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Carolina Vallejo Maldonado

LIGHT AND SPACES

A STUDY OF CONTRAST BETWEEN LIGHT AND DARK



University of South-Eastern Norway
Faculty of Humanities, Sports and Educational Science
Department of Visual and Performing Arts Education
PO Box 235
NO-3603 Kongsberg, Norway

<http://www.usn.no>

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This thesis is worth 60 study points

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ABSTRACT

This master project This research approaches light focusing especially on how the contrast between light and darkness helps us to perceive and describe our spaces, discovering its role in the creation of new meaning in spaces. The is a qualitative study based on a phenomenological approach through descriptive notes, voice recordings, photos material, sketches, drawings, paintings. The creative work is based on charcoal drawings, black and white acrylic paint and an installation room proposal based on light and shadows reflections. Finally, the project is presenting an interdisciplinary as didactic potential about learning in which two subjects and topics can bring together concepts, techniques, methods or strategies of teaching.

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1 Introduction

Light has been studied for centuries, and thanks to these studies, light has manifested itself as one of the most studied topics in religion, art, and science. There is no doubt that light has played a key role since the beginning of human existence, given its physical characteristics and spiritual connotations. From the very start, the primary source of natural light has been the sun, which has been the provider of life, a sense of well-being, happiness and more importantly, has allowed us to see what surrounds us. In a religious context, light has been related to salvation, purity, and centred as the protagonist force against the darkness. Light took away the darkness of the world and it was placed as the “embodiment of the good, righteous, and the true”¹. Culturally, light is associated with positive emotions, and on the contrary, darkness is often associated with negative emotions. In the light, we feel joy, happiness and safety, but when we are surrounded by darkness, we might feel exposed, vulnerable and afraid.

This research is about light and how this phenomenon influences our experiences of spaces. For many centuries, we have relied on the daylight provided by the sun. When sunset occurs and darkness arrives, humans are less able to see our near surroundings. In darkness, our eyes must adjust to the new conditions and historically, light has been provided by stars and the reflection of sunlight from the moon. These days artificial light brings a new world in front of us. With the help of electrical light-sources, we could experience our spaces lit up at night and we have been able to continue tasks that we earlier could not imagine doing during the night. The contribution of the studies of light became transcendental in science in the 18th Century. The movement of “Enlightenment” saw light in a sense of conquering the darkness, nights became alive with the illumination of streets using lanterns for the first time. The era in which people could inhabit cities and continue life even when the sun went down behind the horizon began in this period². Besides illuminating cities, light as an artificial discovery changed the perception of spaces, illuminating them and giving them a new life in the absence of natural light.

¹ <https://thedailylama.net/spirit/towards-an-age-of-light/>

² <https://voltairefoundation.wordpress.com/2018/10/23/lighting-the-enlightenment/>

When light illuminates spaces, it can create a warm and attractive atmosphere, which perhaps can change or affect the mood of peoples experience of spaces. This might depend on the source of light, direction and intensity. Both natural light and artificial light can affect our physical responses to spaces, as well as provoke different reactions and feelings from us. If light influences our experiences, our experiences of light will also depend on our cultural background, memories and experiences lived. Therefore, my investigation will be approached in two ways; first by recording my own subjective perception of the visual effect of light in spaces and second, the objective collection of visual effects within spaces.

This research approaches light focusing especially on how the contrast between light and darkness helps us to perceive and describe our spaces, discovering its role on the creation of new meaning in spaces. Reducing the visual information by increasing the focus on contrasts between light and dark in three different stages; through observation of different spaces, in a two-dimensional format and finally as part of an art installation.

1.1 Background

1.1.1 Subject and motivation

Fourteen years ago, I moved to Norway to take studies in Aquaculture. It was at the end of summertime; thus, light and sunny days were still relatively long. The summer season finished and the days became shorter and darker. At that point, I did not realize how the lack of sunlight affected me, however, I did notice that lamps, lanterns, reflective materials, and especially snow started to be important to me as sources of light. Life continued after 03:00 pm. and I had to adjust my eyes, my body, and my emotions to this new experience of life in the darkness. This new life required all sorts of tricks to keep me active and motivated during wintertime and gave me another perspective of life in the absence of light.

In my experiences with dark periods in Norway, I began to wonder why I had this tremendous fear of dark spaces outside, such as the forest. My first encounter with the forest was while I was working in a restaurant in a nearby city. To get to work and back home, I had to walk through a forest in the evening. The forest triggered uncomfortable sensations of being vulnerable. While walking in the dark forest, the only guides I had to orientate myself were the faraway window lights and the snow illuminating my way out.

My encounter with light and space on a large scale was in 2016 when I went to an exhibition at the Louisiana Museum of Modern Art in Copenhagen, which at the time was exhibiting the work of Japanese artist Yayoi Kusama. I did not know her work very well, particularly the installation Infinity Mirror Room – Gleaming Lights of the Souls. I visited the installation because I was attracted to the colours, mirrors and patterns I saw on a poster. Once inside the installation, I had the sensation of floating in space, the mirrors gave me the sensation of the “infinite”, a sense of a never-ending reflection of myself. Though, the most interesting part was the illumination inside the box. These were colour LEDs blinking at different times. The LEDs were multiplying themselves in repetitive patterns and stopped blinking suddenly, leaving me in the most terrifying darkness.

