

What are the Colours of Health and Sickness?

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ABSTRACT

The aim of this study is to investigate if there are colours that are associated with the words “Health” and “Sickness”. The study was conducted in three countries, Sweden, Russia and Uganda, to see if there are cultural differences in the way people associate colours with the words. In each country, there were two groups of subjects, one group included colour professionals, such as design or art students, and the other group consisted of more common people that had no specific colour training. The subjects were asked to match each of the words with only one colour. They could choose colours from the chart consisting of 27 colour samples selected from the NCS Atlas. The collected data were analysed separately by three values, specifying the hue, the degree of blackness, and the chromaticness. We revealed that colour associations with the words “Health” and “Sickness” using colours vary between different countries. However, we revealed unique colours with the strongest links to the words “Health” and “Sickness” for all of the experimental groups. That indicates that there are universal associations with colours that can help to promote health and wellness.

KEYWORDS: Health, Colour Associations, Design

INTRODUCTION

Human beings are now living longer than previous generations and many people have contact with hospitals and other healthcare institutions during their life. When they have that it is of importance what colours they meet. The perception of colour is immediate and therefore colours constitute important signals to us. The colours in healthcare should be associated with health and help us feel well and not sick.

Associations with colours have interested researchers, artists, designers and marketers for a long time. Various studies have focused on how emotions and concepts are connected with colours and colour combinations in different cultures and if there is a coherence between different groups of people (e.g. Da Pos and Green-Armytage 2007). There are also studies that have investigated colour associations with the words “Health” and “Sickness”. However, those studies were carried out within the limits of a certain culture (e.g. Petkau 2015).

This research is investigating if there are distinctive patterns – similarities and differences in how subjects from different cultures connect the words “Health and “Sickness” with colours.

EXPERIMENTAL

The method used in this experiment was previously implemented for study of colour associations with different words presented in the AIC2016 conference (Jung 2016).

In this study, participants were given two words, “Health” and “Sickness”, and asked to match each word with only one colour sample from a chart with 27 selected shades from the NCS Atlas.

The colours selected for the colour chart included three shades of every NCS primary colour (Y, R, B, G) and every secondary colour (Y50R, R50B, B50G, G50Y). The first shade (B) was the most saturated colour, the second one (C) was a dark shade, and the third one (A) was a light shade of those eight primary and secondary colours. Additionally, we included black, grey, and white into the colour chart of the experiment (Table 1).

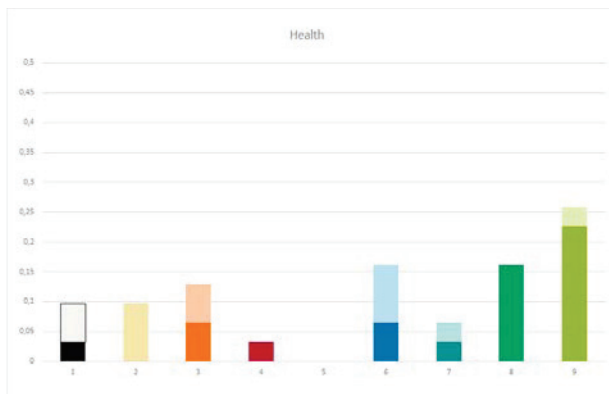
Table 1. The colours selected for the colour chart

	1	2	3	4	5	6	7	8	9
A	S 0300-N	S 0520-Y	S 0520-Y50R	S 0520-R	S 0520-R50B	S 0520-B	S 0520-B50G	S 0520-G	S 0520-G50Y
B	S 4000-N	S 0580-Y	S 0585-Y50R	S 1080-R	S 3055-R50B	S 2065-B	S 2060-B50G	S 1565-G	S 1075-G50Y
C	S 9000-N	S 6020-Y	S 6020-Y50R	S 6020-R	S 6020-R50B	S 6020-B	S 6020-B50G	S 6020-G	S 6020-G50Y

