Cross-cultural Character Design: the experiment on character's visual components and the development of a visual design guide

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ABSTRACT

Design can be both aesthetically and functionally, which includes character design as well. Character design is not merely about a pleasant drawing or an illustration for satisfaction. The association of character design can be found within various fields of work. In merchandising, characters are used as a promotional tool. They appear on products, advertisements, and other promotional activities. In the film world, characters run the whole story of an animation. These characters function as a presentation of a concept, value, community, or convey a message from designers to beholders.

Encouraged by the current movement of diversity and globalization, modern designers have embraced the concept of cultural value and variety into character artwork. This trend has led us to cross-cultural design where two or more cultures harmoniously combined together into one. The most common form of cross-cultural character is the consolidation of a specific cultural art with western context through the process of design modernization, for instance, Walt Disney's Amphibia, the animated television series that centers in Thai American culture. Despite the growth of cross-cultural character, the exploration of visual design and process for cross-cultural character design are still ambiguous.

Cultural characters contain cultural value, which can be implemented into several visual parts of the design. However, the influence of each visual component as a cultural stimulus was not examined before. We believe the clarification of how beholders access senses of culture and interpret a cross-cultural design can support designer's workflow. Therefore, this research aimed to investigate factors involved in visual communication for cross-cultural character design. The exploration included (1) visual components for cultural stimulation, (2) influential weight of each component on cultural sense, (3) effects on beholder's perception and affection, and (4) component manipulation guide for cross-cultural character design.

Thai and Japanese culture were selected as our design case study due to their characteristics. These two cultures are well-known by foreigners. Their attributes are also distinctive, allowing our participants to distinguish between them effortlessly. Our study consists of three main phrases, which are primitive study, character component extraction, and character component testing. The first phrase is where we studied foreigner's general perception of Thai culture. The information acquired from this phrase served as a guide for our Thai character design during the latter experiment. The second phrase is a theoretical study of character design principles to analyze which cultural character components have

the potential as a cultural stimulus. Ten test designs were generated within the last phrase, each with a varied cultural combination. Participants were requested to evaluate the designs under four topics including (1) sense of Thai culture, (2) sense of Japanese culture, (3) uniqueness, and (4) satisfaction. Likert's scale of seven was utilized as the scoring system.

The results indicated that, in terms of visualization, costume is the key parameter for cultural sense accession by beholders. Its influential weight is at the average of 40% compared to other visual components of a cultural character design. The second most effective component is character type following by color and texture consecutively. These results along with our finding of beholder's preferences over each cultural designs have led us to the proposal of cross-cultural character visual design guide at the end.

Keywords: character design, cross-cultural design, cultural value, design procedure

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Sattayasai, P., Jiang, P., & Tanaka, T. (2023). Cultural Parameters of Character Design – a Proposal of Cross-cultural Character Design Procedure for Visual Perception Achievement. *International Journal of Asia Digital Art and Design Association, 27*(1), 1-10. https://doi.org/10.20668/adada.27.1_1

International Conference

Sattayasai, P., Jiang, P., & Tanaka, T. (2022). Cultural Essence Stimulation from Visual Elements of Promotional Character Design. *International Conference for Asia Digital Art and Design 2022*, 55-60

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CHAPTER 1

INTRODUCTION

1.1 Research Background and Objectives

Design is all around us. Every man-made object has to go through a design process before it is produced. Although previous productions were focusing on usability, it is apparently not enough for recent market demands. Faster and cheaper production is now available with advanced technology. The design field has turned into a highly competitive environment, driving designers to continuously bring a new attribute into their work. Aesthetics and value have become powerful tools to make design products outstanding. A design with cultural value can achieve a deeper expression than ones without. Cultural value was further developed to the next level by globalization and cultural diversity movement. Globalization has brought numerous cultures from all around the world together while diversity ensures that no cultures are left behind. This endorsement of cultural combination results in the adoption of cross-cultural art in various design fields.

Despite the growth of cross-cultural design, the science of this design trend is yet to be discovered. There are some studies of character design fundamental and cultural product

design. However, none covers how to incorporate them together and how viewers will interpret the design. The beholder's interpretation is important for all kinds of cultural design. That is because cultural elements can be understood differently depending on beholder's background and knowledge especially when it is not from their own culture.

For the above reasons, we aimed to inspect those matters in terms of design fundamental. In this research, each character design principle was examined to extract any visual elements with the potential for cultural input. We then developed 10 different designs to test those elements for their influential weights based on beholder's interpretation and for a subjective issue like beholder's preference as well. The results were the key to initiating visual guidelines for cross-cultural character design between any two cultures. Proposal of the guidelines can be found under the discussion section.

The population within our test was selected by using accidental-and-volunteer sampling method. As we considered design as a product, the target population was set to be citizens with purchasing power. Therefore, the age range is 18 years old and up. The sample size was determined by using an infinite population formula.

Thai and Japanese participants were selected as our test subjects due to the characteristics of their cultures. Both cultures have prominent attributes, which are well-known by foreigners. This has a positive effect on participants' cultural awareness. It is essential for

participants to have some basic understanding of the opposite culture for our test. Cultural awareness deficiency can lead to misinterpretation or difficulty accessing cultural sense from a design. Hence, the deficiency was controlled to reduce test inaccuracy.

1.2 Thesis Overview

The study aimed to examine the representation of cultural content within character design through visual components. The findings were later used as based information to develop visual guidelines for cross-cultural character design. The topic of this study was in response to the current design trend that has embraced diversity movement. Nonetheless, the exploration of cross-cultural design principles for character design is still limited. By creating 10 test designs, we measured the influence of each character components in the role of cultural stimulus. In the end of the experiment, we were able to analyze the influential weights and interpret them into percentage. We believe that the findings are applicable to any future cross-cultural character designs despite the intention of use, whether for business or animation.

Chapter 2 Literature review

Chapter 2 mainly consists of theoretical explanations. The topics are in relation to the research of cross-cultural design for characters, which include character design in animation, character design for business, design trend in Japan, Thai and Japanese culture, cultural value

implementation, and character design theories. This knowledge is significant for the building of research methodology and experimental characters.

Chapter 3 Research Methodology

All processes of the research are explained in detail within chapter 3. At the start of the chapter, research expectations were stated following by the selection of case study. The calculation of population size was showed as a step-by-step figure. The main research method was separated into three phrases. The first phrase is called primitive study. This is where we intended to acquire the basic understanding of Thai cultural elements through foreign perspectives. The results were beneficial to the design of our experimental characters. The second phrase is the extraction of character components. Since a character contains various minor structures altogether, we had to identify which components have the potential for cultural value implementation in terms of visual design. The results led us to our final phrase, which is character component testing. Here, we have generated 10 different cross-cultural designs between Thai and Japanese cultures. Participants were requested to evaluate all the design under 4 topics including Thai cultural sense, Japanese cultural sense, noteworthiness, and satisfaction.

Chapter 4 Analysis and Results

The experiment results were highlighted in chapter 4. This is where we provided the numerical data retrieved from a mathematical analyzation. The data was later interpreted into cultural visual design aspect and individual preference aspect. Multiple regression analysis has shown that 4 visual components of a character design can be ranking by their cultural influential weights as (1) costume, (2) character type, (3) color, and (4) texture.

Chapter 5 Conclusion and future works

From the analysis in Chapter 4, we have initiated a guide for cross-cultural character design under bi-cultural circumstance. The proposals are Cross-cultural Design Blending and Cross-cultural Design Procedure flowchart. Limitations and suggestions for future work are included as well.

1.3 Definition of Terms

The following terminologies are used within this paper:

- *Cultural value*: in this study, cultural value refers to the representation of a cultural element, perspective, practice and/or beliefs through art and design.

- *Cross-cultural character*: a character that contains two or more cultural characteristics.

CHAPTER 2

LITERATURE REVIEW

2.1 Cultural Character Design and Animation

The art of character design has an exceedingly long history. The very first drawings of human and animal characters can be found within cave paintings since prehistoric times. Character design has become a growing form of art after the golden age of animation and the birth of the famous Walt Disney's studio. At any rate, there will be no animation without a character unless it is abstract. It is also the same time that some character design principles were formed by skilled animation artists. The expansion of the animation industry has encouraged designers to continuously develop various styles of character design to meet viewer's preferences. Some character designs are so successful that they outstand the animation story and have become mainstream themselves. For example, Despicable Me is an animation with the story about a criminal master named Gru. His minions, small unknown yellow creatures, were presented. Their goofy misbehaved actions and adorable appearance were favored by the audience. The popularity of minions is so wide that they ended up having their own series of movies and products. This demonstrates the importance and the power of character design.

There are various successful characters from animations, for instance, Stitch from Lilo & Stitch, Disney's princesses, Totoro from My Neighbor Totoro, and SpongeBob from SpongeBob SquarePants. These characters appear not only on screen, but also on various kinds of product or become the product itself (e.g., figure model and plush toy).