1.2 Problem Area (Scope)

This thesis aims to find how light influences our experience of spaces, furthermore this research will look at spaces under the premise that light has many sources with their characteristics, whether it is natural or artificial light. “Nature is understood as the framework within which light exists in its pure and natural state, unspoiled by human intervention” (So, 2016, p. 8) which means that in my first phase of collecting data, there will be no intervention from my side to direct, control or intervene the light. Likewise, the study of contrast has been restricted to everyday lighting; daily light, subjected to the weather conditions and artificial light, which will consist of existing lanterns, lamps, lights in houses and urban spaces. As well, this exploration will consider a variety of spaces in nature and urban surroundings. Due to its natural attributes, light can evolve and provide a visual, immersive and emotional experience within a space. The spaces in observation are defined as specific places, which hold some significance to me and are spaces I often visit and different places, where long walks can take me to.

1.2.1 Issues

Under the Norwegian Directorate of Education and Training, children should be provided with “rich opportunities to become engaged and develop the urge to explore” (Utdanningsdirektoratet). In Visual Arts, teachers must bring meaningful experiences to teach content and to inspire students to create their vision of the world.

But what does that mean in practice? My response is to think in concepts such as spaces, which based on a two-dimensional explanation, has its limitations. Therefore, experiences

based on children's reality, in contact with nature and daily life spaces will make more sense, allowing children to associate, explore and develop their idea of spaces.

In this research, the presence and absence of light are the factors that will provide the answer to our research question. The study of light through history has provided us with numerous advances in science and technology. Gaining knowledge of the psychological impact of changing light conditions is a matter that should be taken into consideration for future professionals. The awareness of the presence of light in its most pure representation could mark a precedent to keep working on the advances, not only on the physical benefits we receive from light but also the psychological.

1.2.2 Project main goal

To provide a new perspective on the potential and experiential of daily observations of light in different situations, as well as to explore how I can simplify the communication of spaces through the contrast between light and darkness.

1.2.2.1 Specific Goals

In the following section, I will present the goals I intend to achieve in my research:

- To gain an understanding of the effects of light in different situations, and how these effects influence the experiences of spaces.
- To explore the contrast between light and dark on visual perception. Could the exploration of contrast help to simplify the description of spaces?
- To propose a strategy that enables an awareness of light through the exploration of contrast in natural and urban environments.
- To explore the artistic side of the relation between light and space through examples of the art movement Light and Space.
- To create an artwork applying the experiences with contrast through visual and body experience.

To achieve these goals, this research will involve visits to different places which include natural and urban spaces. From these visits, I will create a series of sketches, drawings, and paintings to develop an understanding of the experiences with light in which the main focus will be the contrast between light and dark.

1.2.3 Research Question

The main questions for this research are:

How can light affect our experiences of spaces? How can the contrast between light and dark be used for communicating and interpreting space in a work of art?

To discover the influences of light in our experiences with spaces, requires not only the vision also, the senses that body provides us with. This is a study that is looking to recognize not only light as a main source of experiences as well, it seeking to find the tools that could help us to define or own perception of spaces. To do it, this research has focus the exploration onto discover the potentiality that the contrast between light and dark has to communicate and interpret spaces in a work of art. The following questions are to be part on my reflections with techniques and materials during my practical exploration.

What can be transmitted about spaces using charcoal? Can I express the subjective experience using the contrast between black and white?

Can I express the subjective experience using the contrast between light and dark?

What are the elements that represent the essence of someone's experience of the space?
Can I simplify the landscape by representing/picturing it in black and white?

1.2.4 Strategy of exploration

The model below shows how the elements of the thesis are connected, and they are part of the same exploration process.

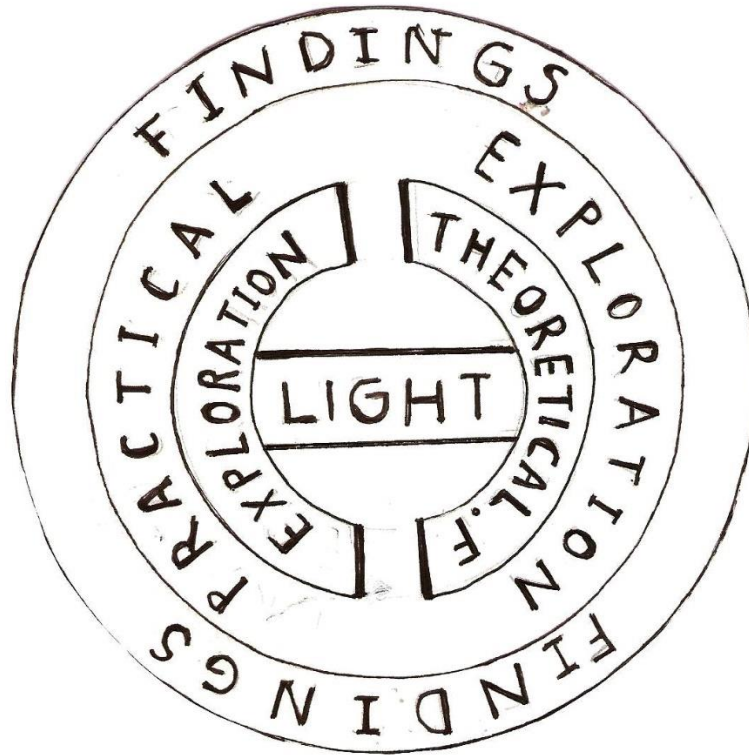


Fig. 1: Strategy of exploration (Private)

2 Theoretical framework

To address the question of how light influences the experiences of spaces and how the contrast between light and dark can be used as a tool to simplify the communication of a space; this chapter presents three major parts; first, phenomenology through Merleau-Ponty's theory to approach the significance of perception, body and movement to define an experience. Second, this chapter presents the exploration of how the contrast between light and dark participates in the experience of spaces. Finally, this chapter is an introduction to the definition of light as a source of experiences. Here, I will go through a brief exploration of the Light and Space movement, looking at three artists: Larry Bell, James Turrell, and Robert Irwin.

