the x-height, the ascenders, and the descenders" (p.94). By using different values of the properties of line, weight, orientation, and size, distinct type styles may be created.

Results studies suggest a two-stage processing of visual features of words. In the first stage, the legibility of letters and words will influence the processing of the verbal material itself (Tinker, 1963; Webster & Tinker, 1935). For instance, a subject may find highly legible type styles, as well as typeface with larger type size, easier to process (Tinker, 1963).

Individuals are also capable of consistent perception of the meaning of typefaces. For example, Bartram (1982), Rowe (1982) and Tantillo et al. (1995) presented subjects with a selection of unique typefaces and asked subjects to indicate the connotation of the type styles, using multi-item scales. As an example, Rowe (1982) found that a scripted typeface was rated as elegant, whereas a non-scripted typeface was not. Subjects were able to identify

semantic qualities of the typefaces. In addition, the semantic associations connoted by typeface characteristics could affect persuasion directly, since individuals tend to perceive the brand name via both the verbal and the visual route.

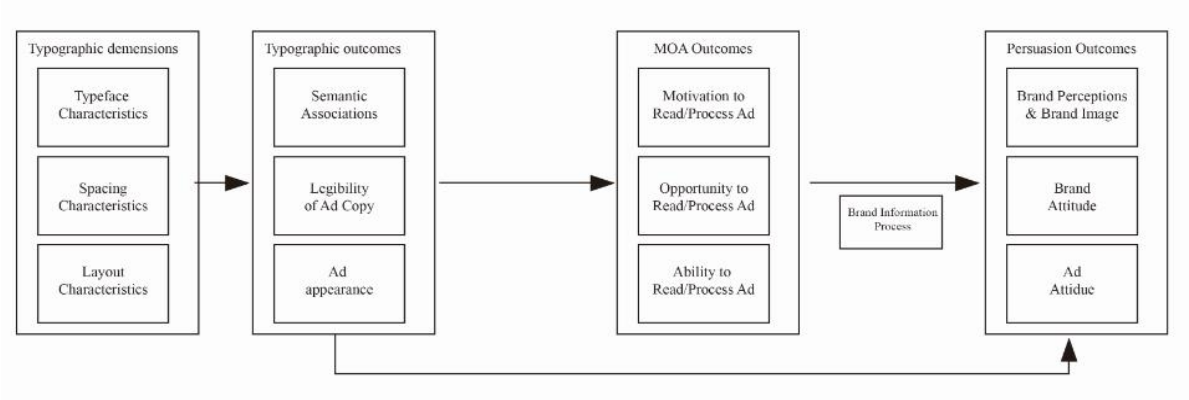
General Model of the Role of Typography in Advertising-based Persuasion

McCarthy and Mothersbaugh (2002) presented a general model of typographic effects on how individuals process persuasive information (as shown in Figure 2). In this model, typographic features are divided into three typographic dimensions: typefaces characters, spacing characters and layout characters. Typeface refers to the appearance of the letter, such as type style (Serif, Sans-Serif, Script), type size (8 point, 9 point, 10 point), x-height (Smaller, Larger), Weight (Light, Normal, Bold) and Slant (Italic, Oblique). Spacing refers to the physical distance between letters. Layout refers to the position and arrangement of text units on the page. Each typographic dimension has its outcome; for example, typeface characters can influence the perception of semantic associations, spacing characteristics can influence the perception of legibility of the ad, and layout characteristic can influence perception of the ad's appearance. Furthermore, these outcomes affect individuals' MOA (Motivation, Opportunity, and Ability) to process the ad and thus can eventually lead to attitude change. To test their model, an empirical study was conducted to examine the relationship between typeface x-height and legibility. The results supported this model; increased x-height improved message legibility and resulted in better reading performance (McCarthy & Mothersbaugh, 2002).

Our study concerns how two typographic characteristics, typefaces and type size, might affect brand attitude in bilingual individuals.

In the two-stage processing of visual features, people tend to focus on how legible the message is first; then they will interpret the connotation of the type style.

Figure 2. *McCarthy and Mothersbaugh's Model of the Role of Typography*



Typeface Characteristics and Brand Attitude

As stated earlier, the typeface characteristics of interest in this study are type style and type size. Studies have focused mostly on two typographic outcomes: typeface semantic associations and typeface legibility. Semantic associations are the connotations that individuals derive about the text or brand that go beyond the text's actual semantic content. For example, an individual might associate ornate fonts with elegance and thus infer that the brand is elegant or stylish; this belief might directly affect the individuals' attitude toward certain brands. Legibility is the ease with which letters and words are discerned, both physically and perceptually (McCarthy & Mothersbaugh, 2002). For example, use of a small font may make it difficult to distinguish one letter from another and thus reduce the legibility of the brand claims.

Type Style and Semantic Associations

As pointed out earlier, type style can be conceptualized in a dichotomous manner, in terms of either serif or sans serif type (McCarthy & Mothersbaugh, 2002). However, another way of thinking about type style is in terms of type ornateness. As shown in the Figure 3. The degree of ornateness of the letter increases from a sans serif typeface on the far left to a more ornate serif to a highly ornate script. Results of a prior study (Rothlein, 1912; Tinker, 1965) indicate that ornateness has an inverted-U effect on legibility. They found that increased ornateness initially provides more information, which can help people recognize and discriminate letters, especially among lower-case letters that are easily confused. However, at some point, additional ornateness become counterproductive, leading to decreased legibility (Tinker, 1965).

Figure 3. *Degrees of Ornateness*

Type Size and Information Prominence

Typeface size is generally measured in terms of points. Evidence has been provided of an inverted-U relationship between type size and legibility. Paterson and Tinker (1929) found that 10-point type was read faster than larger or smaller type.

Based on the published literature and the model we discussed previously, two hypotheses were developed, as follows:

Hypotheses:

H1: Chinese / English bilinguals will have a better attitude toward a bilingual brand name with larger size Chinese typeface than toward brand name with larger size English typeface.

H2: Chinese / English bilinguals will have a better attitude toward a bilingual brand name with highly ornate Chinese typeface than toward a brand with ornate English typeface.

CHAPTER III

METHOD

This chapter will explain how the experiment was constructed from items used in prior typography and brand attitude research, how participants were recruited, how the experiment was administered, and the procedures used to analyze the typography factors.

The Research Design

An online experiment was conducted to test the hypotheses regarding the effects of typeface characteristics on attitude toward brand names. This method was chosen because (1) online experiments are very convenient for participants and is make it easy to reach a demographically specific sample, such as a bilingual group; (2) the online system used had high image-carrying capacity, with enables high-resolution presentation of the experimental stimuli; (3) young people constantly show a preference for messages delivered online and (4) an online experiment makes a potentially larger sample size possible, which improves statistical power.

