

THE GEOGRAPHY OF THE COLOUR ORANGE

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FIGURE 1 - *Sun 64* (2020) by Boswell-Green

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WHEN I SAY ORANGE, YOU SAY...

Geography is the study of “where things are found, why they are there, and how they develop and change over time”. Additionally, it seeks to document “the relationships between people and their environments” (National Geographic, 2020). It spans topics such as culture, location and society, collating information from the physical and human aspects of life to provide a holistic understanding of the world. Though geography rarely overlaps with the subject of colour, this collaboration is in fact an enhancement. The result is a breadth of knowledge on the colour orange which, personally, I regard as underappreciated. In 1810, Johann Wolfgang von Goethe published ‘Theory of Colours’, which was the first of its kind to offer ideas on the effect of colour. In that book, he decided “The colours on the plus side are yellow, red-yellow (orange), yellow-red (minium, cinnabar). The feelings they excite are quick, lively, aspiring.” Developing on this thesis, I’d like to expose ways we respond to presentations of colour because we don’t often acknowledge how colours make us feel. Why does orange seem to be more memorable and noteworthy? Is it seen as special simply due to the rarity of its use in comparison to other colours? How would we feel to be sensually bombarded with orange? Euphoric or distressed? The response to its individuality seems to rest on a fine line between admiration and oppression. Will orange ever have the same effect on everyone, or are we destined to disagree? To answer these, I’d like to track its journey around the globe from the discovery of pigments to its use in political demonstrations. Analysing its development in both art and beyond should uncover a fresh way of seeing the colourful world around us.



FIGURE 2 - Word Cloud of survey responses (2020) by Boswell-Green

This word cloud (Figure 2) visualises the frequency of the words said in response to the trigger word ‘Orange’. Gathering data from the public is a eye-opening task to begin this journey with. This informed me of the kind of foundation that orange has in the world at the moment. From this dissertation, I hope to also solidify what orange embodies in *my* life.

PAINT PIGMENTS

Nature, disposition, character and complexion are additional translations to 'iwn' the Egyptian word for colour (Hill, no date). The Egyptians attached dense meaning to their red, blue, yellow, green, white and black colour palette. In relation to the sun, our life giving light source, items painted in yellow/orange were eternal and perfect. Hence, Gods, Goddesses or anyone in that role as part of the story of the piece were depicted as yellow-skinned if gold was not available (Mark, 2017). The pigment Realgar along with Orpiment were found by the British Museum to appear on such items as "Ancient Egyptian coffins, papyri and miniature paintings from the Middle and Far East" (Daniels and Leach, 2004) Deriving its name from the Arabic 'rahj al ghar', meaning powder of the mine, the orange pigment Realgar (Figure 3) is fairly hard to obtain as it is found in areas of volcanic activity and hot springs. Unfortunately, miners of the pigment were often composed of expendable slaves, sold for their crimes, dying young due to the poisonous dust of this mineral in the air. Although this seems dramatically phrased, it reveals that people unnecessarily died just to retrieve an orange pigment. Upon hearing this, it's as though orange demands an air of respect as a tribute to those who lost their lives. Orpiment (Figure 4) is found alongside Realgar as a byproduct of it decaying. It got its name from the Latin 'auripigmentum' which translates to 'gold paint' simply because it was thought to contain gold (Leach and Parkinson, 2010). When painting, it was regulation to focus on one hue at a time, before moving onto the next. This was partly because each colour in their limited palette was indicative of certain symbols and therefore placement needed to be very accurate, but it also prevented the chemicals mixing with each other and producing incorrect colours.



FIGURE 3 - Realgar Crystal



FIGURE 4 - Orpiment Crystal

Since 1888, the British Museum has owned the 'Papyrus of Ani' (Figure 5), a funerary text containing a multitude of hieroglyphs and delicate drawings. Analytical examinations of the colour components of the papyrus, have elucidated why the paintwork has become patchy. Orpiment and Realgar have low compatibility with other pigments due to their chemical make-up. Arsenic Oxides such as these, are at risk of affecting paint as they dissolve in the water of surrounding pigments and migrate through the layers of paint. The edges of the 'Papyrus of Ani' sheets are bordered by a mixture of Realgar and Red Oxides. Whilst the Red Oxide remains relatively unaffected, the Realgar pigment has drastically faded. Over-exposure to light has also factored into the decline of the colour saturation (Leach and Parkinson, 2010). Historically, there has been a failure to establish conservation techniques which has meant the colour accuracy of paintings have been affected. Then, to be reminded that Egyptians used Realgar and Orpiment to depict items as "Imperishable, eternal and indestructible" (Alchin, no date) means the work becomes awkwardly ironic.

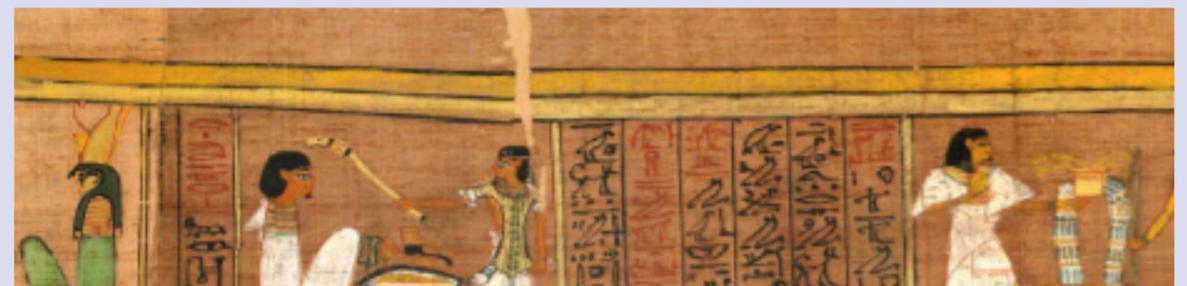
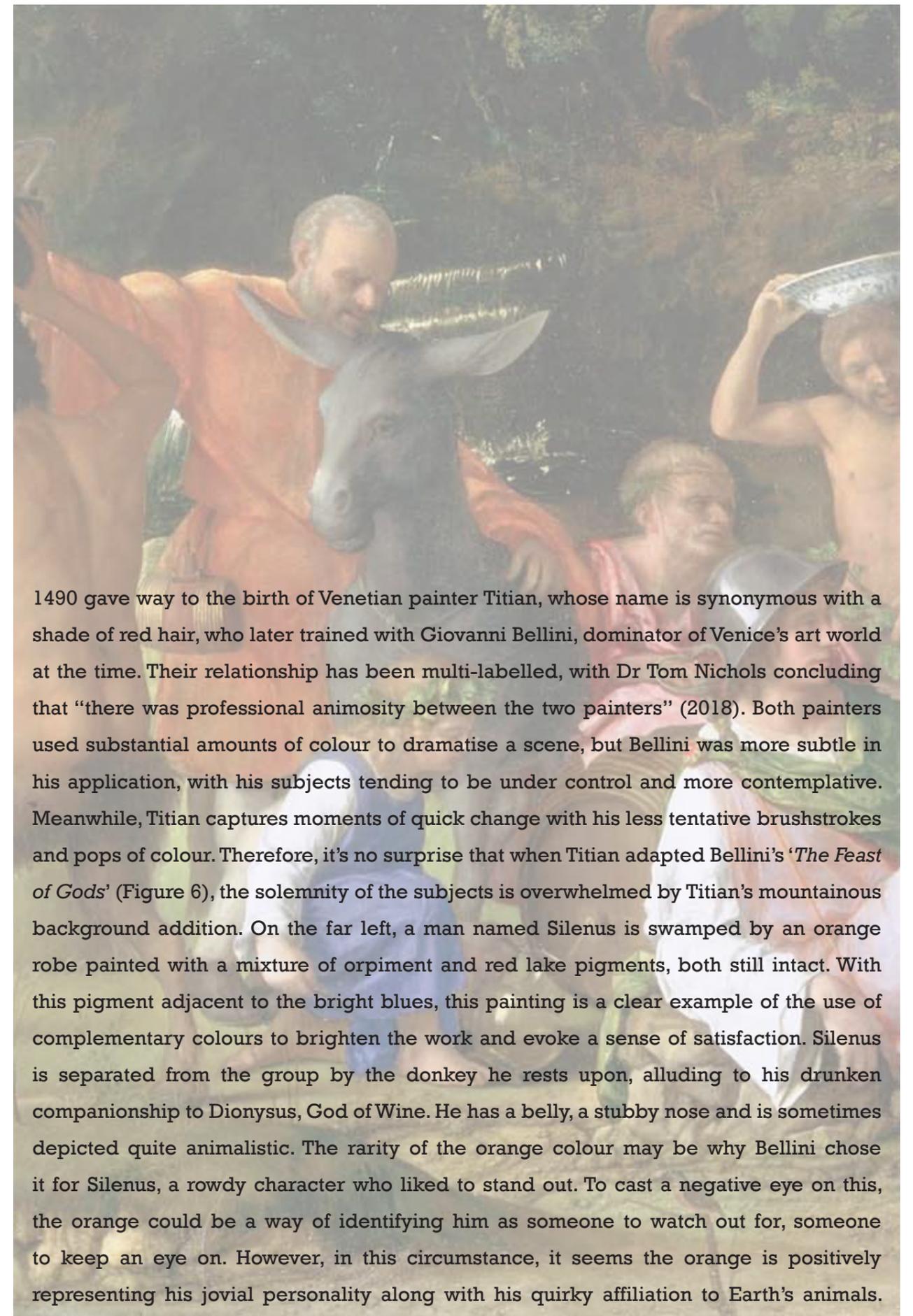