2.1 Phenomenology

Edmund Husserl was the first philosopher to place Phenomenology as the philosophical approach with which we can understand the essence of a phenomenon. For him, the main purpose of Phenomenology was to go, "Back to the things themselves!". By this, he meant that Phenomenology should base its considerations on the ways things are experienced rather than various extraneous concerns which might simply obscure and distort what is to be understood" (Gallagher & Zahavi, 2012, p. 6). Phenomenology in Merleau-Ponty's theory is "the study of essences" is the study that seeks the "definitions of essences: the essences of perception, or the essence of consciousness". (Merleau-Ponty, 2005, p. 8). Essentially, phenomenology looks to understand how things make sense to us and how we sense things in the way they appear to us.

According to Merleau-Ponty (2005), phenomenology does not seek a complete and rational understanding of the world. On the contrary, the essence is put frontline. Phenomenology is the philosophical field in which we begin to see what is already there without previous preconceptions, it is then, the search for the essence of the experience "without taking account of its psychological origin and the casual explanation" (Merleau-Ponty, 2005, p. 8). In a way, to properly understand how we sense and become aware of things, one must be the explorer who is always looking for something. Things that are part of the phenomenon are always hidden; therefore we must look underneath the matter so we can grasp the information of those things. If we were already aware of them, they would be objects already existing in our consciousness. What does phenomenology is to study a phenomenon by

separating it into many parts, once we understand how those parts act individually and together then, we achieve consciousness. Consciousness then begins, when we become aware of the world that surrounds us. "To be conscious is to be aware, in some sense, of some aspect of the world" (Van Manen, 1997, p. 9).

With this in mind, this research starts from the premise that everything that happens in front of our eyes has to be experienced as it is presented, and that the entire phenomenon related to light and its multiple ways of revealing itself will be a new encounter, like a child who experiences everything for the first time. Understanding this approach, we shall find a way to understand how these two words; experience and space, participate in the formation of new meanings when light is playing its role.

The way to approach these two keywords within this research is with the help of Merleau-Ponty's theory. In his theory, he places the body as the most primitive organ with which we experience what surrounds us and is, our connection to the world. Furthermore, Merleau-Ponty is providing us with a closer understanding of the essence of the experience through the whole body in movement, with which to acquire "an account of space, time and the world as we 'live' them". (Merleau-Ponty, 2005, p. 8). In a sense, Merleau-Ponty provides us with a definition of our position in this world, by reminding us that our space is defined by the physical place, the space we occupy concerning others, and a space that is defined by the time in which is situated.

2.2 The moving body

In his book, *Phenomenology of Perception* (2005) Merleau-Ponty joins experience to the embodiment of perception. This idea joins the body and movement as the main principle that brings the sensory experience to a new level. Three elements constitute the explanation of experience within this research. The first element is light, which in this research is the phenomenon to be observed and the source that has the power to give new meaning to spaces. The second the body in movement, through which we perceive, sense and become aware of the phenomenon in situ and third, space which cannot be, nor have new meaning, without the first two.

For Merleau-Ponty, the primary tool that human beings have to sense and perceive the world is the body. Our body works as a receptive organ that perceives and feels what surrounds us. It allows us to connect with what is outside. "The body is our general medium

of having a world” (Merleau-Ponty, 2005, p. 169). According to this idea, the body can be explained in three key contexts; the first one refers to the situation to which the body is subject, the second is the movement that the body can perform towards the object of attention, and third, the combination of the two previous contexts mentioned. “To understand is to experience the harmony between what we aim at and what is given, between the intention and the performance—and the body is our anchorage in a world” (Merleau-Ponty, 2005, p. 167) Then, to perceive the experience for Merleau-Ponty is the perception through the body as a whole.

Merleau-Ponty places the body in different situations where it all depends upon the object of attraction, how the body in movement perceives the object and what experiences come with and from it. “The collection of the situations in which we find ourselves involved – it is the world as we live it, not just the world as it opens up in front of us as perceiving subjects, but the world which is at the same time something *already there*” (Gallagher, 2012, p. 2). In this regard, I am not only interested in embracing the idea of how we perceive objects in the world, but rather how we engage our bodies in the world to create our own experiences.

“Our own body is in the world as the heart is in the organism: it keeps the visible spectacle constantly alive (...) When I walk round my flat, the various aspects in which it presents itself to me could not possibly appear as views of one of them represent the flat seen from spot or another, and if I were unaware of my own movements, and of my body as retaining its identity through the stages of movements”. (Merleau-Ponty, 2005, p. 235)

This analysis or interpretation of the world comes from the idea of how “*our own body*” reveals two important aspects which are our perception and experience. Perception and experience arise through our senses working together as a “single fabric” says Merleau-Ponty. Perception as I see it is the process in which our brain organizes the information we collect through our senses, such as vision, hearing, and smell.

The body in this matter is the receptor that requires moving to gather what we experience. Therefore, the body will provide us “*a descriptive account of perception as a mode of being in the world*” (Carman, 2008, p. 37). The perception should not be understood as an experience that happens only in our mind; rather it is a whole-body experience. In other words, we cannot have a full experience of the world around us without utilizing both the mind and body.

The body is an essential tool that connects us to our ideas about the world live in. Therefore, “I regard my body, which is my point of view upon the world” (Merleau-Ponty, 2005, p. 81)

Experiences can be understood differently by different people. This means that one's experience can be very different from another's. Visual experiences can be a good example of how phenomenological experiences work. In this context, things that we see as real objects can be complicated to describe, for example; visual elements such as colours, textures, and forms are qualities that can create personal experiences and can be interpreted differently depending on how they appear to our eyes. One person can describe an object and see only one colour and no texture; another person can look at the same object and see several colours or maybe patterns. As well, objects can be described differently by different observers, for example, a blue cylinder with a rough texture might be experienced by one person solely by its shape and colour, while another person might see a black square depending on light and the observer's position concerning the object in question.