The experiment was designed to test two hypotheses on the degree to which typeface and type size are expected to influence consumer attitude toward brand names. The experiment was conducted in two stages: In the first, a pretest was administered. The pretest used fictitious brand names, since result of prior research suggest that familiarity with or previous knowledge of the brand can greatly influence subjects' attitude. In the second stage of the experiment, subjects participated in groups. Subjects were randomly assigned to five experimental groups: 40pt Chinese and 20pt English; 40pt English and 20pt Chinese; Xingkai and Sans serif; Script and Song; and a control group (30pt Chinese vs. 30pt English)

with no typographic variables manipulation. Each participant received an email with a link that led to an online questionnaire in Chinese and was told that the study involved bilingual brand names. Participants were told that an international company wants to promote its brand in the Chinese market and needs opinions on its re-designed brand name. Finally, subjects were asked to provide their brand attitude ratings on a seven-point scale. Multiple item scales were developed, based on Fishbein's (1975) attitude theory, which were designed to measure subjects' brand attitude.

The Sample

The study population was composed of Chinese students officially registered in Iowa State University during the 2014 spring and 2014 summer semester. University Chinese students were selected as the sample because (1) they had passed an English proficiency test such as the TOEFL and GRE, to study at ISU; (2) they had studied and lived in a bilingual environment for at least one year. Their knowledge of English is representative of the level of English found in the market segment of young customers targeted by many multinational companies.

A random sample of students and their email addresses were obtained from the Registrar's office. The email addresses on the list were randomly assigned to four groups. Each group received an email describing the study and its purpose, and asking for their participation. Four online questionnaire links were randomly assigned to the emails, to lead subjects to different experimental conditions.

A total of 1756 students' email addresses were obtained from the Registrar's Office. Taking into consideration the normal 10% response rate, the study planned to recruit 250 participants (50 for each condition).

The study made use of Qualtrics, a web-based survey system that allows multi-user support and random groups. Students who agreed to take part were randomly assigned to the five experiment groups. The first two conditions used 40pt brand name versus 20pt brand name; the second two conditions were high ornate Chinese typeface versus high ornate English typeface, and the last condition used 30pt type size and low ornateness typeface for both Chinese and English.

Experimental Stimuli

Several considerations went into in selecting the brand name type size and typefaces. Most research on typography has focused on studying the font size and readability (such as font size 10-14 pt) in paragraphs and lines. However, the present study focused on logo typography, a larger kind of font. Mu and Wang (2011) conducted a study on the findability of logo typography displays on product packaging. With a recognition distance of 80 cm, they chose type size 36 pt for their study. Wang and Cheng (2003) examined Chinese reading performance on the VDT screen, and found that the average distance from the participants' eyes to the screen center was 60 cm. Based on this prior research, the present study chose type size 30pt as the small type size, and 40pt as the larger type size in the stimuli design.

With regard to typefaces, Chinese and English differ greatly. Results of studies on typography have indicated that even font types are different. All English typefaces can be roughly divided into four categories: Roman, italic, Egyptian, and Gothic, also known as sans

serif. (Wang & Chien, 2010). The primary distinctions between these four systems are the stroke's width, length, pitch, and radian, as shown in Figure 4.

Figure 4. *English Font System and Font Feature*

English font system and font feature.

Font system	Font feature
Roman	Times New Roman Garamond Old Style Weiss Roman Bodoni Fancy Century Bold
Italics and script	*Helvetica Italic* *Garamond Light Italic* *Freestyle Script* ***Script MT Bold***
Egyptian	**FetteEgyptiens**
Gothic	Arial Franklin Gothic Book

Tinker (1964) and Frost (2003) summarized the features of these four font styles in their research. The features of the Roman style are narrow horizontal lines and wide beeline, ideal for reading and layout of printed pages; Italics are characterized by right-slanting strokes developed from the Roman style; Script is characterized by italics with cursive style, mostly used for highlighted words, and Egyptian, also called Squire Serif, is similar to serif with the same width, wider style, and a stiff effect. It was called Egyptian because its shape is similar to the old Egyptian characters seen in temples. Gothic style, or Sans serif, has wide strokes with no decorated lines, which makes it similar to the Chinese boldface style; it is one

of the most widely used fonts, second only to Roman, and is an eye-catching font with no excessive decoration, usually used in reports, books, and other important items such as product names in package design.

In prior research in typography, it was believed that serif typefaces enhance legibility by helping the reader distinguish between letters in a word. Burt (1960) found that use of a serif face improved legibility relative to a sans serif face. Times New Roma and Arial, two widely used typefaces in computer display, can represent serif and sans serif. However, ornateness, another important feature of typefaces must also be considered. Tinker (1965) noted an inverted-U effect on legibility in their typeface ornateness study. This effect is believed to occur because increasing ornateness provides more information and discrimination, which leads to a better attitude evaluation, but then results in less discrimination. For example, serif fonts can be seen as more ornate than sans serif fonts since they have more curves and decorative lines. Among the four fonts, Script and Italics are widely considered the most ornate typefaces, and Gothic is considered the least ornate. Given these parameters, the study selected Script as the high ornate typeface and Arial as the low ornate typeface.

Chinese characters have played a vital role in China's history and culture. Countless type styles in China have been created by different people, such as poets, government officials, generals, even emperors. Most of these type styles are still used today, and can be divided into three general categories: Standard, Cursive and Script, and Art style (Paton, 2008), as shown in Figure 5. Font types for Chinese characters such as Song, Kai, and Ming are considered formal typefaces (Zhan 1994), perhaps because these typefaces are widely used in books, newspapers, and formal print materials.

However, results of research investigating the subjective preference for different typefaces show that script typefaces such Xing and Cao are aesthetically more pleasing to readers than Song (Shieh et al, 1997), although characters in Song are more legible than those in script typeface (Shieh et al. 1997, Cai et al. 2001), which is consistent with the inverted-U effect of typeface ornateness mentioned by McCarthy and Mothersbaugh. In order to strike a balance between legibility and ornateness, the study chose Song as the low ornate typeface and Xing Kai as the high ornate typeface for experiment stimulus creation.

Figure 5. *Chinese Font System and Font Feature*

Chinese font system and font feature.

Font system	Font feature
Standard	宋体 黑体 楷体 中等线体
Cursive and Script	行楷 行体 草体
Art style	综艺体 毡笔体 艺黑体

Pretest

Familiarity with or previous knowledge of a brand affects people's brand attitude. Therefore, a pretest was conducted to identify unfamiliar brand names for the experiment. To achieve this goal, an English native speaker generated 10 fictitious English brand names, to minimize any familiarity and prior knowledge on the part of the subject who would take part

in the actual experiment. On the basis of linguistic criteria, word formation, and a native speaker's intuitions about the appropriateness of names of things (Lehrer 1992), several names for each product were selected. These brand names should have either two or three syllables that are representative of the English language. Next, a Chinese graduate student translated the English brand names to Chinese. All Chinese brand names were translated using a phonetic translation method, which means that each Chinese brand name is created directly based on how the English brand name sounds. There is no meaning relation between the English and Chinese names.

