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Colours and their Psychological Impact

Colour visually communicates and “is fundamental to our experience of the world around us” (Kassia, 2016, n/a). This research project will explore how colour visually communicates with our senses, particularly within interior spaces. As such, this Independent Project will investigate the symbolism and meaning of colour, and how these aspects of colour connect with people emotionally. As colour is an “important sense providing us with essential information about our world” (Best, 2012, p.3), so it is an essential tool. Therefore, I will focus on researching different case studies that portray the psychological impacts of colour on people with the influence of symbolism, culture and sexuality. This will allow me as a designer to gain a better understanding of colour from a variety of perspectives and to become aware of the impact and influences of colour. This is essential because through colour “we are able to build up a shared culture of meanings and thus construct a social world which we inhabit together” (Hall, 1997, p.18). For that reason, colour is an indivisible to our everyday lives.

Colour is a visual language that we emotionally respond to. According to Issac Newton, colour comes from light as “by splitting white light, Newton identified the visible... rainbow spectrum” (Loske, 2019, p.11) signifying that light creates colour in correspondence with our eyes. As described by Tilley (2010, p.3), light travels in waves and each colour absorbs different wavelengths which strike our eyes in different ways and are transferred through our eyes as electrical impulses which go to the hypothalamus, located in our brain. Thus, colour is created when our brain interprets these impulses and, we can see the colour black because it traps light whilst we see other colours because, light is reflected off a surface or an object. Furthermore, the hypothalamus affects different functions in our body “thermoregulation, energy control, the sleep-wake cycle, the memorisation process” (Uwaifo, 2020, p.3) and our behavioural patterns. This suggests that there’s much more to colour than just the aesthetical aspect conveying that colour is a visual language that is both physical and an emotional tool of communication which our body corresponds to.

In interior design, colour carries out an important role by having the power of connecting people emotionally and physically to a space, affecting our own aesthetic consciousness because, “colour invariably conveys moods that attach themselves to human feelings or reactions” (Eiseman, 2017, p. 26) due to different wavelengths of light triggering different emotions. Thus, colour is a powerful tool used in interior design to create an emotional connection to our environments. A person will hold an emotional response to colours that they are drawn to and repelled by, indicating that colour is a visual language. These emotional responses can depend on the different colour tones used as softer colours are more calming whilst brighter colours are more energetic by, “changing the exact hue or saturation of a colour can evoke a completely different feeling” (Champan, 2021).

However, each person will have a different reaction to the same colour depending on how they perceive it and what memory they associate it with, as stated by Josef Albers, “the associations and reactions which are experienced in connection with the colour and the name, probably everyone will diverge again in many different directions” (1963, p.3). This portrays that our brain can interpret colour in many ways depending on our previous

experiences, affecting our visuals and perception. Thus, colour communicates through the use of our memories which are associated with colour, changing our behaviour by having the power to express our own emotions, or impact the feelings of others by the use of colour in an interior space.

Although, people have been consumed with the ideas of interior designs that we see in a magazine or on social media by seeing “the results of someone else’s design journey we see a picture” (Olderey, 2017). This means that people have been visualising their own interior space through the eyes of others instead of taking their own design journey to reflect upon their own identity and thinking emotionally about their own comfort when considering the colour choice. This is important because the energy aesthetic of colour is the dynamic that makes our surroundings more lively, allowing us to flourish. As stated by Fettel Lee, “Colour is an indication of the richness of our surroundings. It is an unconscious signal not only of immediate substance but of an environs that is capable of sustaining us over time” (Lee, 2018, n/a). Thus, we make sense of the world around us by using colour as an expression which generates thoughts and feelings in our mind, acting as a tool of expression in our surroundings.

