Presentation Script

Title Slide

Hello, today I'll present my research on the visual perception of color.

Slide #2 (Contents)

In this presentation, we'll look at the scientific analogies that influence our perception of color, its historical context, social and cultural impact, color accessibility, psychological perspectives we obtain as humans in design, and the possible future it holds.

Slide #3

Color is a significant part of our creative lives, it's not just something that can help a piece of work look more visually pleasing but it's a tool to help us communicate to the world. My research question for this presentation is how does visual perception aid the effectiveness of design?

Slide #4 (Scientific Analogies Cover)

Now let's look more into depth the science behind how we perceive things.

Slide #5

Our ability to see is granted by light, without it we wouldn't be able to see anything but darkness. IDF gives us a clear explanation of what it is stating, "Visual perception refers to the ability to interpret and make sense of visual information from the environment through the process of sight" (Interaction Design Foundation).

Slide #6

When we look at something that image passes through our cornea, to the pupil, and then to the retina. One thing you need to know about the retina is that it's wired backward meaning as we look at something right side up, our retina flips it upside down. In the retina, we have 3 cell layers. The book The Perception of Color, states, "Light first interacts with rods and cones at the photoreceptor apertures" (Shevell 62). As light passes through the retina it goes through the optic nerve that then carries the visual information to the thalamus, which then relays the information to the back of the brain known as the occipital lobe.

Slide #7

Let’s focus more specifically on the cones. There are three types of cones that the human eye uses to see color which are red, green, and blue also known as RGB. Ranging from longest (red), medium (green), to shortest (blue). The color of an object is then determined by which wavelength is reflected.

Slide #8

As designers, we use these elements to their advantage and put together pieces to form a whole. In the article Color Research and Application, O’Connor states, “It is color and contrast that play a more important role in terms of visual communications design due to their role in attracting attention” (O’Conner). The eye wants to see the contrast, it's the main part of the visual function. Take Paula Scher's work, for example, high use of saturation and contrast demonstrates bold work, while also allowing our eyes to explore the piece and not just stand in one place.

Slide #9 (Historical Context Cover)

Now let’s talk about the historical context. With the way color has evolved, its perception has too.

Slide #10

“The Greeks were the first to start thinking as philosophers about vision and colors. They started inquiring into phenomena of which there was no previous knowledge” (Crone 7). Therefore, many speculations and assumptions were made revolving around this topic which ended up being dismissed like the theory of visual rays.

Slide #11

When we look at a color timeline for example during the 2000s we saw a lot of bright very saturated colors, yet in comparison to color trends now, we’re seeing more unsaturated and dull colors. It is through history, that we as creatives can look back and gain ideas and knowledge from previous trends. It keeps us updated and ready to anticipate the next color trends.

Slide #12 (Social and Cultural Impact Cover)

Culture is where we see how the same color can have the opposite meaning based on cultural and social space.

Slide #13

In the Contemporary Color book, it states, “In the West, white has long been the

customary color for the bride's gown” (Bleicher). But in some Eastern cultures white is a representation of mourning and misfortune. On the contrary, red is the wedding color in China and India, representing prosperity.

Slide #14

Socially, our perceptions and interpretations can hence communicate shared meanings of various colors. Like in branding, designers create an identity for brands through selected colors. More often than not we recognize brands by their colors. Let’s look at McDonald's for example, when we see red and yellow together some of us may think of them specifically. This is why when choosing colors, we must think of the various meanings they can hold. We have to be conscious of our cultural surroundings and social events that may be going on, to not create the wrong idea, therefore executing more effective and considerate design.

Slide #15 (Color and accessibility)

Moving on, we’ll look at color and its ability to provide accessibility. We as humans don’t all see and perceive color the same way.

Slide #16

Among gender, males have a higher percentage of becoming colorblind than females do, because they lack the extra X chromosomes. UC Berkley states, “About 1 in 12 men (and 1 in 200 women) have color vision deficiency, or are colorblind”(UC Berkley). As designers provide effective designs for these individuals, using colors of high contrast with one another will allow more accessibility for colorblind people to distinguish between design elements.

Slide #17

Using the Gestalt law of perception where we organize components in a way for the user to interpret better, will then enhance their ability to see difference. An example would be using distance to showcase proximity or using shapes to be able to distinguish elements in their everyday lives. In the conference paper, Color Adaptation for Improving Mobile Web Accessibility, Zhou reminds us, “One solution to the accessibility problem caused by CVD is that designers avoid these color selection mistakes during website design. This can be done by not presenting critical content with colors

nondifferentiable to users with CVD" (Zhou). This doesn't just apply to people who are colorblind but to every person, granting more user accessibility worldwide.

Slide #18 (Psychology Cover)

Moving on to psychology

Slide #19

The trichromatic theory states we as humans can perceive thousands of colors by combining red, green, and blue, or as Kalloniatis states in the book of Perception of Color, "The trichromatic nature of color vision will enable almost any color to be matched by a mixture of three colors" (Kalloniatis).

Slide #20

Here we see the color blue establishes feelings like confidence and trust, and we see it in companies like Chase and LinkedIn. Green shows safety and relates to nature, like in Whole Foods and Holiday Inn. Elliot references and says, " Goethe penned his Theory of Colors, in which he linked color categories (e.g., the "plus" colors of yellow, red–yellow, yellow-red) to emotional responding (e.g., warmth, excitement)" (Elliot). It's the psychological perception of how we as a society view and interpret color, then determining its significance. It can be seen as a semiotic which acts as a sign to convey a meaning or emotion.

Slide #21 (Future of Color Cover)

Now let's take a quick look into the future. With the perception of color constantly evolving the potency of design, we wonder what the future will hold with color. As Singh says, "With the passage of time, people change preferences for colors. Like fashion pundits predict fashion trends, color consultants predict and set color trends by taking into account the idiosyncrasies of various segments of the population" (Singh).

Slide #22

And with the technological advancements constantly being made, perhaps color will also be intertwined with it. Possibly picturing a more colorful world, in which our eyes limit what we see, like the mantis shrimp who has 12 different types of photoreceptors unlike us who have only 2 types. Ideas such as these are placed in the hands of designers, which allows them to personalize the human experience.

Slide #23 (Conclusion)

So, how does visual perception aid the effectiveness of design? By understanding how we perceive, we can then make better judgments of the perception of color. It's how we interact in our environments, leading design, steering our emotions and tones, and appearing in our daily lives unnoticed that touches upon our visual view of it, and how it creates more effective design work. Through the research of trends, being aware of current events, and much much more, we are what we create, and color lets us paint the picture of our society for the rest of the world.

Slide #24 (End)

Thank you for listening!