Next, 10 Chinese/English bilinguals participated in the pretest by providing responses to the names. To minimize the influences of brand familiarity, participants were asked to rate on a seven-point scale how familiar each name sounded to them (1= "not at all familiar", 7= "very familiar"). In addition, they were asked to state the degree to which they thought each name was a likely brand name (1= "not very likely", 7= "very likely"). Among all ten brand names, the five names that scored lowest in familiarity and highest in likelihood of being a brand name were selected for use in the experiment.

The final stimuli selected for the main studies are shown in Figure 6.

Figure 6. *Stimulus Brand Names and Pretest Results*

Measures	Brand name (Chinese & English)
	Sakin 思缤
Familiarity	1.30
Likelihood	3.30
	Zachi 飒奇
Familiarity	1.10
Likelihood	4.70
	Rannot 蓝诺
Familiarity	1.10
Likelihood	5.40
	Kerlay 克雷
Familiarity	1.30
Likelihood	3.70
	Krovix 科维克斯
Familiarity	1.10
Likelihood	5.10
	Tineral 狄娜瑞
Familiarity	1.40
Likelihood	3.20
	Wayak 沃亚
Familiarity	1.70
Likelihood	5.00
	Wolock 沃洛克
Familiarity	1.30
Likelihood	3.70
	Carlet 卡莱
Familiarity	1.30
Likelihood	6.00
	Gamson 阁木森
Familiarity	1.30
Likelihood	3.50

The Dependent Variable and Its Measure

This study has only one dependent variable, brand attitude.

Borrowing from Schmitt and Zhang's study about brand names, *Brand attitude* was measured by asking participants to rate the brand names they had just seen on seven semantic differential scales, with response options ranging from 1 to 7 (Schmitt & Zhang, 2001). These item were anchored on the bipolar adjectives (1) bad/good, (2) dislike/ like, (3) not at all satisfactory /very satisfactory. The responses to these items were summed and averaged

as a measure of the attitude toward the brand. A high score indicated a very highly favorable evaluation of the brand. The reliability and internal consistency of this measure were determined by computing Cronbach's alpha.

CHAPTER IV

RESULTS

This study tests the effects of typographic features on the attitude of bilingual college student toward the brand. Participants were randomly assigned to one of five groups. Group 1 and Group 2, designed to test Hypothesis 1, focused on type size. Group 3 and Group 4, designed to test hypothesis 2, focused on typeface ornateness. Group 5 was the control group, with no typographic variable manipulation. To gather data, an online study was performed from June 25 to July 5, 2014, using a sample of Chinese students registered for the summer 2014 and spring 2014 terms at Iowa State University.

Response

A list of emails provided by the Office of the Registrar at Iowa State University indicates that 1755 Chinese students were enrolled during summer 2014 and spring 2014. To get a sufficient number of responses, the online questionnaire links were also put on Chinese international students social networks. A total of 210 responses were received, for a response rate of 11.9%. When questionnaires that were incomplete and questionnaires shown as in progress were excluded, 193 questionnaires were used for data analysis. An online survey system, Qualitrics, was used for data collection and SAS was used for data summarizing and analysis.

Sample Characteristics

Table 1 summarizes the participants' demographic characteristics. As expected of a sample of university students, most were undergraduate and master degree students.

Participants were almost evenly divided between males and females. One important part of demographic characteristic of the sample was participants' self-evaluation of their English proficiency. As shown in Table 1, a majority of students studied English for more than 10 years. 58% of the participants evaluated themselves as upper intermediate and advanced English speakers.

Table 1. *Demographic Characteristics of the Sample (N=193)*

	Frequency	%
Gender		
Male	99	51.29
Female	94	49.33
Age		
15-24	81	41.96
25-34	112	58.03
Education		
Less than High School	0	0
High School	0	0
Some College	0	0
2-year College Degree	0	0
4-year College Degree	42	21.76
Masters Degree	86	44.55
Doctoral Degree	65	33.67
Other	0	0
Years study of English		
1-3 years	2	1.03
4-6 years	5	2.59
7-8 years	15	7.77
9-10 years	31	16.06
More than 10 years	140	71.06
Level of English		
Beginner	2	1.03
Elementary	7	3.62
Intermediate	40	20.72
Upper Intermediate	113	58.54
Advanced	31	16.06

Descriptive Statistics

Participants were asked to evaluate the brand names they were shown in the online questionnaire. The results are shown in Table 2, which present the means and standard deviations of this variable. The value of attitude about the brand was obtained as the average value of three items: bad/ good (M=4.14, SD=1.54), dislike/ like (M=3.99, SD=1.52), not at all satisfactory/very satisfactory (M=3.95, SD=1.53), which were anchored on the bipolar adjectives. The mean of attitude toward the brand was 4.12 (SD=1.57), which was slightly above the mid-point on the seven point scales. The computed indices represent a high reliability (Cronbach's alpha= 0.91).

Table 2. *Descriptive Statistics (N= 193)*

Variables	Mean	SD
Attitude toward the brand	4.12	1.57
Bad/ good	4.14	1.54
Dislike/ like	3.99	1.53
Not at all satisfactory/ very satisfactory	3.95	1.53

Table 3 indicates the mean and standard deviation of attitude toward the brand in different groups. For participants who received brands in Group 1 (40pt Chinese vs. 20pt English), the mean of attitude toward the brands with 40pt Chinese name was 4.2 (SD=0.97, n=36). The mean of attitude toward the brand with 40pt English name was 3.0 (SD=0.79, n=39). For participants who received brand in control group (30pt Chinese vs. 30pt English), the mean of attitude toward the brand was 4.1 (SD=0.93, n=40). As shown in statistics,

brands with bigger Chinese type size were rated higher in terms of brand attitude than those brands in Group 2 and Control group. Moreover, brands in control group (30pt Chinese vs. 30pt English) were rated higher in terms of brand attitude than those brands in Group 2, but still lower than Group 1.

Table 3. *Descriptive Statistics among Different Groups (N =115)*

	Group 1 *40pt Chinese vs. 20pt English*	*Group 2* *40pt English vs. 20pt Chinese*	*Control Group* *30pt English vs. 30pt Chinese*
Attitude	4.2	3.0	4.1
Std. dev.	.97	.79	.93
n	36	39	40

Table 4 shows the means and standard deviations for the group 3 (high ornateness Chinese vs. low ornateness English), group 4 (high ornateness English vs. low ornateness Chinese) and control group (low ornateness Chinese vs. low ornateness English). The mean of attitude toward the brands with high ornateness Chinese name was 5.1 (SD=0.99, n=36). The mean of attitude toward the brand with the high ornateness English name was 3.0 (SD=0.89, n=33), and the mean of attitude toward the brands in the control group was 4.1 (SD=0.93, n=40). As shown in Table 4, brands in group 3 were rated higher in terms of brand attitude than brands in group 4. Brands in control group were rated higher in terms of brand attitude than brands in group 4, but lower than brands in group 3.