Colour can evoke our senses through the way in which it affects our behaviour, mood, emotions and most importantly our well-being as, “colour consists in a power or disposition of something to produce sensory experience of colour in a perceiver” (Thompson, 1995, p.1). Consequently, designers will choose a colour palette that will suit the clients needs and deliver an emotional experience. Such as, in healthcare facilities where the choice of colour is important especially for people who are experiencing mental health problems because “colour has specific effects that influence us on all levels- emotional, mental and physical” (Haller, 2019, p.26). This suggests that colour is a therapeutic tool that can either improve our mood or can impact our emotions negatively by making us feel overwhelmed, uncomfortable and melancholy.

In the mental health facility for children and young people in Edinburgh (fig.1) designed in 2019 by the Projects Office in collaboration with artist James Leadbitter who, himself, experiences a mental health disorder. Meaning that, this design was created with first hand experience. Also, workshops were held with different groups of people to clarify the project brief and these were, “fascinating and informative sessions, which underlined the emotional and practical importance of well-designed spaces for mental health” (Projects Office, 2019). This proves that consideration and thought of the design process and outcome truly considered the patient’s needs.

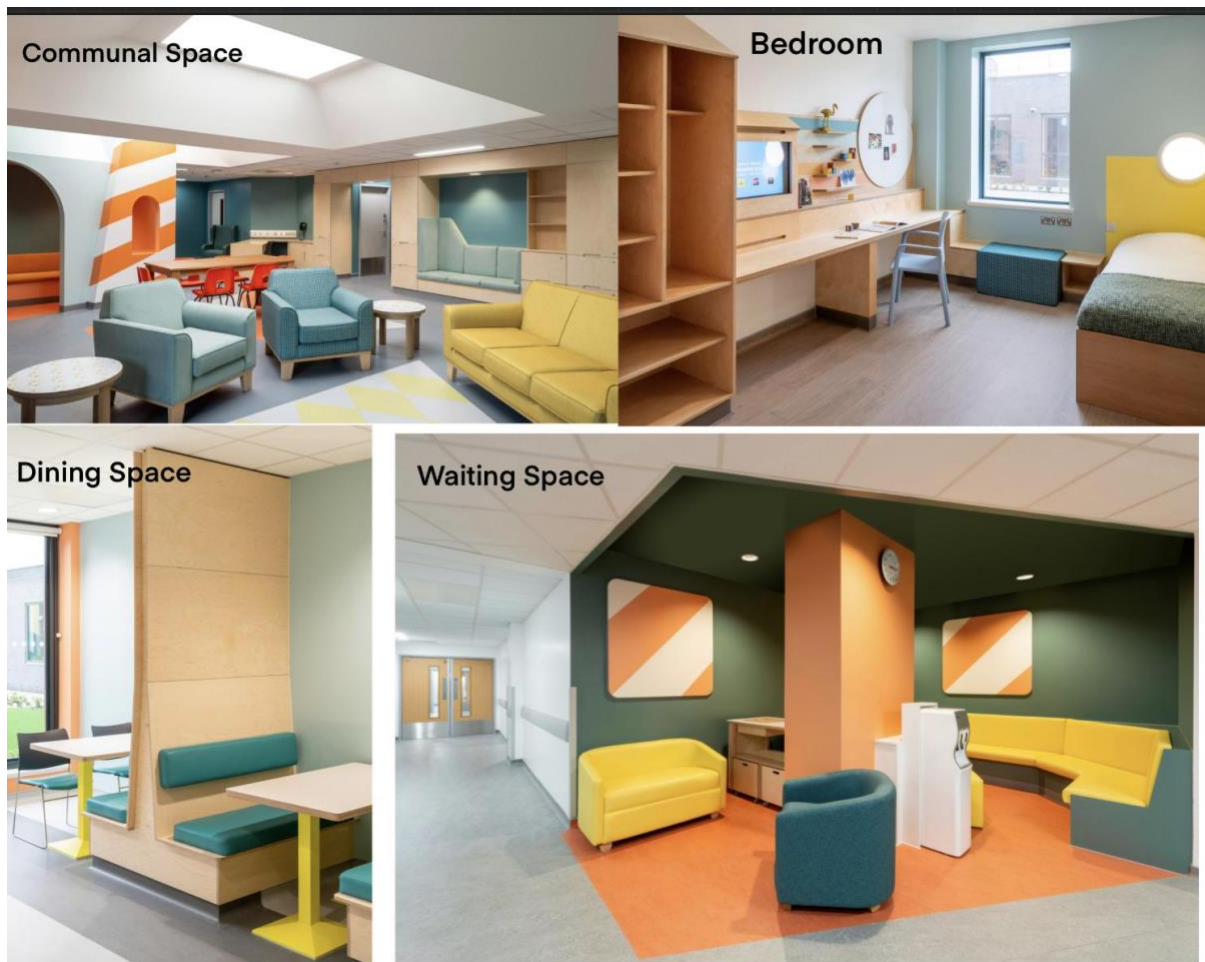


Fig.1

In this project design (fig.1), there are design features such as colour, pattern, shape and space, playing an important role into making the interior space feel non-institutional in order to “make patients feel at ease, but to also look distinctly different than a domestic environment” (Frearson, 2021, n/a). Thus, the interior design of this facility has resulted in creating a space with its own identity that feels different from a home or a hospital. As, mentioned by the designers themselves, “through a user-centered design approach, we produced a collaboratively developed and cohesive set of designs which push the boundaries of ugly about mental health care environments” (Projects Office, 2019). For that reason, this design is unusual in the choice of design features that differ from the usual muted colour designs and the lack of it.

The waiting spaces (fig.1) “are painted with deep colours implying a sense of separation from the busy corridors” (Projects Office, 2019). This may make the patients feel more calm and focused instead of feeling overwhelmed by the busy and sometimes chaotic corridors which can make people feel anxious. So, using colour to separate space is a great way to change a person’s perspective of their surroundings. Since, “colour has a vital role here in enchanting the environment and providing information and spatial orientation, helping occupants make sense of their surroundings” (Dalke et al, 2004, p.13). Hence, the colour is used to separate space and colour placement enhances our perception of spatial quality.

