

FEELING LIGHT

“The scientific process almost always begins with measurement, - and inner states, though subjectively experienced can have measurable manifestations.”

In this text I will attempt to explain how light may affect the human psyche. Specifically in relation to depression, anxiety and their symptoms. These are topics that are present in my own art practice. It is my aim to create a better understanding of how light and human emotions relate to each other.

INTRODUCTION

In one of my more recent works, “BLAUW”, a film installation with the objective of inviting the viewer to meditate, I explore the calming effects of colour and sound. In the video a large blue circle generates new version of itself from within. The audio is arranged in such a way that it will regulate the tempo of the viewers breath.



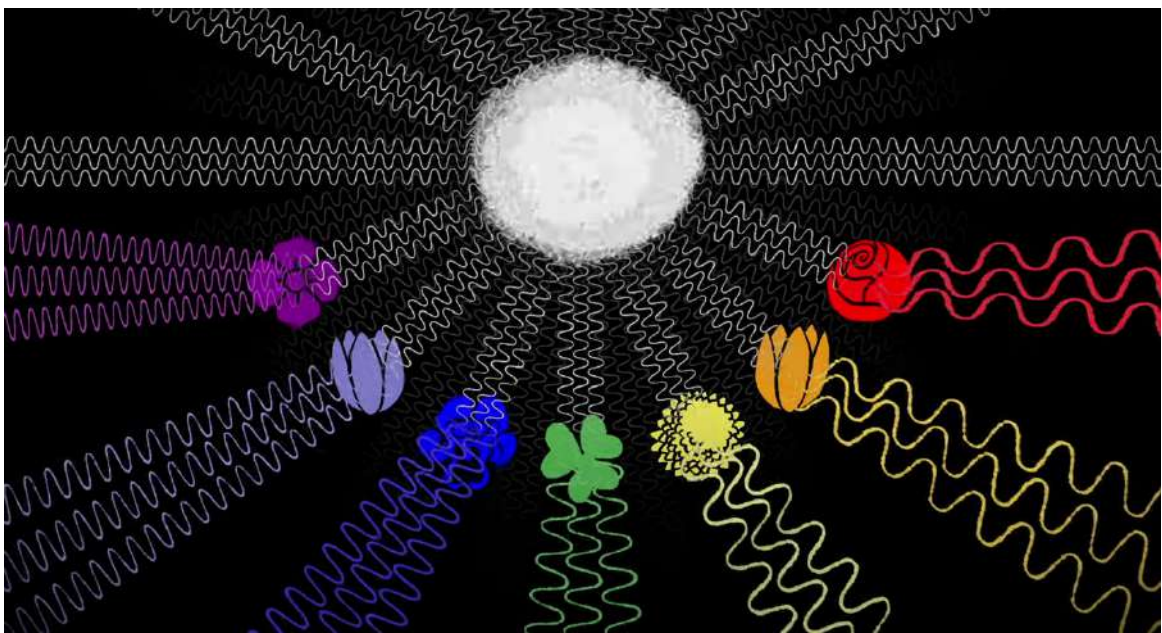
The combination of the calming blue and the rhythmic sound make for an immersive and meditative experience. I chose the colour blue because I have a longstanding relationship with it. For me blue is calm. Blue is vast. Blue is unyielding, but if you give into it, it won't harm you. I like to compare it to the feeling people have when they are overwhelmed by the vastness of the ocean. A beauty that is also terrifying.

The choice for the colour blue was not entirely subconscious, as a painter might choose his paints based on instinct. Blue has a certain effect on me that I want to communicate to others. But is it a given that others have the same relationship with the colour blue? Does it elicit the same response? Does the blue light have the same calming effect that I wish to communicate? The relationship between the viewer and the colour and light is a complex one.

To better understand this relationship, first we have to understand what light is.