Table 4. *Descriptive Statistics among Different Groups (N=108)*

	Group 3 *High ornate Chinese vs. low ornate English*	*Group 4* *High ornate English vs. low ornate Chinese*	*Control Group* *Low ornate Chinese vs. low ornate English*
Attitude	5.1	3.5	4.1
Std. dev.	.99	.89	.93
n	35	33	40

Hypothesis Test

Type size and brand attitude. The first hypothesis posited that those exposed to the larger size Chinese in a Chinese/English bilingual brand name and those exposed to a larger size English in a bilingual brand name would differ in their attitude evaluation to the brand.

To measure brand attitude, seven semantic differential scales were used, with response options ranging from 1 (the most negative rating) to 7 (the most positive rating). These items were anchored on the bipolar adjectives (1) bad/good, (2) dislike/like, (3) not at all satisfactory/very satisfactory. The responses to these items were averaged separately for the two groups. The computed indices demonstrated high reliabilities (Cronbach's alpha Chinese 72pt=.773; Cronbach's alpha English 72pt=.714).

As shown in table 5, the results of an independent samples t-test indicate a highly significant difference between the two groups ($t=5.54$; $df=73$; $p<0.001$) in terms of participants' attitude toward the brand. Thus, H1 was supported.

Typeface ornateness and brand attitude. The second hypothesis tested the difference between the two groups in terms of brand attitude caused by brand name in different typefaces. Fishbein (1963) defined brand attitude as the attitude a consumer holds about a brand. To measure brand attitude, as was done to test hypothesis 1, seven semantic differential scales were used, with response options ranging from 1 (the most negative rating) to 7 (the most positive rating). These items were anchored on the bipolar adjectives (1) bad/good, (2) dislike/like, (3) not at all satisfactory/very satisfactory.

As shown in table 5, the results of an independent samples t-test indicate a difference between the two groups ($t=5.63$; $df=71$; $p<0.001$) in terms of participants' attitude toward the brand. Thus, H2 was supported.

Table 5. *Independent Sample t-tests Results for Attitude toward the Brand*

	t	*df*	*Sig.*
Attitude *(Chinese 72pt vs. English 72pt)*	5.54	73	<0.001
Attitude *(ornate Chinese vs. ornate English)*	5.63	71	<0.001

Summary of Results

Most international brands in China's market consist of an English name and its Chinese translation. In this study, participants were asked about their attitude to the brands to which they were exposed.

The independent sample t-test results showed that (1) a prominent Chinese name in terms of type size in bilingual brands had a positive effect on consumers' attitude toward the brand, (2) consumers evaluated brand names with the same Chinese and English names size more positively than a prominent English name, (3) consumers evaluated brands name with highly ornate Chinese more positively than those with highly ornate English, (4) brand names with low ornate Chinese and low ornate English were evaluated higher in terms of brand attitude than brand names with high ornate English and low ornate Chinese.

CHAPTER V

DISCUSSION

Overview

This study examined the effects on attitude toward brand names of typographic characteristics of both Chinese and English names. Participants had no prior knowledge or experience with the brand. Typographic variables influenced Chinese/ English bilingual consumers' attitude toward the brand. Two hypotheses were proposed, and both were supported. The results showed that larger type size of the Chinese name, and more ornate Chinese typefaces in a Chinese/English bilingual brand, would positively affect consumer attitude toward the brand in consumers whose native language is Chinese.

Prior researchers concluded that bilingual consumers tend to perceive messages by their first language and use the second language as an assistant in meaning perception. For a bilingual brand, making the local language prominent in terms of type size in brand design will naturally gain more attention from consumers. In addition, consumers would not need to extend great effort to figure out the subtle meaning of the brand.

Researchers in cross-cultural marketing have found Chinese speakers are more likely to perceive messages with visual elements. Since Chinese is a logographic based language, Chinese speakers are accustomed to relying on visual information processing. In addition, high ornateness Chinese typefaces are generally believed to be more elegant and artistic than standard typefaces.

Comparisons with Other Studies

In the marketing and advertising areas, numerous studies have investigated how the differences between Chinese and English affect consumers' brand attitudes and purchase intention. Most studies have focused on the auditory and visual differences between English and Chinese (Tavassoli & Lee, 2003; Schmitt & Zhang, 2001). They have found that English speakers were more likely to perceive auditory elements and Chinese speakers were more likely to perceive visual elements. The reason, they concluded, is that English is an alphabetic language in which the words can be represented by sounds, whereas Chinese is a logographic language, which means that Chinese speakers must visually distinguish characters.

Unlike prior research, this study examined the difference between Chinese and English on a more specific level, by examining typographic features of Chinese and English, and found that typographic characteristics (type size and typefaces ornateness) could affect attitude toward brand names.

Some studies in the multi-lingual branding area have examined the effects of different brand name translation methods in the Chinese/ English context. These studies, which analyzed the three translation method, found that Chinese consumers rated phonon-semantic translated brands higher than brands translated by using of other methods (phonetic, semantic). Their results contributed practical suggestions for western companies that want to introduce their products to the market of China. Instead of looking at the translation method, the present study investigated the typographic presentation of bilingual brands. The results should be of particular value to brand and logo designers.

Implications for Theory

McCarthy and Mothersbaugh (2002) presented a general model of typographic effects with regard to how individuals process persuasive information. In their model, typographic variables can directly affect typographic outcomes, which include semantic association, legibility of the ad, and ad appearance. Eventually, these typographic outcomes can lead to changes in brand attitude. The present study borrowed their model, but took it one step, further and hypothesized that typographic dimensions can directly affect participants' attitude toward a brand. Results of the study supported the original assumption. The reasons could include the following: First, Chinese is a logographic based language, all Chinese characters were simplified and abstracted from pictures. Thus, the visual aspects of Chinese were far stronger than those of English. Schmitt and Pan (1997) summarized that that Chinese has more nonlinguistic visual elements, such as symbols and signs, than English. Second, in McCarthy and Mothersbaugh's study of native English speakers' attitude change, they focused on Chinese/ English bilingual consumers' attitude change. Prior research had found that bilingual consumers have a tendency to perceive messages visually. This is especially true for Chinese speakers, since the visual feature of Chinese makes them more sensitive to visual stimulus. Tavassoli and Lee (2003), who studied the interaction of auditory and visual advertising elements in Chinese and English, found that Chinese subjects were more likely to perceive ads with more visual elements than those with more auditory materials. In contrast, English native speakers rated ads with more auditory elements higher than those with more visuals.

