Exploring the Relationship between Reading Habits and Aesthetic Preferences in Different Cultural Contexts and Design Practices

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Abstract: Studies in the field of psychology have supported the idea that cultural factors influence aesthetic preferences. This study investigates the association between reading habits and aesthetic preferences in different cultural contexts. In particular, we explore two questions: (1) Is the association between reading habits and aesthetic preferences the same in Taiwanese culture as it is in other cultures? (2) Is such an association relevant to the design of applications? Readers of Taiwanese were presented pairs of images, one being the mirror-image of the other, and were asked for their aesthetic preference. We found a significant effect of reading habits on aesthetic preference that right-to-left readers preferred stimuli with a leftward directionality. Despite the popularity of computer use (which have a left-to-right directionality), the influence between reading habits and aesthetic preferences still exists in Taiwan. In contrast, when we apply it to design, we cannot see any effect of reading habits on aesthetic preference. Perhaps the constitutional factors of the images are more complex. This also indirectly reminds us that considering the balance of the screen is more important in design.

Key words: Aesthetic preference, Reading habit, Design

1. Introduction

A number of studies indicate that cultural factors influence people’s aesthetic preferences (Chokron and De Agostini, 2000; Nisbett, 2003; Ishii et al., 2011). These factors are collective and common. Nisbett (2003), in The Geography of Thought, discussed how Asians and Westerners think differently and why. The significant difference in thought process affects not only our view of things contemporary but our aesthetic preferences as well. Nisbett compared the philosophies of Confucianism, Buddhism, and Taoism in China with that of the Greek philosopher Aristotle, and concluded that the Eastern thought process involves “Holistic Perception and Cognition” compared to “Analytic Perception and Cognition” in the West. Eastern philosophy emphasizes harmony and while Western philosophy stresses on free will and self control. Asians believe that the truth exists in the “relationship” and Westerners believe that the truth exists in the “object.”

The difference in focus, on “holistic relationships” and “object properties,” affects the viewing of pictures as well as creative aesthetic preferences. Chua, Boland, and Nisbett (2005), in a study titled “Cultural variation in
eye movements during scene perception,” explore how cultural differences affect our view of the scenery or pictures. On inviting Americans and Chinese to see some pictures with objects and background, they found and validated with eye tracking that the Chinese had more saccades while the Americans paid more attention (fixation) to objects. Such cognitive differences affect not only the viewing of pictures but have a potential impact on the creative process as well. Masuda, Gonzalez, and Nisbett (2008) observed the drawings made by Asian and American university students. They found that the American students drew more details on a house and depicted a minor relationship between people and the environment. On the other hand, the Asian students’ drawings had higher horizons, showing more of human relationships with the environment. These studies prove that Asians place greater emphasis on the overall relationship while Westerners focus on the object itself; whereas Asians depict the entire scene as observed from a viewfinder, Westerners will generally depict the target. Thus, the East-West ideological difference directly affects aesthetic preferences as well.

Reading habits affect our aesthetic preferences as well. Chokron and De Agostini (2000) asked readers of French and Hebrew to indicate which of the two mirror (or reversed) images was more aesthetically pleasing or interesting. The elements of the images—mobile object, static object, and landscape—had directional characteristics. It was found that the preference for mobile and static objects was affected by reading direction. French readers preferred left-to-right images and Hebrew readers preferred right-to-left images. Both reading groups showed a preference for landscapes with the mass to the right. Japanese scholars Ishii et al. (2011) conducted the same study, comparing the Japanese and Americans to understand how reading habits affect aesthetic preferences. In addition to horizontal differences in reading direction, there are vertical differences in the case of East Asian languages, such as Japanese, Korean, and Chinese, where words are aligned vertically from top to bottom while lines of words proceed from right to left, that is, top-to-bottom directionality at a word level and right-to-left directionality at a line level. The experimental material for this study, three items comprising mobile objects, static objects, and landscapes, was similar to that used by Chokron and De Agostini (2000). The result of the experiment was also similar, with significant difference in the selection of mobile and static objects. While lateral biases experiments were added to the test, with the results indicated that the influence of reading habits is far greater than the lateral biases influence.

