COLOR COLLOCATION OF CREATIVE PRODUCTS CONSIDERING PERSONALITY PSYCHOLOGY

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SUMMARY
Background: At present, with the continuous development of the cultural and creative industry, the people’s understanding of the definition of beauty has gradually improved. Facing the problem of the single color style of existing creative products, this article considers the influence of individual psychological factors and studies the color matching art that is more in line with the public’s aesthetics. The current design concept of cultural and creative products is still the pursuit of individualization, but the presented works are the same and cannot achieve the purpose of cultural communication. Individual psychology, seeking creative products that are more in line with modern psychology and aesthetics, and improving color matching, cultural and creative product design innovation.

Subjects and methods: This paper conducts research based on the theory of personality psychology, establishes a correlation matrix between mass personality psychology and color matching, analyzes the importance of color matching in creative product design, and discusses the main principles of color matching design.

Conclusions: In view of personality psychology, research shows that the importance of color use in cultural and creative products and the psychological reaction of different color combinations.

Key words: personality psychology - cultural and creative products - color matching - situational psychology - emotional character system

INTRODUCTION

With the development of global economy, consumers’ demand for cultural industry and its derivative creative products is increasing. Cultural creative products are a kind of cultural products that protect, inherit and spread excellent culture with culture as the resource and carrier. They can refine the cultural characteristics of a country, a nation or a certain region and have a strong national culture. Cultural creative products have both cultural attributes and innovative attributes, which are the combination of traditional culture and innovative design (Snowball et al. 2021). The design of cultural and creative products is composed of shape, color, quality and sense, among which color plays an important role in shaping the style and brand characteristics of cultural and creative products and is one of the decisive factors affecting consumers’ purchasing behavior. In the conventional color design of creative products, industrial designers combine their own knowledge, experience and other personal knowledge to introduce the constraints such as color system, style positioning and brand image of enterprises into creative product design, and then choose the color scheme according to the popular trend and consumer preferences, which has the characteristics of subjectivity and openness (Landoni et al. 2019). The color design of cultural creative products should start from the characteristics and attributes of the target culture, extract the colors that reflect the target region, and apply them to specific cultural and creative products combined with the creativity of designers. Compared with conventional cultural and creative products, the color design has more typical regional, cultural and contemporary characteristics. Different times, regions, nationalities, the use of color is very different (Montalto et al. 2019). The cultural boundaries of existing cultural and creative products are fuzzy, and the communication of cultural styles and characteristic images is increasingly weakened (Mbaye & Dinardi 2019; Chang & Hung 2021). Therefore, considering personality psychology, this study explores the importance of color use in cultural and creative products and the personality psychological reaction of different color combinations.

SUBJECTS AND METHODS

Study setting
Concept of personality psychology. Personality psychology is a subject that describes, explains, predicts and controls individual behavior and its underlying causes. In the framework of behavioral prediction, whether it is based on the external or internal characteristics of the individual is the focus of academic debate for a long time. With the development of research, more and more researchers perfect the debate from different angles, trying to provide an integrated approach for personality study. Personality trait theory focuses on intra-trait congruence behavior and inter-trait difference behavior, that is, the typical congruence of individual behavior in different situations and the typical differences of inter-group behavior. However, many studies have shown that personality traits and behavior performance are not all related, most of the correlations are difficult to be higher than 0.3 or 0.4 level, personality traits on the prediction of behavior has been questioned. The debates and dilemmas of idiosyncrasy and situation urge scholars to construct a new framework to explain and predict
individual behavior more effectively. They began to pay attention to the interaction between individual and situation (Domaradzka & Fajkowska 2019, Obschonka et al. 2020).

Situational psychology

Situational psychology emphasizes the importance of situation, and holds that individual behavior is based on the present situation, and is influenced by subjective characteristics (personality inclination, current cognition, emotion, motivation, etc.), immediate objective environment and subjective situations perceived and constructed by individuals. The theory of human-situation interaction is the core of situation psychology, which focuses on the interaction between individual and situation, that is, individual’s actual behavior is the function of many factors between himself and situation, and individual actively constructs the meaning of situation through his own cognition of situation. Therefore, individual cognition plays a more decisive role in constructing meaning and behavioral activities.