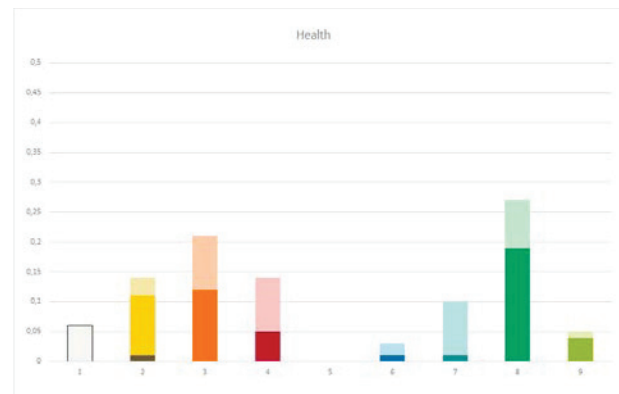
The study was conducted in three countries, Sweden, Russia and Uganda, located in different parts of the world (in Western Europe, Eastern Europe and Africa). The countries represented in this study had different climate conditions, specific cultures and not identical religious traditions. From each country, there were two groups of subjects. One group consisted of people who were not working with colour in their professional life. Another group included students of art and design, and other colour professionals, who were colour trained. In total 230 individuals, 64 from Sweden, 66 from Uganda and 100 from Russia participated, and the distribution of colour professionals and laypersons was approximately equal. It was possible to compare the answers of participants from two groups separately. The subjects did not have any known colour vision defects, were born and reside in one of three countries.

RESULTS AND DISCUSSION

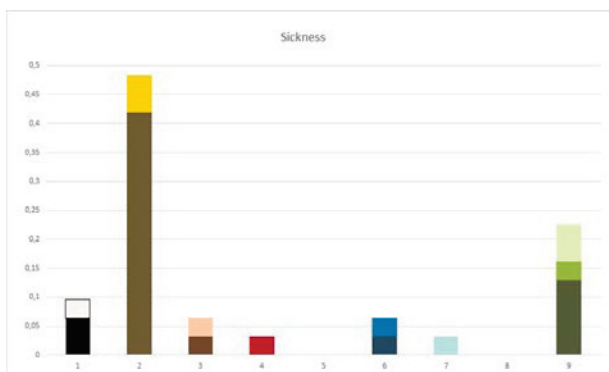
The collected data were analysed separately by three values, specifying the hue (= relative similarity to two of the chromatic elementary colours red, yellow, green and blue), the degree of blackness (= relative visual similarity to the black elementary color), and the chromaticness (= relative visual similarity to the "strongest", most saturated, color).