FIGURE 5 - A demonstration of the degradation of the border bands. (2010)

Realgar and Orpiment were first made readily available by Vendicolori, specialist colour sellers, who began to operate in Venice at the end of the 15th century. Oil paints were the latest exciting development, bringing new challenges that tempera paints did not. They were likely brought to Venice by Italian painter Antonello de Messina, whose techniques were admired and repeated by Venetian artists (Encyclopaedia Britannica, 2020). The oil's translucency allowed artists to enhance the depth of their work, adding layer upon layer, all visible when under light. Venetian artists were not discouraged by the expensive nature of this new pigment, they instead thrived amongst rich, materialistic items due to Venice being such a wealthy trading city. It could be that the price of the pigments is what persuades us to believe the use of orange is special, only available to those who can afford it, emulating opulence. Along with Ultramarine, they used Realgar and Orpiment to depict heavily textured scenes, involving bright lavish fabrics which soon became a theme of the Renaissance period.



FIGURE 6 - *The Feast of Gods* (1514/1529) by Bellini and Titian



1490 gave way to the birth of Venetian painter Titian, whose name is synonymous with a shade of red hair, who later trained with Giovanni Bellini, dominator of Venice's art world at the time. Their relationship has been multi-labelled, with Dr Tom Nichols concluding that "there was professional animosity between the two painters" (2018). Both painters used substantial amounts of colour to dramatise a scene, but Bellini was more subtle in his application, with his subjects tending to be under control and more contemplative. Meanwhile, Titian captures moments of quick change with his less tentative brushstrokes and pops of colour. Therefore, it's no surprise that when Titian adapted Bellini's '*The Feast of Gods*' (Figure 6), the solemnity of the subjects is overwhelmed by Titian's mountainous background addition. On the far left, a man named Silenus is swamped by an orange robe painted with a mixture of orpiment and red lake pigments, both still intact. With this pigment adjacent to the bright blues, this painting is a clear example of the use of complementary colours to brighten the work and evoke a sense of satisfaction. Silenus is separated from the group by the donkey he rests upon, alluding to his drunken companionship to Dionysus, God of Wine. He has a belly, a stubby nose and is sometimes depicted quite animalistic. The rarity of the orange colour may be why Bellini chose it for Silenus, a rowdy character who liked to stand out. To cast a negative eye on this, the orange could be a way of identifying him as someone to watch out for, someone to keep an eye on. However, in this circumstance, it seems the orange is positively representing his jovial personality along with his quirky affiliation to Earth's animals.



FIGURE 7 - *View of the Bay of Marseille with the Village of Saint-Henri* (1883) by Cézanne

One of the last known uses of Orpiment is in Cézanne's 1883 '*View of the Bay of Marseille with the Village of Saint-Henri*' (Figure 7). When the paint was fresh, the triadic colour scheme of purple, green and orange would have drawn great contrasts whilst maintaining an overall aesthetically pleasing harmony. Now, the pale lilac, softened green, muted orange markings of this piece evoke a sombre tone, reminding us once again of the fragility of paint pigments. Subsequently, we may see orange as a less common colour in historical paintings when instead the colour might have, instead, faded to a yellow. However, this problem has begun to be addressed and conditions such as low lighting and controlled temperature in art galleries have been implemented so that the artwork's "permanency might be further insured" (Wolfgang von Goethe, 1810, pp. 241). Thus, ceasing the use of Realgar and Orpiment was rather a positive change which minimised the use of toxic, degenerative pigments (Hoakley, 2018). And it didn't stop the production of orange completely.

In 1797, a chemist named Nicholas Louis found Chromium as a colour source in Crocoite, the natural form of lead chromate, named after the Greek for saffron [κρόκος]. Spiritually, Crocoite was believed to be a sensual crystal which brings passion back into your love life and your art (Oakes, no date). Hence, it is rather apt that this pure hue, made available for use in 1809, was pounced on by the passionate Impressionists. Once artists released themselves from the confines of a studio and into the outdoors, their work transformed. Impressionism was about immediacy, catching glimpses of light falling onto landscapes in a certain way, and encouraging multiple continuous studies of one area to watch how the colour fluctuates. The inability for others to ever reproduce the same brief period of time witnessed by the artist, becomes the movement's speciality.



FIGURE 8 - *The Skiff (La Yole)* (1875) by Renoir

In '*The Skiff (La Yole)*' (Figure 8), Pierre-Auguste Renoir dabs enthusiastically at the canvas with unmixed Chrome orange straight from the tube, confirming a sense of urgency in the work. In this way, it's almost like an extreme display of appreciation for the recent development of ready-mixed portable oil paints. At the time of completion, this work was scandalous. The public were still unable to understand the Impressionists' intentions. Appearing to them as a brightly chaotic sketch, they thought it was rather amusing that he would claim it was a finished piece. His mark making and exaggerated colour choices may come across more rushed, but it is far from unsophisticated. This work is elaborate in its 'simplicity'. His brushstrokes embody the water lapping against the side of the boat, and the colourful reflections dotted amongst the mass of blue allude to the brightness of the day. Complementary colours of blue and orange, once again, satisfy the eye, and encapsulate both the heat of the sun and the cool of the water. The boat becomes a bright bubble of safety, the orange fighting against the surrounding dark blue wetness. The house in the background with matching orange detailing, plus the women's calm slouched nature, makes it seem as though they feel equally at home in the boat. All the while, a train passes by unnoticed, only distinguishable by the soft smoke which rises above the trees. Renoir had so much confidence in the hue of Chrome Orange that he was willing to directly pour it onto the canvas, It can't be disputed that if '*The Skiff*' was to lose its bright orange, it would effectively lose its identity, its focus.





