The Emotional Connotations of Color: A Qualitative Investigation

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Abstract: Typically, the research on the connotations of colors has presented isolated color samples to the participants, and/or restricted their responses to a limited set of alternatives (e.g., basic emotions). In the present study, the participants were asked to imagine their own examples of the target colors, thereby allowing the participants to select their own salient examples, including the context. In addition, a qualitative method, the semi-structured interview, was employed, giving them freedom to choose their own terms of description, and also identify issues which they themselves regarded as relevant. To a large extent, the results were consistent with previous research about the emotional significance and arousing effects of different colors. But this alternative approach also threw light upon more subtle connotations of colors, the multiple meanings of a single color, and also the participants' reasons for these connotations, ranging from individual experiences to cultural conventions and stereotypes. © 2008 Wiley Periodicals, Inc. Col Res Appl, 33, 406–410, 2008; Published online in Wiley InterScience (www.interscience.wiley.com). DOI 10.1002/col.20435

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INTRODUCTION

The significance and symbolism of color has been a long-standing subject of study. The research has indicated some systematic patterns of meaning (e.g., Hemphill,1 and Valdez and Mehrabian2). For example, according to Levy3 ‘cool’ colors are soothing, and ‘warm’ colors stimulate. A good deal of the existing research has, however, used abstracted, disembodied color chips or color atlases, and confined the participants to a limited set of responses (for a critique, see Valdez and Mehrabian2). Yet past research has indicated both the importance of context, and the fact that the meanings of particular colors can be ambiguous, and even conflicting. Several studies have investigated the importance of context, such as the nature of the object, the immediate surroundings, the effects of language, culture and physical environment on the significance of colors to people (e.g., Hargrave,4 Wierzbicka,5 D’Zmura et al.6).

Many of the existing studies have their limitations; however, in so far as they presuppose which contextual factors are most important in determining the connotations of colors, and, as is standard in much quantitative research, they restrict the possible responses of the participants. The following exploratory study used a qualitative methodology to allow people to imagine their own colors before explaining their meaning for them, and, as a result, places them in their own salient contexts. To this end, a semi-structured interview methodology was employed (Smith7), which both sets out a clear agenda for the interview, and yet also gives the participants plenty of room to add their own details, and also point out important issues that may not have been raised in the interview schedule. Participants were told that the purpose of the interview was to explore any emotional associations with color they may have. They were made aware that the interview was informal, and that there were no ‘right’ or ‘wrong’ answers. The participants were shown the list of interview themes, and their purpose was explained. Participants were told that there was no rigid order to the issues to be explored.

The method of the present study was thus distinctive in two important respects. Following the criticism of Valdez and Mehrabian2 of the standard approaches, the participants were not presented with actual color samples so they were free to imagine their own examples and also their contexts. Secondly, the semi-structured interviews did not constrain the range of responses available to the participants. The purpose of this study was to determine
the extent to which this new method yielded results consistent with the existing research, and also to investigate its potential for opening up new insights concerning the connotations of colors.

**METHOD**

**Participants**

Sixteen students from Portsmouth University following various courses took part in the study. The age range was from 18 to 21 years. The interviews were all carried out in the laboratory rooms of the Psychology Department to limit distractions and allow for a comfortable atmosphere. The participants were recruited using the University of Portsmouth’s student participant pool. Gender was not properly represented, with only six males compared to the 10 females that volunteered for the experiment.

**Design/Procedure**

The colors covered in the semi-structured interviews were red, orange, yellow, green, blue, purple, black, white, pink, brown, and grey as identified as the 11 color terms being present in the English language by Berlin and Kay. The order of the colors was counterbalanced. The themes explored in the interviews were as follows:

1. The emotions, images, concepts or events that come into mind when the participants visualized the color.
2. Possible reasons for these associations.
3. The possibility that the same color could have multiple meanings.

During the interview, the investigator recorded the participants’ comments about each color concerning its meaning, associations and the influence of contextual factors, as well as any general attitudes towards that color. Participants were briefed before the interview so that they fully understood the purpose of the interview and the topics that would be covered. Participants were simply told that the aim of this investigation was to look at the emotions, meanings, and associations they experience in relation to specific colors, so that their responses could be compared to those of other people to see if there is any consistency between individuals.

