

# The Effect of Color on People's Emotions

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**Abstract:** *Psychologists have studied the relationship between color and people's mental health and found that color can affect people's emotions. Generally speaking, red means happiness and enthusiasm. It makes people feel warm and full and stimulates the emotion of love. Yellow means happiness, brightness, cheerfulness, and joy. Green means peace and gives people a sense of peace, tranquility, and gentleness. Blue gives people a quiet, cool, comfortable feeling, make people open-minded. Gray makes people feel depressed and empty. White and black are the two poles of vision. Black makes people feel solemn, depressed and sad. White makes people feel elegant, pure and light. Research confirms that black can distract people's attention and make them feel depressed and dull. Long-term living in such an environment, people's pupils are extremely enlarged and numb. Over time, it has a negative impact on people's health and longevity. The rooms are arranged in a white, clean sense, but the white contrast is too strong, easy to stimulate pupil contraction, causing headache and other diseases. In a word, different colors can bring different effects on people's emotions and change their psychological activities. So People's personal experience shows that color has an important impact on people's psychological activities, especially with emotions.*

**Keywords:** Psychology; Mental health; Emotions; Color; Characteristics.

The study of the psychological effects of color has long been confined to psychologists and artists. Colors involve people's clothing, food, housing, transportation, work, study and all aspects of daily life. But does color really have such a big impact on people's emotions? Why are people affected by color? My hypothesis will be the color can influence people's emotion even can change their behavior. Psychologists have studied the relationship between color and people's mental health and found that color can affect people's emotions. Psychologists believe that people's first sense is vision, and the most important impact on vision is color. The reason why people's behavior is influenced by color is that people's behavior is easily controlled by emotion in many cases. It seems that color and emotion are not related to each other, but in fact, color can affect people's emotions. Physical light stimulation of color can directly affect human physiology and induce different emotions. Color works through human vision. Different colors emit different wavelengths of light. When the human eye touches different colors, the association and reaction of the brain nerves are different. Different colors can affect the endocrine system through vision, which leads to the increase or decrease of human hormones and changes in human mood. Therefore, color has a direct impact on people's psychology. Human's perception of color is a complex and delicate psychological, physiological, chemical and physical process. When color comes into sight, so it can cause people's diverse emotional and psychological effects. Then, there are some influences and effects of color in different fields that need to mention such as food, sales or interior design.

At the first, the color design can meet the emotional requirements and preferences of different users by differentiation and diversifying products with different colors; however, the nature of the product will not change just the appearance will change. "Tsai constructed an image evaluation model for a product's color scheme by using gray theory(GT), a back propagation neural network (BPNN), Moon and Spencer's color harmony theory and other methods".(Ding,2019) This model can tell the customer's demand for color and the most popular colors at the time. you can change the color of things according to this template to attract customers' eyes and make them interested in some specific production. Also, the specific thing that this model can do can be designed according to the actual project requirements in order to cater t the identified target users. There is also an emotional need through market research and expert target groups, and then finalizing the product based on the interview results. "An example analysis demonstrates that the proposed method can accommodate complex and diversified product layout forms and can generate product color design schemes that meet users' target emotional image. This method can also provide effective assistance for designers and provide theoretical support to products with color layout forms". (Ding,2019) It can be said that color is one of the most important and powerful tools for designing marketing materials such as websites, direct mail, advertising, and dining environments. "Colors are one of the most important elements in customer and consumer contexts. Similar products are sold often in different colors or with different packaging. Showcase stores and their interior, Shopping mall walls and aisles use multiple colors".( Kavehnezhad,2013)