Despite the success of the films, plenty of old-time characters in animation often contain stereotypes and racism. Even at the present, Disney company is still struggling with criticism over the subject. *Jasmine* is Disney's first non-white lead character. She appeared as an Arabian princess in the movie *Aladdin*. Although the piece is a classic, it received a negative criticism from the American Arab Anti-Discrimination Committee for inaccuracies and some inappropriate rewritten contents. Later in 1995, Disney released their second local culture-centric animation, *Pocahontas*. The story and the lead female belong to Native American culture. Despite the critics, the company's attempt to include diversity within their films is persistent. Disney dropped their first Asian-culture-based animation in 1998, *Mulan*, which derived from a Chinese folklore. As for an African American character in general, their appearances in animation were limited during the year of 1916-1941. They were often represented as characters like maids, aunties, or washerwomen. These characters were problematic, not just by stereotyping through the white perspective, but also stirring racial controversy. Little Ol' Bosko, an animation aired during the 1930s, tells a story of a boy named

Bosko with black features. Although the producer did not confirm Bosco's race, it was believed by critics that the character is a mimic of Black people. There was also an episode of the animation that shows Bosko imitating Chinese dance, which can be controversial [1].

The very first African American lead character produced by a highly influential company in a full-length animation was later introduced in the early 2000s. Disney has their first project for an African American princess in 2009, *The Princess and the Frog* [2] [3]. The film features *Tiana* as a lead female character. Tiana is an African American lady who has a strong passion for her African cuisine and is determined to have her own restaurant. Tiana later becomes a princess after her marriage to Naveen, the prince from Maldonia (fictional country). Despite the effort to be more diverse, the movie still received some negative criticism that it was stereotyping African woman with kitchen work and that Tiana becomes a frog for most of the time.

Although character designs from early times are not diverse and some even contain racial discrimination, modern designs have changed according to a continuous cultural diversity movement and globalization. Eventually, mixed cultural contents are becoming more common within late animation. Disney's Amphibia, an animated series premiered on Disney Channel, is one example of bi-cultural animation. The story was inspired by Thai American culture. Therefore, the story and the lead character are Thai American cultural designs. Amphibia tells

a story of Anne Boonchuy, a half Thai American teenager who got transported into a mystical world full of talking amphibians like frogs [4].

Further examples of full-length animation with cultural contents and designs are provided below.

- DreamWorks Animation - Kung Fu Panda, Puss in Boots, How to Train Your Dragon, The Prince of Egypt, The Road to El Dorado

- Pixar Animation Studios - Turning Red, Luca, Coco, Brave, Ratatouille

- Blue Sky Studios - Rio, Ferdinand

- Studio Ghibli - The Tale of the Princess Kaguya, Grave of the fireflies, Spirited Away (2003 Oscar award winner for best animated feature), Pom Poko

- Sony Pictures Entertainment - Spiderman: Across the Spider-verse, Wish Dragon

It is obvious that cultural design is a growing trend that is evolving into the next step, multi-cultural design. Raya and the Last Dragon is a great sample of a multi-cultural animation. The film was built up based on a variety of Southeast Asian cultures. To design their multi-cultural world, the studio had a group of experts in Southeast Asian cultures for consultation. The animation team also traveled to 7 countries (Laos, Indonesia, Thailand, Vietnam, Cambodia, Malaysia, and Singapore) during the early process of the film to study the cultures and arts [5].

Although the evolution of cultural character design is ongoing, the process and design principles behind the artwork is yet to be identified.

2.2 Cultural Character Design and Business

Character design in the role of merchandising performs as promotional character or so-called mascot. The application of mascot is not limited to a product. They can also be a representation of a brand, institution, event, or place. Mascots can enhance consumer communication in a couple different ways including product identity, brand personality promotion, and promotion continuity assurance [6]. They also allow consumers to have a closer connection with the product or what they represent through activity-based advertising like event marketing. This immersive experience helps raise brand awareness and enhance emotional bond, which can be further developed into brand loyalty. A positive connection between a subject and its representing mascot can strengthen the image of a brand. We can say that an appearance of a mascot can remind people of the originating brand even when the brand name is absent if the relation is strong enough. For example, we think of Kellogg's cornflakes whenever we see the character Tony the tiger.

Although there are cultural mascots, they are commonly one or two-cultures centric. The design tends to not step into the complicated realm of multi-cultural character (3 or more

cultures included). This kind of mascot is usually simplified to reach a wide range of audience

by removing some details. A common method to globalize a design is westernization. To

westernize a design, a certain cultural character will be combined with a 'modern design' or a

glimpse of western culture (usually the US). Hence, it becomes a bi-cultural design. We may

say that the smallest level of cross-cultural character is a combination of a certain culture with

western culture.

Figure 2.1 Muay Thaishi, Mascot of Thai Embassy in Japan.

An example of bi-cultural character is Muay Thaishi or ムエタイシ in Japanese

language. Muay Thaishi is a mascot of Japan embassy in Thailand. It is a red snapper fish

character wearing Thai kickboxing costume. His name Muay means kickboxing in Thai

language and Thaishi rhymes with the word taishi in Japanese, which means embassy. It is

obvious that Muay Thaishi is the outcome of combining Thai and Japanese culture. Its bi-cultural concept is to reach the target audience, Thai and Japanese citizens.

2.3 Character Design Trend in Japan

Japan has the most outstanding character design business in the world, especially mascot business. Their character creation goes beyond the purpose of product and brand advertising. Each area in Japan has their own promoting character to connect with people. The most popular style of these designs is called Yuru-Chara. Yuru-Chara refers to characters that are designed to be loose, gentle, or relax [7] [8]. This style is exceedingly preferred by Japanese people. There are a few studies of Japanese local mascots. The results have indicated that Yuru-Chara characters are affectionate to Japanese people because of their attributes as following: large round eyes or smiling eyes, short limbs, large head proportion, round nose, animal-like or smiling mouth, and friendly childlike personality [9] [10] [11]. Not just nationally, some of these characters have made their way international also. Kumamon is a city mascot of Kumamoto prefecture designed as a black bear character with big red cheeks. Kumamon was initially promoted through a Kumamon photo hunting campaign. The campaign was so successful that Kumamon was able to raise the value of its prefecture tourism almost up to 9,000 million yen within 5 years. The mascot was found doing promotion activities in Thailand

also [12] [13]. Further examples of famous mascots from Japan can be Chiitan, Funassyi, and Domo-kun.

Figure 2.2 Kumamon in Thailand.

Other famous relaxing characters from Japan can be found in animation and game industry. Sanrio, a huge Japanese company, is remarkably well-known for their adorable original character designs. For instance, Hello Kitty character has a variety of products selling worldwide.

Sumikko Gurashi animation characters are also internationally famous. The name 'Sumikko Gurashi' derives from Japanese words means life in the corner. The animation is about the life of 15 characters including Shirokuma, the green Penguin, Tonkatsu, Neko, Tokage, Furoshiki, Obake, Nisetsumuri, Tapioca, Zassou, Mogura, Ebifurai no Shippo,

Suzume, Hokori, and, lastly, Yama [14]. These characters are the reflection of Japanese people's shy characteristic. However, their quirky but adorable behavior and appearance have impressed foreign audiences too. Nowadays Sumikkogurashi can be found commonly on various goods in the supermarket.

2.4 Design and Cultural Value Implementation

Design expresses the concept of a subject. For products, design includes packaging, graphics, and promotional character as well as product body. These elements are bonded unitedly to bring meanings and values to a product. The way they shape beholder's perspective of a subject can make a product stand out among similar ones [15] [16].

Cultural value can be implemented into an object through several elements, for example, texture, pattern, and shape. For character design, cultural value insertion can be done through visualization. There are several character elements that can be manipulated such as costumes and accessories. Anyhow, cultural context can also generate some complications for the audience. That is because it relies highly on beholder's cultural knowledge, which is influenced by several factors, for instance, educational background and media. The risk of complication is supposedly greater when the audience is not a native of the presented culture [17] [18]. Some cultures are also difficult to distinguish between each other due to their close characteristics,

for example, some Indian products are misunderstood as Thai products by foreigners [19]. Despite the possible issues, products with cultural value undeniably contain deeper aspects of product experience, meanings, and even identity [20]. Consequently, the suggestion for designers is not to avoid using cultural value but to study cultural background of their target group during the initial state of design process. This is to make sure what level of cultures they understand and prefer in a design.

2.5 Visual Components of a Character Design

Character design has no fixed rules since it is a creative field of work. However, there are theories that were established by professional artists as a design guide. For character components, there are several ways to break down a character into small parts depending on the perspective of an artist. For example, a character can be considered as a picture, which then will be separated into 6 visual elements: space, line and shape, tone, color, movement, and rhythm [21]. Examples of commonly used theories are shown in table 2.1.

Table 2.1 Character component theory comparison table

Number	1	2	3
Author	Bruce Block	Tom Bancroft	Randy Bishop, Sweeney Boo, Meybis Ruiz Cruz, & Luis Gadea
Source	[Book] The Visual Components	[Book] Creating Characters with Personality	[Book] Fundamentals of Character Design
Design Elements	(1) Space (2) Line and shape (3) Tone (4) Color (5) Movement (6) Rhythm	(1) Shape (2) Size (3) Variance (referring to spacing and size-shape variety) (4) Negative space (5) Hairstyle & clothing (6) Proportion (7) Pose (8) Color (9) Style (referring to illustration style)	(1) Shape language (2) Color & value (3) Lighting (4) Balance & contrast (5) Scale (6) Repetition (7) Rhythm (8) Tangents

These theories were later determined to see which are capable of cultural value insertion. They then were categorized into groups in terms of visible character components that can be understood by the general audience.