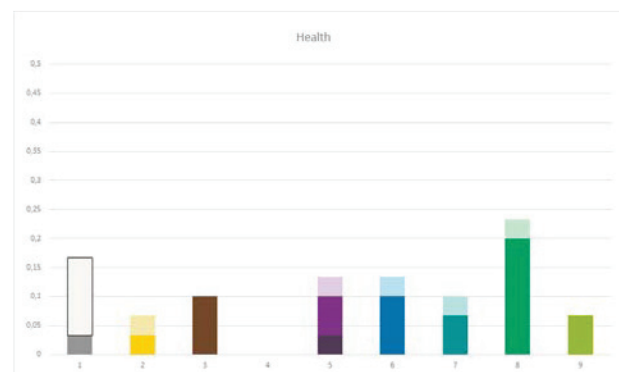
Sweden: Health



Russia: Health



Sweden: Sickness



Uganda: Health

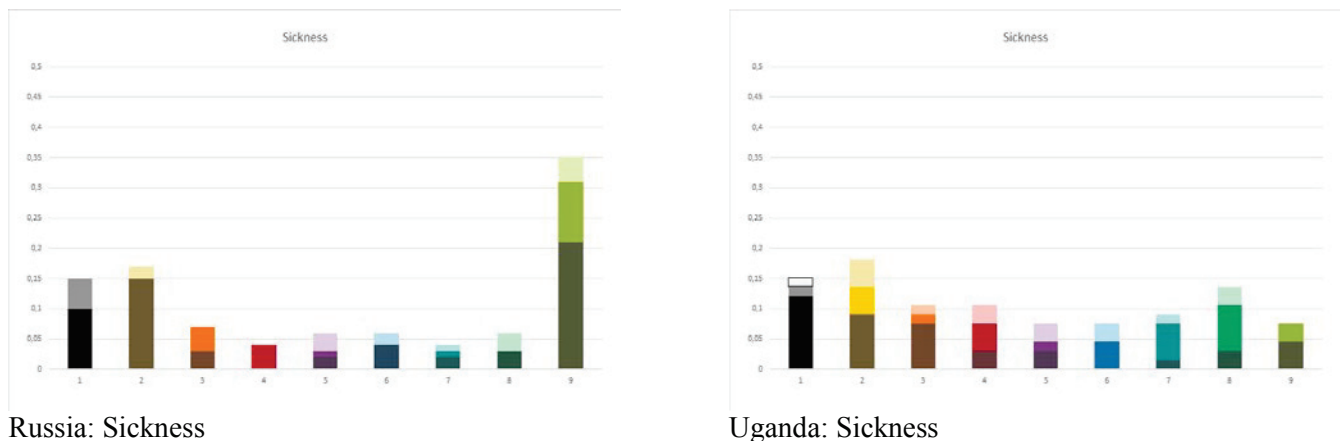


Figure 1: Diagrams for the different countries.

Associations with hue

The results seen in the diagrams above show that “Health” was most often associated with green-yellow, green and blue hues in Sweden; with green, orange, yellow and red hues in Russia; with green, blue and red-blue hues in Uganda. “Sickness” was mostly linked to yellow and green-yellow in Sweden and Russia; to yellow and green in Uganda.

A culturological analysis of the data from Russia showed that the revealed associations with hue are based on the specific connotations that both concepts have in Russian culture. Health is semantically linked to the image of natural environment with virgin vegetation (this link declares itself in the prevalence of saturated and light green shades) and to the image of a sound body (it is evident as different yellowish and reddish skin and flesh colours). The connotations of Sickness are based on the same images of nature and human body, but in fundamentally different conditions of breakdown, decay, and corruption. These associations are expressed in the predominance of the dark green, brown and dark green-yellow shades connected with Sickness (Griber and Jung 2017).

Associations with blackness and chromaticness

Generally, the most chosen colour for Health in Russia and Uganda was chromatic green, S 1565-G (B8). In Sweden, the most chosen colour was the chromatic yellow-green, S 1075-G50Y (B9), and chromatic green came as number two. While chromatic colours were mainly chosen for Health, dark colours were mostly associated with Sickness. In Sweden, the most chosen colour for Sickness was yellow-brown, S 6020-Y (C2), with green-yellow-brown, S 6020-G50Y (C9), as number two. In Russia, it was green-yellow-brown, with yellow-brown as number two. The most chosen colour among all three countries was yellow-brown that was linked to Sickness in Sweden by 42% of the participants. Light colours were more frequently associated with the word “Health”, than with “Sickness”.

Associations with achromatic colours

In all three countries, white was mainly associated with “Health”, whereas black was predominantly linked to “Sickness”. The most disparate answers were for the word “Sickness” in Uganda where 12% of experiment participants chose the most frequent colour, black.

The results do not differ in any higher extent according to if the subjects are colour trained or not.

CONCLUSION

This study does not take into consideration the complexity of using colours in different contexts or colour combinations. However, even though there are some differences among the three countries, and a single colour can even have opposite meanings in different cultures (e.g. saturated green-yellow colour is associated in Sweden with Health, whereas in Russia rather with Sickness), there is a clear indication on what colours that are associated with the words “Health” and “Sickness”.

The strongest coinciding associations with Health are revealed for the chromatic green, as well as for all saturated and light colours.

The most significant associations with Sickness we defined for black, brownish, and dark colours.

The findings are of interest for professionals and academics working in visual communications, architecture and design.

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