**RESULTS/DISCUSSION**

**Red, Orange, and Yellow**

Consistent with the claim by Levy that cool colors sedate and warm colors provoke active feelings; the present study also found that “warm” colors such as red, orange, and yellow did evoke the more active emotions (by “active emotions” I refer to Levy’s use of this term when speaking of emotions or feelings that involve physical arousal, and by the use of “passive” those that sedate). When questioned about red, 75% of participants made comments regarding red’s highly emotive nature relating to love, anger, and passion:

- “Makes me think of emotions like anger and passion.”—Alison
- “Anger, rage, warmth.”—Heather
- “Deep, high emotion.”—Natalie

These results are also very similar to those reported by Wexner who found that the words “exciting” and “stimulating” were often associated with the color red. For orange, 56% of the participants also reported similar active emotions, although they tended to be more pleasant:

- “Homely, warm, happy and energetic.”—Lisa

However, the “warmth” of red, orange and yellow varied along a continuum. Red was talked about in reference to “heat” and “fire” by 19% of participants. Yet as the questioning progressed onto orange then to yellow, words such as “warmth,” “sunshine” and “flames” became used by 44% of participants, suggesting the type of heat developed from that of an intense heat to more of mild warmth. Perhaps the decrease in warmth of a color is a reflection of the level of arousal the color evokes, which may explain the range of associations, from strong emotions such as “passion” and “anger” with red, to milder emotions such as “happy” with orange, and “smiley” and “cheery” with yellow.

**Green and Blue**

The results also corroborated previous research concerning the qualities of green and blue. For example, Spielberger and Wexner found that green and blue were associated with low anxiety levels and the qualities of being comfortable and soothing. About 44% of our participants made very similar comments about green:

- “It’s peaceful, as long as its olive green, it kind of means nature as well, and I suppose nature equals peace.”—Royston
- “It’s a peaceful colour as it’s like the countryside, which is also relaxed and peaceful.”—Lisa

In addition, 69% of participants reported similar low arousal comments for blue:

- “Sad, it’s a heavy colour when rich”—Alison
- “Sea, sky, it’s a very free colour, calming, its soothing and relaxing.”—Nikki

The responses for green and blue were very similar with terms such as “neutral” often being used. The associations of green and blue with “calm” and “peaceful” was also common, yet there was a gradation. While green was often referred to as “neutral” and “cool” (44%) when the questioning progressed onto blue such terms as “cold,” “cold colour” and “water” became increasingly frequent (69%). In fact, one of the participants explicitly suggested the existence of a symbolic continuum:
“Green – blue turquoise type colours are kind of on a continuum between the meaning of green and blue.”—Natalie

**Purple**

Interestingly, references to temperature, either warmth or coldness, abruptly stopped beyond blue. Purple was never referred to as “cold”; however, 50% of participants did make reference to purples calming and passive nature, for example:

“Placid feelings, it’s a calming colour”—Kerrie
“Feminine, I don’t think much of purple”—Mike

**Black and White**

The responses obtained for black were consistent with the research of Adams and Osgood\(^1\) and Wexner\(^2\) who reported that black is bad, strong, and inactive as well as powerful and masterful. About 69% of our participants regarded it as a symbol of evil, malice and death:

“It’s an evil sinister kinda colour.”—Alison
“Everything drowns in black, it ‘takes’ everything into it.”—Alison

Interestingly, 68% of the comments made of white made reference to black, usually as being its opposite:

“Just take everything I said about black and use that, and reverse some of it.”—Jo

As one participant put it, “[White] can mean death, but in a more peaceful way [than black].” Whereas black signified, “Death and bad things: evil sinister things” (Natalie), white, even when referring to death, was more positive.

It seems strange that black is so popular in fashion and marketing when it potentially could carry a whole host of negative connotations. It’s of the authors’ only personal opinion that its popularity is due to blacks’ overtones of power and the supernatural. Its use being to represent something mysterious, rebellious or an alternative, traits that by some may seem appealing.

“Death but in a different way from black, the whole ‘a light at the end of a tunnel’ type thing.”—Claire

**Lightness and Hue**

Hemphill\(^3\) investigated the affective significance of bright colors which included white, and found that, for bright colors, 61% of the responses were positive, potentially demonstrating how the lightness and brilliance of white is the source of its positive traits. When participants mentioned the term “light colours” or similar, it is presumed that due to the examples of pale colors that are given, that individuals are referring to a colors “value” as opposed to its “chroma” as depicted in the Munsell color system. It may well be that white represents the pinnacle of positive emotions, as opposed to black which seems to be entirely negative. This especially seems true when the responses for white are analyzed. About 88% of the participants’ answers included comments about white’s pleasant and positive traits:

“Heavenly, excited; it’s a euphoria type, happy”—Katherine
“Weird, innocence, plain, pure, babies, and fluffy clouds”—Adam

About 50% of participants related the positive significance of a color to its lightness rather than its hue:

“Bright green would be happiness, light colours are always happy regardless of colour”—Rachel
“Pale and bright yellow is far happier.”—Kerrie

**Pink**

This was also the case for pink where its lightness was said to “tone down” the aggressive and active feelings associated with red and make it more feminine (see also Lee and Lee,\(^4\) Garret and Brooks,\(^5\) Weller and Livingston.\(^6\)

“If it’s a light red it’s softer, not as strong emotions, although once it becomes pink it’s more feminine”—Natalie

The association of femininity with pink was extremely strong and very common, 69% explicitly referring to pink as feminine:

“Pink and red are girly colors.”—William
“Girly, fluffy, it’s very feminine, it’s a soft colour, makes me think of a dog’s nose.”—Heather
“Girly, bubbly, Barbie dolls.”—Mike

**Brown**

Responses to brown were typically neutral or negative (see Hemphill\(^3\)).