2.2.1 Perception

To begin explaining the definition of perception in this part of the chapter, I will have a look at the description of Husserl, whose ideas grounded Merleau-Ponty's explanation about how our body participates directly in the process of perception. Husserl wrote about the embodiment of perception, placing the role of kinesthesia (movement sense) as the main factor to perceive. To complete this definition of perception, I will also go through Merleau-Ponty's ideas about the body as a receptor and participant in the embodiment perception.

For Husserl, the first idea to describe perception is kinesthesia, which activates and participates in perception, as movement is intrinsically connected with the visual perception of things. Thus, wherever our eyes point their attention to, the “visual objects activate the kinaesthetic system in such a way that the position and shapes of the objects are “configured” with the potential bodily movements” (Shapiro L. , 2014, p. 9). What he meant, is that through the body in movements things around us can appear differently, depending on our position within a space. In the same way, shapes look different from one angle to another one, depending also on the position of the body in relation to the object. In Husserl's analyses of the embodiment of perception, the body can be understood in two separate ways: a body which is the objective body or the body-as-object (*körper*), which in scientific

terms is a body that has physical parts, and the second; the lived body or body– as–subject (*Leib*), which defines the body as the perceiving body. In this sense, Husserl makes a breakthrough in the way experiences can be explained. We are living bodies; therefore, we have the ability to perceive physically and emotionally. These two aspects of the body are the key when we meet the phenomenon or object. (Shapiro L. , 2014, pp. 9-10)

2.2.1.1 Merleau-Ponty and perception

Merleau-Ponty in his book *Phenomenology of Perception* (2005) stresses the idea of the body as the main receptor, which not only physically contributes to the perception of experiences or sensing of the phenomenon, but also identifies and describes a body schema to explain it. Merleau- Ponty (2005) added to this definition that, since the body is the receptor, it does perceive the world through sensory and motor processes.

My entire body is not for me an assemblage of organs juxtaposed in space. I hold my body as an indivisible possession and I know the position of each of my limbs (Merleau-Ponty, 2005, page 112-11 through a body schema [*un schema corporel*] that envelops them all. (Shapiro L. , 2014, p. 10)

Within the body schema, Merleau-Ponty distinguishes the spatiality of the surroundings and the spatiality of the body. Under Merleau-Ponty's example; our hands are organs not next to me in the same way as the cup is next to me (Shapiro L. , 2014, p. 11). The body schema situates the body as a united whole, which holds and possesses an awareness of the body parts, is aware of the organs it contains and has a certain amount of control over the reactions and the movements the body executes in front of something unexpected. On the other side, Merleau-Ponty rejects the idea of a body with limbs juxtaposed without connection between them. Within the body schema, the body engages with the world while moving, meaning that the body commands the movements as opposed to a body which movements are the reactions produced by random images and sensations. To go further on spatial space of the environment against to spatiality of the body, within the schema the spatiality doesn't mean a space that can be measured, it is a space of situation where environment, movements, reactions, and spatiality are part of a situation (Shapiro L. , 2014).

2.3 Light

In this part of chapter 2, I will go through the importance of light in general; its relevance for this research, and the ideas that have been the basis to focus my observations on. These are the aspects that light has to influence the experiences of spaces, specifically the contrast between light and dark. It is important to clarify how we understand the contrast between light and dark, contextualizing the exploration that is about to take place. We know that light acts naturally during the day, and most common conceptions about light and its properties are generally thought around the sun and daylight. To provide a wider perspective about light, this research contemplated an exploration based on observations of light, in different situations. This includes; different times of the day, different seasons, and different weather. Seeing the same landscapes and spaces in different light conditions will perhaps provide new information on how light can affect our experiences of spaces.

Definition (Oxford English Dictionary)

From a scientific aspect, “Light or visible Light, commonly refers to electromagnetic radiation that can be detected by the human eye” (Andor, n/a). The Oxford English Dictionary defines light as “that natural agent or influence which (emanating from the sun, bodies intensely heated or burning, and various other sources) evokes the functional activity of the organ of sight” (Clarke, K.P, & Baccianti, S., 2014).

Light is a phenomenon that surrounds us and affects almost every aspect of our lives. Like water, it is a vital resource for human beings to survive but one which we may take for granted. Light is a source of inspiration that has led to a series of scientific, social, and artistic developments. Moreover, throughout the centuries and in many cultures, light has been recognized as a symbol of divinity, spirituality, and revelation. Light represents the divine and holiness; it has a direct connection with the power of creation, and in some cultures with the power of God revealed. In cultures, such as Hinduism, light is a symbol of wisdom and triumph over evil, for Christians light represents hope, joy, and love through the advent season. Light represents; the beginning of the creation of the world, the separation of day and night.

¹⁴And God said, “Let there be lights in the vault of the sky to separate the day from the night and let them serve as signs to mark sacred times, and days and years, ¹⁵and let them be lights in the

vault of the sky to give light on the earth.” And it was so. ¹⁶God made two great lights—the greater light to govern the day and the lesser light to govern the night. He also made the stars. ¹⁷God set them in the vault of the sky to give light on the earth, ¹⁸to govern the day and the night, and to separate light from the darkness. And God saw that it was good. ¹⁹And there was evening, and there was morning—the fourth day. (Bible online) (Society, 2011)

From this paragraph, we can infer that light is the beginning of everything, and in this research, light is the starting point of the entire exploration, it is the source responsible for numerous experiences throughout the days and seasons. Even more, light is essential to see what surround us, it is the natural material that provides us with strong experiences in the way we perceive the world. Within the phenomenological approach in this research, light is a presence existing in both day and night, is the source that guides us to see the world from a different perspective, filling spaces with energy and participating as their natural feature.