McCarthy and Mothersbaugh's model, examined only the influences of typographic dimensions in the English language system. However, the present study applied their model

to a multi-cultural context. It attempted to test to test whether it is possible to put a western model into another language system. The results showed that although Chinese and English are two totally different language systems, on some level they share some common features. Visual aspects of these two languages can influence subjects' attitudes.

Practical Implications

This study can provide practical suggestions to companies that want to introduce their products to Chinese market, to marketers, and to graphic designers. Companies today invest substantial resources in brand name creation in an international context. Marketing managers, naming agencies, corporate-identity firms, and advertising agencies are hired to create the best name for a foreign market. Unlike the situation with other language systems in the world, the visual aspect of characters is particularly important in the Chinese market, since Chinese characters have their own aesthetic attributes. The choice of typographic characteristics such as type size and typefaces could affect consumers' perception of the brand.

Many companies would therefore benefit from knowing what typeface and what type size should be used in their brand design. The answers could be found in this study, the results of which show that Chinese consumers prefer bilingual brands with larger Chinese font than that used for the English translation and high ornateness typefaces.

Limitations

This study has taken a step toward applying western typographic theories to a logographic based language- Chinese. The results showed that typographic characteristics

such as type size and type ornateness could directly affect Chinese consumer's brand attitude. However, some limitations cannot be ignored.

First, the structure of Chinese characters has its own typographic design system. As already mentioned, Chinese characters originated as pictures that were refined and simplified over thousands of years. Each modern Chinese character can be composed of various simple parts, which means a simple character can appear as an independent character as well as a component element in compound characters. Because of this special structure, each Chinese character essentially has its own meaning, which can be interpreted differently by different people. For example, the Chinese word for "bright" is comprised of two parts. One part is the character that represents "sun" and the other is the character that represents moon. If a company decides to use this "bright" character in its brand name, consumers will tend to evaluate this character positively, since "moon" in China symbolizes family unity, Chinese people celebrate a festival at which they eat Moon cakes every year.

Although this study has attempted to avoid using meaningful Chinese characters in stimuli design, the effects of Chinese characters cannot be neglected.

Future Study Suggestions

Our research and findings also suggest possible opportunities for further research. In the present study, we focused on Chinese-English names in the multilingual market of China. Future research should examine whether our results can be replicated with other languages and in other markets. For example, Japanese consists of both alphabetic words and logographic characters. It will be interesting to look into the influence of typographic variables in the Japanese language system.

Moreover, as many already know, Mainland China is using simplified-form characters in writing and *Putonghua* (standard Chinese) in speaking. In Hong Kong and Taiwan, traditional-form characters are used in writing. This study focused on the simplified-form Chinese characters, since the majority of Chinese use this system. Additional research could investigate typographic issues in different Chinese language systems. It would be beneficial to look into how consumers evaluate traditional form characters used by those companies who want to introduce their brands and products to the market of Mainland China.

In addition, many factors affect the visual appearance of characters, including type style, size, x-height, weight, slant, stress, and spacing. This study investigated the effects of type size and type style. Future studies could investigate the influences of other typographic characteristics on consumers' brand attitude and purchase intentions.

REFERENCES

An-Hsiang W., & Cheng-Hsun C. (2003). Effects of screen type, Chinese typography, text/background color combination, speed, and jump length for VDT leading display on users' reading performance. *International Journal of Industrial Ergonomics,* 31(4), 249-261.

Bartram, D. (1982). The perception of semantic quality in type: Differences between designers and non-designers. *Information Design Journal*, 38-50.

Burt, C. L. (1959). A psychology study of typography. Cambridge, UK: Cambridge University Press.

Burt, C. L. (1960). The typography of children's books: A record of research in the U.K. In. G. Z. F. Bereday & J. A. Lauwerys (Eds.), *The yearbook of education, London: Evans.*

Cai, D., Chi, C.-F., & You, M., (2001). The legibility threshold of Chinese characters in three type styles. *International Journal of Industrial Ergonomics*, 27 (1), 9–17.

Carter, R., B. & Meggs, P. (1993). Typographic design: Form & communication. (2nd Ed.) New York: Van Nostand Reinhold.

C. Frost, Designing for Newspapers and Magazines: Media Skills, Taylor & Francis, Inc., London, 2003.

Chaiken, S., & Chaiken, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *Journal of personality and social psychology, 66*(3), 460-473.

Chan, Allan K.K. (1990). Localization in international branding: a preliminary investigation on Chinese names of foreign brands in Hong Kong. *International Journal of Advertising*, 9(1), 81-91.

Childers, T. L., & Jass, J. (2002). All Dressed Up With Something to Say: Effects of Typeface Semantic Associations on Brand Perceptions and Consumer Memory. *Journal of Consumer Psychology*, 12(2), 93-106.

Collins, Allan M. & Elizabeth F. loftus (1975). A spreading activation theory of semantic processing. *Psychological Review*, 82(6), 407-28.

DeFerancis, J. (1984). The Chinese language: Fact and fantasy. Honolulu: University of Hawaii Press

Fishbein, Martin and Icek Ajzen (1975), Belief, Attitude, Intention, and Behavior, Reading, MA: Addison-Wesley.

Hung, Daisy L., & Ovid J. L. Tzeng (1981). Orthographic Variations and Visual Information Processing. *Psychological Bulletin*, 93(6), 258-68.

Hu, Yu-shu (1999), Modern Chinese, 2d ed. Shanghai, China: Shanghai Education Press.

Javed, Naseem (1993), *Naming for power.* Mississauga, Ontario, Canada: Linkbridge Publishing.

Kong-King, S., Ming-Te, C., & Jiunn-Huei, C. (1997). Effects of Color Combination and Typography on Identification of Characters Briefly Presented on VDTs. *International Journal of Human-Computer Interaction, 9*(2), 169.

Lehrer, Adrienne (1992), Names and Naming: Why We Need Fields and Frames, in *Frames, Fields and Contrasts,* Adrienne Lehrer and Eva Feder Kittay, Eds. Hillsdale, NJ: Lawwrence Erlbaum Association, 132-42.

McCusker, L., McCusker, M., & Hillinger, R. (1981). Phonological recoding and reading. *Psychological bulletin, 89*(2), 217-245.

McCarthy, M. S., & Mothersbaugh, D. L. (2002). Effects of Typographic Factors in Advertising-Based Persuasion: A General Model and Initial Empirical Tests. *Psychology & Marketing,* 19(7/8), 663-691.

Miljkovitch, I. (1980). Classement suivant des categories sans etiquette verbale chez le bilingue. *Canadian journal of psychology, 34*(4), 359-369.