The reason that why color can affect people's mental state and the mood is that color comes from the innate color of nature, blue sky, bright red blood, golden sun. When people seeing these colors are the same as nature's innate

colors, we naturally associate with the sensory experience associated with these natural objects, which is the most primitive influence. This may also be the reason why people of different regions, countries, nationalities, and personalities have common feelings about some colors. Although we can't absolutize the emotional effect of color, and we can't understand the real reason that why bulls attack when they see red and retreat when they see yellow in the Spanish bullfight, a lot of practice has found that there is something in common in people's psychological perception of color. Reasonable application of color can help and regulate people's mood. "For instance, researches have shown that warm colors, especially reds and oranges, encourage meal consumers to eat quickly and leave, this is why most fast food restaurants are decorated with light red and orange colors, and the effects of these colors are the cause that restaurant owners want costumes to do it".(Kavehnezhad,2013) In modern life, people are more and more affected by color. The use of color and tone is very important in home design, clothing matching, and environmental layout. According to the theory of psychology, color has a certain influence on everyone, and some color can even control our mood. In restaurants, red-brown tables are good for appetite. Under different climatic conditions, the use of different colors can also change the ambient atmosphere to a certain extent. In the cold north, people hope that warmth, interior walls, floors, furniture, and curtains will have a warm feeling when they choose the warm color decoration. On the contrary, in the hot and humid climate of the south, it will feel cooler when they adopt cold color decoration such as green, green and blue.

Secondly, as we know every time that we goes to airport and we can see there are a many people waiting for the plane, because there is long waiting time when flying, so the airport has to take into account the feelings and needs of the passengers. At this time, people will use the design and color of the airport to make passengers feel comfortable and relaxed. "Analyses showed that passengers preferred a passenger area with a curvilinear roof, a curved layout, the presence of greenery, no decoration reflecting the distinctiveness of Holland, warm lighting, wide dimensions, and white materials".(Berkhof,2013) the curved surface design, warm lighting and green plants in the passenger lounge area are calm and reassuring. This is also because the above design can be very connected with nature. People have the nature of being close to nature, also known as Biophilia. Architects will make full use of the aesthetic principle of space, lighting and the external environment of the airport to bring nature into the interior. A better understanding of the pro-life nature is the application of bionic technology, which creates more innovative buildings by simulating the laws of nature, including the airport terminal. "However, Mehrabian and Russell found that people's muscle activity responded more quickly to red than to green. Mehrabian and Geuens showed that light color stimulate consumers to explore the environment, and that these colors were preferred over dark colors". (Berkhof,2013) Previously, there been cases of green plants being introduced into the interior to effectively reduce the restlessness of passengers, and the natural landscape has been widely praised by tourists.

Art is another way to introduce outdoor landscapes into airport passenger lounge areas, besides color also has a larger role in stimulate the emotional response specifically. Specifically, the warmer earth tones or gentle ocean tones in the boarding gate and rest area can also effectively relieve stress and create a positive atmosphere. The color seen by the eye causes a reaction inside the brain, which in turn activates the autonomic nervous system that controls heart rate and blood pressure. For example, red can stimulate the adrenal glands to secrete hormones to cope with stress. Seeing red can cause heart rate and blood pressure to rise, so that alertness and vitality will increase. In contrast to red, the blue color at the other end of the spectrum has the effect of lowering blood pressure and heart rate. The yellow-affected part of the hormonal system controls how the body's body uses the energy available quickly by stimulating the brain and nerves, and makes the muscles feel stronger. Blue ocean or yellow sunny pictures can greatly help improve the passenger's airport experience. Phototherapy takes full advantage of the benefits of light, so we can also use phototherapy to alleviate the anxiety of airport travelers. For example, using as much natural light as possible in public areas of the airport can help increase serotonin levels, while serotonin helps to promote a good mood for travelers.

Thirdly, Restaurant is an important place in people's life. The color of the restaurant's environment will affect the appetite and dining mood of the customers, which will affect the health of the customers. Restaurant is kind of a place of service, the service object is the customers, restaurant interior designers should always put the needs and satisfaction of the customers in the first place, pay attention to the visual feeling, psychological stimulation and spiritual enjoyment brought by the color to the customers. At the same time, the influence of color design on the eating behavior of the customers will be considered, embodying the principle of people oriented. "The results support Othman and Goodarzirad, that pleasure from color significantly affects a positive behavioral intention in restaurants. The results are similar to suggestions from previous studies (Brenngman, 2002; Brenngman and Geuens, 2004; Othman and Goodarzirad, 2013), where high value and warm tone colors were suggested for store design to encourage a positive emotion and satisfaction from customer".(Berkhof,2013) Warm colors should be chosen for color matching, and cold colors should be used for family rooms with a large population and noisy atmosphere.