CHAPTER ONE - LIGHT

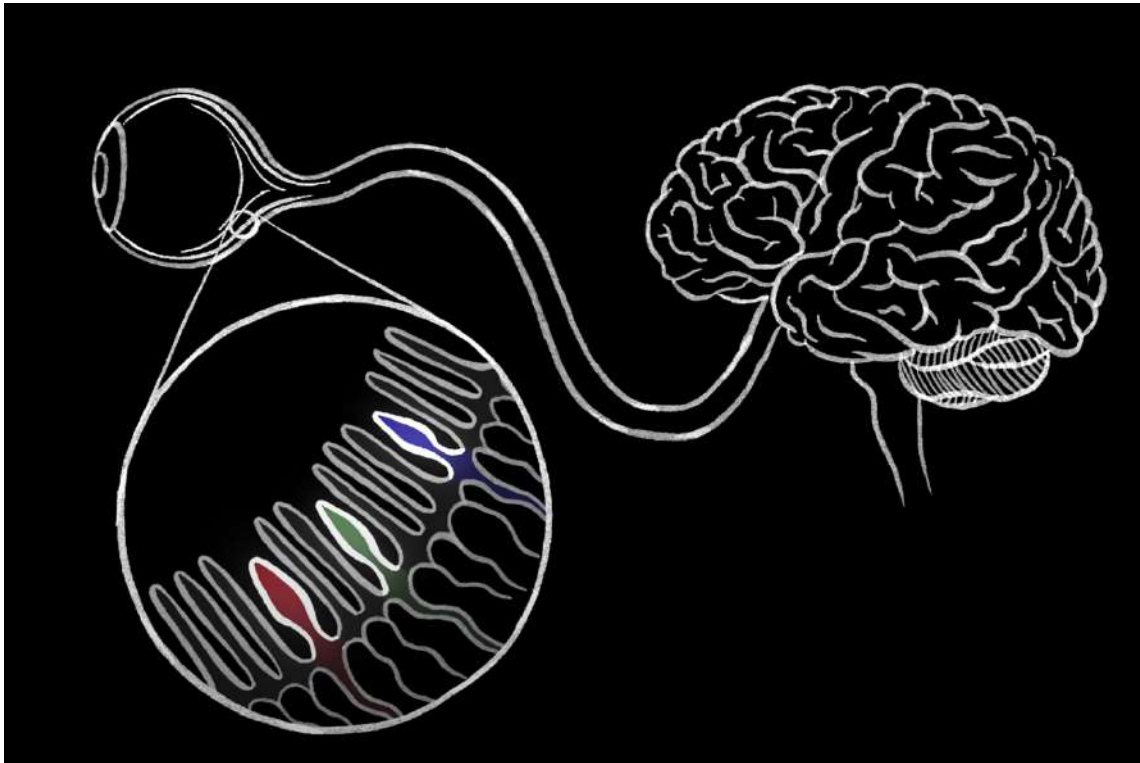
The light that humans can perceive, often referred to as "visible light," encompasses a specific range of wavelengths within the electromagnetic spectrum. Within the visible light spectrum, different wavelengths correspond to different colours that humans can see, with shorter wavelengths appearing as violet and longer wavelengths as red.



We can see all the colours on this spectrum, but they are not all perceived as individual colours by the eye. On the back of the eyeball we find the retina, a layer of light detecting cells. In the retina we find three different cone-shaped receptors. A red, green and blue light receptor. This means we can only 'see'