Milroy, Milroy, L., & Muysken, P. (1995). One Speaker, Two Languages, 4. 232-240.

Pan, Y., & Pan, B. (1996). Language and Brand Attitudes: Impact of Script and Sound Matching in Chinese and English. *Journal of consumer psychology, 5*(3), 263-277.

Petty, R., & Petty, J. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of personality and social psychology, 46*(1), 69-81.

Regina W.Y. Wang, Mu Chien Chou. (2010). Differentiation in the arched surface of packaging: Its influence on the findability of logo typography displays, *Displays*, 32(1), 24-34.

Roethlein, B. E. (1912). The relative legibility of different faces of printing types. *American Journal of Psychology*, 23, 1-56.

Schmitt, B., Schmitt, Y., & Pan, N. (1994). Language and Consumer Memory: The Impact of Linguistic Differences between Chinese and English. *The Journal of consumer research, 21*(3), 419-431.

Schmitt, Nader T. Tavassoli, and Robert Millard (1933), "Memory for Print Ads: Understanding Relations among Brand Name, Copy, and Picture," *Journal of Consumer Psychology*, 2(1), 55-81.

Schriver, K. A. (1997). Dynamics in document design. New York: Wiley.

Shieh, K.K., Chen, M.T., and Chung, J.H., 1997. Effects of color combination and typography on identification of characters briefly presented on VDTs. *International Journal of Human-Computer Interaction*, 9 (2), 169–181.

Shiley, David, Graham S. Hooley, and Simon Wallace (1988), "The Brand Name Development Process," International Journal of Advertising, 7(3), 255-66.

Tavasolli, N. T., & Lee, Y. (2003). The Differential Interaction of Auditory and Visual Advertising Elements with Chinese and English. *Journal of Marketing Research*, 40(4), 468-480.

Tavasolli, Nader T. (1998), "Language in Multimedia: Interaction Books of Spoken and Written information," *Journal of Consumer Research*, 25(June), 26-37.

Tavasolli, Nader T. (1999), "Temporal and Associative Memory in Chinese and English," *Journal of Consumer Research*, 26(September), 170-181.

Tavasolli, Nader T. (2001), "Color Memory and Evaluations for Alphabetic and Logographic Brand Names," *Journal of Experimental Psychology: Applied*, 7(June), 104-111.

Tavasolli, Nader T. (2002), "Spatial Memory for Chinese and English," Journal of Cross-Cultural Psychology, 33(4), 415-30.

Tinker, Miles A. (1963). *Legibility of print.* Ames: Iowa State University Press.

Tinker, Miles A., & Paterson, David G. (1928). Influence of type form on speed of reading. *Journal of Applied Psychology*. 12, 359-368.

Tribby, M. (1995). Type and Layout: How Typography and Design Can Get Your Message Across - Or Get in the Way. *Booklist, 91*(14), 1294.

Unnava, H, & Burnkrant, R. E. (1991). An Imagery-Processing View of the Role of Pictures in Print Advertisements. *Journal of Marketing Research*, 28(2), 226-231.

Wang, A. H, and Chen, C. H., (2003). Effects of screen type, Chinese typography, text/background color combination, speed, and jump length for VDT reading display on user's reading performance. *International Journal of Industrial Ergonomics*, 31, 249-261.

Wenyi, Li,. (2014). Chinese Charaters in Modern Design. Xinming Press.

Walker, P., Smith, S., & Livingston, A. (1986). Predicting the appropriateness of a typeface on the basis of its multi-modal features. Information Design Journal, 29-42.

Wertheimer, M. (1938). Laws of organization in perceptual forms. In W. D. Ellis (Ed.), A source book of Gestalt psychology (pp. 71-88). London: Routledge & Kegan Paul.

Wheildon, C. (1995). Type & layout: How typography and design can get your message across, or get in the way. Berkeley, CA: Strathmoor Press.

Yen, N.-S., Tsai, J.-L., Chen, P.-L., Lin, H.-Y., & Chen, A. L. P. (2011). Effects of typographic variables on eye-movement measures in reading Chinese from a screen. *Behavior & Information Technology, 30*(6), 797-808.

Zhan, J. X., (1994). Introduction to Chinese characters. Taipei, Taiwan: Hong-Ye Book Co.

Zhang, S., & Schmitt, B. H. (2001). Creating Local Brands in Multilingual International Markets. Journal Of Marketing Research (JMR),38(3), 313-325.

APPENDIX A

IRB APPROVAL LETTER

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
1138 Pearson Hall
Ames, Iowa 50011-2207
515 294-4566
FAX 515 294-4267

Date: 3/28/2014

To: Ran Bi
2414 Orion Dr #220
Ames, IA 50010

CC: Dr. Jay Newell
122 Hamilton

From: Office for Responsible Research

Title: Effects of Typographic Variables on Attitude Measures in Reading Bilingual Brands

IRB ID: 14-194

Study Review Date: 3/28/2014

The project referenced above has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b) because it meets the following federal requirements for exemption:

- (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures with adults or observation of public behavior where
  - Information obtained is recorded in such a manner that human subjects cannot be identified directly or through identifiers linked to the subjects; or
  - Any disclosure of the human subjects' responses outside the research could not reasonably place the subject at risk of criminal or civil liability or be damaging to their financial standing, employability, or reputation.

The determination of exemption means that:

- **You do not need to submit an application for annual continuing review.**
- **You must carry out the research as described in the IRB application.** Review by IRB staff is required prior to implementing modifications that may change the exempt status of the research. In general, review is required for any modifications to the research procedures (e.g., method of data collection, nature or scope of information to be collected, changes in confidentiality measures, etc.), modifications that result in the inclusion of participants from vulnerable populations, and/or any change that may increase the risk or discomfort to participants. Changes to key personnel must also be approved. The purpose of review is to determine if the project still meets the federal criteria for exemption.

  Non-exempt research is subject to many regulatory requirements that must be addressed prior to implementation of the study. Conducting non-exempt research without IRB review and approval may constitute non-compliance with federal regulations and/or academic misconduct according to ISU policy.

  Detailed information about requirements for submission of modifications can be found on the Exempt Study Modification Form. A Personnel Change Form may be submitted when the only modification involves changes in study staff. If it is determined that exemption is no longer warranted, then an Application for Approval of Research Involving Humans Form will need to be submitted and approved before proceeding with data collection.

Please note that you must submit all research involving human participants for review. **Only the IRB or designees may make the determination of exemption,** even if you conduct a study in the future that is exactly like this study.

Please be aware that **approval from other entities may also be needed.** For example, access to data from private records (e.g. student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **An IRB determination of exemption in no way implies or guarantees that permission from these other entities will be granted.**

APPENDIX B. PRETEST QUESTIONNAIRE

You are going to see some brand names below. There will be two questions under each brand name. After read each brand, please provide your answers to the questions below. Thank you for your participation.