6 Visual Components by Bruce Block

When we consider a character as a picture, according to Bruce Block, it can be broken into six visual components including space, line and shape, tone, color, movement, and rhythm.

- *Space*: space refers to 3 areas including the real area in front of a camera, area within the screen, and the screen size.

- *Line and shape*: line exists in our mind. It is the results of other visual components. Lines can form into shapes.

- *Tone*: tone is the brightness of an object in grey scale.

- *Color*: literally means the colors of an image.

- *Movement*: this attribute exists within a moving picture such as animation and film.

- *Rhythm*: the rhythm within an image, which consists of alternation, repetition, and tempo.

Character Designs by Tom Bancroft

- *Shape*: this refers to the basic shapes in terms of drawing fundamentals, which are circle, square, and triangle. Each one has its own symbolic meaning and mood generation.

- *Size*: variation of size can give different mood and feel.

- *Variance*: it is referring to spacing and size-shape variety.

- *Negative space*: the free space around a drawing.

- *Hairstyle & clothing*: the design of a character's hair and costume.

- *Proportion*: the ratio between a character's head and body.

- *Pose*: the act or the standing pose of a character.

- *Color*: the color palette of a design.

- *Style*: the illustration artistic style such as comic book and Japanese manga.

Key Design Principles by Randy Bishop, Sweeney Boo, Meybis Ruiz Cruz, & Luis Gadea

According to the book, there are eight attributes involved with a character design including shape language, color & value, lighting, balance & contrast, scale, repetition, rhythm, and tangents. These attributes are mostly similar to Bancroft's design fundamentals. Some different principles are explained as follows.

- Lighting: it is the setting of light sources within the drawing. The principle explains how the casting of light and shadow can affect a picture.

- *Balance & contrast*: this refers to the evaluation of the balance and contrast of all drawing components within the picture such as color and light setting.

- *Repetition*: the consistency of design created by using repetitive elements such as same texture.

- *Rhythm*: it is found within the line of action of a character.

- Tangents: this refers to the intersection of lines that causes confusion to the audience.

2.6 Cultural Exchange between Thailand and Japan

Japanese and Thai culture were selected as our case study because of their prominent characteristics. These two cultures are internationally known by foreigners. Moreover, there have been a continuing cultural exchange between Japan and Thailand through diplomatic

relation. In 2009, Japan Ministry of Foreign Affairs reported that Thailand was one of the most

visited countries by Japanese [22]. This over-a-hundred-years of exchange allows both citizens

to have some basic knowledge about the opposite country. It is important for this study that

participants have some cultural awareness because of the upcoming experiment. Participants

needed to be able to access some sense of foreign culture through the test designs. Lack of

foreign cultural knowledge may lead to trouble understanding bi-cultural designs, which can

affect our test accuracy.

CHAPTER 3

RESEARCH METHOD

3.1 Case Study Selection

The expectation of this research was to establish a visual design guide for cross-cultural design. At the initial stage, we aimed to create a bi-cultural design first instead of going directly to an advanced multi-cultural design guide. That is because bi-cultural character is the most common form of cross-cultural character design. The complexity of a multi-cultural character is larger. Hence, the chance of multi-cultural characters being used is lower than the bi-cultural ones. Nevertheless, the principle of multi-cultural character design may be investigated in future research. To select two cultures for the experiment, we set up a requirement checklist as in table 3.1. These requirements were fulfilled by Japanese and Thai cultures, which is why they have become our case study.

Table 3.1 Test culture requirements

Cultural Attribute	Participants of the test culture	Limitation of Researcher
(1) The cultures are well-known internationally.	(1) Participants have some basic cultural knowledge of their own and foreign culture.	(1) Researchers should be able to explain to participants clearly with their spoken language in case of problem or question.
(2) The characteristics of both test cultures are prominent and can be identified effortlessly.	(2) Participants are accessible online (online questionnaire).	(2) Preferrable communication languages: English, Thai, and Japanese.
(3) Test cultures are not similar or share a close root.		

3.2 Population and Sampling Method

As stated earlier, Japanese culture and Thai culture are our case study. Therefore, the population included Japanese and Thai citizens. Target population was required to be 18 years old and up to assure their purchasing power as a customer. That is because we aimed to contemplate the test results in terms of purchasing influence as well. Adult consumers have more opportunities to purchase or decide what they prefer by their individual decision while young consumers like children mostly depend on their parents or guardians.

Specific knowledge or skills are not necessary for our experiments. Participants were only required to fill in a set of online questionnaires. Thus, the sampling method was accidental and volunteer sampling. Accessible population includes (1) Japanese natives in Morioka, Iwate and (2) Thai natives with internet access.

Infinite population formula

: n – sample size, z – z statistic for a confidence level, d – precision, P – expected prevalence or proportion

$$n = \frac{P(1-P) \times Z^2}{d^2}$$

Input values
Proportion of 7%, level of confidence at 95% and precision of 5%
Thus, P = 0.07, Z = 1.96 and d = 0.05

Output value

n = 100.035 ≈ **100 people**

108 Japanese participants
116 Thai participants
⎱ TOTAL 224 people
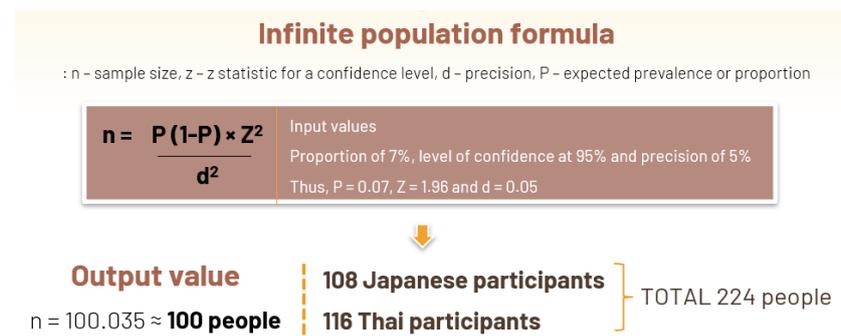
Figure 3.1 Sample Size Calculation.

To determine the sample size, an infinite population formula was utilized. The calculation was done as in figure 3.1. The output showed that at least 100 participants are required to achieve standard accuracy (level of confidence at 95 percent). As a result, we have gathered 108 Japanese participants and 116 Thai participants, in total 224 people.

3.3 Primitive Study

Each culture has its own complexity and details. Thai culture is rather more complex than Japanese culture. Japanese culture is very well recognized by foreigners worldwide. Normally, Thai people can answer 'Kimono' right away when asking about Japan's national costume. However, it is not the same way round for Japanese people. In fact, specifying only one Thai attire as the national costume can be tough even for the natives. Thailand is divided into six regions geographically, which are central, north, northeast, east, west, and south region. All regions have their own subcultures, and all are periodical. Thai national costumes involve variety of designs depending on which area and from which period of time we are talking about. Examples of Thai attires from the period of King Rama the fourth and King Rama the fifth are shown in figure 3.2 and 3.3. It is obvious that the style from King Rama IIII period is more exotic. A long shawl-like cloth made from silk called 'Sabai' is the main apparel for lady's top. In contrast, the top from King Rama V period is more of a lacy blouse with long puffy sleeves.

Figure 3.2 Thai National Costume from King Rama IIII Period.

Figure 3.3 Thai National Costume from King Rama V Period.

The presented samples are only a small part from the whole collection of Thai national costumes. These designs are still used until the present day, especially on a special occasion like Thai wedding, but which design is depending on individual's preference. Therefore, we have conducted a primitive questionnaire in this research to ensure that our character designs in the latter experiment are understandable by foreign participants. The questionnaire was on an online platform. The aim was to retrieve a wide idea of how foreigners see Thai cultures. Participants include 32 non-Thai people who live in Morioka, Japan. Most respondents are Japanese citizens, 18 out of 32 people. Others were foreigners who live in the area including Chinese, American, Indian, Mongolian, Bangladesh, New Zealander, and Australian.

There are three main questions in the questionnaire. Each question and its purpose are stated in table 3.2.

Table 3.2 Details of primitive questionnaire

Question	Purpose	Character Design Application
(1) Select pictures that could represent Thailand (Thai culture) in your opinion.	To find the common symbol or icon of Thai culture in foreigner's perspective.	Type of character that can be the representative of Thai culture.
(2) Select style of cloth that feels the most Thai to you.	To find the design of Thai costume that best conveys Thai cultural essence to foreigners.	Thai character's apparel design.
(3) Select products that you think are Thai products.	To find what design elements or appearances of a product that seem Thai to foreigners.	Additional information for Thai product packaging design—in case of further study of cultural character design for product.

In question 1, participants were required to select any pictures from the choices that can represent Thai culture in their opinions. The choices included (1) elephants, (2) people in Thai traditional clothes, (3) Siamese cat, (4) Yak statues, (5) Exotic creature statues, (6) Thai kick boxer, (7) Pakchee (Thai coriander), and (8) other (blank fillable choice for other personal choice). After selecting the pictures, participants were also required to explain why they think the selected pictures are suitable in their perspectives.

Question 2 consists of five designs of Thai traditional costumes. These costumes can be commonly found at most Thai garment store, photoshoot, or even on the internet. Participants were requested to select any design that feels Thai to them. They were then asked again to explain the reasons for choosing it.