2.3.1 The light that transforms experiences in spaces

“The sun is the rich source of natural light for the illumination of forms and landscapes (...) While the sun’s radiation is intense, the quality of its light, manifested in the form of direct sunlight or diffuse daylight, varies with the time of day, from season to season, and from place to place”. (Ching F. D., 2007, p. 174).

This research defines light as the phenomenon that transforms the way we experience spaces. We are approaching light and its effects within two contexts:

First, both light and space relate to each other through daily experiences. Light reveals itself by touching and filtering materials and objects, exposing their aesthetical qualities such as colours, textures, distances, shapes, forms, lines, value, and space, even more, light can show us the pass of time. As light touches the physical elements of space, it provides us with a variety of visual experiences that can affect our emotions and feelings and perhaps, trig memories which lead to recognize a specific place (Descottes et al, 2011). Therefore, in this research, when we think about space influenced by light, we think about the “feeling of sense of “atmosphere” (Descottes et al, 2011, p. 11) that spaces provide us. The aesthetical details are mere information, what we grasp and perceive is an experience that contains the aesthetical and the emotional sense of being in them.

Even more, the aesthetical qualities that space can possess and the emotions that we feel in each space will differ in each person according to their own and individual perception. With all this explanation, the presence of light as being part of the natural feature of spaces is perceived in the same way as the rest of the other aesthetical qualities.

Second, within the phenomenology view, we are approaching the understanding of the relation between light and space through movement, with which we discover not only the aesthetic attributes of spaces, as well, we are discovering their essence while moving. To explain it, Merleau-Ponty in his book *Phenomenology of Perception* (2005) takes as an example a glass cube. One can stand outside of a glass box looking inside and get a glimpse of the space inside. Perhaps in this way, one can make up an idea of that glass box. However, for Merleau-Ponty it is impossible to gain a complete understanding of that box with all its vertices, angles, and sides without the body entering that box. This means that it is understood that “without moving I could not access any landscape, as it would be impossible to express myself” (Di Fazio, *Phenomenology of Movement*, 2015, p. 152).

To sum up, we experience light as the phenomenon that contributes to discovering the essence of spaces in two ways; first, by providing us with unlimited aesthetical experiences capturing our attention regardless of how or where we encounter it, and second, by affecting the way we feel about certain spaces, triggering memories, waking up emotions and changing our moods that belong to that specific space. Merleau-Ponty in this matter presents the body as the organ that perceives and the “mediator of the world” (Di Fazio, 2015, s. 151) and adds to this body the movement with which we make sense of everything around us. “Transcendence” is the name we shall give to this movement by which existence takes up for itself and transforms a *de facto* situation” (Di Fazio, *Phenomenology of Movement*, 2015, p. 153). Therefore, once we make sense of our experiences with light we can then, make sense of our own space.

2.4 Spaces

The term space is generally known as part of the visual elements of a picture, painting or landscape. In visual art, space refers to the “area in which an artwork is organized and encompasses both what is inside and what is immediately outside, or around, the work” (Farr, 2018).

“The conventional definition of space had been the empty area between objects”. (Stevko, 2018, p. 27) In architecture, space is defined as the unity of opposites, where figures and contrasting backgrounds meet.

“Space constantly encompasses our being. Through the volume of space, we move, see forms, hear sounds, feel breezes, smell the fragrances of a flower garden in bloom. It is a material substance like wood or stone. Yet it is an inherently formless vapor. Its visual form, its dimensions and scale, the quality of its light—all of these qualities depend on our perception of the spatial boundaries defined by elements of forms. As space begins to be captured, enclosed, molded, and organized by the elements of mass, architecture comes into being. (Ching D. K., 2007, p. 94)

The definition of space in this research is given by the body in movement, it is a space that we inhabit and which has immersive connotations. Francis D. K. Ching, in his book *Architecture: Form, Space and Order* (2007), raises the definition of space through the use of senses. Our senses select and retain the sensory information when we perceive our environments. Thus, the characteristic of a space does not only refer to its physicality, it is also understood as the place where aesthetic experiences occur; it is a space in which each person perceives differently and individually.

In a different field, an ideal definition of spaces is given by Plato who described them as to where “that tangible objects, as perceived by the senses, were perishable and the ideal Forms in the Realm of Forms or Realm of Ideas, could be imitated, but always Imperfectly” (Stevko, 2018, p. 27). What he meant is that the way we see things and objects around us begins from an ideal idea of the form. Within the space, that ideal take form and is shaped by the context in which objects live and exist. However, they will never be the perfect form, since its ideal only exist in our mind, subjectively. For example, if we were thinking about an apple, we would think about the ideas that surround an apple, the ideal form belongs only to us as an individual, and the physical aspect known to us as our recreation is only a mere attempt that never can achieve perfection.

What concerns this research about spaces are three characteristics; movement, by which we discover the physical and aesthetical aspects of a determined space, the immersion which connects us with the space that encompasses us, and the phenomenological aspects of a space which involves spatiality and time. These three aspects define the experiences with light and how we perceive its effects.