Taiwanese and Japanese are East Asian languages, and its users read from top to bottom, right to left. Owing to the popularity of computers, reading the Chinese language from left to right has become increasingly common. However, in Taiwan, the original reading direction continues to prevail in magazines, newspapers and the majority of traditional mass media. This study examines whether cultural differences similar to those identified by Ishii et al. (2011) in the relationship between reading habits and aesthetic preferences exist in Taiwanese society.

We also aim to determine the significance of this relationship in the actual design of applications. In the visual design field, focus on communication and placed more emphasis on the emotional aesthetic pleasure (Norman, 2004). If there are the same effects in the design of applications, then future designers will have to be aware of this relationship while catering to different cultural groups.
2. Methods

The study is divided into two parts. Task I repeats the experiments of Ishii et al. (2011) to determine whether there is a relation between reading habits and aesthetic preference in Taiwanese society as well. Task II attempts to examine the effect of this relationship on the practical applications of design.

2.1 Participants

At the current stage of the study, all the participants are Taiwanese. There were 119 participants in Task I and 117 participants in Task II, recruited from the University of Southern Taiwan and University of Tainan. All the participants were native Chinese speakers.

2.2 Materials

Task I: Thirty pairs of line drawings were used for aesthetic preference judgment. Each pair consisted of an original line drawing and its mirror image. The original line drawings were divided into three object types: mobile objects (chick, boat, stroller, mouse, locust, bicycle, rabbit, airplane, gecko, and whale), static objects (baseball cap, shoes, thongs, chair, drawer, slippers, trumpet, socks, statue, and piano), and landscapes (mountain, seaside, moonlit night, fireworks, castle, pond, snowy city, flower fields, beach, and hillside). The three object types were the same as those used by Ishii et al. (2011). The mobile and static objects possessed a clear asymmetry, facing either to the left or to the right (Figs. 1a and 1b). In the landscape pictures, the most informative parts of the image were positioned on the left or right half of the image (Fig. 1c).

Each pair of line drawings was aligned vertically on the display. For one-half of the 30 pairs, the “left” drawing was presented above the “right” drawing. The vertical position of the line drawings was counterbalanced across participants. Each line drawing subtended 130 mm horizontally and 97 mm vertically on the 22-inch LCD display.

![Fig. 1 Examples of Task I stimuli: (a) Mobile object, (b) Static object, (c) Landscape. Images coded as right-to-left in the first row and as left-to-right in the second row.](image)
Task II: Thirty pairs of pictures were used in this task as well, divided into three categories, mobile objects, static objects, and landscapes. The pictures were sourced from actual posters, cover designs, dynamic graphic designs (Fig. 2a), as well as photographic images (Fig. 2c). The size of the images was not the same. As posters or covers often have text, the text in the images retained the original reading direction (Fig. 2b).

Fig. 2 Examples of Task II stimuli: (a) Mobile object, (b) Static object, (c) Landscape. Images coded as right-to-left are in the first row and those coded left-to-right are in the second row.

2.3 Procedure

Participants were tested in the computer classroom. They were asked to indicate which line drawing was more aesthetically pleasing. The order of trials was randomized across participants. The experiment started with the provision of instructions and sample pictures, the latter being different from the ones used in the actual test session. To avoid the learning effect and its associated impacts, different participants were selected for Task I and Task II.

3. Results

For each participant, preference scores were computed for the three object conditions by subtracting the number of left-to-right choices from the right-to-left choices (from -10 to +10). Thus, a positive score indicates a preference for right-to-left pictures whereas a negative score indicates a preference for left-to-right pictures.

Fig. 3a indicates the results of Task I (aesthetic preference judgment: line drawing). Taiwanese readers showed a significant right-to-left preference for mobile objects (M = 1.51, SD = 5.58, p < 0.005) and static objects (M = 1.24, SD = 4.66, p < 0.005). There was a left-to-right preference for landscapes in which the greater weight was to the right (M = -1.08, SD = 4.47, p < 0.05).

Fig. 3b indicates the results of Task II (aesthetic preference judgment: actual design application). The results of this task showed no significant bias for mobile objects (M = -0.53, SD = 3.03, p = 0.061), static objects (M = 0.26, SD = 3.01, p = 0.359), and landscapes (M = -0.26, SD = 3.15, p = 0.380).
Fig. 3 Task I and II results. Means of aesthetic preferences: A positive score indicates a preference for right-to-left directionality whereas a negative score indicates a preference for left-to-right directionality.