FIGURE 9 - *Impression, Sunrise* (1872) by Monet

The same can be said for Claude Monet's '*Impression, Sunrise*' (Figure 9) which was unveiled in the famously controversial now-named 'Exhibition of the Impressionists' (The Anonymous Society of Painters, Sculptors, Engravers, etc.) in Paris in 1874. This painting was the catalyst needed to encourage artists to encapsulate impressions of fleeting moments, of subjects other than stationary people. Its powerful influence is unlike any other painting in any other movement. On paper, the subject matter of Renoir and Monet's paintings are similar. Both feature a centrally positioned boat with a softer secondary boat on the left hand side, both have a large body of water swallowing the majority of the canvas and both allude to industrial practices in the background. However, their usage of orange paint becomes a storytelling device which creates drama in different ways. Post Franco-Prussian War, the timing of '*Impression, Sunrise*' is poignant in providing a sign of hope via the symbol of a new day. This depiction of the Port of Le Havre becomes defined by the orange sun coming to life, likely to have also been painted with Chrome orange, and triggering the start of France's financial rehabilitation. Through this portrayal orange becomes the shade of regrowth. An atmosphere has been created where neither colour tries to dominate but rather they work as a team, reflecting the newly accomplished political harmony. These struggles are unapparent in '*The Skiff*' which utilises orange to be more simply visually appealing but no less intellectual. In response, a statement can be made that Impressionists have no need to render the details in the scene because the colour can speak for itself.

Frustratingly, when exposed to UV rays for long periods of time, Crocoite has the tendency to darken to 'a very deep, beer-bottle brown to almost black' (Grguric, 2015). This is being witnessed in highly regarded works such as Van Gogh's series of *Sunflowers* (1887-1889) which bizarrely, irrespective of the negative impact, beautifully transforms them into real flowers wilting over time (St Clare, 2016). It's yet another pigment that requires a higher amount of conservation attention so that priceless artworks continue to evoke the same energy as they do now. Colour degradation solidifies the difficulty of colour analysis in paintings; it highlights how we can't necessarily obtain the meaning of the image as to how it was portrayed when it was newly finished. One can still appreciate the work, however looking at more modern pieces involving different mediums to fragile paint pigments will help with understanding the feeling of orange in a fresher state.

Indeed, light can be damaging to colour, however this is not the only route their relationship can take. In fact, one method of light exposure causes quite the opposite to occur. On the very first day, God said "Let there be light" (Genesis 1:3), before which, Earth was dark and formless. Although this is a religious belief, it presents the importance of light as it enables us to distinguish shapes and depths. From early on we knew to appreciate light sources, such as a fire to warm us at night, or the moon and stars to direct us at sea. In this way, light was a sacred gift; it held a strong presence in people's lives by means of survival. As far back as 2000BC, Phototherapy or Chromotherapy, coloured light as a form of medicine, has been used. Ancient Egyptians who practiced chromotherapy, believed the god Thoth, god of wisdom, of the moon, inventor of the written word and representative for the sun god Re, discovered the chromotherapy craft. Throughout the world it has been continually practiced (Azeemi & Raza, 2015). In India "treatment sanctuaries" were painted in particular colours to help rehabilitation. In Greece, colour was used to "restore balance" in people, either directly via sunlight or indirectly via stones, dyes and plasters for example. The same goal is reflected in Dinshah P. Ghadial's Spectro-Chrome Metry Encyclopaedia (1997) whereby he claimed some colours are a catalyst for organs or bodily processes while others act as an inhibitor; hence the therapy aims to "balance the action of any organ or system that has become abnormal in its functioning or condition" (Azeemi & Raza, 2015). In the case of therapy with orange, the patient should witness improvements to menstruation cramps and an unblocking of the digestive tract, as well as increased lung strength and suppression of asthma and bronchitis. Supposedly, orange also helps to "simulate mammary glands to increase milk production" (Watson, no date). For those who are spiritually inclined, Chromotherapy is something they may live by. It is a way that the intensity of the colours of light can have a positive effect. A counter argument may be that the placebo effect comes into play, but ultimately better health is gained so this shouldn't be a setback.

Biologically, light arrives at the eye with different wavelengths depending on what it has reflected from. The lens focuses it onto a tiny fraction of the retina called the fovea, which contains photosensitive cells called cones. The cone's photoreceptor cells house pigment molecules called opsins, which change shape in response to light. From this change, an electrical signal travels, via the optic nerve, to the brain where the image being viewed is translated into information involving colour that we can comprehend. The function of the cones that humans have, is to identify red, green and blue from the lightwaves they receive. The majority of our cone cells react to red light with only "around a third to green light, and just two per cent to blue light" but "combining these three signals in the brain creates millions of different shades" with our "vision focused around the yellow-green region of the spectrum" (Tyley, 2015). The first 'Colour Wheel' (Figure 10) was conceived by Sir Isaac Newton in 1704 in response to his experimentation with prisms and the identification of the visible spectrum of light. He named the colours he witnessed coming out of the prism, and adjusted the size of the segments of the circle to match their different wavelengths. From this diagram and many more which followed, we have developed psychologically persuasive colour schemes for advertising, business and education. Hence, it is undeniable that light is essential to colour.

