Color Psychology-Based Persuasive Interaction Design for Health Behavior Change

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Abstract

In an era where digital technology profoundly influences our daily habits, we explore the potential of color psychology as a key element in the design of persuasive technology to promote health behavior change. This paper presents a strategy that uses color psychology to both encourage positive behaviors and discourage negative ones. We present two different applications: "eat2pic," a system designed to promote healthier eating habits by transforming meal selection into an engaging activity of adding color to images, and "color-wall," an application designed to reduce digital distractions by applying a grayscale filter to non-essential digital content. Through these demonstrations, we explore the efficacy and potential of color psychology in persuasive technology to influence user behavior in a health context and offer promising solutions to improve dietary choices and concentration while using computers.

Keywords

Color Psychology, Health Behavior Change, Interactive Systems, Dietary Choices, Digital Distractions

1. Introduction

In the current digital era, characterized by the attention economy's focus on capturing users' attention, we turn our gaze to the potential of color psychology [1] as a promising strategy within persuasive technology to promote health behavior change. This paper sets out to highlight the practical applications of color psychology in persuasive technology by focusing on two specific implementations: eat2pic [2] and color-wall [3]. These applications serve as exemplars of how strategic use of color can not only attract attention but also guide users towards making more health-conscious decisions and reducing susceptibility to digital distractions.

2. Demonstrations

Our demonstrations highlight the practical application of color psychology through two systems, eat2pic and color-wall, each designed to address different aspects of health behavior change. The following is a description of how each system applies color psychology to persuade users.

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2.1. eat2pic

eat2pic harnesses the emotional and motivational power of color, transforming the routine task of meal selection into an interactive and engaging activity of adding color to landscape images. The system is based on the insight that visualizing meals in a coloring picture can serve as a heuristic for nutritional balance, effectively nudging users toward healthier eating patterns. For example, a canvas dominated by white and brown intuitively signals a lack of dietary diversity, often reflecting meals rich in processed foods or meat. Conversely, a canvas filled with greens, yellows, and reds visually represents a more balanced diet, suggesting the inclusion of a variety of fruits and vegetables. eat2pic uses this visual metaphor to allow users to see their food choices reflected in vibrant colors on a digital canvas, gently guiding them toward balanced dietary decisions. This intuitive understanding of nutritional balance facilitated by the system encourages users to adopt long-term healthy eating habits by leveraging the subtle yet powerful persuasive potential of color psychology.

2.2. color-wall

color-wall directly tackles digital distractions by diminishing the visual allure of non-essential digital content through grayscale filtering. This application of color psychology is strategic: by removing the stimulating effect of colors, color-wall makes potentially distracting content less engaging. The system identifies when a user veers towards unproductive applications or media and responds by stripping the screen of color, leveraging the psychological impact of a colorless environment to lower the content's attraction. This reduction in visual stimulus is based on the principle that colors play a significant role in capturing and maintaining our attention; hence, their absence can lead to decreased interest in distractions, enabling users to realign their focus toward primary tasks. User tests confirm that color-wall's approach to reducing the vibrancy of digital distractions effectively enhances concentration and productivity, showcasing the practical application of color psychology in improving work efficiency.

3. Conclusion

This paper has explored the application of color psychology within the context of promoting healthier eating habits and minimizing digital distractions as subjects for behavior change, demonstrating the potential of persuasive technology to catalyze health behavior change. Our demonstrations of eat2pic and color-wall underscore the significant potential of leveraging color psychology in persuasive technologies and open new avenues for the development of health behavior change interventions.

Acknowledgments

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