Cuteness Design in the UX: An Initial Analysis

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Abstract. The authors conducted initial research/analysis of cuteness, especially in East Asian countries, and its existing/potential use in computer-based products/services worldwide. They provide a taxonomy of cuteness to guide developers and offer initial recommendations.

1 Introduction

For many decades, cute toys, animations, publications, and images have been used in many cultures. They are often associated with and used widely in products/services for children. As an example, at one point in time Walt Disney's Mickey Mouse character, introduced in 1928, became the most widely known image/character in the world, surpassing even images of Santa Claus [18]. In the past few decades, cute products/services, images, icons, *etc*., have appeared extensively in east Asian countries (China, Japan, South Korea, Taiwan, in particular). In part, this increased use of cuteness may stem from the popularity of *animé*, comics, and electronic games in east Asia, the audiences for which are no longer limited to children, teenagers, and young adults. Cuteness has been used to define and brand computer-based products/services (*e.g.,* the MIUI themes of recent Xiaomi phones in China). While cuteness has less impact in Africa, Europe, India, South America, and the USA, the globalization of products/services (*e.g*., the Hello Kitty brand, Line, and Wechat) coming from east-Asian countries makes it likely that cuteness will be incorporated more and more into many products/services, their devices, user interfaces, and branding. An example is the extensive use of emoticons in the Japanese Line product and the Chinese WeChat product. Now, even Skype, which was founded in 2003 by Swedish and Danish persons with Skype software from Estonia, and which is currently owned by Microsoft in the US, features numerous cute icons (see Fig. 1) some of which seem very culture-bound.

All of these products/services possess user experiences (UXs), that is, user interfaces, user touch points, etc., which must be usable, useful, and appealing, and which
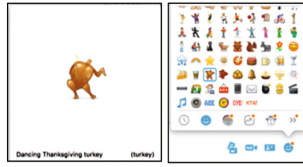
Fig. 1. Example of cute emoticons (some very culturally biased) in Skype (December 2015), including a dancing turkey for use during the Thanksgiving (US) holiday. The emoticons are also designed with too-small components, making them difficult to identify. (Figure permission assumed through fair-use circumstances).

can meet the needs/preferences of major stakeholders (the user community, engineering, marketing, business management, government, investors, and journalists). We believe cuteness can contribute to the UX by increasing appeal and memorability, and by helping to clarify concepts. There is now a challenge to create successful UXs that are cute. Exploring UX cuteness can cover country/culture criteria, design philosophy, methods, evaluation criteria for stakeholders, and relations among stakeholders.

Computer-based (especially mobile and consumer-oriented) products/services are produced/consumed worldwide. Designers/developers must be aware of culture differences in thinking about cute UX designs, even for diverse domestic markets. The focus on cuteness is especially important for Asian cultures, which give increased attention to aesthetic appeal and fun in the UX in comparison to Western cultures, as shown by Frandsen-Thorlacius et al. [4]. Cuteness engineering or design, culture theory, and design theory in relation to applying cuteness to products/services in many different cultures and contexts are all inter-connected. Culture theories and models and user-centered design theory can serve as a basis for analyzing cuteness in, for example, mobile devices, publications, and Websites. Cuteness can be connected to time orientation, spatial relations, family structure, gender roles, beauty, happiness, health, money/wealth, age/aging, groups/individuals, privacy/security, trust, and persuasion/behavior change. In this paper we shall have an initial opportunity to comment on cuteness of Asian products/services in relation to personas, use scenarios, information architecture (metaphors, mental models, and navigation), and look-and-feel (appearance and interaction) for products/services.

We believe it reasonable to consider several issues of cuteness design, or cuteness engineering, in UX design:

- What is the taxonomy of cuteness?
- Where has cuteness been used in computer-based products/services?
- How does cuteness work or become effective?
- What guidelines exist for cuteness design?
- What information resources exist for the cuteness designer?
- How can local developers create successful cuteness user-experience for domestic and foreign products and services?
- How can foreign software/hardware developers create a successful user-experience for products and services in other countries/cultures?

- Is there a significant difference in Asian (*e.g.,* Chinese cuteness), as opposed to Western cuteness?
- What is the nature of the cuteness in China, Japan, South Korea, and/or Japan?
- Are there any significant design patterns for cuteness?
- What information resources exist to help designers of cuteness?