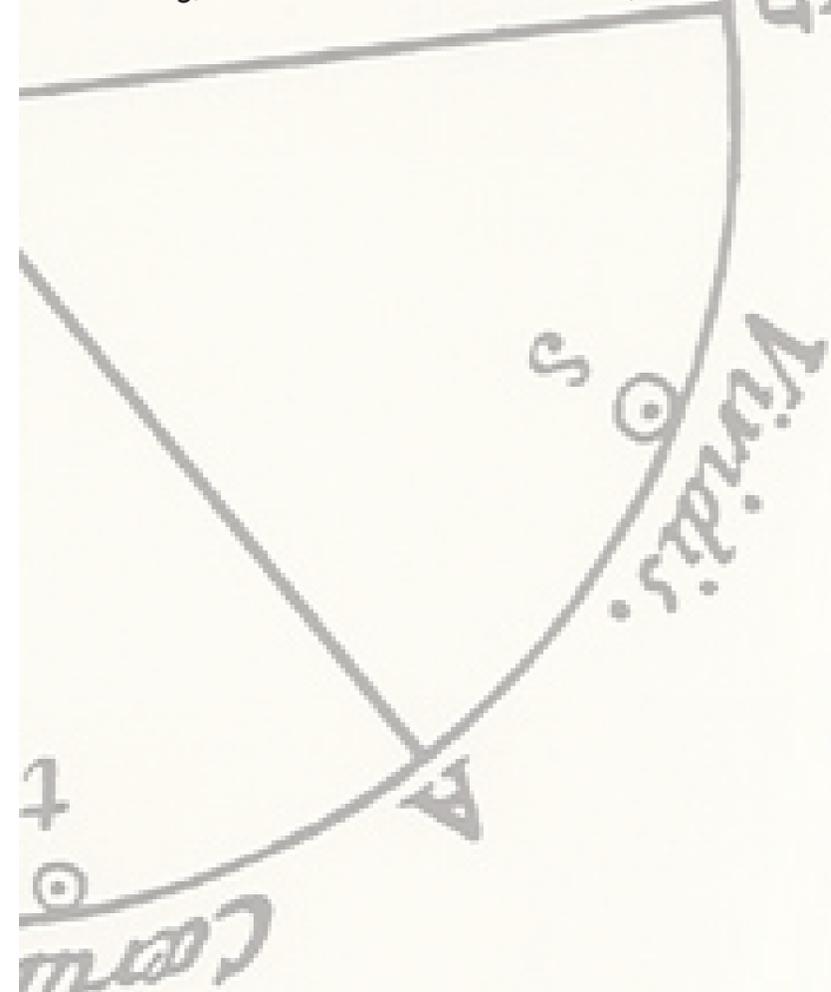


FIGURE 10 - Colour Wheel by Newton

One way of attempting to understand the effect of orange is to surround yourself with it. Much like the prominence of Monet's sun, Olafur Eliasson has set out to provide punters with an orange-washed experience multiple times. The Danish-Icelandic artist creates work where colour is perceivable physically, or as he refers to it "seeing yourself sensing" (Tate, 2003a). Combining colour with water, smoke or more solid tangible objects often associated with weather, he forces the viewer to be transported to the outside world whilst remaining safely indoors. When studying *'Impression, Sunrise'* (Figure 9) some may be reminded of Eliasson's *'The Weather Project'* (Figure 11). In the Tate Modern's description, it consisted of "Monofrequency lights, projection foil, haze machines, mirror foil, aluminium, and scaffolding" (Tate, 2003b). The piece transformed the Tate's turbine hall into a sun-soaked relaxation centre where you felt like you needed suncream. The behaviour of the visitors was fascinating; their response was to lay down to absorb the 'rays'. This restful atmosphere brought on solely by a large visible circle of orange light, proves how easily we are influenced by colour to feel a certain way. His more recent showing at the Tate followed a similar theme. Rainbow mist was exhibited alongside mirrored tunnels and pulsing trays of orange water. The longest wait, however, was the queue to enter *'Your Blind Passenger'* (Figure 12), a corridor pumped with smoke and starkly lit with orange to the point where visibility was greatly restricted.

The intensity of the orange felt loud and unsettling, and the pairing with the smoke gave it a mischievous twist. Once inside, the glaring coloured light inhibits your natural sight, and your spatial awareness becomes sluggish if not non-existent. It was like an invasion of the senses. On the other hand, it could be perceived as a comforting recluse, a possible artistic reinvention of the womb, though it's doubtful this would be a common response. It seems that without the context and placement of the orange, the orange wouldn't necessarily mean anything to us. In the same vein, unnatural-looking flowers like *The Bird of Paradise*, are remembered firstly because of its eye-catching colour but then the image is retained because of its bizarre form. Conclusively, what we can learn is that colour alone doesn't stimulate an emotive response as strongly until paired with an item, texture or story where they can inform each other.



FIGURE 11 - *The Weather Project* (2003) by Eliasson

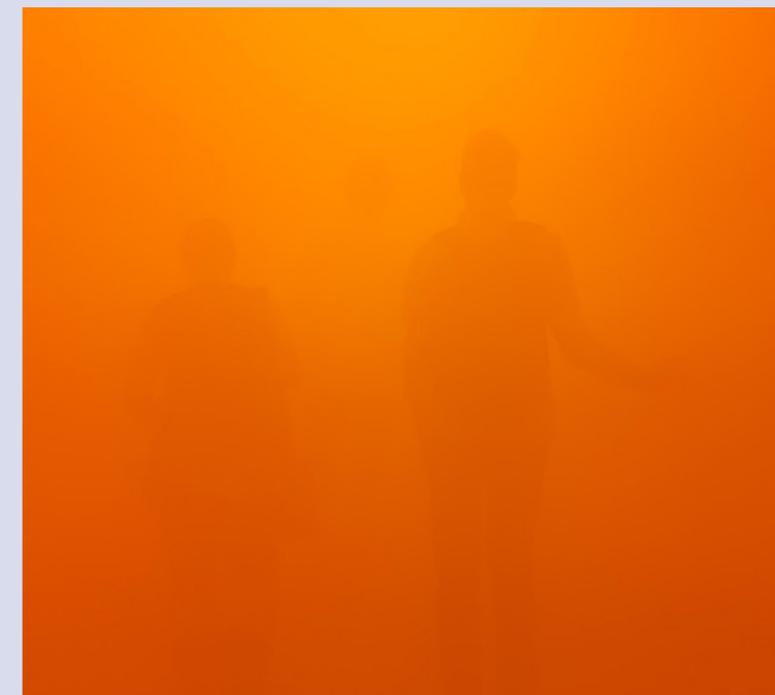


FIGURE 12 - *Your Blind Passenger* (2010) by Eliasson, Photograph by Boswell-Green

Generally speaking, we often rely on our sight to explain a situation to us, even if we have heard a noise first, or smelt something odd. Colour in a film has to set the scene prior to any speech getting involved, “there may be no better way than choosing a color associated with the emotion you are trying to evoke” (Fusco, 2016). Evidentially, the emotive quality of orange is multi-dimensional. The range of its uses span from the futurism of ‘Blade Runner 2049’, and the arid landscape of ‘Mad Max Fury Road’, to the youthful nature of ‘Wall-E’. While red seems destined for passion, orange seems playable in a much deeper pool of scenarios.

The entire aura of ‘*Fantastic Mr. Fox*’ (2009), written by Roald Dahl and made filmic by Wes Anderson, is orange (Figure 13). Seamless transitions are made from dusty fields to built towns, with interjections of deep blue nights. As the film progresses, the orange adopts the quality of luxury. This is achieved with the orange-tinted portrayal of lavish roast chickens, bespoke apple cider and supermarkets packed with an abundance of food. Much like the real world, food and drink resemble wealth in their ability to keep the characters alive. To add insult to injury, when the main enemy of the fox decides to wear his shot-off tail around his neck as an adornment, we are reminded of the cruelty that is the business of poaching. It brings a bitter edge to orange and reminds us that money shouldn’t be everything.

However, on a lighter note, the richness of the orange is what makes the suave-acting fox fit in so well. Not forgetting, he is literally the colour of the world around him, allowing him to merge entirely with his environment wherever he may be (Figure 14). Thus, orange visually illustrates the carefree nature of Mr. Fox, able to feel at home even when he’s faced with danger. Plus, it highlights his ability to evade his catchers, passing through slyly, unseen like a fox in real life. The colour of Mr. Fox in relation to his character has layers of complexities, after all “animals are coloured for display or camouflage” (Carpinetti, 2019) yet it could be that he is orange for both. As mentioned, he is able to blend into his surroundings while inadvertently exuding charisma and confidence, as seen through his need to perform the perfect speech. Surely this counts as him embodying the energy of orange in a “display and camouflage” manner.

There isn’t a definite explanation for why real foxes are commonly orange, one explanation online sweetly decided it was so they could hide in autumn leaves but others are unsure. Coincidentally, the main reason for a tiger to be orange had not been identified, until recently. Tigers prey on dichromats who have only two colour receptor cones in their eyes which blinds them to the difference between red and green. When in their green habitat, Trichromat humans can detect a tiger’s orange skin but that doesn’t matter to the natural survival of the tigers who are still able to catch their colour-blind prey. Therefore, it is not necessary for the tigers to evolve a green pigmentation. This disregards the fact they fit in perfectly with dry grasslands or stick out against snowy backdrops. Thus, there are complications with identifying reasons for the fox and tiger coat, however ‘*Fantastic Mr. Fox*’ plays with this uncertainty. By colouring everything as orange, it almost makes the audience feel like prey, unable to separate the predator from the rest of the habitat much like the stupid humans Boggis, Bunce and Bean.