4. Discussion

Reading direction had a marked effect on aesthetic preference for mobile and static objects. Readers of Taiwanese selected pictures with right-to-left directionality. The results are similar to those of Chokron and De Agostini (2000) and Ishii et al. (2011) Although different from Hebrew, which is read from right-to-left at a word and line level, Chinese and Japanese are read from right-to-left only at a line level. Although this line level directionality might be expected to produce a weaker effect of reading direction, the results show that reading habits in Taiwanese produce a right-to-left aesthetic preference that is just as strong as the left-to-right line and word reading habits produced by Hebrew (Fig. 4). However, comparing to Ishii et al. (2011) Taiwanese reader
why the numerically lower than the same line level Japanese reader. Though newspapers, magazines, and the majority of traditional mass media in Taiwan use the original (right-to-left) reading direction, the frequent use of computer tools such as browsing the web and typing involves left-to-right direction. Perhaps, after 10 years, when the computer and mobile devices become part of the mainstream media, the difference in aesthetic preference will cease to exist. The study shows that the right-to-left image preference is prevalent in Taiwan and Japan.

![Graph showing comparison of three studies: average number of left minus right preferences (range from +10 to -10) for moving objects, static objects, and landscapes.]

Fig. 4 Comparison of three studies: average number of left minus right preferences (range from +10 to -10) for moving objects, static objects, and landscapes.

With regards to landscape, this study, Chokron and De Agostini (2000), and Ishii et al. (2011) show clear preferences for pictures with the object of interest on the right, indicating statistical significance. In the study comparing the French and the Americans, there was no clear preference for the landscape item amongst these left-to-right readers. The main reason was that the images did not show the direction of the indicative, is the choice of which was therefore not influenced by the reading habits. There are many reasons why the results of several studies show the preferred image as the one with the object on the right. One is psychological balance; Arnheim (1954) pointed out that the balanced weight is an important factor in aesthetic judgments. The left side of a picture could bear a heavier weight, though higher pictorial content on the right half might correct the imbalance induced by greater psychological weighting of the left half. The second reason is cerebral hemispheres lateral biases; Levy (1976) argued that the biases arise from the selective activation of the right hemisphere (RH) as a result of pictorial viewing. Participants prefer the figure with the mass on the right because it balances the leftward attentional bias. The cerebral asymmetries for the control of spatial attention may play a more important role in this asymmetry.

From the results of Task II, it can be inferred that reading habits influence aesthetic preference but do not have the same effect on the actual design of the application. Though Task II was expected to produce the same result as Task I, it did not lead to a statistically significant inference for the mobile objects, static objects, or landscapes. Thus, reading habits do not seem to affect the aesthetic preferences on the actual design applications. The main reason behind the difference is that Task I involved only line drawings and there were no other factors of interference such as background color or even text. In the mobile objects item, particularly, most participants preferred the left-to-right image (76 prefer L-R : 41 prefer R-L), presumably because some of the images were
reminiscent of the game (Fig. 5a). Most screen games are played by the left-to-right direction. The participants were more familiar with this picture and preferred the images left-to-right. This point is similar to the one Berlyne made in his study (1974)—people are more favorable toward familiar things. Moreover, some images, after mirroring, become imbalanced. In the original image in Fig. 5b (bottom), the flowers grow left-to-right. The picture above it shows the mirror diagram (79 prefer original; 38 prefer mirror), with flowers growing right-to-left. Following higher pictorial content on the left side, as discussed earlier, greater pictorial content on the right half may serve to correct the imbalance induced by greater psychological weighting of the left half.

5. Conclusion

This study intended to examine whether in Taiwan and Japan, reading habits influence aesthetic preference; and whether the influence of reading habits on aesthetic preference also applies to the actual design of the application. We found that in Taiwan, reading habits affect aesthetic preferences, which is consistent with reading habits in countries with right-to-left orientation. Countries like Japan and Israel prefer left-facing images. As Nisbett (2003) claims in his research, studies of aesthetics often relate to personal preferences and individual difference, but cultural factors that influence aesthetic preferences tend to be consistent with a collective commonality. In contrast, the influence of reading habits on aesthetic preference does not apply to the design of the application, which indirectly reminds to think about the balance of image construction during design, the familiarity of the user, and the aesthetic preference.

References