Furthermore, these unusual healing spaces (fig.1) that are vibrant and eye-catching create a visual sensory experience that can be emotionally evocative, communicating beyond verbal description. This is because “colour is principally experience” that “we passively absorb colour into our emotions” (Day and Midbjer, 2007, p.91). This implies that colour is a tool of communication that evokes emotions and can trigger ones. It is an emotional experience that is not just about the aesthetics, but instead about how people perceive colour and how it affects them. Consequently, in every interior space of a facility, colour is essential because “colour can play an enormous role in how people perceive facilities and how they react to them” (Marc, 2010, p.37). Colour is the key that connects our emotions with interior spaces.



Fig.2

This photograph of a room (fig.2) shows a playful design that consists of a balanced colour scheme featuring the bright orange accent colour and muted, cooler tones, harmonising the space and creating an uplifting atmosphere and a fun environment. This is achieved through the use of geometric shapes. Each design element was chosen by taking into consideration patients needs. This is emphasised by the choice of colours (fig.2) which have their own psychological meaning. The designers used cool colours because “cool colours have a relaxing effect and that’s why they are commonly used in healthcare facilities” (Ferrara and Bengisu, 2013, p.83). Hence, these colours were intended to make patients feel calm which is what they require in such health facilities.

As well as this, “blue symbolises peace and serenity, as it is associated with water, still plane or sky” (Jovanovic et al, 2010, p.2). So, having a shade of blue in this design aims to create a tranquil and calm environment. Also, the colour orange adds positive association to the experience of this environment. The colour orange is made up of meaning that is uplifting and keeps people motivated into seeing a brighter side of life because, it “increases the oxygen supply to the brain and stimulates mental activity...orange provides emotional strength in difficult times” (Elangovan, 2020, n/a), radiating warmth and joy. Although, “using a lot of different colours may lead to an environment which is visually busy, leading to confusion and unease” (Dalke et al, 2004, p.22). This could be overwhelming for mental health patients since an excess of orange can make a person feel restless and so could affect patients negatively.