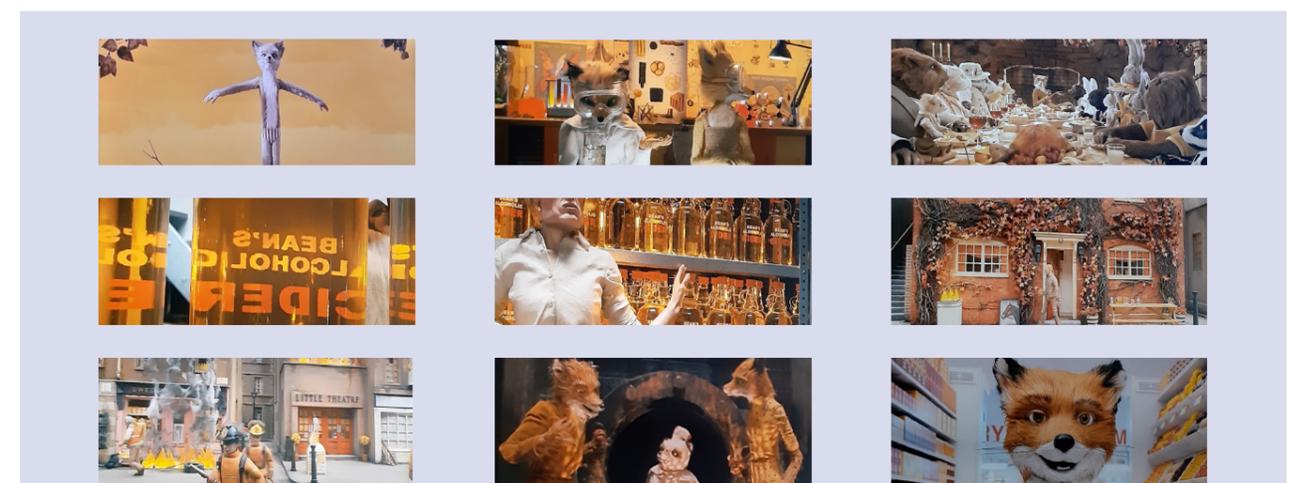


FIGURE 13 - Stills from *Fantastic Mr. Fox* taken by Ruby Boswell-Green (2020)



FIGURE 14 - Professional still from *Fantastic Mr. Fox*

...CLOTHING

It reveals that orange can be surprisingly introvert or for want of a better word, hideable. One would think that wearing an orange high visibility jacket would always draw attention but the work of Stephen Gill suggests otherwise. His series of photographs titled *'Invisible'* (Figure 15) seek to expose the reality that we never truly acknowledge workers in high visibility. Gill strived to capture workers in portraits as a revelation that they minimise their visibility by wearing high-vis. Passerbys understand they're close to a worksite, yet they don't actually need to worry because the workers should be adhering to necessary safety precautions which prevent us from harm. In a negative sense, we start to disregard the people who label themselves as manual workers with a orange reflective vest, because we socially view their jobs as unimpressive. If not that, then there's an abundance of jobs where high visibility is required that we've seen it too much and don't recognise it as something which stands out. So ultimately, we are weirdly trained to ignore it. Diversions due to lane closures on roads are put in place so the orange workers don't affect us. Trains whizz past railtrack amendments. Those who place advertisements on billboards, do so at night as to not cause a distraction. The conflict between 'look at me' and 'don't mind me' is so ubiquitous that we end up not caring. Therefore, repetitive exposure to a colour, can desensitise you to its eye-catching nature.



FIGURE 15 - *Invisible* (no date) by Gill

Part of the culture surrounding the wearing of orange in a fashion sense, is that it feels destined for the rich when it comes to the price of synthetic pigments and rarity of production. Then again, natural resources can often dye items on a red to yellow spectrum. Some could say, historically, peasants have never been able to wear orange, others say aren't monks the poorest and yet they don orange clothing? Funnily enough, Micco Grönholm claims that orange reflects perfectly opposing traits. "Security" and "sensuality" compete with "deprivation" and "frustration". It's this tug of war that people must find difficult, not wanting to be seen as "frivolous" or "immature" but wanting to demonstrate "passion" (no date). In 1974, Keith Jacobs and Frank Hustmyer presented participants with colours and measured their responses via Heart Rate, Galvanic Skin Response [changes in sweat glands] and Respiration Rate. They began their research stating "The assumption is frequently made that people are affected psychologically by colors" which they proved correct. Their findings were that "the most arousing color was red, followed by green, yellow, and blue, with significant differences in arousal value found between colors". Consistency can be found in the results of research into the emotive qualities of orange. Conclusively, "Orange increases oxygen supply to the brain, produces an energizing effect, and stimulates brain activity" (Van Edwards, 2014). You're given a force of energy when wearing orange and whether that is seen as childish or efficient depends on the context, hence why recommendations usually advise wearing orange for workouts but not for the office. But with careful consideration, a case can be made for orange outfits in the workplace. In 2011, Nigerian designer Adebayo Oke-Lawal launched his brand 'Orange Culture' "to be a movement that celebrated the idea of diversity and individuality" (Frearson, 2019). Because his goal is to fight against toxic masculinity, he decided on orange as an "alternative to more typical masculine shades like red or blue" (Frearson, 2019). To him, hearing someone like the former CEO of GAP Inc Millard Drexley saying "You know what ends up on the markdown racks? All the weird colors. Guys don't wear orange or citron" (Smith, no date), is even more of a reason to break whatever chain that stereotype is linked to. Often without realising we are put under social constructs of what should be worn in certain situations. So, separating yourself from that to wear orange could demonstrate a strong sense of character, necessary for leadership. At the very least it will inform business people of your individuality which technically makes you irreplaceable. To sum up, it would be beneficial to wear orange if you need a boost of energy, just do so with caution and understanding that reactions may be mixed.



FIGURE 16 - *Self Portrait with Yellow Lilies* (1907) by Goncharova

Natalia Goncharova is a passion-filled, multifaceted artist. Her work has accurately been described by her partner as “everythingism” (Williamson, 2019); She takes inspiration from Russian folklore and Lubok prints, art in Paris, and culture in Spain, plus she not only works on canvas, but as a designer/maker of costume and set for theatre. Orange is a continual feature of Goncharova’s costume designs for the Paris-based Ballet Russes, founded by Sergei Diaghilev. For the production of ‘*Le Coq d’or*’ in 1914 the performers were swathed in a dress made from orange patterned cloth, feeding into the iconography of her culture and referencing her affiliation with folk art (Figure 17). They are still able to be enjoyed by those without this background, simply because the eye-catching colours are a joy to look at. The outfits were flooded with orange-accented flower details which feature so often in her work. These flowery designs subtly linked the performer to life and beauty, and as a consequence their song followed suit. It’s as if their operatic voice was embellished by the costumes.



FIGURE 17 - Set of costumes designed by Goncharova for *Le Coq d’or*.