¹https://www.youtube.com/watch?v=l8_fZPHasdo

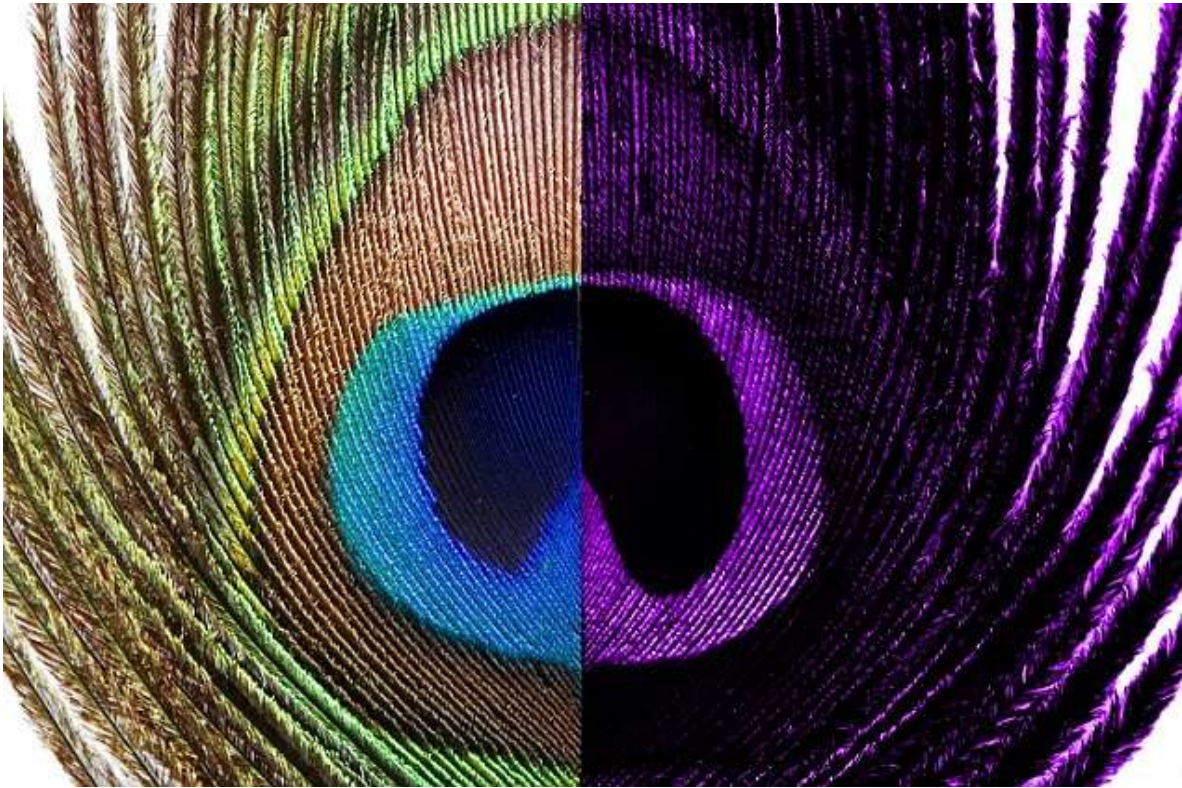
these three colours. All other perceptible colours are only visible to us because two or more of these receptors are sending a signal to our brain. Blending these colours together to create the colour we're seeing.



Visible light is just a small portion of physical light. When we refer to physical light, we refer to light that exists on a broader spectrum of wavelengths.

Ultraviolet light, for example, is imperceptible by the human eye because it moves at a shorter frequency than violet light. However, some animals are able to see these colours. A beautiful example of this is the peacock. Peacocks use their colourful feathers to perform mating dances and attract mates. Some of

the spots that can be found at the end of their feathers have been observed to be more reflective under ultraviolet light.²



This means that the beautiful colours of their feathers are even more complex than we can see with the human eye.³ These colours may not be visible to us, but just as the peacock we use colours to communicate.

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https://www.researchgate.net/publication/328187431_Ultraviolet_Reflectance_Structures_of_Peacock_Feathers

³ <https://www.dailymail.co.uk/sciencetech/article-2168268/Incredible-photos-peacock-sees-looks-potential-mate--dog-sees-throw-ball.html>

In film we can set the mood by using a certain colour palette. For example, in the film *The Pianist* by director Roman Polanski. In this Holocaust war drama Polanski captures the changing atmosphere through the use of colour. Flawlessly shifting from vibrant and comforting shades to gradually fading and desaturated tones.⁴ The colours in the film progressively lose their vibrancy and become darker. By doing this



Polanski is able to communicate the increasing bleakness of the war and the turmoil the main character endures.

Often a common ground for these functions can be found. Within colour psychology different factors are considered to affect how certain colours are perceived. Evolutionary aesthetics suggest that humans have a preference for

⁴ <https://www.youtube.com/shorts/hinJIq6OgH0>

green and blue. It suggests that this preference aided in finding habitable environments.⁵ Think of blue for clean drinking water and green for fertile ground for food production.

