

Comparative (Cross-cultural) Color Preference and Its Structure

Miho Saito*

Faculty of Human Sciences, Waseda University, 2-579-15, Mikajima, Tokorozawa, Saitama, Japan

Synonyms

“Blue-Seven Phenomenon”; Color preference; Cross-cultural color preference; Culture and color; Preference for white in Asia; Structure of color preference

Definition

Surveys on color preference can be found among the very first psychological experiments, with several factors thought to be responsible for color preference, such as age, gender, and geographical area of residence. Although numerous studies have investigated age and gender differences in color preference, very few have concentrated on geographical regions, especially from a cross-cultural perspective. Data from early surveys indicated the existence of cultural differences, especially in Asia where white was commonly and strongly preferred by Japanese, Koreans, Chinese, and Indonesians. Subsequent studies have shown that blue has been consistently preferred in many countries for many years. The term “Blue-Seven Phenomenon” is used to indicate that blue is the universally favorite color. The phenomenon refers to Simon’s finding that subjects selected “blue” when asked to name a color and selected “seven” when requested to choose a number from zero to nine and has been widely researched in many countries. Generally, the associative images which were assumed to be responsible for color preference and the subjects’ reasons for selecting colors that tended to be liked or disliked regardless of time or place were closely connected with the feelings of pleasantness and unpleasantness. Cognitive studies suggest that the amygdala is closely connected with preference in relation to the feelings of pleasantness and unpleasantness, suggesting that the feelings of “pleasantness” and “unpleasantness” also play an important role in determining color preference. Based on an analysis of the results of such surveys, a general structure of color preference was suggested in a three-layered diagram, with preferred feelings of “pleasantness” and “unpleasantness” forming the nucleus or the innermost first layer, preferences based on individual factors composing the surrounding second layer, and preference based on environmental factors forming the outermost third layer.

Historical Background of Studies on Color Preference

The study of color preference is of current interest, especially among cognitive psychologists and neuroscientific researchers because preference is a basic human trait which regulates everyday behavior. There are numerous studies which have attempted to clarify the mechanism of preference and to isolate the factors which influence one’s preference or taste. While there are various research areas concerning this topic, this entry focuses on the mechanism underlying the preference for color.

Surveys on color preference can be found among the very first psychological experiments. Some studies have been carried out on the preference for colors associated with particular objects. Many, however, have investigated the affective appeal of color, not in combination, but separately, so as to evaluate single colors themselves without the influence of other variables.

*Email: miho@waseda.jp

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Eysenck [1] suggested that there was a general order of preference for fully saturated hues in the order of blue, red, green, purple, and orange, with yellow ranking last. As this order did not differ between Caucasian and other races, he concluded that there was no cross-cultural difference in the preference for colors. Choungourian [2] reported the preferences of American, Lebanese, Iranian, and Kuwaiti university students in Beirut. While red and blue ranked highest in preference value for the American subjects, those colors ranked lowest for Kuwaitis. Blue-green was ranked as being the least preferred among the Americans, but was most preferred by both the Iranian and Kuwaiti subjects. He concluded that cultural variables were an underlying factor in determining color preferences. On the other hand, a factor analysis study by Adams and Osgood [3] found similarities in feelings about colors among 23 cultural groups.

Saito [4] demonstrated cross-cultural differences and similarities in color preference among nine cultural groups. The groups were Americans, Germans, Danes, Australians, Papua New Guineans, South Africans, Japanese-Americans living in the USA, non-Japanese living in Japan, and Japanese. Four hundred subjects were asked to choose the colors they liked and disliked from among 65 colored chips. Results showed that vivid blue was the only color that was commonly preferred highly by all groups, suggesting that cultural variables are indeed involved in color preference.

One significant finding emerging from Saito's study was the distinct Japanese preference for white. One out of every four of the Japanese subjects selected white as their first, second, or third choice, while no such high preference for white was observed in other countries.

In factor analysis and cluster analysis studies [5, 6], a detailed investigation of color preference was carried out on 1600 Japanese in four large cities, considering subjects' age, gender, area of residence, and lifestyle. This study also suggested that white was the highest preferred color, regardless of age, gender, or area of residence, further indicating the high preference for white by Japanese.