A popular piece, 'Self-Portrait with Yellow Lilies' (Figure 16), depicts Goncharova posing in front of her artworks like a proud mother clutching a congratulatory bouquet of lilies to her chest. It seems to allude to Greek Mythology, where Hera, the wife of Zeus, was thought to create white Lilies from drops of her breast milk that had fallen to Earth. Hence, usually, any depictions of white Lilies project themes like beauty and fertility. What's more, the Lily's religious association with the Virgin Mary meant it became a symbol of chastity and virtue. Goncharova's choice to include orange coloured lilies, may be an example of her trying to pit herself against those of spiritual godly origin whilst cheekily admitting to a lesser amount of purity than them (S.F. Heart, no date). She maintains her love of flowers and orange in the rest of her work in pieces such as 'Orange Vendor' (Figure 18) where she was inspired by Spanish women sellers in the street, when she was there on business. It can be interpreted that the bowl of oranges atop the woman's head and the basket of oranges within her hand, demonstrate how her job consumes her, especially as she is just reduced to the name 'Orange Vendor'. However, it also adds poise to her physique, marking her as strong yet elegant. She said herself "When I returned to Paris, I started creating images of Spanish women in colors suggested to me by this country's atmosphere" (The Art Story, no date). The subject's clothes look like a beam of light shining down upon her to illuminate her, which identifies with Rayonism. Conceived by Goncharova and her partner Mikhail Larionov, Rayonism was "an approach that sought to portray in two dimensions the spatial qualities of reflected light" (Blumberg, 2020).



FIGURE 18 - Orange Vendor (1916) by Goncharova

In 'Peasants Harvesting Grapes' (Figure 19) Goncharova's graphic lines give the workers a glowing aura around them as they walk. The peasants' stance along with their 2D quality make them look as though they are in some sort of strongman pose. Then, the leader's orange tunic adds to his character, bringing forth even more strength and confidence. All of these techniques remind me of religious motifs; the vendor's oranges settle around her head like a halo, the peasants wear their grapes like a thorny crown. She paints those who seem less fortunate (including herself), those who are often ignored or are in poverty, but in a way that likens them to deities. Instead of using sombre tones, she constantly uses bright oranges to provide an unexpected air of reverence, as though to say 'Look! Look at these people and appreciate them!'. Her work draws attention to commonly invisible lower class workers for which she shows her support and admiration. It seemingly reflects the politics of Russia at the time, which was moving towards communism around 1917. Before he was corrupted with the power he received, Stalin was fighting for more rights for the proletariat which was one of the first times the poor had a chance of leading better lives (BBC, 2019). It's as though Goncharova was part of this campaign to change perceptions of the poor via painting forms of propaganda. Thus, cadmium orange becomes an easily identifiable positivity-inducing feature throughout her work.

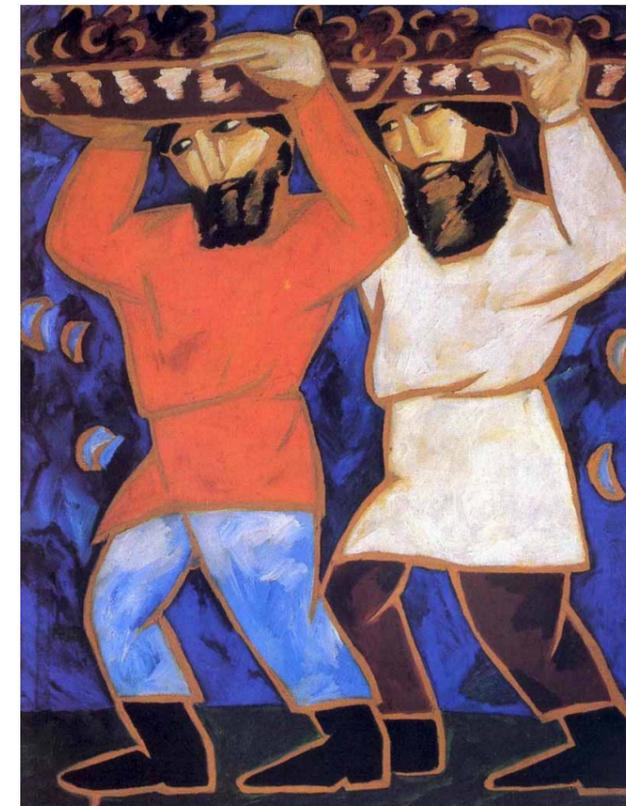


FIGURE 19 - Peasants Harvesting Grapes (1911) by Goncharova

Goncharova's use of religious connotations make orange relatable to a wider audience who follow Christianity. Those who recognise that particular symbolism, can then feel as though they are part of a group. The same feeling of familiarity can be found in other religious presentations of orange, particularly as textiles or clothing. Theravada Buddhist monks, "one of the largest subdivisions of Buddhism" (BBC, 2002) live in a robe which is only there to serve as minimal protection to the body. Formed of many separate cuttings of cloth, sewn into the formation of the fields of Magadha, decided on by Buddha himself, it is a lot more specifically designed than it appears. Originally the colour varied due to the unpredictability of the dying methods they used to achieve a golden tone and the availability of organic material around them. Prior to dyeing, as a foundation, one would submerge the cloth in a concoction of cow dung and red clay. In order to be chemical-free, the monks dyed their clothes with any plant-based matter that provided orange tone results. This included "roots, the bark of trees, leaves, fruits, flowers, or tubers" (Buddhism Zone, 2020). In Thailand, Jackfruit trees boiled in water became the source of dye for the majority of monks. They would also use extracted rubber from trees to prevent the retention of humidity in the cloth, and the growth of bacteria. However, if this tradition was to continue in this way, it would have eventually become unsustainable with an abundance of trees being destroyed (Venerable Dhattajeevo Bhikku, 2006). Nowadays, the majority of monks use synthetic dyes to maintain their cloth colour. For monks, wearing orange transforms them into a flame. Developed from the Hindu belief that the colour of fire symbolises sacrifice, Buddha teaches us that flames radiate light in the darkness and bring forth clarity in the face of ignorance. Becoming orange, enables monks to follow the path to enlightenment. In addition, orange represents purity, an ideal they wish every part of their body personifies, thus they project their identity to others as a provider of truth. The end result revolves around the rejection of materialistic aspects to life and finding strength in minimalism (Monk John, no date). As a consequence, colour can be a way of promoting a way of life. Luckily, Buddhism requests peace and harmony amongst all. Plus, they are the opposite of invasive, often taking themselves away from others to live in solitude. However, the collective wearing of orange tones became frightening in recent years, in the case of the Sannyasins (Figure 20).

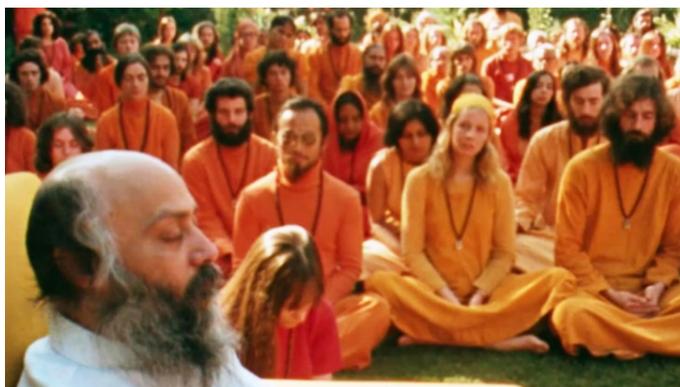


FIGURE 20 - Bhagwan Shree Rajneesh sits amongst his followers.