Cognitive-affective personality system theory

The cognitive affective personality system (known as the CAPS theory) attempts to reconcile idiosyncratic and situational inconsistencies within a broader framework. CAPS theory expatiates on the relationship between personality, situation and their interaction. It also emphasizes the individual’s cognition and emotion, and names it as “cognitive-emotion unit”. This unique structure unit and network determines the individual’s construction and understanding of the situation, and promotes or inhibits the activation of the situation characteristics to potential behavior. Individuals in different time and situation, different internal cognitive-affective unit combination will be activated, thus triggering different behavioral responses. When this combination is presented in data form, a situation-behavior profile of “if … then …” is formed.

DESIGN

The aesthetic cognitive psychology of the audience to cultural and creative products

As the current design of cultural and creative products ultimately requires a certain medium to display information to the visual interface. Therefore, the audience should be made aware of the information they see from the media; in addition, the designer should understand the audience’s aesthetic ability and understanding, and design beautiful and easy-to-understand images to help the audience see the information. Scientific research has shown that one tenth of the human visual system is physical, and the other nine are spiritual. Although in the visual process, sensory stimuli are transmitted to the brain in the form of light to form meaningful images, the viewer relies on his personal experience, knowledge and surroundings to interpret the images (Nascimento Albers & Gegenfurtner 2021). In other words, humans can “see” things with their eyes, but they need to learn how to choose what they want to “see” from what they see. Therefore, we don’t have the ability to focus on all the things we see. Once you’ve made your choice, learn how to “see” what you “see”. From “see” to “see” is a very complex process of reasoning and decision-making. Humans have done a lot of research on this process over the past three decades, developing the science of “cognitive psychology.”

Information from the environment is received by the senses in the form of sensory stimuli for a brief stay. The storage of sensory signals is the first step of information processing. Sensory stimuli must reach a certain amount to be felt. If it is not noticed by the individual, it will soon disappear. Sensory signal storage includes image storage and audio and video storage. Image storage retains visual input, while audio storage retains auditory input. Sensory memory can store a great deal of information, but if left unattended, it is quickly lost. Therefore, it is necessary to further “pay attention”, make “pattern identification”, and select the required sensory signals for further processing (Yu et al. 2021).

Cognitive psychology studies the advanced mental processes of human beings, such as attention, memory, type recognition, reasoning, language, reading, consciousness and unconsciousness. Cognitive psychology plays an important role in arranging various visual elements (text, image, color, size, distance, etc.) and optimizing visual perception (Skov & Nadal 2020): A. light and heavy. The degree of lightness of color is mainly determined by lightness. Lightness of color has a light feeling while lightness of color has a heavy feeling. White, yellow, sky-blue, and light gray give a light feel, while deep purple, dark blue, and black give a heavy feel. B. Sense of cold and warm. The hue of colour, lightness and purity can let a person produce the feeling of cold and warm, and hue is in the effect on cold and warm feeling the strongest. Such as red and yellow, orange often reminds people of the sun and feel warm, and blue, blue, purple color reminds people of seawater, moonlight and so on and feel cold. C. Sense of distance. Color advance and retract of this distance, produced in the eye to feel different colors, in which hue in the sense of distance is the strongest, followed by chroma and brightness. Warm colors have the characteristics of advancing and expanding, while cool colors have the feeling of retracting or contracting. In addition to purity and dark color make a person feel hard, and the opacity with high brightness has downy soft feeling. D. Sense of taste. The sense of taste is determined by the symbolism and recollection of color (Lajante M et al. 2020).

Composition of color

Color, in theory, is a sensation produced when light stimulates the eye’s visual center, which then travels to the brain. The accomplishment of one’s sense of color requires, first and foremost, the presence of light, the presence of objects (objects) and the presence of healthy eyes. Specifically divided into the following three stages:
the first stage for the physical stage that is the nature of light itself and the number of issues. The second is the stage where the visual cells respond to light and color and pass it on to the brain. This is a physiological problem that occurs when stimulated by light. The third stage is psychological stage, which is the combination of psychology and conscious action. The visual process is shown in Figure 1 (Rabb et al. 2020).