Given that, colours play an important role by shaping our emotions. Even so, the “colours you choose for your physical surroundings can help to shape your moods... make you feel happier, calmer, more nurtured, romantic and connected” (Eiseman, 2005, p.87). Therefore, colour can affect people psychologically and the designers used this power of colour to create a space which will impact patients thoughts and feelings through the application and use of colour. On the other hand, “people who are depressed, lonely, or lacking in motivation, for example, can benefit from having orange around them” (Feisner, 2006, p.132). This suggests that orange will benefit the patients mentally by encouraging them to get through or to see a way of dealing with their mental health struggles.

Consequently, designers must be conscious of their colour choice. This is because, colours consist of their own set of meanings which can depend on culture. For example, the orange (fig. 1) has a different meaning “in Japan and China, it symbolises courage, happiness, prosperity and good health. However, in the Middle East, it is laced with the negative interpretations such as loss danger and mourning” (Elangovan, 2020, n/a). In addition, from a scientific point of view the colour orange is made up of red and yellow, meaning that “it combines two of the psychological primaries, one that relates to the physical (red) and the other to the emotions (yellow)” (Haller, 2019, p.26). From a Western perspective, yellow is a cheerful colour that positively communicates happiness and optimism which is important in order to be hopeful about the future and have the confidence to be able to improve our well-being. Whereas, red is an expression of strength, passion and excitement. Therefore, orange is a warm and an upbeat colour which lifts the space up due to being an expression of energy that invites innovation, enthusiasm and socialisation, allowing people to express themselves more freely. I feel that this may increase social interaction which plays a tremendous role in the fulfilment of well-being, empowering young people to communicate and open up about their problems. Since “Visual, mental and spiritual phenomena are multiply, interrelated in the realm of colour and the colour arts [sic]” (Birren, 1970, p.12). This is why colour matters and when used according to the patients needs it can improve their well-being and their experience at the facility.

On the contrary, some people may argue against colour scheme and design. As mentioned in the comment section of the *Dezeen* magazine in the article by Amy Frearson, 2019 (fig.3), some people felt less positive about the colour palette and pattern used, associating it with a more negative experience and reflecting upon the design features as overwhelming, overpowering and triggering mental problems even more. As stated by, respondent number three, a person with a mental disorder “would be traumatised simply being in a such an

environment". This is a controversial opinion to what the design intends to do which, in fact, is healing patients and making them feel at ease. As stated by the designers themselves, "the atmosphere is vibrant, friendly and non institutional without being artificially domestic or patronising...., we've created unique and efficient healthcare environments which offer comfortable, safe and joyful spaces to heal" (Projects Office, 2019). Even so, the response was the opposite.



Fig. 3

These responses (fig.3), could have been influenced by that person's age and experience with colour since, "human's experience things through their senses according to their own culture that gives sensations their meanings, from which arise emotions" (Ferreira and Bengisu, 2013, p.82). There are different cultures, thus, different meanings and associations. As well as this, a person who loves blue will often be drawn to it because they have a positive association with it, for instance swimming or surfing down the beach. This means that people may feel differently about the same colour because, "colours are forces, radiant energies that affect us positively or negatively" (Birren, 1970, p.12), depending on personal experiences and associations.

A person's colour association can be negative due to a bad experience for example, a person can want to avoid orange because they were in a car crash involving an orange colour car. Furthermore, the intensity of colour is vital because people will experience a different feeling when looking at an intense orange in comparison to a softer, more pastel orange which is more comforting and less overpowering. This is because the "intensity or value of a colour can alter both the perception of temperature and psychological message of a hue" (Eiseman, 2017, p.17). Thus, there is more to colour than just the aesthetics aspect.