Question 3 contains several product designs from different countries including Singapore, India, and Thailand. Participants were asked to the products that they think are Thai products. After the selection, there was a free space for participants to explain what convinced them the selected designs are Thai products.

3.4 Character Component Extraction

Character's structure needed to be studied as we aimed to explore which parts of a character can retain cultural value in terms of visual design. This process is very important for

the upcoming experiment. The determination of test components was based on beholder's

perspective, not designer's perspective since the objective was to *understand the effect of each*

component as a cultural sense stimulus to beholders. This was to support visual communication

through character designs and ensure the use of visual cues. This was regarding the concern

that design value and goals cannot be fully achieved if it is misinterpreted by beholders.

Common principles of character design structure were implemented as in figure 3.4.
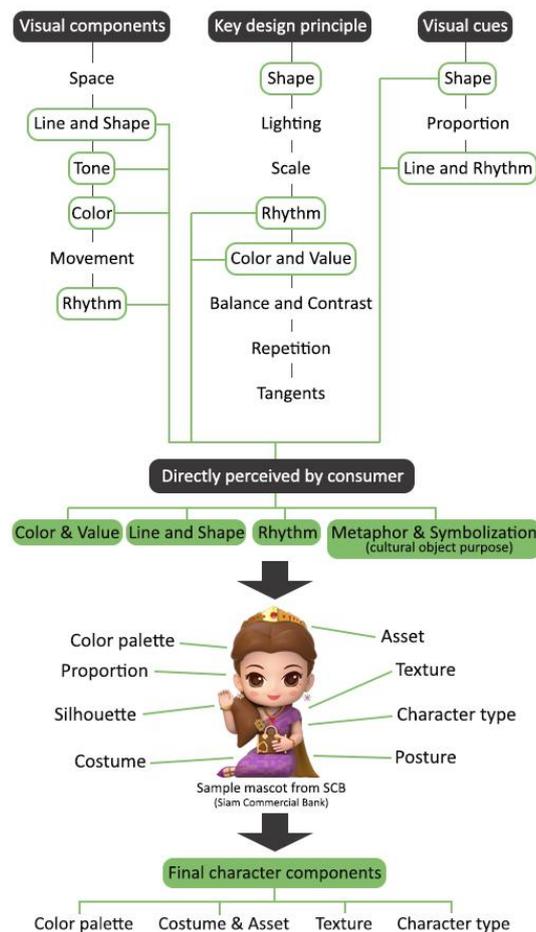
Figure 3.4 Character Component Extraction Workflow.

The implementation was done as in this order: (1) select, (2) grouping, and (3) visualize. There were three main character design principles that were in the comparison. From these three, we selected the principles that can be directly perceived and understood by beholders. Details of some principle's removal are as follows.

Space – In visual component, space refers to the area within the picture. This considers picture as a whole and does not focus on any design part of a character. Therefore, 'space' was opted out from our experiment for character's cultural value insertion.

Movement – Although movement can be put in cultural context at some point, it is very rare and can be ambiguous. Some movements like traditional dance or a specific gesture can be cultural. However, chances of use within character design are low and difficult especially with a product's promotional character that does not move at all.

Lighting – Even though good lighting is important to make a design look attractive, it is not related to cultural context.

Scale – Scale refers to the size of each part of a character. Changing the size of each character's part will definitely affect the look and feel of a character but not in a cultural context.

Balance and contrast – This principle refers to how we should differentiate each small component (such as lines) to make a strong visual representation. However, it is not connected to cultural value, but just design aesthetics.

Repetition – It is how to create a consistent design by using similar elements within the same drawing. This is not about cultural value.

Tangents – Tangents are the intersection of lines that seems confusing. The principle focuses on a drawing technique, not in cultural context.

Proportion – It is the same as 'Scale'.

After the selection, similar subjects were put together as a group to eliminate repetition of the same principles. To fulfill the cultural context, metaphor and symbolization were added as another connected principles to cultural character design. That is because cultural contents are usually presented through metaphoric/ symbolic pictures to convey some messages or an identity of a group. Thailand and elephant can be an example of symbolic meaning developed by culture. According to Thai government public relations department, every March 13th of a year is Thailand's national elephant day. It is also the same that the country's national animal was designated as a white elephant. Elephant has a very long journey within Thai culture. During the old times, Thai king rode them to war battles. Rare white elephant was also

presented to kings as the utmost precious gift. Consequently, elephant has become the symbol

of Thai royals and eventually turned into the symbol of the whole nation. A picture of elephant

can be seen on the old version of Thai national flag that was used during the period of king

Rama II [23].

Figure 3.5 History of Thai National Flag.

In the end, we have four groups of principles that are connected to cultural character

design including (1) color and value, (2) line and shape, and (3) rhythm, and (4) metaphor and

symbolization. These are four main groups that occur whenever cultural characters are created.

The next step was to interpret these principles into the form of visualizations— *what*

audiences actually see on a character. For color and value, it is obvious that they directly turn

into color palettes. For rhythm, the principle is the use of pattern within a design. Thus, it can

be implied as texture such as a fabric pattern. For metaphor and symbolization, the visual side

of them is commonly expressed through a hidden message of a picture or cultural symbol. So, they can widely refer to costume (specific cloth design), asset (a use of cultural object as an accessory), and even the type of a character as well (an elephant as the representation of Thai nation as an example). Line and shape can be slightly tougher than other principles to identify. Very parts of a design contain line and shape. However, if we consider it as a drawing of a character, what line and shape form into are costume, asset, texture, and the character itself.

As a result, we were left with four main components with the potential for cultural value input: (1) color palette, (2) costume and asset, (3) texture, (4) character type. Costume and assets were put together to maintain design consistency. If the apparel and accessories go separate ways, they can cause confusion or conflicted sense of design.

3.5 Character Component Testing

Character component testing is the major experiment of our research. This is where we tested the four components that we previously extracted from character design principles to see how they would work as a cultural stimulus within bi-cultural context. The goals of the experiment are explained in table 3.3.

Table 3.3 Character component testing goals

Goal	Purpose	Method
(1) Investigate the influential weight of each component as a cultural stimulus.	Design purpose	Set up test design including base characters (characters with only one culture) and bi-cultural characters with different levels of cultural input. Compare the cultural senses received by participants.
(2) Investigate participants' nationality factor in terms of cultural preference.	Merchandising purpose	Record how participants feel towards each test designs.
(3) Use of database for cross-cultural character visual guideline development	Character design innovation	Analyse and interpret raw data statistically.

In this experiment, participants were required to evaluate 10 different designs based on

Japanese and Thai culture. Two of them are base character including a full Thai character and

a full Japanese character. They were the indicators for the shift of cultural scores after the

application of bi-cultural context. The other eight designs are a combination of Thai and

Japanese cultures.

3.5.1   Japanese Character Design

The Japanese character's cultural element designs were based on publication resources

and interviews of Japanese participants. Japan has various iconic matters that are

internationally famous, especially Sakura. Sakura is a cherry blossom tree that blooms once a

year during Springtime. Sakura has a strong involvement in Japan's culture. During the

blooming of Sakura, Japanese people usually hold a celebration called o-hanami (お花見).

There are also countless foreigners visiting Japan every year specifically for the cherry blossom

festival. Japanese people's appreciation of Sakura can also be found within objects and traditions. There are several kinds of products from Sakura, for example, desserts, drinks, and beauty supplies. Drawings of Sakura can be seen as a graphic design and family crests. The word Sakura is also a common female's name. Consequently, Sakura has become the face of Japan. This is why it was chosen as *the type of character* for our Japanese-based character design.

After character type was decided, costume came into consideration. Certainly, Kimono is Japan's traditional attire. It is also well known by foreigners around the world. There are several types of Kimonos for different occasions of use. The remarkably traditional designs are complicated, heavy weighted and costly. Therefore, they are exclusively for a very special occasion such as a graduation ceremony or a wedding. This is where Yutaka steps into the top of the business. Yukata is a basic type of Kimono made of thinner fabric. It is simple to wear and usually worn during summertime. Yukata's simplicity and economical price allow it to be reachable by people. Most hotels in Japan also provide Yukata in various designs and sizes for both male and female guests as their basic accommodation. This allows foreign tourists to be able to learn about Yukata and try it on as well. Yukata's popularity goes beyond just a traditional apparel of Japan. It has become a part of the modern fashion industry [24] [25]. Thus, Yukata was selected as *the costume* for our Japanese-based character in the experiment.

For texture component, it can be slightly tough to decide. The history of Japan's textile pattern is a long journey of antique cultural art, which has been passed through many generations of Japanese textile artists until the present day. To preserve the wide collection of textile patterns, a non-profit organization named Kyoto Antique Fabric Preservation was founded. Normally, Kimono's patterns can be categorized into four seasonal themes including spring, summer, fall and winter pattern [26]. There are various beautiful patterns available for character design applications. Some designs are highly detailed, which can be complicated for foreigners to remember and understand. Therefore, we aimed to adopt a simple pattern that is acquainted by non-natives, in this case, Thai participants. This is why asa-no-ha pattern was chosen as *the texture* for our Japanese-based character. Asa-no-ha is a pattern of Japanese textile that has geometric shapes. The pattern has a positive meaning of healthy growth, so it is commonly used for a child's Kimono [27]. Asa-no-ha is a simple pattern, but it is distinct from Thai art. Most Thai people acknowledge asa-no-ha as a Japanese design due to cultural exchanges between the countries. The acculturation between Thai and Japanese culture also happens within the textile industry. Nowadays, there are several adaptations of Japanese garment patterns in Thai products as shown in figure 3.6.