A common perception is that blue light can have a calming effect. As opposed to the aggressiveness and passion associated with the colour red. In 2008 a railroad company in Japan installed blue lighting on its stations in an effort to reduce the number of rail suicide attempts.⁶



⁵ <https://nl.pinterest.com/pin/595390013230807440/>

⁶ <https://www.bbc.com/future/article/20190122-can-blue-lights-prevent-suicide-at-train-stations>

Supposedly these blue lights had a massive positive impact, decreasing the rail suicide attempts by 84%. In Glasgow they attempted a similar strategy where blue street lighting was installed in high crime rate areas. Afterward, the number of crimes in areas illuminated in blue noticeable decreased.⁷ These are all common denominators, however within colour psychology it is not always this binary or uniform. People may have subjective relationships with certain colours. The cultural or personal context impact the meaning and effect a colour can have. Where one person might find blue light to have a calming effect, someone else might have a trauma related response because of a negative personal experience.

Other, less straightforward uses of light can be found in architectural design. Several years ago, I visited the Notre Dame du Haut on a family vacation. A chapel in Ronchamp designed by Le Corbusier.

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https://web.archive.org/web/20100913151600/http://seattletimes.nwsourc.com/html/nationworld/2008494010_bluelight11.html



I would not consider myself a religious person. But the imposing effect that the architecture of a church or cathedral can have is not lost on me. In this instance the design is not your average church or chapel. The play of light within the chapel I can only describe as a transcendent experience. An overwhelming feeling of weightlessness and tranquillity. ⁸

⁸ <https://teamwhitearkitekter.wordpress.com/2013/10/22/windows/>

Corbusier later wrote that he was interested in “the effect of architectural forms and the spirit of architecture in the construction of a vessel of intense concentration and meditation”.⁹

Another great example of how lighting in architecture can be used to create a calming sensation is the Therme Vals in Switzerland. A hotel and spa that is seamlessly integrated into the Swiss landscape. The bath building’s design adapts to the hills’ slope, and it seems to emerge from the natural landscape. The façade of the building is structured with consecutive

⁹ LE CORBUSIER (1953) Le Corbusier – Oeuvre complete, Vol. 5: 1946-1952 (French, English and German Edition) (p.88)

wide openings and monolithic walls. Allowing a large amount of natural light into the building.^{10 11}

In this case the architecture and use of light attribute to the calm and relaxation people seek from a day at a spa. Yes, imposing, but not overwhelming. The large structure provides a feeling of safety from the outside world, while the natural light connects you with it.



¹⁰ <https://www.re-thinkingthefuture.com/case-studies/a2530-therme-vals-spa-in-switzerland-by-peter-zumthor/#:~:text=The%20design%20process%20has%20been,respect%20bathing%20and%20mystic%20silence.>

¹¹ <https://www.dezeen.com/2016/09/25/peter-zumthor-therme-vals-spa-baths-photography-fernando-guerra/>

CHAPTER TWO - MEDICINE

I have never looked into the possibility that depression and anxiety might be a genetic trait passed down in my family history.

However, I know for a fact that several close relatives have gotten diagnosed with depression and have gotten prescriptions for these ailments. The most common drugs prescribed to people who suffer from anxiety and depression are SSRI's or Selective Serotonin Reuptake Inhibitors.¹² These anti-depressants work by increasing levels of serotonin in the brain. Serotonin has many different functions within the body. Its main function is as a neurotransmitter. This means that it's responsible for communication between cells in the body. Plainly put; it tells one part of the body how the other part should behave.

¹³These anti-depressants can often combat the symptoms of anxiety, making a

¹² [https://magazine.medlineplus.gov/article/commonly-prescribed-antidepressants-and-how-they-work#:~:text=Selective%20serotonin%20reuptake%20inhibitors%20\(SSRIs,than%20other%20types%20of%20antidepressants.](https://magazine.medlineplus.gov/article/commonly-prescribed-antidepressants-and-how-they-work#:~:text=Selective%20serotonin%20reuptake%20inhibitors%20(SSRIs,than%20other%20types%20of%20antidepressants.)