Different colors not only cause different psychological feelings, but also different physiological pride reactions. The physiological effects of color involve many systems, such as nervous system, respiratory system, circulatory system, endocrine system, digestive system, and motor system. "The interaction between visual mental processing and perceptual responses to visual stimuli were investigated". (Berkhof,2013) Color can not only affect people's mood but also affect people's health. "Through this study, we have empirically confirmed that pleasurable atmosphere induced by color influence store entry behaviors. The interaction between visual- mental processing and perceptual responses to visual stimuli were investigated".(Tantanatewin,2018) In clinical practice, color is also used as an adjuvant treatment for some diseases, and good results have been achieved. For example, high blood pressure patients wearing smoke-colored glasses can lower blood pressure. Hospital are usually decorated with white, light blue, light green or light yellow walls, which can make people feel calm and comfortable and help patients recover.

By the way, The preference for color in infancy is due to physiological effects, and association increases with age. People from different regions and nationalities also have different preferences and feelings for colors. For example, people in southern Europe and the tropics prefer bright colors, while people in northern Europe and the frigid zone prefer dark colors. People also feel different about color. Red is very popular in China, while in Africa, such as Nigeria, red is considered an unlucky color. In addition, with the development of society, there are more and more factors affecting the popular color. For example, people are troubled by industrial pollution, so more and more people begin to yearn for the color of nature. They express the color of nature, such as "sky color", "sea blue", "desert color" and "forest color". It is generally accepted that green is a healthy color, especially among those consumers who attach great importance to healthy diet. In the other hands, "In many situations, red is associated with danger and perceptions of threat. Despite the well- established link between red and danger, there is still a lack of experimental studies examining the effects of color on risk-taking behavior. Therefore, contributes to the growing body of research on color psychology by examining the behavioral effects of red on risk-taking in computerized environments".(Gnambs,2015) As we know, in China orange can produce vitality, induce appetite, is also the representative color in the warm color system, also represents the color of health, it also contains the meaning of maturity and happiness. Yellow gives people the feeling of being rich and noble. Even the precious metal gold in nature is golden. White reflects all light and has a sense of cleanliness and expansion. White also stands for purity and supremacy, but white also represents funeral and mourning for lost people. Black has the functions of clearing away heat, calming down and stabilizing. It can restore stability for patients with excitement, irritability, insomnia, and panic. Grey is a very easy-going color with a variety of colors to match. Grey is a very easy-going color with a variety of colors to match. Blue: A fantastic color, but also a serious color and blue has the function of regulating nerve, calming and tranquilizing mind. Finally, it should be emphasized that the influence of color on people is also affected by many factors. For example, it has something to do with people's personality. An objective and rational person only pays attention to whether the color is distinct or not. There are no emotional elements in it, so the emotions of such people are less affected by the color. People with rich emotions, such as some women with associative personality, often think about things related to color when they see it. Such people's emotions are easily affected by color. Also, "Including a red (vs. gray) headline in a web based survey led users to behave in a more risk-averse way within a classic dilemma paradigm at least under conditions of uncertainty. Likewise, users chose a less risky strategy in an online game when the target stimulus was red rather than blue". (Gnambs,2015) This is why color has such large magic, and anger can change people's emotions and behaviors without speaking.

Finally, it should be emphasized that the influence of color on people is also affected by many factors. For example, it has something to do with people's personality. An objective and rational person only pays attention to whether the color is distinct or not. There are no emotional elements in it, so the emotions of such people are less affected by the color. People with rich emotions, such as some women with associative personality, often think about things related to color when they see it. Such people's emotions are easily affected by color. Others have their own special personality when they look at colors, some of which are kind, some of which are brave or cunning. Colors make the world colorful. They can change our moods and affect our views on something. Enterprises are therefore willing to invest in the colors of the design representative enterprises. All designers rack their brains to express the characteristics of each color so that they believe that at the moment you meet the color, you can realize the message it conveys to you under the gentle or violent colors.

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