![Object Eye Brain Visual imaging](image)

**Figure 1.** Principle of visual process.

The color matching design of creative products does not represent any meaning in itself, but due to the influence of human thoughts and social factors, it is easy to produce obvious emotions. Correct understanding of color is the premise of color design. In the field of color, the German scientists Ostwald and Munsell scientifically and systematically arranged the colors in a certain order of hue, brightness and purity in the “color stereo” (see below) so that each color has a fixed position and code name for analysis and application (Myszkowski Elik & Storme 2020).

Lightness: refers to the degree of light and shade of color on the light source pigment said that can be called luminosity. In addition to the brightness of the object color can also be called brightness, depth.

Hue: Hue refers to the appearance of color. It is the name of different color types. It refers to the different color feelings of different wavelengths of light. Red, orange, yellow, green, blue, purple each word represents a specific kind of hue between them is the difference between hue difference.

Purity: Purity is used to show shades and shades of color. Therefore, it also has the gorgeousness, the chroma saturation and so on. Any color in the purity of the highest when there is specific brightness if the brightness will change the purity will be reduced. High-purity hue blending white or black blending reduces the purity of the hue and also reduces the brightness of the hue. And it mixed with different shades of gray reduces the hue’s purity and makes the brightness close to the gray’s brightness. If high-purity hue with the same degree of gray mixture can form the same color with the same degree of brightness of different purity sequence.

**The importance of color in the design of cultural and creative products**

In the design of cultural and creative products, although color is attached to the shape of creative products, it is often more attractive than the shape, with the artistic charm of preemptive. Color is the easiest content to impress people in the design of cultural creative products. Designers can enrich and perfect their own designs, express their creative intention, and interpret the soul of creative design works through the choice, collocation and combination of colors.

![Forbidden City Theme lipstick](image)

(a) Forbidden City Theme lipstick

![Palace gate luggage](image)

(b) Palace gate luggage

**Figure 2.** Cultural and creative products of the Forbidden City.

Cultural and creative product design is an important part of cultural and creative industry. It is the perfect combination of creativity and design, and the process and result of presenting creative design thinking and complete design intention of designers through design. With the rapid development of social economy and the impact of emerging industries on the market, all fields are facing new challenges. Under the current situation, more attention should be paid to “design”, “culture” and “innovation”, which also provides opportunities and platforms for cultural and creative product design. Cultural creative product design in the context of cultural creativity should be the result of the integration of spiritual culture and material culture. It not only pays attention to the functionality of design, but also emphasizes humanistic care and emotional expression in design. The design of cultural creative products is not only the subversion of tradition and the break of conventional thinking, but also the extension and supplement of practical functions of cultural creative products. Cultural and creative product design aims to meet the needs of life, pays attention to the combination of emotion and rationality, integrates traditional culture, environmental protection concept and fashion experience together, and interprets the designer’s design propositions. It is an innovation on both spiritual and material levels.

In the design of cultural and creative products, shape, color and material are important parts. Color does not exist independently, but is the link and bridge between them. Color is one of the expressive languages in the
design of cultural and creative cultural products, which can meet People’s Daily aesthetic needs. The visual impact of color will arouse people’s desire and curiosity for cultural and creative cultural products. Analysis from the perspective of color, therefore, to explore the color in the cultural creativity, and the role in the field of product design and the emotion performance is necessary, not only can promote the cultural creative industry category, multi-disciplinary mutual reference and integration, to explore more appropriate service cultural originality and the color of the product design system, it can improve the artistic quality of cultural creativity industry. The dynamic harmonization process of the color design of cultural creative products is based on munsell’s quantification of color harmonization rules. Through the correlation and coupling between color beauty and visual beauty, the dynamic mapping between color image and color image is established to realize the color collocation design of cultural creative cultural products.