We explore a few of these issues and base our hypothesis of emerging cuteness design on examination of hundreds of images gathered over 10 years by Marcus and five years by Ma, and by previous qualitative and quantitative research. We hope to raise usable, useful, and appealing issues to consider further.

2 User-Interface, User-Experience, and User-Centered Design

We do not elaborate on these concepts and terms, because they are familiar to most readers, are widely understood, and are explained in numerous resources, for example, [2, 5, 9–11]. All such terms must all be reconsidered in the light of cuteness design. We consider a few specific topics below.

3 Cross-Cultural UX Design

Theorists of culture, anthropologists, ethnographers, and professionals in the UX field have devised descriptions of culture, proposed models of culture, dimensions of culture, and explored similarities/differences of patterns of feelings, opinions, actions, signs, rituals, and values, as studied by [2–4, 6, 7, 9, 11–15, 17, 19]. Especially important: researchers noticed differences between Eastern (Chinese, Japanese) and Western (European and North-American) users in terms of learning strategies, navigation behavior, *etc*. Frandsen-Thorlacius *et al.* [3] studied Danish *vs.* Chinese users to determine that the very concept of usability differed between the two cultures. Chinese users consider that "usability" more strongly possesses the attributes of "fun" and "aesthetically pleasing" built into the concept than Danish users. Based, in part, on studies of Japanese and US participants staring at fish tanks and describing what they saw (Japanese viewers tended to describe relationships, US viewers tended to describe objects), Nisbett [15] postulated that there were major cognitive differences between the East and West; people in these two regions think differently.

4 Cuteness Taxonomy

Cuteness relates to all the above UX issues. We propose an initial, simplified definition of cuteness: a characteristic of a product, person, thing, or context that makes it appealing, charming, funny, desirable, often endearing, memorable, and (usually) non-threatening. Cuteness as a concept is nuanced and complex. The authors present an initial taxonomy below to help future researchers/designers.

4.1   Evolution of Cuteness

Cuteness-Historical Changes: For example, the evolution of the look of Mickey Mouse, Garfield, and other cartoon characters over decades of time.

Cuteness-Social Influence: For example, the Otaku phenomenon, a Japanese term for people with obsessive interests, commonly used for fans of Japanese animé and manga. See: http://en.wikipedia.org/wiki/Otaku.

Cuteness-Technology Orientation: From just the appearance (e.g., icon design) to more extensive characteristics of functions and services (See Fig. 2, Yamaha's Hatsune Miku singing synthesizer https://en.wikipedia.org/wiki/Hatsune_Miku).

4.2   Dependence of Cuteness (with Acknowledgement to Wentao Wang of Baidu, Who Includes Some Cuteness Guidelines in the Baidu UX Design Guidelines [1])

Cuteness-Age Dependence: Baby, child, teenager, senior, etc.

Cuteness-Context Dependence: Advertising, education, medical, government, sport, entertainment, etc.

Cuteness-Culture Dependence: European, North American, Indian, Asian, Chinese, Japanese, Korean, etc.

Cuteness-Education Dependence: Advanced education may reduce sensitivity to cuteness.

Cuteness-Gender Dependence: Men, women, other genders.

Cuteness-Profession Dependence: Designers may be more sensitive.

4.3   Elements of Cuteness

Cuteness-Medium: Emojis/emoticons, mascots, ACG (animation, comics, games).

Cuteness-Appearance: Color, *e.g.,* pink and other pastels), shapes (rounded, blobs), face treatment (baby-like, large eyes), anthropomorphism (*e.g.,* hammers can become human-like characters), expression (hyperbolic, ritualized), *etc.*). See for example [8].

Cuteness-Sound: Voice, sound *(e.g., Pikachu), etc*. Pikachu are Japanese fictional Pokemon creatures that appear in comics, animations, agames, and movies/television. See: https://en.wikipedia.org/wiki/Pokémon_Pikachu.

Cuteness-Language: Slangs and symbols, e.g., 萌萌哒 ("so cute," frequently seen in Chinwaw social media), 么么哒 ("kiss kiss"), the tilde symbol ("～"), *etc.*

Cuteness-Behavior: Gesture, posture, *etc.* The term "acting/playing cute" means someone deliberately attracts others by showing off (or pretending) to be cute, such as the leading character in the 2011 movie *Puss in Boots* (Fig. 3). The use of *kaomoji* in Japanese social media is one example. See http://kaomoji.ru/en. The Website notes that the emoticons are uniquely Japanese and that the Japanese consider the eyes the source or chief denoter of emotion. Another example is found at the Youtube video https://www.youtube.com/watch?v=iwxYV6y7Cl4. A young man (a lawyer, see Fig. 3) is playing cute while the girl standing behind is also supposed to be cute. The "cuteness" of "the guy" demonstrates another type of cuteness. Figure 4 shows a cute animal with large eyes, furry body, round forms.