Summarizing, from all the definitions exposed here about spaces, what is most relevant is to know what connects us with certain spaces, and from there we will know how to define and describe them. A closer definition is given by the field of architecture, here the definition of spaces bring us closer to the sense of "atmosphere" is known as the sense of place in architecture. To develop a sense of place, we need to understand the "genius loci" of spaces, which translated into English means "the soul of a place." This term explains how we can relate harmoniously with our natural environment by understanding the characteristics of each space. Light provides spaces with a "soul" being part of its natural features, the source that guides us and is present in all spaces. That being said, the daily observation of light within different spaces and conditions opens up a new world to us, where "our visual perceptions and aesthetic responsiveness can be enhanced" (Yot, 2020, p. 12).

2.5 Contrast

As one of the most important principles in art, contrast is the golden rule for creation. It is defined as the "juxtaposition of difference, used to intensify the properties within a work, the contrast in art is closely related to the variety" (Silka, 2016). Contrast is a tool to call attention to compositions, it can be described as the "dramatic difference between elements in a composition" (Field, 2018, p. 42). In the same way, the definition of space is created by a unity of opposites, where figures and contrasting backgrounds exist, contrast cannot exist within a space without a variety of opposites of forms, textures, colours, shapes, sizes, and values, etc. In architectural lighting, contrast is defined as "the juxtaposition of light with its counterpart, darkness—is necessary for us to distinguish foreground from background, positive from negative, architectural form from space" (Descottes et al, 2011, p. 60).

Contrast is an important tool when it comes to design anything. Either in a two-dimensional composition or real three-dimensional spaces, contrast stands up as the union of opposites found between shapes, colours, time, textures, sizes, or values. What matters about contrast is its function, which is to capture our attention whether is intentional in a composition or as spontaneous as in nature. The main focus of this research is the contrast between light and dark and its effects on how space can be communicated and interpreted in a work of art. To do so, I am taking the examples of how contrast is applied in a two-dimensional format, and how contrast is applied where light intervenes spaces, immersive and three-dimensional.

The contrast in both formats helps us to find the focal point in the composition, regardless of how it is presented. Often, and spontaneously, our eyes are attracted to where contrast exists. In terms of light and dark, our eyes scan everything visible to us. As an example, if we take a blank piece of paper at first, we see that nothing is there to capture our attention or specifically, nothing that directs our attention. If we draw a small dot in the middle, our eyes spontaneously are drawn to that point. In the same way, contrast acts in the composition of spaces. A clear example is a dark room, if we leave a single lamp or candle in the room, our eyes will know where to look. This means that an area that possesses a high luminosity only appears bright unless it is surrounded by an area of low luminosity.

2.5.1 The contrast between light and dark

How we perceive contrast through the human eye is marked by the amount of light existing in our visible area. During the day, we can rely upon our eyes to see the world, in the darkness, the world is hidden from us and our vision loses its importance while other senses become more alert. To go further on the explanation of the presence of contrast between light and dark, my exploration takes this particular property from light to discover how it can be used to simplify the description of a space, and how this description can be communicated in a work of art. There are two ways to understand the contrast in this research, the first is to be explained how the effect of contrasts between light and dark creates shadows during the day and night, and the second through two-dimensional images where sketches, drawings and paintings are the methods to explore the essence of the experience.

“We find beauty, not in the things itself, but in the patterns of shadows, the light and darkness, that one thing against another creates” (Tanizaki, p. 30)

How we perceive light and dark, with all the characteristics that this implies is different for each person and will depend upon memories, beliefs, cultural background and probably the physical surroundings where we were brought up. Jun'ichiro Tanizaki, a Japanese writer, examines in a short essay “A praise of shadows” (1933 – 1977) comparing the Western culture's appreciation of all things light and bright with the Japanese culture's appreciation for things that exist in shadows and darkness, mentioning how in the dark we discover a new world where things acquire another type of beauty. In this context, Tanizaki praises the light that occurs in shadows and darkness, exemplifying it through the daily aspects of the

life of Japanese culture, how shadows and dark are as important as the natural light during the day. Appreciating shadows and darkness does require an openness to see the negative aspects of things, the lack or absence of light makes something look mysterious and desirable, the minimalism of things that conceals beauty in a settled manner. On the contrary, the differences between light and dark can be perceived differently. This means that excessive light can disturb a mood, while darkness can be associated with the negative and danger, isolation or suffering, it does in some way accentuate the beauty of spaces and things.

The contrast between light and dark has great influence on our physiological responses, for instance, our eyes change to process lower levels of light; therefore, what we perceive in the absence of light is a visual transformation. In phenomenological speaking, this goes onto the quality of light, which has a role especially in our responses to a specific space, it can trig our “intrinsic fear of the dark, or gravitation towards light” (Descottes et al, 2011, p. 18). In the same way, during the night, artificial light has the responsibility to guide us to navigate our way through the darkness as well as help us to perform tasks within a space. Because of these two explanations, people and societies have represented light as a synonym of faith, safety and emotional reassurance. (Descottes et al, 2011).

Besides, the aspect of contrast can be appreciated in a two-dimensional format and is often associated with the changing value between light and dark tones. When we have this type of opposites, our eyes tend to gravitate towards the point, where these two values meet. In art this technique is known as “chiaroscuro” which is a translated word from the “combinations of two Italian words - *chiaro*, “light” or “clear”, and *scuro*, “dark” or “obscure” (Seiferle, 2021), an artistic method used by painters, photographers and artists, in general, to use “gradations of light and shadow to create convincing three-dimensional scenes where figures and objects appeared as solid forms” (Seiferle, 2021). One of the most-known artists who became *grandioso* using this method during The Baroque period was Michelangelo Merisi da Caravaggio (1571 – 1610). His use of light and shadow to produce drama in his paintings made a mark in the history of art.