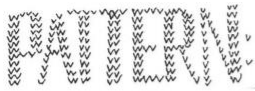
Colour is a vital tool that impacts how we go about our lives as, “colour of the pigment on walls or the fabrics on furnishings can affect and change our moods, lift our spirits and bring a sense of joy or serenity to us” (Eiseman, 2005, p.82). For that reason, a designer will choose a colour palette that will be suitable for the space that they are designing and the people who will be using that space which, in this case, are the mental health patients.

Considering, that this interior space was specifically designed for children and young teenagers with mental health illnesses and, orange “can be seen around nurturing, emotionally intuitive children” (Hamilton, 2008, p.43). Therefore, respondents opinions suggest that an interior space with a substantial amount of orange colour may affect adults more negatively. However, in children, “yellow and orange will activate and increase energy levels. It has been shown that blood pressure is elevated by experiencing red, orange or yellow environments” (Feisner, 2006, p.132). Hence, used in a facility for children empowering them by turning that energy into the motivation they need to heal and, stated by Elangovan, “there is no colour without its own positive and negatives” (Elangovan, 2020, n/a), due to people having different associations and connotations regarding to colour.

The colour pink is “a colour between red and white” (Blegvad, 2019, p.12) that, has countless associations varying from shade to shade but, is generally associated with love, femininity and kindness and it symbolises health and romance. The influence of pink has become apparent through history and its symbolism has been interpreted in many ways depending on culture and society beliefs. As pink can be believed to be “feminine...sweet...romantic...bold and vulgar” (Blegvad, 2019, p.9) thus, pink has many connotations and can be used as a visual communication tool in design to encourage physical and emotional response.



Fig.4



Pussy Power Hat

By Kat Coyle, The Little Knittery, Atwater Village, CA

Yarn: Malabrigo Worsted (210 yd per 100 grams), in Fuchsia Pink, 1 skein (any shade of PINK & any worsted weight yarn will do)

Needles: US 8/5mm straight

Gauge: 18 sts and 23 rows = 4" in St st

Finished size: before seaming 11" wide and 17 1/4" long

Pattern:

To fit: medium/large

CO 50 sts. Leave a long tail for seaming.

Rib: K1 * k2, p2; rep from * end p1.

Work Rib for 4 1/4".

Work in Stockinette (knit right side rows, purl wrong side rows) until piece measures 13" from cast on edge. Begin Rib on right side row.

Rib: P1 * p2, k2; rep from * end k1.

Work Rib for 4 1/4". Piece measures 17 1/4" from cast on edge.

Bind off all stitches. Cut yarn leaving a long tail for seaming.

Fold hat in half and sew each side seam. Weave in loose ends.

Put on hat, and the cat ears will appear!

FOR AN EVEN SIMPLER PATTERN,
SEE OUR WEBSITE!

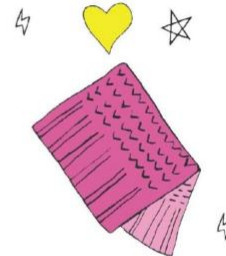
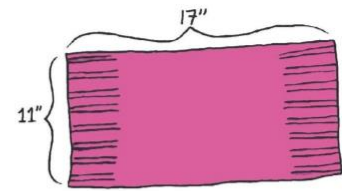


Fig.5

On January 2017, as many as 500,500 people took part in the women's march in Washington DC and an estimated 4.6 million throughout the United States (Rafferty,2017), against Trump inauguration process (Rafferty, 2017), wearing a knitted pink hat which, "became a global symbol of female solidarity and the power of collective action" (Gardner, 2017). This implies that the colour pink is a powerful meaningful and a tool of communication that can be used politically and to empower culturally. As shown in (fig.4), a striking visual statement expressing the pink hat as a symbol of political activism and resistance, empowering the solidarity of women's rights and their rebellion to the Trump regime. Furthermore, the 2017 'cat ear' design hat by Jayna Zweiman and Krista Suh (fig.5) was a response to the release recording of Trump "during the election campaign, in which he claimed to "grab them by the pussy"(Harrison, 2019) hence, the name 'Pussyhat' which is now recognised as an expression of female solidarity that visually demonstrates support for women's rights and "de-stigmatize the word "pussy" by transforming "it into one of empowerment" (Pussyhat Project, n/a). Thus, this fourth-wave feminism empowered modern feminists by, reclaiming pink from its sexist feelings that pink can evoke. As, 'Pussyhat' colour, enhanced the symbolism of pink which is associated with kindness, love and femininity, through the united strength of these protesters supporting one another by what they believe in. Therefore, the pink colour proved to be meaningful by being the main feature of a considerate act of kindness and peace.