To investigate whether this tendency was unique to Japan, if it may be observed in other Asian areas and if the preference is influenced by environmental factors such as cultural and geographical aspects, Saito [7] replicated the study in Seoul (Korea). The fact that white was preferred highly not only in Tokyo but also, even more so, in Seoul led Saito and Lai [8] to conduct the same survey in Taipei (Taiwan), which is close to Japan both geographically and culturally, to further test the hypothesis that the strong preference for white is based to some degree on geographical and cultural variables. The result of the survey indicated that the high preference for white was common in Taipei as well.

The preference for white in China has long been noted in studies, beginning with those by Chou and Chen [9] and Shen [10]. Chou and Chen postulated two possible explanations for this preference: association influence and tradition influence. As the most frequently used color word in Chinese literature was the character for white, they postulated that the subjects' preference was based on familiarity, i.e., frequency of association. The second possibility, tradition influence, was that their preference derived from the color of their national flag. (It is to be noted that the colors of the flag were not the same then as the present-day flags). Shen, however, questioned Chou and Chen's explanations and offered an alternative explanation which combined Chou and Chen's concept of association frequency with language influence. For example, he noted that the Chinese character for white is associated not only with pureness but also with everything open, clear, and unselfish, while grayness (gray was the least preferred color in their study) is a symbol for everything negative, disappointing, discouraging, or pessimistic.

Saito [11] extended the area of investigation to Tianjin in China and Jakarta in Indonesia in order to investigate the preference for color in more detail with special emphasis on the preference for white to establish whether or not a strong preference for white is common to Asian areas which have both

geographical and cultural proximity. As a result, it was found that while white was strongly preferred in both areas, the reasons for the preference were different. In Japan, white was mostly preferred because of its associative image of being clean, pure, harmonious, refreshing, beautiful, clear, gentle, and natural. In China, the reasons for the choice were mainly in association with chastity or purity. Chinese also preferred white because it was elegant, clean, beautiful, and “pure white.” It was also found that white is also a symbol of sacredness for them. Several subjects were reported as stating that white was the source of every color suggesting it to be substantial and unique. In Indonesia, white was reported as being mostly preferred for its image of being clean, chaste, neutral, and light.

The associative images stated above were assumed to be responsible for the strong preference for white. However, it should be noted that in China, white was found to be sometimes disliked, especially by male subjects because of its lifelessness, emptiness, loneliness, and image of death. And some Indonesian subjects were reported to have also disliked white, although only very slightly, because it was too light, too easy to become dirty, and too simple. However, for Indonesian subjects, it was found that white did not have the image of death as it did for the Chinese.

Another possible explanation of the preference for white in Japan is that literature on ancient Japanese religion and mythology states that ancient people believed in the power of the Sun. This belief can still be found in Japanese Shintoism. The Sun Goddess is called Amaterasu-ōmikami. As white represented the color of the Sun or sunshine, people accepted it as a sacred color. This is shown by Shinto priests wearing holy white costumes and also holding a sacred wand called a *gohei*, a purifying implement with white strips of paper used while they pray (Fig. 1). Such items which imply that white is a sacred color can still be seen throughout the country. There are examples, especially in folklore, of even white objects or animals becoming objects of worship at times. In this way, white had special meaning for people who revered the sun. For those people, this may explain why the color quite naturally came to be favored and admired.



Fig. 1 Photograph of a Gohei (white strips of paper) for a purification (With permission from Office of Public Relations, Waseda University)

Studies on the “Blue-Seven Phenomenon”

The “Blue-Seven Phenomenon” has been widely researched in many countries since it was first reported by Simon in 1971. It refers to Simon’s finding that over 40 % of American subjects selected blue when asked to name a color and over 30 % selected “seven” when requested to choose a number from zero to nine. This phenomenon has been confirmed by studies in the USA, Australia, and Kenya. In order to investigate color and number preferences in Japan, Saito [12] asked 586 university undergraduates (239 men and 347 women, average age = 20.85) (1) to name the color which first comes to mind, (2) to name his or her favorite color, and (3) to select his or her preferred number from zero to nine.