Different color brings people different psychological reaction

Colour is right psychology and the effect of life already is acknowledged fact, and the auxiliary treatment that already was applied at psychological treatment and a few diseases by developed country. When you adjust your own coloring, before too long, you will find yourself from the outside to the inside have a a new feeling, a state of mind will clear a lot, around the relatives and friends to see you will feel shine at the moment, in social activities, you are the first impression that gives a person is decent, generous, have grade, your self-confidence will get a lot of ascension, of course things will also feel a lot smoother. Anyhow the mood is pretty good, all these changes, colorific merit cannot fail. Colour psychologist thinks, the influence of different color to the person’s mood and psychology has difference (Reymond et al. 2020).

Anacronitic colour can pass optic nerve to cerebrum nerve cell, be helpful for promoting the intelligence development of the person thereby. If often be in the colour environment that lets a person mood depressive, can affect the development of cerebrum nerve cell, make intelligence drops thereby. Color is as important to the eye as our ears must appreciate music. It is hard to imagine what it would be like in a world without color. Color can coruscate people’s emotion, can describe people’s thought, therefore, have insight, appropriate use of color attracts people’s attention. Blue conveys peace, serenity, harmony, trust and confidence.

When used in food or cooking, blue can suppress appetite. Orange is warm and luxurious, if you want to show showy and eye-catching, then use orange, it may stimulate your emotions. Use orange and blue with caution as these complementary colors can give the impression of instability. Red expresses enthusiasm and passion, heat and fire, speed, generosity and excitement can be used in red, it may be exciting, not quite peaceful color, with brown, blue, light purple used together is not quite appropriate. Yellow expresses optimism, happiness, idealism and imagination. If you are determined to use yellow, it is a good choice to use as a background to create a light and shade effect.

Purple is a mysterious color, symbolizing spirituality. For non-traditional and creative aspects, it is not only a good choice, it may be the only choice. Green evokes strong feelings, both positive and negative. In some cases, it is a friendly color, indicating peace, and is often used to describe areas of production and health care. Black is widely regarded as the color of sadness, seriousness and depression, but in the positive aspect, it is also considered as the color of rich experience and mystery. Taking black as the main tone, it is usually used with great caution. After all, for artists, black is the most attractive color. Gray represents act of stuffy, without vitality, but it is the rest spot of person eye however, when people feel tired in multicolored world, appropriate use gray can make people get proper rest. According to psychology, white has the meaning of cleanliness, purity, simplicity, frankness and innocence. White is the most common background in design, because it is the easiest to identify. As a “colorless” background, we can use colors at will. In our design, we have more colors to use, but we must choose the most appropriate color.

Establishment of correlation matrix between color matching of cultural and creative products and personality psychology

Based on the color harmony quantification method and personality psychology theory, considering the index relationship between color beauty and visual psychology, the correlation strength analysis of color beauty and visual psychology can be expressed by matrix P, as shown in formula (1).

\[
P = \begin{bmatrix}
P_{11} & P_{12} & \cdots & P_{1n} \\
P_{21} & P_{22} & \cdots & P_{2n} \\
\vdots & \vdots & \ddots & \vdots \\
P_{n1} & P_{n2} & \cdots & P_{nn}
\end{bmatrix}
\] (1)

Where: \( M \) is color beauty; \( S \) is symmetry; \( B \) is the degree of balance; \( P \) is the proportionality; \( N \) is the analysis quantity of related elements between color beauty and visual beauty, where \( n = 4 \). The special properties of the correlation coupling matrix include: \( P \) is a symmetric matrix; The effective number of correlation coupling in matrix \( P \) is \( n(n+1)/2 \). The functional expression factors of cultural and creative product color design are compared and judged by the list comparison method in analytic hierarchy process (Ren 2019). Where \( p_{ij} (i = 1, 2, \ldots, n; j = i = 1, 2, \ldots, n) \) is the importance scale of color beauty and visual beauty, and

\[
p_{ij} = \frac{1}{p \hat{p}}.
\]

The discrimination of relative importance is shown in Table 1.
According to the above steps, we can judge the degree of the impact of color matching on human psychology under the theory of personality psychology. Through the above steps, it can be judged whether the creative work has a certain degree of innovation and artistry.