Fig.6



Fig.7

However, the colour pink can be juxtaposed by applying it in different ways to symbolise different meanings and have different outcomes. As, pink can empower but it can also be used to belittle and humiliate which is the opposite of the pink's true meaning. In Arizona prisoners (fig.6), have pink towels and “parade in pink underwear for the general public to see” (Yekani et al, 2016, p.85). This is humiliating for the prisoners and is a type of punishment strategy. As well as in the city jail in Georgia (fig.7) where explained by Towner, inmates who are serving for minor crimes, wear hot pink uniforms when they pick litter up from the city roads (Towner, 2015). This strategy uses the colour pink as a tool for good behaviour, influencing the inmates mentally as, “inmates commented they do not want to return to the jail if they have to wear the color” (Towner, 2014). This portrays colour pink as a weapon used against the inmates so that they would not offend again as, the warden himself “believes in pinks punitive quality” (Yekani et al, 2016, p.85), controlling their behaviour thus, contrasting to the effects of pink and its purpose. As both prisons had different tones of pink yet, had the same emotional response of embarrassment. In comparison to the women's march (fig.4), pink can be a tool of empowerment but it can also be a tool used for punishment. This is contrasting to the effects of pink and it's purpose.

In contrast, in a jail in Washington years back, pink in prison was found as “therapeutic” due to its “calming effect” (Yekani et al, 2016, p.85). As, pink can influence our mood by having the power to be physically soothing, tranquilizing the feeling of anger by producing calming effects on the nerves. As, “the colour pink has been found to calm violent prisoners” (Johnson, 2017) meaning that, it can have a soothing effect on a person's mind influencing their physical response.



Fig.8



Fig.9

The experiment by Dr. Alexander Schaus (fig.8) who “studied the impact of colour on blood pressure and pulse rate” (Fraser, 2017, n/a) by painting prisoners cells in the specific ‘Baker-Miller pink’ colour (fig.9), has proven to have a calming effect on prisoners by reducing aggressive behaviour. This was shown through the prisoners response which were positive to this nurturing colour as, “aggressive outbursts and violent behaviour reportedly declined” (Fraser, 201, n/a), proving that a specific shade of pink can control aggressive male behaviour by having a soothing effect. Conversely, these results were gained by prisoners having to “squeeze a dynamometer” (Eiseman, 2005, p.79) were different in comparison to females, as “men responded by, in fact, becoming weaker, while the women became stronger” (Eiseman, 2005, p.79). Thus, the same colour can have a different effect depending on the gender due to seeing the same colour from a slightly different perspective. This is “because males need a longer light wavelength than females to see and perceive the same shade of colour” (Braam, 2020) and longer wavelengths are connected with warmer tones such as red or yellow thus, males are more likely to see warm colours more warmer. In this case the colour pink will be more warmer to males than females resulting, in males feeling more calm whilst women more empowered, as they have felt during the women’s march.