Japanese students were reported to have selected blue (33.50 %) most frequently followed by red (28.02 %) when they were asked to name a color (question 1). Blue, red, white (11.06 %), and black (6.18 %) together accounted for approximately 80 % of the responses. Further, a gender difference was reportedly found in the selection of colors, with blue and black being preferred more by men and red and white being preferred more by women. On the other hand, in response to question 2, the top four colors were the same, but red was not chosen as frequently as blue as the preferred color (red, 11.09 %; blue, 37.08 %). A gender difference was also obtained in question 2.

As for the preferred number, the subjects in Saito’s [12] study selected “seven” most frequently (22.50 %), supporting Simon’s [13] finding of the “Blue-Seven Phenomenon.” The reasons given for the choice showed that “seven” was associated with “lucky seven” and was considered “a lucky number” and to “represent happiness” among Japanese students. Other highly preferred numbers were found to be “three” (16.24 %), “five” (13.03 %), and “one” (11.84 %). Odd numbers accounted for 68.35 % of the responses. Male students selected the number “one” more often (men, 15.67 %; women, 9.07 %), the main reason given being that it represented “number one” or “top.” Female students, on the other hand, preferred “five” (men, 9.66 %; women, 15.30 %), because they “just liked the number” or because it was “a birth date,” “a good cutoff point,” or “a shapely number.” A gender difference was also found in number selection. Numbers were sometimes preferred for their “visual appearance.”

The results of Saito’s study consequently indicated the existence of the “Blue-Seven Phenomenon” among Japanese students. It should be noted that the top four colors (blue, red, white, and black) have consistently been found to be preferred highly in Japan by the method of choosing a favorite color from a color chart, as reported in related color preference studies [14]. Moreover, it has also been found to be the only color not likely to be taboo in most cultures [15].

Further study will be needed to determine whether the predominant selection of blue is a natural, spontaneous human response or something that is based on personal preference. In other words, it is believed that when humans and other living organisms show some reaction, they do not show the same tendency to react with every object-stimulus, but instead show a type of selectivity. In that sense, “seven” and “blue” may be the number and color, respectively, where response is likely to be concentrated.

There are several factors that may be connected with this tendency. For example, the subject’s tendency to respond in a certain way may be increased by factors from his or her cultural background (e.g., the belief that “seven” is a lucky number or the positive image of blue as seen in the paintings of Europe and America) or simply by the individual’s tastes. Therefore, if, after carrying out investigations in various areas of the world, it is found that there is a multiregional tendency toward certain responses, such as the tendency toward the selection of “seven” and “blue,” then these findings should not be dismissed simply as phenomena to be noted. Instead, studies from the viewpoint of human science or interdisciplinary studies should be carried out to investigate whether the cause of such common tendencies in human response is related to an innate cognition style or due to a cognition style acquired through experience.

Cognitive Implication and the Structure of Color Preference

During the course of the analysis of color preference, it has been found that there are preferences which have remained relatively unchanged for many years and those that have been changeable. In addition, it seems to be found that there are preferences that are common universally and those that seem to be distinctive to a specific region.

For example, “blue” tended to be preferred very highly in all regions in all years surveyed. Similarly, as report above, in an early cross-cultural 1963 study of taboo colors over the world, Winick reported that he did not find “blue” to be a taboo color in any country.

Moreover, the subjects’ reasons for selecting colors that tended to be liked or disliked regardless of time or place were closely connected with feelings of “pleasantness” and “unpleasantness.” According to the results of those surveys, the three principal images most frequently associated with pleasant feelings were “beautiful,” “agreeable,” and “bright,” while those most frequently associated with unpleasant feelings were “dirty,” “disagreeable,” and “dark.” These associations were observed commonly in all regions regardless of the year of the survey.

In the field of cognitive psychology, it is said that when information reaches certain centers of the brain, the corresponding sensory system is stimulated. The various stimuli that reach the sensory centers in the cerebral cortex do not simply remain there, but are transmitted to the amygdala and activate the memory circuit connecting the amygdala and the thalamus. The involvement of emotion is thought to occur because the union of the amygdala and the hypothalamus adds emotion to past experience and memory. This may be why, for example, when we hear a certain sound, we may remember nostalgic scenes or sense colors or smells that we associate with that sound or that we usually find accompanying it.