About 44% of the participants reported that brown carried very few emotive qualities (in fact, three of the participants completely skipped the topic of brown as they had so little to say). Few people related it to any particular emotion but made comments such as “Earthy, mud, nature, I’ve got no real feeling towards brown” (Heather), and “I’ve got nothing to say really, it’s just brown” (Alison).

**Grey**

Grey was also widely regarded as lacking emotion, 31% of the participants making no comment about its emotive qualities, with 50% referring to its un-emotive qualities. It was reported to be neutral, weak, and even as a “no-man’s land” among colors:

“Boring, deliberately un-emotive”—Robert
“Calming, drab, neutral”—Mike
“Grey is quite a weak color, it’s almost like black’s understudy!”—Rachel
“I guess grey is more depressing, it’s kinda like the ‘no mans land’ of the color world.”—Alison

Nuances of Meaning

So far, our results have been consistent with previous research. However, the use of a qualitative methodology also yielded more nuanced accounts of the significance of colors. For example, 69% of the participants reported that both orange and yellow were “happy” colors, yet nevertheless attributed different qualities to them:

“No orange is more a relaxed type of happy, yellow is a more bouncy happy color.”—Lisa
“[Orange] can be more a happy color because of the tranquility, it’s a different type of happy from yellow, and it’s more an ‘inner happy’ yellow is more a social happy”—Natalie

The shade also influenced the quality of “happy”:

“Light orange is a lot more soothing, it is happiness but more ‘content’ happiness as opposed to smiley happy”—Rachel

It was surprising to discover how many facets of “happy” both orange and yellow could express: relaxation, energy, contentment or social expression. Such subtleties highlight the limitations of questionnaire-based studies that restrict responses to supposedly “basic” emotions.

Individual Experience and Culture

Despite the consistency of the responses of our participants about the meanings of colors we are not claiming that these are innate or universal. Many of the reported experiences of a particular color were based upon individual experiences. In some instances, the associations made reference to celebrities and the popular media, including comics from when the participants were young:

“Uri Geller said that orange is a lucky color.”—Heather
“Red and white make me think of the cover of Hitchcock movies, kinda scary.”—Heather
“Probably from when I was younger from when I read comics, you know… the whole classic supervillain type of thing.”—Alison

Many of the participants commented that a color’s emotive aspects were “traditional,” “cultural,” or “stereotypical,” as in the case of the association of colors with gender:

“The blue versus girl thing going on, blue for boys and pink for girls.”—Royston

Specific cultural events were also identified, as when many of the participants associated love and romance with St Valentine’s Day decorations and marketing:

“Red for love because of Valentines Day marketing, all the red hearts and red roses etc.”—John

Similarly, the associations with black and death were attributed to wearing black to funerals; “Obvious associations with death cause of funerals and stuff” (John). White had common reference to being tranquil, innocent etc…often explained as being due to Christian ceremonies and religious depictions:

“Probably from the way angels are shown in church things, glass stained windows for example as well as weddings and christenings” (Natalie).

St Patrick’s Day was referred to by several participants to explain their associations of shamrocks, luck, and growth with the color green:

“It makes me think of Ireland and lucky things, shamrocks and so on, although it is St Patrick’s Day today so that’s probably why I say that.”—Claire

CONCLUSION

The purpose of the present study was exploratory, to determine the extent to which the use of semi-structured interviews and imagined colors (rather than actual color samples) would yield results consistent with those obtained by the standard techniques, and also whether this approach could provide new insights into the connotations of colors.

To a large extent, the connotations reported in the present study were consistent with previous research. In addition, this study raised new issues concerning color as emotionally multi-faceted, individual differences and experience, and the specific influences of culture upon emotional reactions.

The participant sample for this study was extremely narrow, using only 18–21 year olds, all of whom where university students thus attaining similar levels of education, all of the same race (Caucasian) and all residing in the United Kingdom. This may have resulted in the findings being specific to this particular combination of demographics. It would be of interest to explore the influence of variables such as education levels and location of residence to see if further unexplored topics are raised.

An essential feature of the present study was that the participants were not required to respond to actual color samples. This procedure was adopted in order to allow the participants to imagine the colors and place them in their own contexts.

Future studies using this methodology might also ask the participants to identify the specific colors they had imagined using a standardized color atlas. It is possible,
however, that untrained participants might not find this an easy task to match imagined colors to samples in a standard color atlas (see Costall; Saunders and Brakel), and so it would be important to ask them how confident they are in their matching.

In our view, the methodology adopted in the present study constitutes a useful complement to the standard approaches. It certainly has yielded a wealth of material, much of which could not be included within a single article, for example, about color preferences and the effects of colors combinations.