**DISCUSSION**

Colors are attached to the packaging of cultural and creative products. In terms of visual effects, colors are indeed more attractive than forms. When cultural and creative products are circulated as commodities in the market and bought by people, the color of cultural and creative products determines whether they can attract people. Therefore, it is of great practical significance to study the tone design and color matching principle in the functional expression of cultural and creative products, beautify cultural and creative products, improve the grade and competitiveness of products, improve production safety and work efficiency, create a good color environment and pleasant people’s mind and body. Each kind of cultural and creative product has its own function, completes its own function utility. In the color design of cultural and creative products, we must first consider the coordination and unity of color function and cultural and creative product function characteristics, so that people can deepen the clear understanding of the material function of cultural and creative products, so as to facilitate the play of cultural and creative product function and achieve good results. Considering the relationship between the function of cultural and creative products and the color tones, it is an important issue to be determined first in the color design of cultural and creative products. The artistic effects formed by different tones are different. In the color processing of cultural and creative products, we should pay attention to the theory of personality psychology and study the visual impact of different colors on humans, so that it is more in line with human aesthetics. We should pay attention to the unified effect of the main colors. Too many color configurations can easily cause color confusion. It is not easy to adjust and destroy the harmonious effect. At the same time, the painting is complicated and the economic effect is poor. Therefore, the color design should grasp the following three principles.

1. There is an internal connection between cultural and creative products and color. Highlighting and strengthening this internal connection is a key method to grasp the main tone. In addition, color has certain functions and personalities. For light and precise cultural and creative products, it is advisable to use light and quiet colors to show the precision and lightweight functional characteristics of light cultural and creative products; For heavy cultural and creative products, it is advisable to use a darker and heavier tone to express the stable and powerful functional characteristics of heavy cultural and creative products.

2. The color design level of cultural and creative products can reflect the appearance of science and technology, material culture and spiritual life, as well as the artistic characteristics of the era of innovation. Therefore, combining the leap development of modern science with the modernization of art organically can enhance the market attraction and competitiveness of cultural and creative products to a certain extent. Therefore, in the use of colors, especially in the selection of colors, we should not only reflect the novelty and beauty, in line with the aesthetic requirements of The Times, but also not excessively pursue dazzling and gorgeous, losing the functional characteristics of cultural and creative products. Only the harmonious beauty of nature can give people a pleasant, vivid and soft feeling.

3. The expressive force of the appearance of cultural and creative products should make the color configuration harmonized with the form, structure and functional requirements of cultural and creative products, which is an important symbol of the success of color matching. According to the different functions and forms of cultural and creative products, there are many kinds and shapes differ greatly. Therefore, different color schemes must be selected according to their types, uses and sizes. The selection of different colors is closely related to the functional characteristics and appearance expression of cultural and creative products. Therefore, tonal design must conform to the functional characteristics of cultural and creative products in order to make cultural and creative products have strong and rich appearance expressive force.

The overall coordination of color is an important factor to show the artistic beauty of cultural products. Cultural and creative products should have a sense of wholeness from form to color. Cultural and creative products should not be allowed to have chaotic colors, separate from each other and be fragmented. At the same time, attention should be paid to the organic connection of other aspects of color, so that it can be coordinated with...
cultural and creative products into an organic whole, so that cultural and creative products can be full of vitality, stability, kindness and sense of The Times. Therefore, in the color design of cultural and creative products, in addition to reflecting the general color characteristics and general tendency of the main tone of cultural and creative products, while allowing the overall effect not to be destroyed, specific attention should be paid to the requirements of visual balance, human-machine coordination, democracy and fashion of color.

**CONCLUSIONS**

Colour is having impact to the vision of people with its or warm, romantic, or sweet strength. People use color to show their aesthetic consciousness, so that our living environment is full of color. The color matching group of designers of cultural and creative products is not for individuals, but for all groups of people. Therefore, it is necessary for designers to have a deep understanding of personality psychology and create a common artistic environment in line with people’s different aesthetic positions through the application of psychological analysis in color matching.

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Ruizhi Zu: conception and design of the manuscript and interpretation of data, manuscript preparation and writing the paper;

Weidong Hao: participated in revising the article and gave final approval of the version to be submitted.