On the 16th of March 2018, Netflix released a series called '*Wild Wild Country*' (2018) which followed the unimaginable, widely unknown story of Bhagwan Shree Rajneesh and his disciples. Gradually taking over a small Oregon town called Antelope, they became extremely influential politically, sexually, and above all, religiously. Their initial methods of power play, which can only be described as slyly aggressive, escalated to slipping "salmonella into salad bars in The Dalles" which "poisoned more than 750 people" (Goldman, 2011) in order to control an election. They would never have associated themselves with the term 'cult', though outsiders felt confident in identifying them as one. They wore the same palette of colours, picking from a limited range in shops, or choosing to dye clothing on their compound. In his book '*Krishna : The Man and His Philosophy*' (Osho, 1991) Bhagwan himself explained that the orange tones of their clothing were chosen extremely precisely. If an item is pure red then it doesn't absorb any red light, which he determined was the colour of sexuality. He wanted to ensure that a fraction of red light was able to pass through the clothing into the Sannyasins' body, to keep an element of that sexuality alive. Plus, he believed "the sight of the pure red is harsh and harmful" (Osho, 1991), which, he claimed, was not the Sannyasins' intended demeanour and he was wary of how outsiders would respond to such a bright, invasive colour. In a different circumstance, their orange outfits could cause a major misunderstanding due to the strikingly similar style worn by convicts. Prisoners are forced to wear orange so that they are easily spotted if they were to escape. It becomes humorous if one looks upon the Rajneeshis in this kind of context; it is as though he never prevented the group from looking dangerous. Nonetheless, Ochre was originally the main colour choice, picked to mimic the sunrise at the start of the first meditation of the day. Therefore, the Sannyasins were constantly reminded of this integral part of Buddhism, the calming meditative state evoked by the warmth of the surrounding member's clothes (Figure 21). Bhagwan firstly considered green as the colour of the group, however it may not have triggered the same feeling of comradeship. Green could have unintentionally encouraged negativity due to associated emotions such as greed and jealousy. To Bhagwan's native country of India, the colour of orange is considered to reflect more positive characteristics like selflessness and courage. To the outside world, this orange could therefore subtly relate the cult members to kind-natured monks who reside in Eastern Asia. These amiable traits created by the orange coloured clothes helped establish the fakery that Bhagwan was desperate to maintain.

FIGURE 21 - Dynamic meditation session

A very comparable situation would be the orange-wearing Protestants of Ireland. Rorie Brophy, a props maker who grew up in Derry/Londonderry at the time the programme 'Derry Girls' (2018) is set, describes orange as "massively political" (2020). He explains, the Protestant community founded the Orange Order as an "explicit allegiance" to their "great founding hero" King William of Orange, a Protestant monarch of Dutch descent, named in such a way due to his inheritance of a French province. In the 20th century, after the War of Independence fought by the Catholics whose leaders were then executed, the British government offered a deal to give half of the country independence. They said you can "partition Ireland or we will declare war with the full force of the British military" (Brophy, 2020). The treaty was agreed and the flag design became green for the pro-irish independence Nationalists, orange for the anti-irish independence Protestants and white for peace between the two. The symbolism of the flag is something many do not know, however it carries the weight of a long, painful past for the Irish. Southern Irish composer Pierce Joyce who studies at the Royal Welsh College of Music and Drama offered his thoughts on the flag colours. He said:

I resonate a lot more with the green than I do with the orange, since it's always seemed to be presented as a "green=us" "orange=them" sort of mentality... And when I see green out and about it seems 'irish' to me whereas orange doesn't, unless orange and green are together? (2020)

He adds that he sees orange as a reminder of all the fighting, so fails to have a happy connection with it. Adrian Hardy, a teacher brought up in a Protestant area of Kilkeel, agrees. His stepdaughter infers, "if he sees lots of orange it feels to him very intense and unrelaxing" (Foley, 2020). Someone who wished to remain anonymous described their understanding of orange as a slightly more complicated thing because it is a tricky subject if you're from Northern Ireland. More personal interpretations of the orange vary from pride to utter distaste, depending on one's upbringing. Whatever the perception, it is technically a significant part of the growth of the country.

Brophy continues, "July is marching season in Ireland", where protestants still walk through Catholic neighbourhoods to commemorate the Battle of the Boyne when King William defeated Catholic King James. They wear all black suits and white gloves with a deliberately prominent orange sash around their shoulders as they stomp through the streets (Figure 22). When asked if orange clothing is something that Brophy avoids, he explains wearing orange is fine but the "sash is loaded". People were certainly frowned upon if they mixed with those of the opposing religion; Brophy's ex girlfriend's father was heavily against their pairing. He was an extreme hater of the Catholics going as far as to say in one of his speeches that they should be gassed. In response to all this history, Brophy reveals orange is still used as a derogatory term in phrases such as "he's an orange bastard, don't trust him". There is clearly still plenty of undissolved tension in Ireland in relation to orange. A feeling of unrest and unease follows orange around.



FIGURE 22 - Protestant (Orangemen) March (2017)

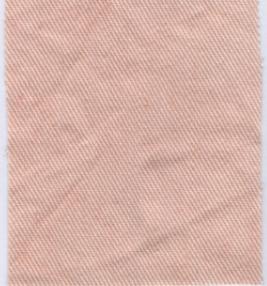
Yellow Onion Skins

500ml water with salt
Skins of approx 7 onions
Brought to boil, simmered for 20 mins
Skins removed
Pre-soaked material
Material added to dye

LEFT IN FOR 30 MINS



DIPPED



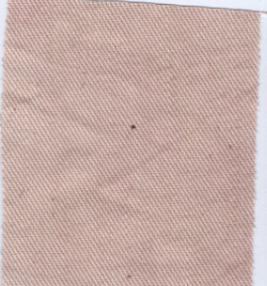
Red Onion Skins

500ml water with salt
Skins of approx 7 onions
Brought to boil, simmered for 20 mins
Skins removed
Pre-soaked material
Material added to dye

LEFT IN FOR 30 MINS



DIPPED



250ml Yellow Onion Skin dye
250ml Red Onion Skin dye
Brought to boil again
Changed to a simmer
Pre-soaked material
Material added to dye

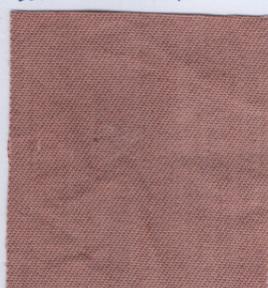
LEFT IN FOR 30 MINS



DIPPED



LEFT OVERNIGHT



LEFT FOR AN HOUR



Paprika

500ml water with salt and dash of vinegar
2 teaspoons of Paprika
Brought to boil
Changed to a simmer
Pre-soaked material
Material added to dye

LEFT IN FOR 30 MINS



RUBBED IN PAPRIKA



Lichen & Tree Bark

500ml water with salt
Pot of assorted lichens and tree bark from Highgate Woods
Brought to boil
Changed to a simmer
Pre-soaked material
Material added to dye

LEFT IN FOR 30 MINS



LEFT IN FOR 3 HOURS



FIGURE 23 - Swatches of Naturally Dyed Material (2020) by Boswell-Green

I decided to educate myself further on the trials of dyeing with natural materials in order to understand the unpredictability of the colouring and the best way to achieve a perceivable orange (Figure 23). From my experiments, I concluded that the yellow onion skins provide the closest to a clear orange that I could obtain (Figure 24). It highlighted to me that the colour saturation of natural ingredients is much lower than what can be acquired with the same amount of chemicals. However, the process itself felt extremely rewarding and undamaging; It increased my appreciation for the natural resources that we have in abundance on this planet and, moving forward, we could all attempt creations like this to increase our efficiency. Other choices of dyes could be tea leaves and carrots.