In most of Caravaggio’s paintings the intense dramatic light does not come from imagination or unrealistic sources, is a light that we see in real life in sunrises, sunsets, or night lights. What is most attractive and relevant about the “chiaroscuro” to this research is the intentional use of light to create a certain atmosphere to draw the attention of the viewers to a specific

area in a work. Also, the high contrast of the backgrounds against the lighter figures on Caravaggio's paintings infers make them feel not only with a three-dimensional feature but also real and concrete.

During the exploratory part of this research, it was important to enhance how light changes moods and emotions in spaces, so to investigate this aspect of light, a series of compositions made by charcoal has been used to explore how the accentuation of the contrast between light and dark areas can transmit emotions and feelings using a single light point. As well, the importance of the creation of an atmosphere is explored to transmit some feelings and emotions from the observations planned within the practical work. As a bridge to understanding this aspect, the Baroque period in which Caravaggio was painting, has a religious connotation within Art history. In a way, Caravaggio's paintings were Catholic propaganda against the Protestants. In this context, the light was not only used to spread the catholic doctrine of the church but also, used to recreate a light that represented the salvation of believers.

Following the same aspect of light and the contrast between light and dark within the practical exploration, the use of black and white colours will be present. The idea of simplifying the description of the experiences of light within spaces has been approached by creating paintings in black in white. Reducing everything that is redundant and interferes with the perception of spaces, we can leave only some essential and organic shapes to capture the essence of the experience. This method of capturing the essential parts of a subject is what in visual language represents the negative space in between objects or part of the objects. The negative space allows us to paint something that has been prior observed and grasp the essential parts of the subject and represent it in a work. "Instead of painting what is in front us, we paint what we know and remember about the subject" (Boddy-Evans, 2017). The negative space in painting allows creating a much more accurate shape of what has been observed by reducing all details and leaving the essential idea of the subject. In a way, working with negative spaces makes us develop better, if not more accurate observations of the world.

Within the educational field, a similar method is used in Montessori education, in which children are gradually exposed to concrete objects and their surroundings, throughout activities in which all senses are performing. Touching, smelling, tasting, looking and hearing are how children make sense of an object or situation from concrete to abstraction. When

children are presented with monochrome cards in which the figure appears with a simple outline, they can grasp information that relates to the subject then, the “representations which were concrete to the vision and touch return to their mind“ (Montessori, 2004, p. 170).

2.6 Light and Space Movement

In this part of the chapter, it is important to remember the relation between light and space in this research. Light is a constant source of energy that gives us a sense of wellbeing and provides us with uncountable visual experiences within spaces. Visual experiences are not reserved just to our eyes, under the phenomenological view from Merleau-Ponty (Phenomenology of Perception, 2005) the entire body in movement participates experiencing as the receptor. How we perceive our surroundings is different for each person and therefore non-repeatable to others. The play occurring between light, perception and space, is the main concern for the light and space artists.

The light and space movement origins were in southern California around 1960. This period was historically marked by the Vietnam War, the first visit of men to the moon and many technological advances such as; the aeronautics materials were making history in this period. Between the 1960s and 1970s in the USA, a group of artists became fascinated by the application of new technologies in lighting and materials; whether directing the flow of natural light or set in artificial light in a single object, architecture or exploring and playing with light and its properties: reflective, transparent or translucent materials (Clark, 2011). Each of these artists produced works capable of “stimulating heightened sensory awareness in the receptive viewer” (Clark, 2011, p. 20), defining the work with light as mostly “about the exploration, it’s about the encounter, it’s about the journey into that work. So it’s a different experience, but it’s all about the experience. Helen Pashgian (KCET-TV, 2020)

Although neither of them was consciously part of this specific movement, and deny artistic relation in between them, all shared an special interest in the study of space, perception and the “immaterial and material properties of light, as well as its potential of occupying the entire space” (Nikolic, 2017, p. 48). Among the artists in this movement is Robert Irwin (b. 1928) and James Turrell (b. 1953) whose works not only stand out by their experimentations with light, space, perception and nature, but also in the inclusion of architecture projects to create their immersive installations, and Larry Bell (b. 1939) who works with light over a long term

through the use of materials such as glass (Clark, 2011). In the following paragraphs, I will go through each of these artists briefly, pointing out the way they have been working with light, space and perception, and their specific use of contrast between light and dark.

Robert Irwin was born on September 12th, 1928 in Long Beach, California. He studied at the Otis Art Institute, the Jepson Art Institute, and the Chouinard Art Institute in Los Angeles. He began his career as a painter, making large scale paintings, using a mixture of texture and gestural brushwork, very much as Abstract Expressionism. Frustrated with the restriction of the medium and unable to transcend his spatial environment, Irwin commences an exploration in which he is “interested in eliminating the appearance of the imagery from the work” (Clark, 2011, p. 23). Working with series of reductive experiments in response to the excessive confinement that canvas offered him, the results of the reductive experiments; lead him to create a format of parallel lines floating on a monochrome field (Clark, 2011). In many respects, Irwin had already started to investigate the process of seeing and perception. In these works, he played with the viewer’s attention span, drawing parallel lines near to the top and bottom of the canvas. To play with the space in these works, Irwin made the “canvases subtly shaped so that the centre projects forwards slightly and slopes back gently towards to the edges” (Clark, 2011, p. 23). After completely stopping painting, he began to experiment with discs, to abandon completely the square shapes of the canvases. Irwin explains that “The reason for the circular disc, “he recalls, as opposed to making them square, was that that eliminated the four corners, corners being powerful focal points, whereas what I was after was an evenness of presence” (Weschler, 1982, p. 101). With the discs, Irwin will shape light, space, and the circular form of the discs to create an ephemeral luminosity (lone, 2004). What is most relevant about Irwin’s works is the idea behind of light and space that nurtures an immersive environment, where a flowing light is recognized through an embodied perceptual experience. What is most relevant about Irwin’s works is the idea behind light and space that nurtures an immersive environment, where a flowing light is recognized through an embodied perceptual experience. On the other hand, it is remarkable how his work creates spaces where light not only is the key to start and complete an installation but also the element that directs viewers to shift their perception, while movement is happening. In *Marfa Texas (Untitled, down to dusk, 2016)*, he uses the contrast of light and dark in a large scale installation. In a building that has a “C” shape, he divides the entire site into light and dark halves. Each side has a number of windows that receive the light from outside and in each long hallway, white scrims on one side with clear windows