SAKIN® 思缤®

1. Are you familiar with this brand name?

Not at all familiar Very familiar

1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?

Not at all likely Very likely

1 2 3 4 5 6 7

ZACHI® 飒奇®

1. Are you familiar with this brand name?

Not at all familiar Very familiar

1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?

Not at all likely Very likely

1 2 3 4 5 6 7

RANOT® 蓝诺®

1. Are you familiar with this brand name?

Not at all familiar Very familiar

1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?

Not at all likely Very likely

1 2 3 4 5 6 7

KERLAY® 克雷®

1. Are you familiar with this brand name?

Not at all familiar Very familiar

1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?

Not at all likely Very likely

1 2 3 4 5 6 7

KROVIX® 科维克斯®

1. Are you familiar with this brand name?

Not at all familiar Very familiar

1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?

Not at all likely Very likely
1 2 3 4 5 6 7

TINERAL® 狄娜瑞®

1. Are you familiar with this brand name?
Not at all familiar Very familiar
1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?
Not at all likely Very likely
1 2 3 4 5 6 7

WAYAK® 沃亚®

1. Are you familiar with this brand name?
Not at all familiar Very familiar
1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?
Not at all likely Very likely
1 2 3 4 5 6 7

CARLET®卡莱®

1. Are you familiar with this brand name?
Not at all familiar Very familiar
1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?
Not at all likely Very likely
1 2 3 4 5 6 7

WOLOCK® 沃洛克®

1. Are you familiar with this brand name?
Not at all familiar Very familiar
1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?
Not at all likely Very likely
1 2 3 4 5 6 7

GAMSON®阁木森®

1. Are you familiar with this brand name?
Not at all familiar Very familiar
1 2 3 4 5 6 7

2. To what degree you think this name is a likely brand name?
Not at all likely Very likely
1 2 3 4 5 6 7

APPENDIX C. INFORMED CONSENT DOCUMENT (IN CHINESE)

知情同意书

文字形式对品牌态度的影响调查
感谢您参与这次关于文字对品牌态度影响的调查。请您花一些时间完成之后的网上问卷。完成这项调查您必须年满 18 岁或者以上，且拥有一定的英语水平。

过程描述
此项调查只会花费你 5 分钟时间。它包括了提供个人基本信息和对几个品牌态度的评分。

好处
参加此项调查虽然对您没有直接的好处。但是本调查结果可望为国际企业及组织品牌标识进入中国市场提供实际性建议。

危害
参加此项调查没有任何可预见性危害。本调查已经通过爱荷华州立大学的机构审查委员会（IRB）的认证，您的利益将会受到联邦法律的保护。

费用及补偿
您不用承担参与本次研究的任何费用。

参与者权利
您对这次研究项目的参与是完全自愿的。您可以随时拒绝参加或离开本次调查，不会受到任何处罚或不良后果。

保密原则
您的答案会被保密。维确保保密，在法律允许的范围内，将采取以下措施，以确保通过本研究收集的数据：一旦数据被收集，这些材料将在一个安全的服务器中。当数据收集完成时，您的信息将被删除。如果结果公布，您的身份将被严格保密。

联系信息
如果您需要对此进一步研究的资料，请与美国爱荷华州立大学格林利新闻传播学院研究生毕然联系，电话：515-441-0970；电子邮件：rbi@iastate.edu。或杰·纽厄尔，美国爱荷华州立大学格林利新闻传播学院研究导师，电话：515-294-3445，电子邮件：newelljj@iastate.edu。
如果您对研究对象的权利或对研究有关伤害有任何疑问，请联系爱荷华州立大学的机构审查委员会管理员，电话：515-294-4566，电子邮件：irb@iastate.edu。

诚挚感谢您的协助！

我已经阅读并了解以上内容并自愿参与本次调查。

- □ 是
- □ 否

APPENDIX C. INFORMED CONSENT DOCUMENT (IN ENGLISH)

Effects of Typographic Variables on Attitude Measures in Reading Bilingual Brands

Introduction

This study attempts to collect information about attitude differences in individual perception of brand names.

Procedures

You will be shown several brand names and asked to provide your answers on seven point about brand attitude. There are 3 questions under each brand and will take approximately 10 minutes or less. Questions are designed to measure your attitude toward each brand based on your own perception. This questionnaire will be conducted with an online Qualtrics-created survey.

Risks/Discomforts

Risks are minimal for involvement in this study. However, you may feel emotionally uneasy when asked to make judgments based on the photograph and biography provided. Although we do not expect any harm to come upon any participants due to electronic malfunction of the computer, it is possible though extremely rare and uncommon.

Benefits

There are no direct benefits for participants. However, it is hoped that through your participation, brand typography designer will learn more about Chinese/ English bilingual brands.

Confidentiality

All data obtained from participants will be kept confidential and will only be reported in an aggregate format (by reporting only combined results and never reporting individual ones). All questionnaires will be concealed, and no one other than then primary investigator and assistant researches listed below will have access to them. The data collected will be stored in the HIPPA-compliant, Qualtrics-secure database until it has been deleted by the primary investigator.

Participation

Participation in this research study is completely voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your academic status, GPA or standing with the university. If you desire to withdraw, please close your internet browser and notify the principal investigator at this email: rbi@iastate.edu. Or, if you prefer, inform the principal investigator as you leave.

Questions about the Research

If you have questions regarding this study, you may contact Ran Bi, at 555-441-0970, rbi@iastate.edu or Dr. Newell. at 515-294-3445, newelljj@iastate.edu.

Questions about your Rights as Research Participants

If you have questions you do not feel comfortable asking the researcher, you may contact Iowa State University Institutional Review Board, at 515-294-4566, irb@iastate.edu.

I have read, understood, the above consent form and desire of my own free will to participate in this study.

- ☐ Yes
- ☐ No

APPENDIX D. SURVEY QUESTIONNAIRE (GROUP 1)

接下来您将会见到 5 个不同的品牌，这些品牌可能会出现在未来的市场中。请您分别对这 5 个品牌予以评价。

You are going to see 5 brand names below. These brands might be used for actual products in the future. Please provide your evaluations on three seven-point scales.

ZACHI®
飒奇®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

RANOT®
蓝诺®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

KROVIX®
科维克斯®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

WAYAK®
沃亚®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

CARLET®
卡莱®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

APPENDIX E. SURVEY QUESTIONNAIRE (GROUP 2)

接下来您将会见到 5 个不同的品牌，这些品牌可能会出现在未来的市场中。请您分别对这 5 个品牌予以评价。

You are going to see 5 brand names below. These brands might be used for actual products in the future. Please provide your evaluations on three seven-point scales.