The meaning of pink and what it symbolises can be contradicting as it can affect gender differently. The reason for the pink connotation in such a contrasting point of view would be the stereotypical association with ‘pink colour being for girls’ and ‘blue for boys’, because of different traditional values that portray pink as part of culture to define gender. In Japan, gender colour defining is indicated as “the symbol of the male lavatory is often colored blue, whereas, that of the female lavatory is often colored pink or red” (Kunio et al, 2019, n/a). Thus, pink is linked to femininity through culture, society and can be expressed in design by using colour to express its symbolism. Since a young age we have been exposed to categorisation of gender by the use of pink and blue colour and this has caused such different perspectives on the use of pink and its purpose, relating to the influence of pink on behaviour. Therefore, this is embedded in our mind through the way in which we experience the world as “ the association between color and gender in memory becomes stronger through experiences of gender categorization by color” (Kunio et al, 2019). Therefore, the

use of pink can be controversial as, the importance of pink colour is what it symbolises, love and kindness which both men and women experience thus, it should not seem less significant because of the way that it has been used to symbolise gender, leading to men feeling humiliated and women empowered. The way in which pink dominates people differently, has controversially made pink less important rather than powerful as stated by Lawley, “pink paradoxically empowers and trivialises women” (Lawley, 2018). This reflects upon the cognitive distortion of pink.

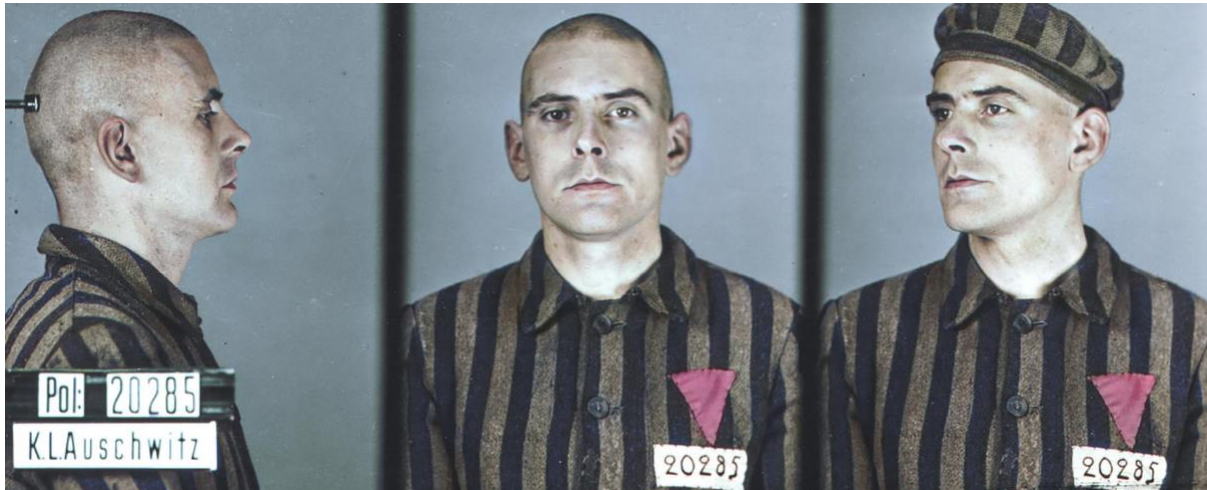


Fig.10

Additionally, pink conveys crucial semiotic implications due to historical associations with male homosexuality (fig.10). During the war “the Nazis marked homosexuals with a pink triangle” (Vänskä, 2017, p.199). This was discriminating and portrayed pink as a visual communication tool used to represent gender and sexuality because of such repellent use of colour, pink influences society’s perception differently. This is because colour association can be influenced through the translation of the same concepts and ideas by being apart of the same society as stated by Hall, “to belong to a culture is to belong roughly to the same conceptual and linguistic universe” (Hall, 1997, p.22). Therefore, society associate's pink with sexuality and gender because of having the same historical cultural influences. Although, before the 19th century, pink was considered to be a boys colour whilst blue a girls colour because pink was considered “as a watered-down, bold, dramatic red, which is a fierce colour” whilst “blue, was associated with the Virgin Mary in Christian Europe” (Frassantonito and Pettorini, 2008, p.2). Therefore, pink has served a variety of meanings relating to gender specification, leading to different symbolism of pink and pink no longer seems as warming but instead as weak. However, pink is being reclaimed to no longer have this stereotypical image perception as provoked by the ‘Pussyhat’ protest, it is rather being embraced. Also, pink is a bold statement colour of raising an awareness for breast cancer. The pink ribbon “signifies a good and moral cause” (Sulik, 2012, p.27) and is a cultural language that symbolises hope and fight thus, strength rather than weakness in comparison to the effects that pink has on inmates. Therefore, pink is being reclaimed by being promoted for a good cause and to support, making pink culture visible and abolishing it’s cliché associated meaning. As pink being a colour of strength not weakness.