Figure 3.6 Thai Local Products with Japanese Textile Patterns.

The most intricate part was color palette selection. There is no specific set of colors that is tied entirely to any culture or nation. It is more of an impression depending on the individual's perspective. However, this does not mean that we cannot associate colors with a culture. To build a color palette for the Japanese-based character, we have studied traditional colors of Japan. Kimono's color scheme will be shifting according to its seasonal theme and trending at the time. Therefore, we inspected the old traditional colors of Japan. During the old times, traditional colors derived from mineral and flower pigments [28]. The natural dyes resulted in five common colors: red, orange, purple, black, and deep blue. From the five colors, we have selected deep blue and red for our Japanese character's costume. These two were chosen because they are still widely used with Kimono design until the present date. Finally, *the color palette* for the Japanese-based character has become deep blue, red, and pink (as it is the color of Sakura).

Figure 3.7 Yukata with Color Scheme Similar to Traditional Dye.

To summarize, the components of our Japanese-based character are as follows. The character type is Sakura. The costume is Yukata. The color palette consists of pink, deep blue and red. The texture is Asa-no-ha pattern.

Figure 3.8 Japanese-based Character Design.

3.5.2 Thai Character Design

For our Thai-based character, the way its character type and costume were specified was different from the Japanese-based character. Thailand has variety of cultural subjects that are almost equally known by foreigners. Moreover, Thai culture in the perspectives of Japanese people seem to be changing over time, for instance, Thai coriander. Thai coriander is a kind of herb that often appears on top of Thai food. The herb was heavily introduced to Japanese people through their television show around the year of 2014. Somehow it has become a sensation. Thai coriander is currently sold in many forms of food product in Japan under its Thai name Pakchee (パクチー) [29]. The popularity of Pakchee in Japan was unexpectable for Thai people that it was on the news for a while. Therefore, we carried out a primitive questionnaire to confirm what foreigners, especially Japanese, are reminded of when they think of Thai culture. According to the results, we have Thai elephant as *the character* type for our Thai-based character. As for *costume*, it was the design of Thai Chakri cloth that most participants preferred.

Texture and color palette are different. These two components cannot be retrieved from a questionnaire. Deeper study was required. For texture design, we have consulted with a professional Thai wedding gown producer, Ms. Wichittra Porntadawit. As a result, Poom Khao

Bin was chosen as *the texture* for the character's apparel. Poom Khao Bin (พุ่มข้าวบิณฑ์) is a traditional pattern commonly used for Thai fabric. It is also can be found on Thai traditional architecture and products (W. Porntadawit, personal communication, December 13, 2021) [30].

Products of Wichittra
Local Thai traditional garment, Phitsanulok, Thailand
Official contact: https://www.facebook.com/WichittraThaiDress
OR https://www.instagram.com/wichittra.thaidress

Figure 3.9 Poom Khao Bin pattern, Hand-sewn by Wichittra Porntadawit.

Although the primitive questionnaire could not cover the relationship of colors to Thai culture. However, there were some interesting indications of colors that associate with Thai culture in the perspectives of foreigners. The indications include (1) several participants selected products with these green and yellow colors as Thai products despite the language on the packages and (2) some participants' direct statements about the colors. Besides the test, Thai Tone was examined. Thai tone is the collection of Thai traditional color palette developed by a Thai researcher, Dr. Pairoj Pittayamatee. The colors derived from authentic Thai

traditional arts and architecture [31] [32]. Eventually, the finalized color palette for Thai

character has become yellow, green, blue, red, and brown.

Figure 3.10 Thai-based Character Design.

3.5.3 Bi-cultural Character Design

To create bi-cultural characters for testing, we switched the cultural content within each

design one by one component as in table 3.4.

Table 3.4 Description of all test characters

Number of designs	Picture of designs	Cultural context	Cultural element			
			Color	Texture	Costume	Character type
1		Thai based	Thai	Thai	Thai	Thai
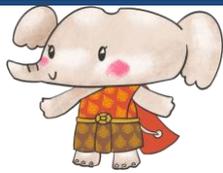
2		Japanese based	Japanese	Japanese	Japanese	Japanese
3		Bi-cultural	Japanese	Thai	Thai	Thai
4		Bi-cultural	Thai	Japanese	Japanese	Japanese
5		Bi-cultural	Thai	Japanese	Thai	Thai
6		Bi-cultural	Japanese	Thai	Japanese	Japanese
7		Bi-cultural	Thai	Thai	Japanese	Thai
8		Bi-cultural	Japanese	Japanese	Thai	Japanese
9		Bi-cultural	Japanese	Japanese	Japanese	Thai

10		Bi-cultural	Thai	Thai	Thai	Japanese

3.5.4   Scoring System of the Experiment

Participants of the character component test were divided into 2 groups by nationality, Thai and Japanese citizen. The division was to observe if the cultural components would affect participants differently in accordance with their cultural background or not.

The scoring system is based on Likert's scale of 7 where the score starts from 1, which means extremely low, to 7 that means extremely high. The scoring consists of four parameter evaluations including (1) Thai cultural score, (2) Japanese cultural score, (3) noteworthiness, and (4) satisfaction. These four parameters were established in accordance with product design situations, which are Purchase, benefits provision and impact creation (externalities) [33] [34]. That is because the adoption of character design ranges from animation industry to business and advertisement. This means characters will be perceived and judged by consumers as well as other components of a product that it belongs to. In fact, it plays an important role in product identity and purchasing influence. Promotional characters can convey the personality of a product and provide customers with a hint of the brand even when the brand name is absent.

With proper uses, it can even lead to brand awareness through a powerful connection between characters and products [6]. The interpretations of the four parameters are as follows.

(1)   satisfaction – indicating purchase tendency and emotional bond.

(2)   cultural score – indicating the benefit as a cultural promotion and identity sharing.

(3)   noteworthiness and singularity – referring to design impact as a brand identity and brand awareness factor for product competition.

The coverage of product situations is to encourage the potential of a promotional character as a part of product or brand awareness and preferences. These achievements are proven to be feasible by some brands, for instance, Ronald McDonald [35] [36]. Ronald is a clown mascot of McDonald's the fast-food restaurant. His colors and appearance are iconic and well-known globally. The image of the mascot is so prominent that it can effectively remind consumers of the brand regardless of the business name.

CHAPTER 4

RESULT AND ANALYSIS

4.1 Results of the Primitive Questionnaire

According to the primitive questionnaire, there were six questions for participants (three main questions, three explanation spaces). The first question was "Please select pictures that can represent Thailand or Thai culture in your opinion. Multiple choices are available.". In this question, seven pictures were presented along with the choice of *other* in case participants prefer something that was not provided. The outcome showed that approximately 78% of our participants considered elephant as the best representative of Thailand while Siamese cat received the lowest score among all choices despite the name 'Siamese'. Siamese derives from the previous name of Thailand, which was Siam.

Question 1: Please select pictures that can represent Thailand or Thai culture in your opinion. Multiple choices are available.

32 responses

Elephant — 25 (78.1%)
Thai cloth — 10 (31.3%)
Siamese cat — 2 (6.3%)
Yak statue — 12 (37.5%)
Exotic creature statue — 10 (31.3%)
Thai boxing — 17 (53.1%)
Pak-Chee (coriander) — 14 (43.8%)
Delicious Thai Food (eg. Tom… — 1 (3.1%)
other thai food (like pad-thai) — 1 (3.1%)
Thai curry — 1 (3.1%)
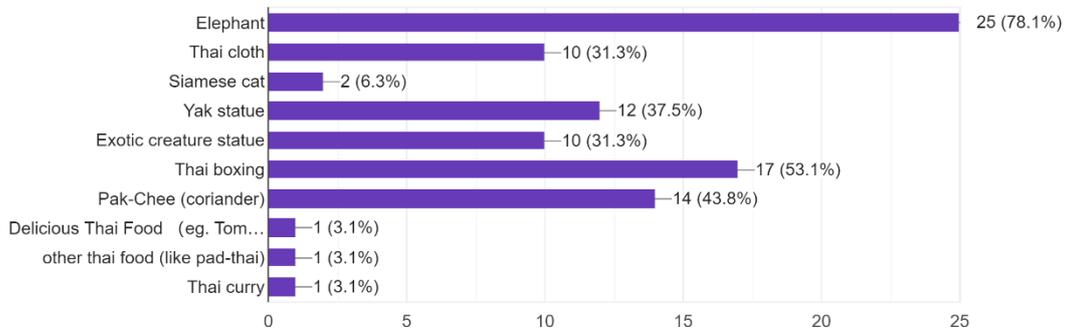
Figure 4.1 Result of the Primitive Questionnaire: First Question.

The second question was related to the first one. Here we provided participants with an opportunity to explain their reasons for their choices. Samples of the answer are below.

Question 2: From question 1, please tell us why you think the chosen pictures seem Thai to you.