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ANALYSIS OF THE INFLUENCE OF BEHAVIORAL PSYCHOLOGY ON THE EFFECT OF JAPANESE TEACHING

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SUMMARY

Background: Behavioral psychology is one of the important schools of learning theory today, and its theoretical ideas have an important influence on modern teaching. This paper analyzes the behavioral learning theory, combines it with pedagogy, and applies it to Japanese education and teaching to improve the quality of Japanese teaching.

Subjects and methods: This research verifies whether teachers’ teaching behaviors can give students moderate stimulation, drive students’ emotional behaviors, and maximize their subjective initiative, using simple sounds, pictures, and text as examples.

Results: Under the teaching behavior that gives the same stimulus, different students have different responses, which produce different effects. In the early stage of teaching, teachers can use more teaching methods to improve teaching efficiency and impose different stimuli on the different characteristics of students. In response to these behaviors, we have proposed the following methods and strategies to stimulate students’ learning motivation, guide students to face failure correctly, set a learning example, cultivate students’ observational learning ability, and pay attention to strengthening students’ learning content.

Conclusions: This paper focuses on behavioral psychology and studies the influence of behavioral psychology on Japanese teaching. By responding to student behaviors and students’ responses to different stimuli, changing the current teaching methods, enhancing the effectiveness of classroom teaching, improving students’ Japanese proficiency, conforming to the requirements of the new curriculum standards and the country’s demand for talents, and cultivating well-rounded college students.

Key words: behavioral psychology - Japanese teaching - student behavior - stimulate - reaction

INTRODUCTION

Behaviorism is the psychology of behavior as the research object. Behavioral psychology takes objective and observable objects as the object of research, and it has great resistance to the traditional psychology that takes consciousness as the object of research (Sahu et al. 2020). Behavior in behaviorist psychology refers to the various body reactions that are made when affected by external environmental factors. American psychologist Watson divides the construction of psychology into two levels. On the one hand, it is the observable object, which refers to the reaction of the organism to the outside world under the influence of heredity or certain habits. These reactions may be adapted to the external environment, or they may not be suitable for the external environment, and some organisms may even react in order to survive. On the other hand, it is the body’s response to certain specific stimuli, which can be regarded as the essential generalization of behaviorist psychology, which is stimulus and response (Oga-Baldwin et al. 2017). Stimulus refers to external factors that can cause changes in the body. In real life, stimuli are often produced through multiple forms intertwined, which is what we often say (Hiver et al. 2018).

Behaviorism can predict and control the behavior of organisms. The behaviors of all human beings and animals are caused by external stimuli. Behavioral psychology studies the laws of such stimuli and responses, so that it can predict what kind of response will be based on the stimulus, the reaction by which infer what kind of stimulus, thereby achieving efficient prediction and control of behavior (Pinner et al. 2019). A successful behaviorist psychologist should be able to use scientific methods to predict and control people’s behavior, so that they can predict their possible reactions when they encounter certain stimuli (Alhamami et al. 2018). Behavioral psychology believes that learning is a connection between stimulus and response established through conditioned reflex. The content of learning should be the formation of habit, the connection of stimulus and response; the viewpoint of behaviorism is mechanical and focuses on the effect of learning content (King et al. 2018). Behaviorist psychology has a deep influence on foreign language teaching. The “contrastive analysis hypothesis” in foreign language learning theory is put forward under its influence, and the “listening and listening method” in foreign language teaching method is also put forward on its basis (Dewaele et al. 2019). Although behaviorist psychology has declined or even been declared “dead”, the concepts of “language contrast”, “timely feedback”, “active reinforcement” and “a lot of practice” put forward by it in language teaching still have practical significance (Jin et al. 2018). In some aspects of teaching, the crutch of behaviorism is still needed, which is one reason why the learning theory of behaviorism “catch but not fall” (Sun et al. 2020) even believes that in the absence of a language environment for Japanese teaching in China, “this is the only effective Japanese learning concept, and establishing a corresponding teaching method based on this concept is the fastest, effective, and more effective way of foreign