Fig. 2. Yamaha synthesizer
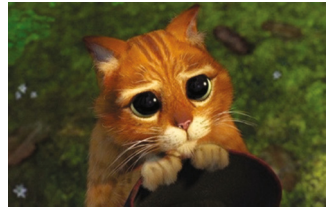

Fig. 3. Cute lawyer

Fig. 4. Cute animal

4.4   Styles of Cuteness

Sexy-Cute: Examples of this style are plentiful, including some of the gestures and behavior of Marilyn Monroe in the movie *Some Like it Hot*.

Cuteness-by Contrast: (反差萌 in Chinese, *i.*e., something that is conventionally considered serious, dangerous, scary, *etc.* is playing cute.) An example is the lawyer, the man in suit that is dancing in the court in the image above.

Cuteness-by Association: Some other characteristics, not negative, that may evoke the perception of cuteness*, e.g.,* the following adjectives:

- Lolita-cute: (Moe (萌え, pronounced [mo.e]) in Japanese) is the most common style of cuteness in ACG young girl characters. The girl in Fig. 5 is dressed in the Lolita-cute style. See: https://en.wikipedia.org/wiki/Moe_%28slang%29).
- Stupid: (蠢萌), *e.g., Minions* characters (Fig. 6).
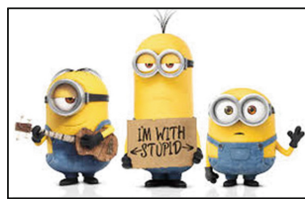

Fig. 5. Lolita-cute style
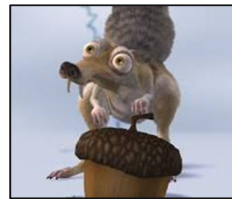

Fig. 6. Minions characters

Fig. 7. Cute Ice Age Squirrel

- Slow-witted: (呆萌, 囧萌) *e.g.*, the squirrel in the *Ice Age* movie (Fig. 7)
- Naïve: (天然萌) such as Baymax in Big Hero Six (Fig. 8).
- Angry: (Fig. 9)
- Ugly, lurid, vulgar, or anarchic: (丑萌, 贱萌) when something is sensationally displeasing to a certain extent, it can become cute, as in Garfield (Fig. 9) and selected *baozou* stickers (Fig. 10). Baozou comics/animations in China are popular character stickers on Tencent's Wechat messaging application, which seem to be derived from other Internet memes.

Fig. 8. Baymax character.

Fig. 9. Cute-Angry Garfield.

Fig. 10. Example of baozou stickers

In Fig. 10, the left character says "Dear Police, I lost my wallet (top)" but he actually means "Give it back to me (bottom)." The right character says "No problem. I will handle it (top)" but really means "Are you kidding me?"

4.5   Value of Cuteness

Cuteness-Psychological Value: Keeping people curious, interested, and engaged.

Cuteness-Social Value

Cuteness-Economic Value: Brand value.
Cuteness-Culture Value:
See: http://www.56.com/u53/v_MTI5OTE2ODE4.html.
See: http://www.bilibili.com/video/av1701475/.

The following examples, primarily of social value, bring something that used to be distant, serious, formal, and/or cold more close to ordinary people and everyday life.

One example is playing "Little Apple" for the Chinese People's Liberation Army (PLA) recruitment video (Figs. 11, 12 and 13).

In Fig. 14, the Nanjing, China, police department uses baozou stickers for anti-fraud campaign:

http://news.sina.com.cn/s/wh/2015-10-02/doc-ifximeyw9480918.shtml.

Fig. 11. The original music video of Little Apple

Fig. 12. Performance at the 2014 American Music Awards

Fig. 13. The Little Apple version of the PLA recruitment video
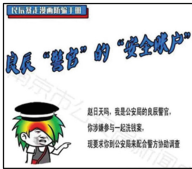

Fig. 14. Cuteness in anti-fraud campaign

Fig. 15. China border control cuteness

Fig. 16. China border control greeting

In Figs. 15 and 16, images show the mascot (a cute mix of sun and shield) of the Chinese Border Control Immigration Inspection guards welcoming everyone to China.