¹³ <https://my.clevelandclinic.org/health/articles/22572-serotonin>

person feel less anxious or stressed, however it is not a ready-made cure. As is common in most forms of modern medicine, the drugs prescribed can have various non-pleasant side effects.

I have always had an aversion for anti-depressants. I was convinced it would dull my mind to a point where I could no longer recognize myself. Not in a literal sense where I would look in the mirror and physically would not recognize myself. But rather on an emotional, almost spiritual level where you would disconnect from your sense of self. Feeling everything around me as strong as I do is now part of my identity. Cut this out of your life and what is left? A watered-down experience of life?

Besides, the anti-depressants would help with the anxiety symptoms. Relieve stress and make stressful situation more manageable. But they wouldn't cure the depression. Not at its core.

We return to the people who prescribed these drugs to us, the psychotherapists, for a final judgement or solution. Can they deliver us peace of mind?

In a search for alternative remedies, and as part of my artistic research I investigated how light is used in medicine and therapy. Is this medium possibly overlooked in western medicine as a treatment for anxiety and depression?

Light therapy or chromotherapy is not a new phenomenon. The ancient Egyptians have been recorded to have been using colour for cures and ailments.

They worshipped the sun, knowing that without light there can be no life. They built temples for healing and used crystals through which the sunlight shone. ¹⁴

A parallel can be drawn between these practices and the art installation The Weather Project by Olafur Eliasson. Working with artificial light instead of natural light. However, in my opinion still highly effective. The Weather Project was a site-specific artwork presented at the Tate Modern in London in 2003. The installation employed a semi-circular screen, a ceiling of mirrors, and artificial mist to create the illusion of a sun. Backlit by approximately 200

¹⁴ <https://www.colourtherapyhealing.com/colour/colour-history>

mono-frequency lights,
the semi-circle and its
reflection created the
image of a massive,
indoor sunset seen
through the artificial mist
emitted into the room.¹⁵

Imagine walking
through the grey,
urban wetness of
London and stepping
into the Tate Modern.



Only to be confronted by a large space that feels warm and humid. Where you are invited to lie down, observe and experience the sensation of this warm light.

The most common form of light therapy; bright light therapy, is often used to treat people who suffer from Seasonal Affective Disorder (S.A.D.). This is a type of depression that occurs during a certain time of year, usually

¹⁵ <https://olafureliasson.net/artwork/the-weather-project-2003/>

in the wintertime when there is less daylight. The lack of sunlight in the morning makes it difficult for people to feel energetic and productive when they are trying to start their day.¹⁶

Bright light therapy is used to gradually shift sleeping patterns to what we consider normal and alleviate moods. During a session, you sit near a light box or lamp, which emits bright light. The box or lamp usually mimics natural sunlight, but there can be variations. For treatment, the timing of light exposure is critical. The light must be delivered to the retina as soon after spontaneous awakening as possible to achieve the desired effect.¹⁷ This sleep/wake cycle is referred to as your circadian rhythm. Circadian rhythm is the 24-hour internal clock in our brain that regulates cycles of alertness and sleepiness by responding to light changes in our environment. The sleep/wake cycle is necessary to replenish and heal the body to ensure

¹⁶ <https://www.healthline.com/health/depression/light-therapy>

¹⁷ <https://stanfordhealthcare.org/medical-conditions/sleep/advanced-sleep-phase-syndrome/treatments/bright-light-therapy.html>

that it can function properly.¹⁸ An irregular circadian rhythm can have a negative effect on a person's ability to sleep and function properly. Most of the evidence on the relationship between mood problems and circadian rhythm comes from studies of shift workers, whose sleep periods are out of sync with their circadian rhythm. Multiple studies show an increased prevalence of depression in night-shift workers. Conversely, circadian rhythm disturbances are common in people with depression, who often have changes in the pattern of their sleep, their hormone rhythms, and body temperature rhythms.¹⁹ I experienced these effects myself when I was working evening shifts. I had quit my studies and started working full-time. The shifts ended at 1:30AM which meant I wasn't sleeping until at least 2:30, 3:00 o'clock at night. Only to wake up at 1:00PM and start work again at 3:00PM. Seeing as my work was indoors, I sometimes had less than half an hour of direct sunlight per day available to me. In the beginning it was