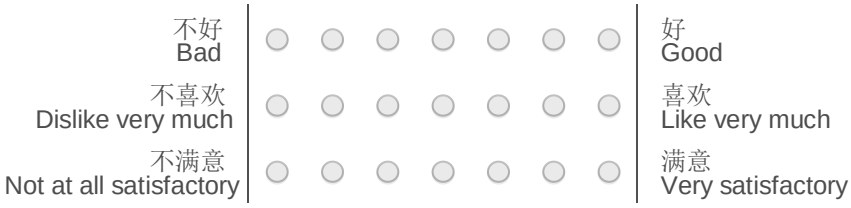
ZACHI®
飒奇®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

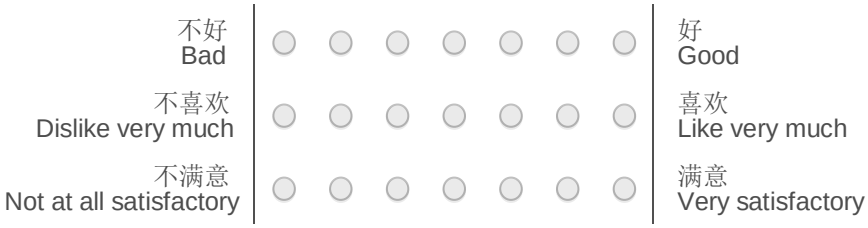
RANOT®
蓝诺®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

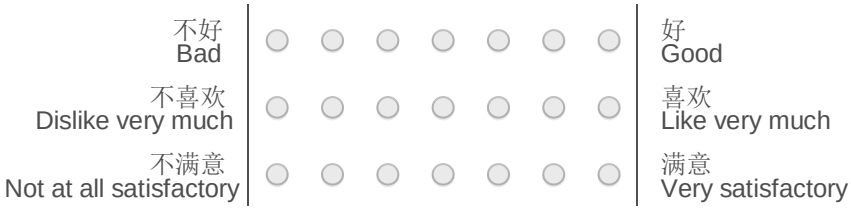
KROVIX®
科维克斯®



WAYAK®
沃亚®



CARLET®
卡莱®



APPENDIX F. SURVEY QUESTIONNAIRE (GROUP 3)

接下来您将会见到 5 个不同的品牌，这些品牌可能会出现在未来的市场中。请您分别对这 5 个品牌予以评价。
You are going to see 5 brand names below. These brands might be used for actual products in the future. Please provide your evaluations on three seven-point scales.

ZACHI®
飒奇®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

RANOT®
蓝诺®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

KROVIX®
科维克斯®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

WAYAK®
沃亚®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

CARLET®
卡莱®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

APPENDIX G. SURVEY QUESTIONNAIRE (GROUP 4)

接下来您将会见到 5 个不同的品牌，这些品牌可能会出现在未来的市场中。请您分别对这 5 个品牌予以评价。

You are going to see 5 brand names below. These brands might be used for actual products in the future. Please provide your evaluations on three seven-point scales.

ZACHI®
飒奇®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

RANOT®
蓝诺®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

KROVIX®
科维克斯®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

WAYAK®
沃亚®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

CARLET®
卡莱®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

APPENDIX H. SURVEY QUESTIONNAIRE (CONTROL GROUP)

接下来您将会见到 5 个不同的品牌，这些品牌可能会出现在未来的市场中。请您分别对这 5 个品牌予以评价。

You are going to see 5 brand names below. These brands might be used for actual products in the future. Please provide your evaluations on three seven-point scales.

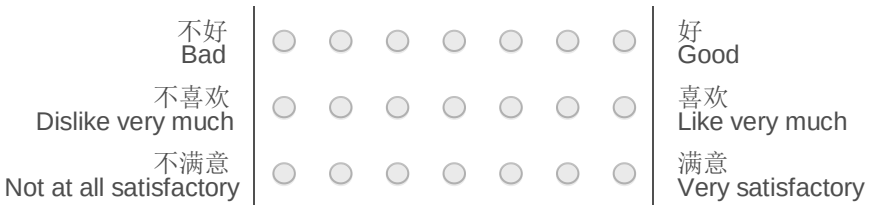
ZACHI®
飒奇®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

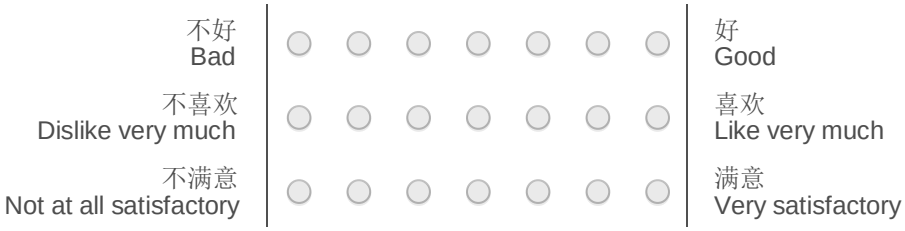
RANOT®
蓝诺®

不好 Bad	○ ○ ○ ○ ○ ○ ○	好 Good
不喜欢 Dislike very much	○ ○ ○ ○ ○ ○ ○	喜欢 Like very much
不满意 Not at all satisfactory	○ ○ ○ ○ ○ ○ ○	满意 Very satisfactory

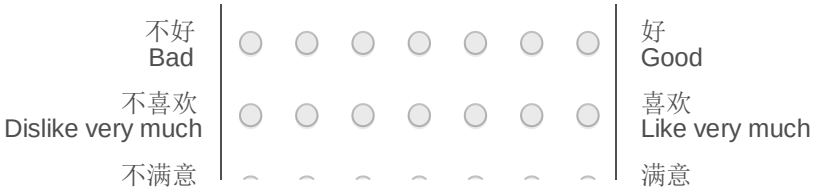
KROVIX®
科维克斯®



WAYAK®
沃亚®



CARLET®
卡莱®



APPENDIX I. SURVEY QUESTIONNAIRE

DEMOGRAPHIC INFORMATION

1、您的性别是？
1. What is your gender?

- 男性
  Male
- 女性
  Female

2、您的年龄是？
2. What is your age?

▼

3、您的学历是？
3. What is the highest level of education you have completed?

- 高中以下
  Less than High School
- 高中
  High School
- 职业学院
  Some College
- 专科
  2-year College Degree
- 本科
  4-year College Degree
- 研究生
  Masters Degree
- 博士生
  Doctoral Degree
- 其他
  Other

4、您学习了多长时间英语？
4. How many years you have been learning English?

- 1-3 years
- 4-6 years
- 7-8 years
- 9-10 years
- More than 10 years

5、您觉得您现在的英语水平是？
5. What, in your opinion, is your current level of English?

- 开始
  Beginner
- 入门
  Elementary
- 中等
  Intermediate
- 中等偏上
  Upper Intermediate
- 高等
  Advanced