This research implies that people can have a different relationship with colour because colour can influence our social cognition depending on our perception of the meaning, its symbolism and personal concepts in memory. As in theory, different cultures have their own

language to translate concepts and ideas enabling them to “see the world from within the same construal map and to make sense of it through the same language system” (Hall, 1997, p.22). Thus, culture will impact meanings and representation of colours through the use of language in which they use to translate concepts and ideas. A designer can use the power of colour to visually stimulate meanings and to evoke emotions, creating a connection between the designers work and the viewer since, “a designer may use red colour... to get attention of the customer or reader, but this may be associated with romance, eroticism, or passion as in European culture, or luck as in Chinese culture” (Ferrara and Bengisu, 2013, p.83). This portrays that designers cogitate culture when choosing colours.

This study of colours and their psychological impact in an interior space, has led to conclude that colours are full of meaning and symbolisms. Influenced by our personal relationships with colour leading to how a person may feel when encountering an interior space, in a certain colour palette. As shown throughout this research project, colour is a visual stimuli that can shape our behaviour by communicating on an emotional level and by delivering a message. This visual language communication, using colour, can be conveyed through the combination of colour and space working synergistically together to achieve emotional balance in the person's mind. As the way in which we inhabit space can impact our mood, creativity and well-being, therefore, the choice and the use of colour can change the way in which we usually view that space. Hence, colour is a tool for transforming space, portraying its energy, and creating an atmosphere, whilst shaping an experience that a person will encounter on many levels.

In interior design, it is essential for the designers to consider the client's needs by thinking about who will be using the space and how. This leads to a required understanding of the effects that colours have upon people thus, how will the chosen colours affect the client mentally. Since, colour communicates psychologically by relating to our concepts in memory that a person may have encountered with a specific colour, resulting in how they will perceive that colour. As, previous negative or positive experience with colour can influence colour association and symbolism. Meaning that, people have their own unique experience of colour which can change their perspective of surroundings in which the colour was applied to, making the space feel comfortable or making it feel anxious. Thus, it is essential to consider the psychological factors of colour.

In addition, the power of colour is used by designers and people to encourage physical and emotional response. These responses will be achieved through the meanings of colour which depend on sexuality, culture, society and historical background. As mentioned, the colour pink had many connotations which depended on people's different perceptions and different ways of using pink for different reasons, one to empower and one to humiliate. Meaning that, the same colour can communicate a different message and the meaning of colour can be transformed by reclaiming it's interpretation. As did the 'Pussyhat' protest reclaiming pink from it's sexist concepts. Hence, colours can be juxtaposed by being given their own purpose of communication, depending on how people utilise colour in order to receive the reactions and outcomes they want.

In my Surface Pattern Design practice, colour is a big part of the design process because it reflects upon the pattern and motif design, adding character and creating a mood or a feeling that will evoke an emotional encounter between the targeted clientele and the design.

Moreover, as a designer myself, I think that the role of colour is hugely important and needs to be considered when designing to communicate the message that I as a designer would want to convey. My role is to take into consideration that people's meaning of colour can vary and different emotions will be evoked. In order to create a visual and sensory experience through the use of colour in my pattern designs. Therefore, this research will encourage me to be more conscious of colour choices, not just within my practice, but also within my day to day life, because of the psychological impact. Thus, as a designer, I have a deeper understanding of colour by perceiving colour with the influence of cultural consciousness, history, meanings and symbolism.

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