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<https://www.ncbi.nlm.nih.gov/books/NBK519507/#:~:text=Circadian%20rhythm%20is%20the%2024,Earth's%20rotation%20around%20its%20axis>

¹⁹ <https://www.health.harvard.edu/blog/why-your-sleep-and-wake-cycles-affect-your-mood-2020051319792>

rather exciting, working late, going for drinks with colleagues after work. I
However, after a certain period of this schedule you start to realise it is not
sustainable. Or at least less fulfilling. You have little to no energy left to do
things outside of work. And when you have a day off you spend it laying on
your bed, feeling exhausted.

CHAPTER THREE – APPLICATION

Rewiring your own biological clock is not an easy thing to do. Personally, I quite enjoy the comfort of my bed, sleeping in and being lazy. However, this feeling can quickly be overturned. Feelings of not being productive or useful can quickly develop and become overwhelming. I think it is important to note that a balance within this productivity is very important. Humans are not designed to work and be productive every waking hour. Nor will life be fulfilling if you are passive through the entire day. Luckily, to find this balance there are several accessible tools and solutions.

Be intentional about colour choices. When picking colours for anything, from the colour of the walls in your room to the colour of clothes you wear. Red, orange and yellow are commonly known to energize and elicit happy emotions. Blue and green have more of a sedative and calming effect. Remember that this is always subjective, choose colours that you find stimulating or elicit positive emotions.²⁰ A recent trend that I have succumbed to myself are sunlight lamps.

²⁰ <https://www.verywellmind.com/colour-therapy-definition-types-techniques-and-efficacy->



²²Biologically, people are wired to wake up as the sun rises.²³ And sunrise alarm clocks are designed to simulate that effect, starting with a dim light that builds up to the brilliance of a bright spring day over the course of about 30 minutes.²⁴ I am quite a deep sleeper myself, and not what you would call a morning person. To make sure I do not sleep through all my planned engagements I use my very loud and ugly sounding alarm clock on my phone. I often put more than one, just so I don't run the risk of accidentally

²² <https://sleepopolis.com/reviews/ihome-zenergy-sunrise-alarm-clock-review/>

²³ <https://www.sciencenews.org/article/origin-biological-clocks>

²⁴ <https://www.nytimes.com/wirecutter/reviews/best-sunrise-alarm-clock/>

sleeping through the first one (yes, I'm one of those people). This method of waking up has proven effective for me. But it is not the most comfortable way of waking up. This alternative 'natural' way of waking up might just be the key. On several occasions I have tried this out by leaving the curtains in my bedroom open. This way the sunlight would gradually wake me up. I found it to be a much more pleasant way to wake up. I felt less groggy in the morning, and it made it easier to get out of bed. However, I was dependant on the timing of the sunrise itself. That is why I was only able to try this out on days that I didn't have anything planned. I consider a programmable, digital 'sun' as an alarm a good solution. Finally, the most effective way has proven to be exposure to direct sunlight as soon as possible after waking up. Artificial lights can produce around 10,000 lux, whereas the intensity of the sun's light is approximately 100,000 lux.²⁵ I understand, however, that direct sunlight might not be available to everyone. And even if it is, you might not want to step outside in the cold first thing in the morning.

²⁵ [https://www.verywellhealth.com/morning-sunlight-exposure-](https://www.verywellhealth.com/morning-sunlight-exposure-3973908)

CONCLUSION

Light has a large impact on our wellbeing and state of mind. We design and shape our environment accordingly. However, we are not always aware when we make these choices and how much they impact us.

People who suffer from anxiety and depression can reduce their symptoms by using light. Minor adjustments have made quite the impact on my mental health. I implore you to not disregard the effect your environment has on you. Are you stuck working in a badly lit office building most of the day? Try to get your rays early in the morning. Do you have only that one bright light hanging from the ceiling in your studio? Try to invest in more ambient light. Are you an artist working with light? Be conscious of the choices you make in your work. For your own wellbeing, and the wellbeing of others.