FIGURE 24 - Yellow Onion compared the material dyed with its skin (2020) by Boswell-Green

Around 1530, the word 'carrot' was first spoken in English, from the greek καρωτόν to the Latin carōta, and finally to the french carotte. In Danish, 'gul og rød' means 'yellow and red' and very similarly 'Gulerod' means 'carrot', showing they connect the colour to the vegetable. Contrastly, the Dutch word for carrot is the same for root, connecting the vegetable to the ground where it comes from and subtly the process of its existence. Brought by Arab traders in the late 1500s, carrot seeds were cultivated by Dutch agricultural experts. They're known as the ones to breed yellow varieties together to produce the sweet orange carrot we know today (Figure 25), likely spurred on by the introduction of the popular orange fruit (Stolarczyk, no date). Philipp Simon, a research geneticist for the U.S Department of Agriculture discovered that it was the DCAR_032551 gene containing Carotenoids which gives the carrot its distinct colouring. In plants and flowers, Carotenoids provide protection to the chlorophyll against photodamage and they absorb light for photosynthesis to take place. As well as their presence in pumpkins, sweet potatoes, shrimp and salmon, it is the Carotenoids that remain in dead leaves which gives Autumn it's characteristic burnt orange hue (Lehman, 2019).



FIGURE 25 - *The Vegetable Stall* (1665) by Van Brekelenkam

Before the 1500s, prior to the trading of oranges in Britain, the colour orange had not even received its specific name in English. The word for the fruit either derived from the Arabic 'naaranj' which morphed into the Spanish 'naranja', or more simply from the French 'pomme d'orange' (Quinion, 1996). Sampling from 319 languages, only 40% have a word for the colour orange, while 100% have a word for black (Ager, no date). Thus, not only is the usage of orange minimal but so is the exact way to identify it. In another instance, not all languages adopted the same word for both the fruit and the colour. In Swedish the fruit translates to Chinese apple, hinting at the origin of its growth; The same is said for Dutch, in its use of sinaasappel. In Greek and German, accented syllables are what distinguishes the two. In this way, language becomes an aural variable when deciding how we view/describe colour. When questioned about the relationship between colour and language, Kassia St Clare, author of *'The Secret Lives of Colour'* (2016) explained:

I definitely wouldn't consider myself an expert when it comes to the language and colour debate. What I would say is that, both as individuals and as cultures, people have very intense and distinct relationships with colour... different people have different ideas of where the boundaries between colours are: where precisely does red shade into pink or orange for example? (St Clare, 2020)

In her book, she highlights a handful of places where colour is labelled differently to standard English. A particularly relevant example is a Polynesian language called Rennell-Bellona where their word for red "includes yellow and orange" (2016). In response to the chaotic amount of colour systems in the world, some scholars have tried to stratify colours into category systems, such as the "Atlas of the Munsell Color System, which featured 15 colour charts consisting of several hundred colour chips arranged according to the three characteristics of hue, value, and chroma" (Encyclopaedia Britannica, 1998) but they never caught on to the masses.

Although the discussion of language affecting perception is relatively inconclusive, there is an understanding that language is just one route of forming a relationship with something. St Clare confirms that "At any one time each individual will be attaching layers of meaning and association to different shades" (2020). This development identifies that perception of even one isolated colour, such as orange, is not straightforward. Kassia admits "Orange is definitely a colour whose meaning I would say has changed for me over my lifetime" (2020) and Expert Colourist Kate Smith explains "people [have] a love it or hate it reaction when asked about it" (2020). Our opinion-based society provides minds so free to decide for themselves that no thought can be universal. It has become apparent that we shouldn't fight against our differences but embrace them in case they're able to inform us positively.

CELEBRATION

The Netherlands' adoration of orange is an example of unity on a country-wide scale. Firstly, they are the original producers of orange carrots, then annually they transform into a sea of orange for 'Koningsdag' (Figure 27). 'King's Day' on the 27th of April is a celebration of the Dutch Royal Family who bear the name The House of Oranje. Similarly to Ireland, their political and religious involvement with William of Orange as their prince, influenced their likening to the colour orange. The orange, white and blue Prinsenvlag [Prince's flag] was first used "in the 16th century during the Eighty Years' War by so called Orangists, who supported the prince" and then in the 1930s by "the National Socialist Movement (NSB)" (Antifautrecht, 2018). It was flown by the lower class and the military who wanted a "more centralised government under one of the House of Orange" (History with Hilbert, 2019). The red, white and blue Statenvlag [State flag] was used by the equivalent to a Republican party whose followers were Protestants and the rich. They ended up banning the Prinsenvlag and instating their favoured design as the national flag. During King's Day, the chant "Oranje boven, Oranje boven. Leve de Koning!" (Dutch Amsterdam, no date) [Orange on top, Orange on top. Long Live the King!] is bellowed by crowds; this song may be referring to the Prinsenflag which was essentially the flag of the people. Unlike Ireland, the Netherlands doesn't heavily relate the flag colours to conflict or disagreements. Orange doesn't become tainted as a consequence.

Nikita Verboon, a Dutch costume maker graduating from the Royal Welsh College of Music and Drama, strives to get home every year to join in with the King's Day festivities. She confirms she "loves that day" and feels "very connected with everyone" around her because of their matching orange outfits. She explains "what a lot of people do is put a blanket in front of their house and sell their old stuff that they don't want anymore". As a result, the warm orange becomes a representation of a kind, sharing atmosphere. Verboon goes on to say:

the city will organise an hour long route for the king and his whole family to walk. They talk to people, they play old Dutch games, they watch acts people perform for them and they give a speech (2020)

The orange-cladded people and their activities encourage inclusivity; the King is invited to walk amongst them and take interest in their personal lives (Figure 26). In this way, orange provides a heartwarming glow of appreciation and community spirit. Beautifully, there is no indication of any differences between people, status or otherwise. They all become one for these 24 hours, helped by orange.



FIGURE 26 - Queen Maxima and King Willem-Alexander paraded through the village of De Rijp to celebrate King's Day (2017)



FIGURE 27 - King's Day crowds in Amsterdam

THE PROFILE OF ORANGE

Orange wants to be seen. It wants to be exciting, fun and extremely apparent in our lives. Berries of a dragon blood tree are orange to make birds spot them to eat them and pass on the seeds. Wotsits want you to buy them and Nickelodeon wants you to watch their programmes. Fashionistas wearing orange want to be noticed, and prisoners in overalls can't evade our sight. It doesn't try to be overly serious, only cautious in some situations where it's used as a polite warning. This is particularly observable on roads with the amber traffic light, the zebra crossing beacons and the traffic cone. But also elsewhere when your battery is running low or as hazard labels on a substance. Orange is characterful. Goofy encompasses its silliness, Tigger its energy, and Garfield its humour. Orange is sought after. Painters boast the colour in their work while teenagers in the winter beg for the summer sun. Orange is powerful. Dramatically, it is used in political demonstrations to make a statement or begin a movement. On the other hand, it can bring people peace or solemnity. Religiously, it can strengthen one's godly connection or at least highlight the divine. Via research, it is clear that the outcome of your opinion on orange depends on your location and upbringing. To me, orange is gritty in a good way. Like lava, it encompasses beauty and danger. Poetically, it is the colour that surrounds the core of the Earth but personally it embodies the terracotta brick houses of my neighbourhood. Orange reminds me of icing gingerbread men with my mum and the glowing barnets of my dad and sister. The examples are endless but the totality of the effect of orange is clear. Orange wants to be seen and I see it everywhere.



FIGURE 28 - House 26 (2020) by Boswell-Green

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I declare that this research project is the result of my own efforts. The various sources to which I am indebted are clearly indicated in the references in text or bibliography. I further declare that this work has never been accepted in the substance of any degree and is not being concurrently submitted in candidate for any other degree.

R BOSWELL-GREEN

(candidate)