32 responses

i went to bangkok and i saw yak statue everywhere, and i know thai boxing from chinese tv

I have seen those pics are representing Thailand on TV

They are ethnicity of Thailand.

Depends on culture and growing quantity

I think it is a symbol of Thailand

I think that I have seen images online involving elephants and Thailand. I have never seen Thai cloth or Yak Statues. I know about Thai Boxing from its popularity in movies and games.

I've seen them on TV.

民族的なものはその国を表していると思うから。

Figure 4.2 Result of the Primitive Questionnaire: Second Question.

The third question asked about the design of Thai cloth that foreigners are familiar with, "*Please select one style of cloth that feels the most 'Thai' to you. Multiple choices are available.*". Within this phase, we have found that 'Thai Chakri' is the most recognizable design for foreigners.

Question 3: Please select one style of cloth that feels the most 'Thai' to you. Multiple choices are available.
32 responses
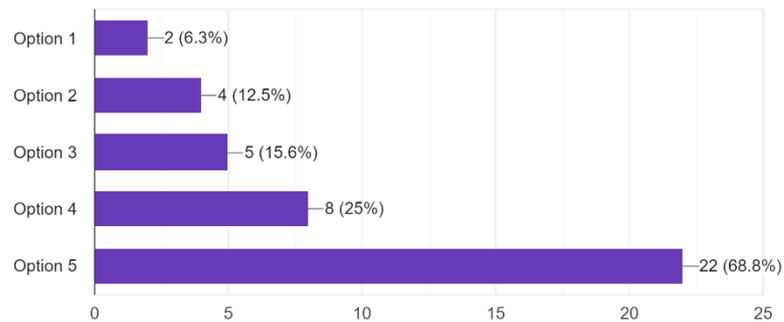
Figure 4.3 Result of the Primitive Questionnaire: Third Question.

Figure 4.4 Sample picture of Thai Chakri Cloth.

The fourth question was a space for participants to explain the reasons behind their answers for the previous question. Samples of the answer are below.

Question 4: From question 3, please tell us why you think the chosen costume seems Thai to you.
32 responses

it's royal, i saw a lot this costume from tv and pee pair also wear it in lab before, and it is beautiful.

I have seen this clothes from Thai music video

In my opinion that's the traditional attire of Thailand.

Culture fact

Taisi: In recent decades, due to the unique hand-made craftsmanship and unique exterior texture, Taisi has become a unique product

I think I have seen necklaces and some cloth tied around men's waist in movies featuring Thailand.

Because I have image that some Thai people make rice.

色合い

I have seen it from drama.

Figure 4.5 Result of the Primitive Questionnaire: Fourth Question.

While other questions were aiming toward character design aspect, the next question was to understand the impression of Thai product package design. Participants were given a small test to select products that seemed to be Thai from various choices, which were a mix of Thai products and other country's products. Evidently, participants tended to confuse between Thai and Indian product package design due to the similarity of cultural arts. It is the main caution when designing a package for Thai product, which can be useful for cooperating package design with promotional character design.

Question 5: Please select products that you think are 'Thai products'. Multiple choices are available.
32 responses

product 1	10 (31.3%)
product 2	10 (31.3%)
product 3	8 (25%)
product 4	13 (40.6%)
product 5	2 (6.3%)
product 6	0 (0%)
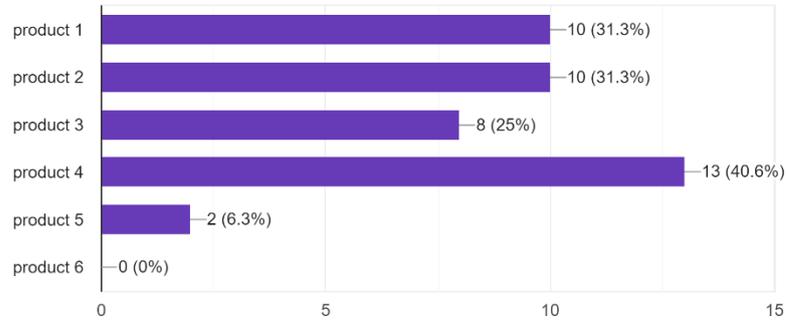
Figure 4.6 Result of the Primitive Questionnaire: Fifth Question.

As usual, participants were also requested to explain their reasons for choosing their answers.

Question 6: From question 5, how do you know or guess which product is Thai? What elements help you decide? (Examples: color, graphics, alphabets, etc.)
32 responses

i saw a big thai font, and i used to get this kind of things from pee sake and pee pair.

This product has thai alphabets in it

It's the Thai language on the package I guess

I used the product

Yellow is equivalent to the national color, but also a symbol of power

I think the colors of products one and three "seem" Thai to me. Product three says Thai in English on the bag. Product four is written in what I think is Thai. I can recognize many of these products as "foreign" but not specifically "Thai"

color and alphabets

色合い

Figure 4.7 Result of the Primitive Questionnaire: Sixth Question.

Figure 4.8 Sample Picture of Indian Product Misinterpreted as Thai's.

4.2 Results of the Main Experiment

According to the experiment, both Thai and Japanese participants considered design NO.1 as the strongest Thai design following by design NO.5. However, the third place for Thai design is NO.3 for Thai participants while Japanese participants mainly selected NO.10. For the most Japanese character, both groups had a complete agreement that design NO.2 is the most Japanese one following by design NO. 4 and NO. 6 consecutively. A summary of all the evaluations is shown in table 4.1 below.

Table 4.1 Average scores of all parameters from the character component test

Number of designs	Participant group	Thai cultural score	Japanese cultural score	Noteworthiness	Satisfaction
1	Thai	**5.59**	2.41	4.78	4.86
	Japanese	**5.08**	2.25	4.49	4.31
2	Thai	2.05	**5.83**	**5.13**	**5.17**

	Japanese	1.86	**5.66**	4.46	4.34
3	Thai	**5.10**	2.73	4.62	4.67
	Japanese	4.25	3.13	4.22	4.20
4	Thai	2.20	**5.49**	4.88	4.92
	Japanese	2.37	**5.19**	**4.74**	**4.43**
5	Thai	**5.20**	2.62	4.76	4.83
	Japanese	**5.06**	2.44	4.39	4.28
6	Thai	2.96	**5.20**	4.82	4.87
	Japanese	2.42	**5.08**	4.44	4.36
7	Thai	4.28	4.19	4.66	4.64
	Japanese	4.49	3.37	4.27	4.23
8	Thai	3.62	4.16	4.29	4.30
	Japanese	2.96	4.39	4.35	4.14
9	Thai	3.35	4.86	4.71	4.72
	Japanese	2.95	4.51	4.08	4.08
10	Thai	4.99	3.71	4.66	4.63
	Japanese	**4.35**	3.62	4.19	4.03

The results exhibit that there are some differences between Thai and Japanese participants on how character components affect the sense of culture. With Thai participants, costume had the strongest effect on how they perceived cultural sense following by character, texture, and color respectively. As for Japanese participants, the most influential components can be put in sequence as: character, costume, color, and texture.

In terms of noteworthiness and satisfaction, Thai participants gave design NO.2, the Japanese-based character, a highest score for both parameters. On the contrary, the most

preferred design by Japanese participants is design NO. 4, which is the Japanese character but with Thai color palette. These findings can be interpreted as

1)   Thai people tend to be fond of designs that are completely exotic, which means the purchase tendency will be higher than traditional designs.

2)   Japanese people are more conservative. Although they prefer designs that are highly Japanese-centered, a slight hint of another culture is also preferable.

These basic test results were further studied by using multiple regression analysis for the estimation of each component's influential weight on cultural sense stimulation. Dummy coding for categorical value had to be utilized since character components are non-numeric data. For the comprehensive view, nationality factor was eliminated. The analysis was done twice depending on the base cultural scores, Thai and Japanese, to observe any deviation between the two.

4.3 Multiple Regression Analysis

With n = 287 and 99% level of confidence, regression statistics based on Japanese cultural score showed multiple R value as 0.626 meaning the correlation coefficient is approximately 63%. R square value was 0.392 stating that around 39% of y-value (cultural score) can be explain with by the x-value (character components). Regression statistics and the

coefficient values based on Japanese cultural score are displayed within table 4.2 and 4.3

respectively.

Table 4.2 Multiple regression analysis based on Japanese cultural score

Regression Statistics	
Multiple R	0.626
R Square	0.392
Adjusted R Square	0.391
Standard Error	1.378
Observations	2870

Table 4.3 Coefficient values based on Japanese cultural score

	COEFFICIENTS	STANDARD ERROR	T STAT	P-VALUE	LOWER 95%	UPPER 95%	LOWER 95.0%	UPPER 95.0%
INTERCEPT	2.346	0.048	48.747	0	2.252	2.440	2.252	2.440
COLOR	0.435	0.054	8.078	9.571E-16	0.329	0.540	0.329	0.540
TEXTURE	0.370	0.054	6.880	7.302E-12	0.265	0.476	0.265	0.476
COSTUME	1.416	0.054	26.307	8.28E-137	1.310	1.521	1.310	1.521
CHARACTER TYPE	1.051	0.054	19.540	6.361E-80	0.946	1.157	0.946	1.157

Meanwhile, regression statistics based on Thai cultural score showed multiple R value

as 0.635 and R square value as 0.403. These mean the correlation coefficient is approximately

64% and around 40% of y-value (cultural score) can be explained with by the x-value (character

components). Regression statistics and the coefficient values based on Thai cultural score are

displayed within table 4.4 and 4.5 consecutively.