Thus, the union of the amygdala and the hypothalamus may also be involved in outcomes such upon seeing a certain color, we may feel an emotion, form an image in our minds, or make a specific association. Our perception of color, in other words, is not a simple sensation. Rather, we add on psychological elements such as emotion as part of our act of “seeing.” This is what the cognition of color involves, and the integrated performance of this cognition is suggested as being the result of the integrated union between the amygdala and the hypothalamus.

Of further significance is the close connection of the amygdala with our feelings of preference. In the physiology of the brain, the amygdala has always been thought to be involved in our judgment of whether something is “safe” or “dangerous.” This was then transferred to the feelings of “pleasantness” and “unpleasantness,” with “safe” being equated with “pleasantness” and “dangerous” with “unpleasantness.” Ultimately, this became transformed into the feelings of like and dislike.

As mentioned above, the amygdala is closely connected with preference in relation to the feelings of “pleasantness” and “unpleasantness,” and it seems apparent that the feelings of “pleasantness” and “unpleasantness” are closely related to the basis of color preference as well. Based on an analysis of the results of those surveys, a diagram has been made (Source: Saito et al. [16]) of what it is believed to be one of the general structures of color preference (Fig. 2).

As shown in the diagram, color preference has a three-layered structure, with preference due to feelings of “pleasantness” and “unpleasantness” forming the nucleus or the innermost first layer, preference due to individual factors composing the surrounding second layer, and preference due to environmental factors the outermost third layer.

The individual factors involved in the second layer include demographic aspects such as age and gender, physiological aspects such as skin color and eye color, psychological aspects such as personality, and other elements such as the individual’s life history, including his or her childhood. These are believed to be the principal individual factors that affect color preference.

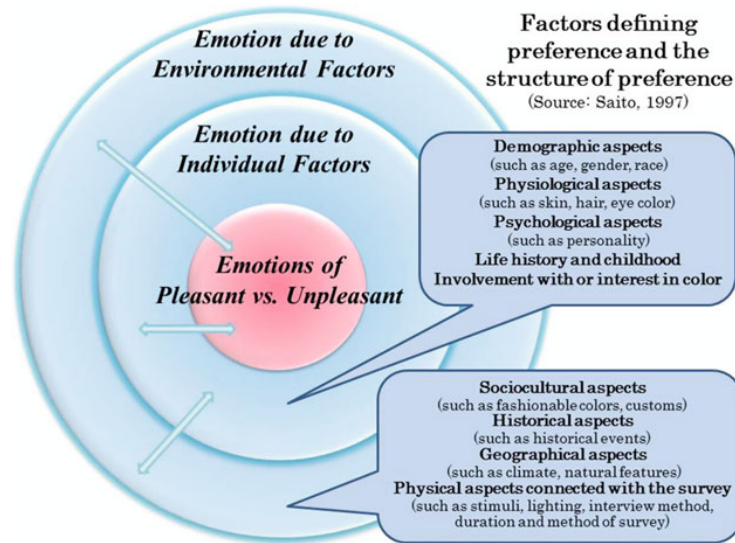


Fig. 2 Diagram – factors defining preference and the structure of preference (Source: Saito, M. (1997). “Shikisaino Kouzouni Kansuru Shinrigakuteki Kenkyu—Kokusai Hikaku Kenkyuwo Toushite— (A Psychological Study of a Structure of Color Preference—Though Cross-cultural Studies—),” an unpublished doctoral dissertation, the Graduate School of Human Sciences, Waseda University., Fig. 4.1, p. 264)

The environmental factors in the third layer affecting color preference are thought to include socio-cultural aspects such as current fashion trends or custom, geographical aspects such as climate and natural features, historical events, and physical aspects related to the survey itself.

The closer the preference is to the center of this structure, the more stable it is, and the more it is a preference that is common to all people, being relatively unaffected by differences in geographical area of residence or year of survey. The further away the preference is from the center, the more liable it is to change with the individual and the environment surrounding that individual.

As has been shown, the factors influencing comparative color preference are varied and diverse. Further studies are necessary to clarify other factors which may influence this phenomenon, because color preference is such a fundamental human trait.

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