The souvenir store (both online and offline) of the Forbidden City Museum in Beijing, China, uses cute characters (Figs. 17, 18 and 19).

Fig. 17. "Buy it, and then we are friends."

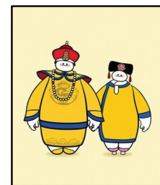**Fig. 18.** "Kiss Kiss ∼ (the product is a mobile phone stand)."

Fig. 19. Qing Dynasty-style Baymax.

Cuteness and Culture; Storytelling; Beauty/Aesthetics:

Culture biases
Historical patterns

Cuteness and Emotions:

Cuteness and happiness

Cuteness and helplessness
Cuteness and childishness

Other Cuteness Topics (Health, Nutrition, Exercise; Wealth, Money Management; Age; Privacy; Security; Storytelling; Innovation; Travel; Work; Entertainment; Manners and Social Norms):

Theories
Culture biases
Historical patterns

5   UX Design Topics

The following UX cuteness-design topics seem especially relevant and worth considering regarding patterns of differences/similarities in countries and cultures:

- Personas and use scenarios
- Metaphors
- Mental models and navigation, *i.e.,* information architecture
- Appearance and interaction, *i.e.*, look-and-feel

6   Examples of Cuteness in UX of Computer-Based Products/Services

The following examples show cuteness incorporated into different aspects of computer-based products and services, including appearance and functions.

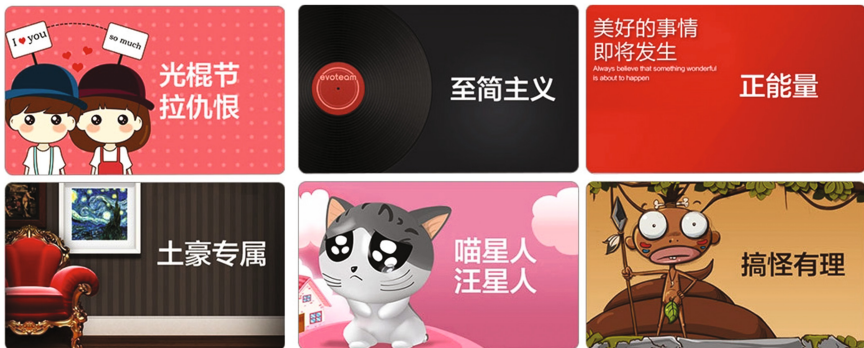### 6.1   Product Images

See Figs. 20, 21, 22, 23, 24, 25 and 26.

Fig. 20. Branding/aesthetics of Miui themes for phones from Xiaomi, China.
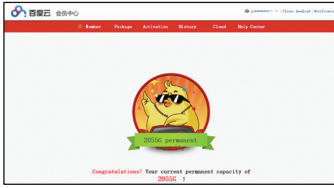
Fig. 21. Error messages: free cloud service, video demo, China

Fig. 22. Cloud service cuteness.

Fig. 23. Cute imagery for 360 backup wizard, Baidu backup progress, China.

Fig. 24. File-transfer cuteness.

Fig. 25. Cute penguin mascot for TenCent QQ, China. Image source: [7].

Fig. 26. Loading cycle from Bilbili, China.

Fig. 27. Cute Guidelines in [1].

6.2 Design Guidelines for Cuteness

Many companies that produce cute products, services, publications, brands, such as Disney and Hello Kitty, do not regularly publish detailed information about the cuteness-design guidelines that make their designs so effective. One known major high-technology company that has published design guidelines is Baidu [1] (Fig. 27).

Another, limited source of cuteness guidelines is Preuss' "The Elements of Cute Character Design" [16]. Space does not permit extensive recitation of the recommendations, but topics include the following:

Definition of cuteness: childlike, sweet, helplessness

Childlike characteristics: large round heads; large eyes; small or absent mouths

Arms and legs: short, round, soft, unmuscular

Roundness: used throughout

Simple: avoid complexity

Little and lovable: small-sized, sociable

Colors: warm, friendly, soft contrasts

For all such guidelines, it remains to be determined how culturally biased such prescriptions are. Metrics are yet to be determined; much research remains.

6.3 Cautions and Future Challenges

The authors believe the characteristics described here can provide guidance and stimulation to others who may research these topics more thoroughly and design specific guidelines and solutions to demonstrate the impact of cuteness on UX design.

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