Table 4.4 Multiple regression based on Thai cultural score

Regression Statistics	
Multiple R	0.635
R Square	0.403
Adjusted R Square	0.402
Standard Error	1.382
Observations	2870

Table 4.5 Coefficient values based on Thai cultural score

	COEFFICIENTS	STANDARD ERROR	T STAT	P-VALUE	LOWER 95%	UPPER 95%	LOWER 95.0%	UPPER 95.0%
INTERCEPT	5.454	0.048	113.006	0	5.360	5.549	5.360	5.549
COLOR	-0.612	0.054	-11.340	3.442E-29	-0.718	-0.506	-0.718	-0.506
TEXTURE	-0.586	0.054	-10.856	6.203E-27	-0.692	-0.480	-0.692	-0.480
COSTUME	-1.293	0.054	-23.964	8.05E-116	-1.399	-1.187	-1.399	-1.187
CHARACTER TYPE	-1.002	0.054	-18.572	8.586E-73	-1.108	-0.896	-1.108	-0.896

The coefficient values of both analyses can be interpreted into cultural equations that portray the influential weight of each character component as in the following picture.

$$\text{Japanese Cultural value} = 2.35 + 0.44\text{Color} + 0.37\text{Texture} + 1.42\text{Costume} + 1.05\text{Character}$$

$$\text{Thai Cultural value} = 5.45 - 0.61\text{Color} - 0.59\text{Texture} - 1.29\text{Costume} - 1\text{Character}$$

Figure 4.9 Cultural Equations from Multiple Regression Analysis.

Figure 4.9 shows the equations resulting from multiple regression analysis based on

Japanese and Thai cultural score. The numeral in front of each component name exhibits the

influential weight of the parameter on the cultural score. The comparison of all components' influence in percentage can be seen in figure 4.10.
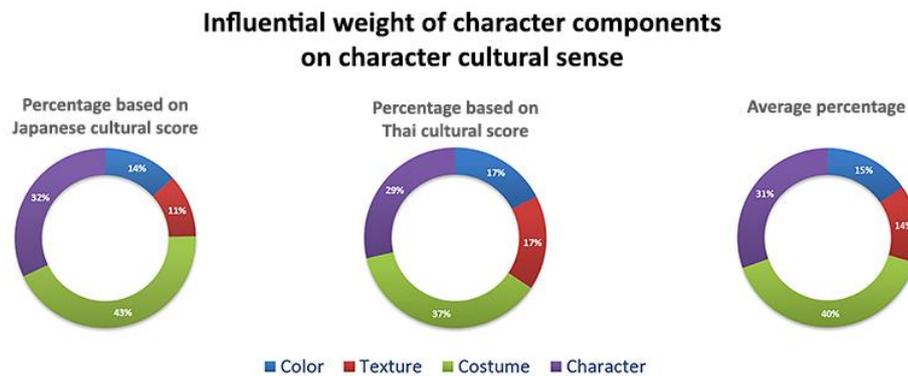

Figure 4.10 Percentage of Character Components' Influential Weight on Character Cultural Sense.

According to the equations, 'costume' certainly has the strongest influence as a cultural stimulus when nationality factor is removed. The second most influential component is character type while color and texture's influential weights can fluctuate.

In summary, 'costume' has the highest influence on cultural score both before and after the average. The overall picture of character components' cultural influence can be put into a sequence as: Costume > Character type > Color > Texture. The oscillation of color and texture's influence can be affected by cultural background, cultural experience, particularities

of the test cultures, and the design of the texture itself. However, the gap between their

influential percentages is not extensive.

CHAPTER 5

DISCUSSION AND LIMITATIONS

5.1 Proposal of Cross-cultural Design Procedure

The results of multiple regression analysis have navigated us how cultural sense stimulation can be done through mascot designs. Additionally, a cross-cultural design procedure was developed in accordance with the percentage of cultural weights generated by the four character components. Proposal of the procedure is as in figure 5.1.

The flowchart demonstrates the results of each character component combination in terms of beholder's perception. The reading conditions for the flowchart are (1) character starts from culture-A centric design to culture-B centric design, (2) the final perceptions (mood and feel) are in the aspect of culture-A beholders. To effectively utilize the flowchart, the following procedure in figure 5.2 is suggested.
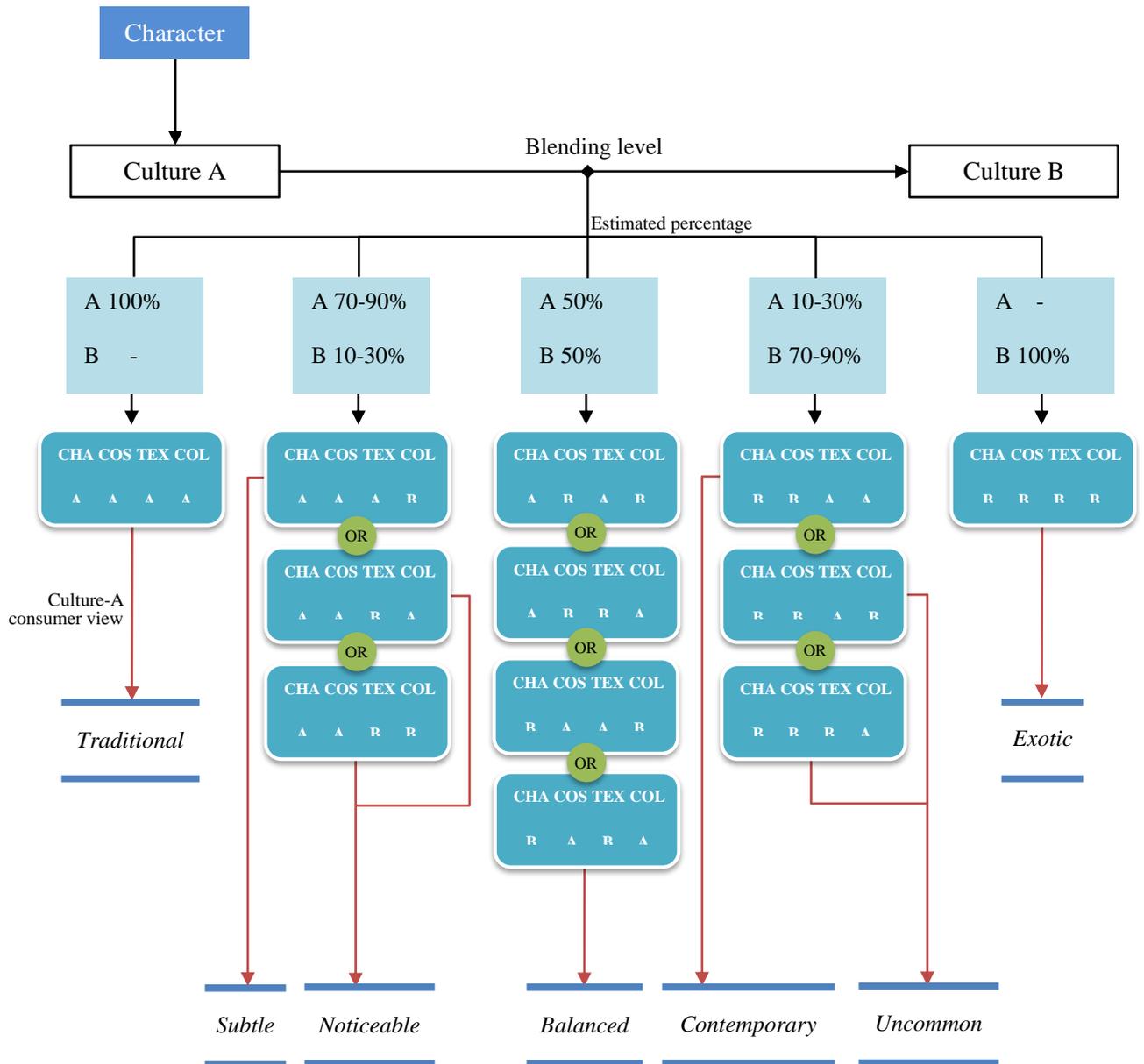
Figure 5.1 Proposal of Cross-cultural Design Blending.

Abbreviations: CHA – character type, COS – costume, TEX – texture, COL – color, A – culture A, and B – culture B. Percentage numbers are the percentages of cultural sense from each culture received by beholders.
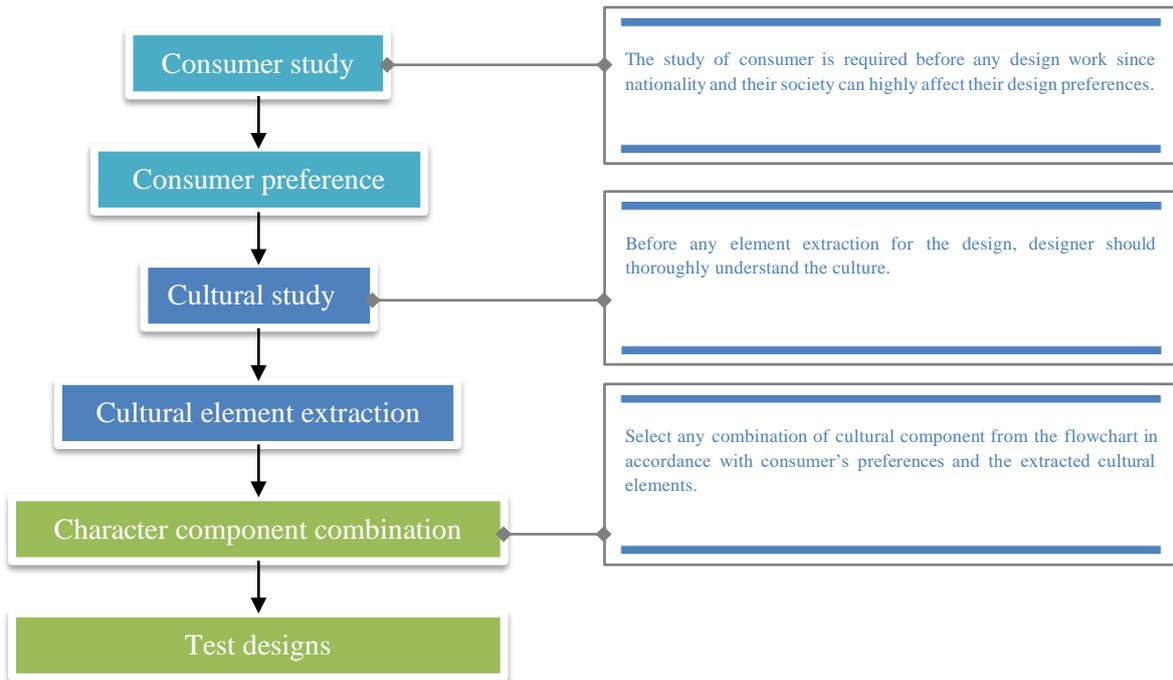
Figure 5.2 Cross-cultural Design Procedure.

5.2 Application of Cross-cultural Design Blending

The proposed procedure for cross-cultural design is newly developed. Therefore, the process may contain flaws that are yet to be discovered within use. In addition, it is highly based on beholder's perspectives. This means the perception (mood and feeling) may need an alteration for each target group in accordance with their personal preferences. Nevertheless, we believe the developed procedure can support designers for any cross-cultural character design despite the intention of use.

5.3 Limitations

There are two main limitations within the study: nationality and test cultures. Nationality is highly related to a participant's cultural background. It is the shaping of their cultural experience, society, education, and perception. One cultural content can be interpreted very differently based on the test subject. This research only experimented with two nationalities. Further study with other nations is suggested.

Selected cultures for our test are noticeable for their characteristics and appearances. Results may vary with closed cultures. Cultures with immense similarities are tough to distinguish, which may affect the results.

5.4 Conclusion

This research essentially experimented on usage of character design as a promotional character for products. Nonetheless, it is applicable to character design for animation and other business as well. The study emphasized design fundamentals, which allows the principle to be adoptable by any cross-cultural character design despite the intention of use.

Although the study presumably covers all the visible character components with a high possibility to perform as a cultural stimulus to beholders, character development is more complicated than just the visual aspect of a design. There are abundant subjects that support

the characteristic building and sense of culture, for instance, character background, world setting, combination with packaging, advertising strategy and so on. These are matters that cannot be neglected as well as the drawing. The proposed procedure of cultural character design is supposedly a primitive guideline for designing the visual parts, not all of the character. Character design still remains a vast field that is full of mysteries waiting to be further discovered by researchers.

APPENDIX A

Primitive Questionnaire

Section 1 of 2

The essence of Thai in foreigner's perspective.

This questionnaire is a part of a Ph.D. research conducted by Ms.Puttachad Sattayasai. Should you have any questions, please contact p.sattayasai@gmail.com.

Name

Short answer text

Gender *

1. Female

2. Male

3. LGBTQ+

Nationality *

○ Japanese

○ Chinese

○ American

○ Indian

○ Other…

Age *

1. 12 years old and under

2. 13-19 years old

3. 20-29 years old

4. 30-39 years old

5. 40-49 years old

6. 50-59 years old

7. 60 years old and above

The essence of Thai in foreigner's perspective.

This questionnaire is a part of a Ph.D. research conducted by Ms.Puttachad Sattayasai. Should you have any questions, please contact p.sattayasai@gmail.com.

Question 1: Please select pictures that can represent Thailand or Thai culture in your opinion. *
Multiple choices are available.

☐ Elephant

☐ Thai cloth

☐ Siamese cat

☐ Yak statue

☐ Exotic creature statue

☐ Thai boxing

☐ Pak-Chee (coriander)

☐ Other…

Question 2: From question 1, please tell us why you think the chosen pictures seem Thai to you. *

Short answer text

Question 3: Please select one style of cloth that feels the most 'Thai' to you. Multiple choices   *
are available.

☐ Option 1

☐ Option 2

☐ Option 3

☐ Option 4

☐ Option 5

Question 4: From question 3, please tell us why you think the chosen costume seems Thai to you. *

Short answer text

Question 5: Please select products that you think are 'Thai products'. Multiple choices are available. *

☐ product 1

☐ product 2

☐ product 3

☐ product 4

☐ product 5

☐ product 6

Question 6: From question 5, how do you know or guess which product is Thai? What   *
elements help you decide? (Examples: color, graphics, alphabets, etc.)

Short answer text

APPENDIX B

Character Component Test Questionnaire

Character Component Test

本アンケートは、日本の岩手県、岩手大学、博士課程学生のプッタ シャッド ・サッタヤサイの研究の一部です。記載される個人情報は研究のみ利用し、秘密を保持するものとします。ご質問等ございましたら、こちらのメールアドレス「p.sattayasai@gmail.com」までお問い合わせてください。

　本アンケートは、異なる十種類のデザインが行われたキャラクター画像に対するご意見についての調査内容です。ご回答のお時間が２〜３分ぐらいかかります。

　本アンケートをご希望でご回答できます。ご回答をする場合には、「Next」または「次へ」のボタンを押してください。

個人情報

　個人情報について、正直に個人情報をご回答ください。性別、女性、男性、年齢、国籍、日本国、タイ王国、職業、高校生、大学生、大学院生、博士課程学生、会社員などすべての情報はこの研究のみ利用し、秘密を保持するものとします。

性別 *

○ 女性

○ 男性

○ LGBTQ+

年齢 *

Short answer text

国籍 *

○ 日本国

○ タイ王国

○ Other…

職業 *

○ 高校生

○ 大学生 (Undergrads)

○ 大学院生 (Master's)

○ 博士課程学生 (Ph.D.)

○ 会社員

○ Other…

こちらの研究に関連するタイと日本の文化についての概要です。参考にしてください。

こちらの研究はタイと日本の文化に関係がございます。民族衣装と模様をキャラクターにデザインを行いました。タイの伝統的な正装である「タイ・チャクリ」からデザインされました。以前行った調査により、これは外国の方にとっても親しみやすく、よく知られている衣装であることが分かっています。今回、衣装の模様は「プムカーオビン」という模様を使用しました。こちらの模様はタイの衣装の中で、一般的に使われ、人気がございます。また、日本の文化の代表として「浴衣」を引き合いに出しました。こちらは非常に日本らしい文化です。浴衣はシンプルで、着物より様々な場面で使われています。使われる衣装の模様は「麻の葉 (Asanoha)」です。こちらの模様は日本の文化に長い間受け継がれてきて、現在もよく見られています。

Test Section   ⌄ ⋮

本アンケートはキャラクターのエレメントと文化についての調査研究の一部です。

各キャラクターの画像に心に感じられた点数を付けてください。点数は１点（最も低い）から７点（最も高い）までです。

---

1) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最…	2点（低…	3点（か…	4点（中…	5点（か…	6点（非…	7点（最…
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ…	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

2) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最...	2点（低...	3点（か...	4点（中...	5点（か...	6点（非...	7点（最...
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ...	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

3) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最…	2点（低…	3点（か…	4点（中…	5点（か…	6点（非…	7点（最…
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ…	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

4) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最...	2点（低...	3点（か...	4点（中...	5点（か...	6点（非...	7点（最...
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ...	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

5) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最...	2点（低...	3点（か...	4点（中...	5点（か...	6点（非...	7点（最...
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ...	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

6) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最...	2点（低...	3点（か...	4点（中...	5点（か...	6点（非...	7点（最...
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ...	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

7) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最…	2点（低…	3点（か…	4点（中…	5点（か…	6点（非…	7点（最…
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ…	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

8) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最…	2点（低…	3点（か…	4点（中…	5点（か…	6点（非…	7点（最…
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ…	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

9) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、日 *
本らしさ、魅力／ユニーク、満足などです。

	1点（最…	2点（低…	3点（か…	4点（中…	5点（か…	6点（非…	7点（最…
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ…	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

10) 下記にて各キャラクターの画像に心に感じられた点数を付けてください。タイらしさ、 *
日本らしさ、魅力／ユニーク、満足などです。

	1点（最...	2点（低...	3点（か...	4点（中...	5点（か...	6点（非...	7点（最...
タイらしさ	○	○	○	○	○	○	○
日本らしさ	○	○	○	○	○	○	○
魅力／ユ...	○	○	○	○	○	○	○
満足	○	○	○	○	○	○	○

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