and black scrims on the other side with tinted windows are centred (Bennett, 2017). The high contrast between light and dark is as jolt and vivid as the viewer moves from one corridor to the next. The shifting between the corridors is almost a blind experience of light that occupies the entire space and vice-versa where the darkness encompasses the space. Irwin explains, that the entire installation is not only a thing you see “the light is the event of the moment, the event of the day” (KCET-TV, 2020), it is an experience in constant movement, which occurs when the viewer walks either forward and backwards along the corridors. Any direction chosen is a moment where the viewer lives a distinctive and unique experience.

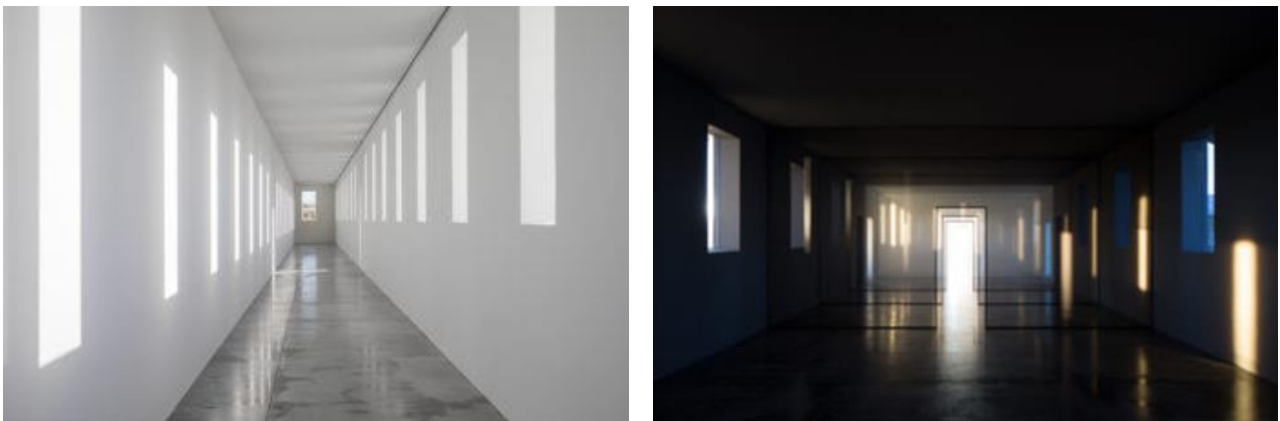


Fig. 2 and 3: “untitled (dawn to dusk)”, 2016, by Irwin R.

“You can’t see anything if there is not light and you can’t put anything down unless there’s space, so everything that has to do with anything with weight and mass has to do with light and space also” *Larry Bell* (KCET-TV, 2020)

Larry Bell was born in Chicago in 1939. His family moved to California in 1945, when he was five years old. His formal studies began in 1957 when he enrolled at the Chouinard Art School to study animation. As a part of the curriculum of the same school, Bell assisted to painting classes where he met the instructor, Robert Irwin. Irwin introduced and exposed Bell to “ideas associated with what he described as “Perceptualism” (Enholm, 2021). From being a formal painter, Larry Bell slowly became interested in the effects of light in spaces, especially the combination of light and reflective materials. His first paintings are also very influenced by the emotional and gestural brushes from the Abstract Expressionism (*The L. Bell’s House*, 1959). While working with volumes, he started to eliminate the textures of the strokes, leaving the painting flat using opaque colours. More as illustrations of volumes

(*Little Blank Riding Hood*, 1962), he represents a red cube “whose top left and bottom right corners are clipped, suggesting an isometric projection of a three-dimensional form” (Clark, 2011, p. 34). Later, Bell realized that in order to work with volumes, he needed it to create the volumes. So he began to work with glass. While working in a small frame shop cutting glasses for the picture frames, he engaged in a series of experiments with glass. Since it was easy to get and not so expensive, his studies go onto exploring the quality of the surfaces of glass and its three major characteristics; glass transmits, absorbs and reflects light, all in one material and at the same time. Experimenting with glass, Larry Bell is interested in how the cutting edges of the glass “contained a space and that space between one side and another side compressed light” (KCET-TV, 2020). In terms of space, in his work “6 x 6 An Improvisation”, 2014, Bell worked with glass and sculpture, adding an idea of peripheral vision which could involve and encompass the viewers. To do it, he worked with large scale sculptures; the larger they were, the more environments and immersive his installations became. The configuration of the pieces and the given spaces, go according to the space they work is sitting on, so the light changes with the variations of the weather, time, seasons, etc. The continuous work of Larry Bell is reflected in his constant interest in time, seasons, the properties of light, especially the phenomenon that occurs when light hits different surfaces. Glass as he put it, is an inexpensive material that in combination with transduced films³ (“Iceberg and its shadows”, 1975) changes the way glass reflects, transmit and absorbs light.

³ The process that Larry Bells uses in his works with glass and translucent films is called “thermal evaporation in a vacuum, which mixes materials that are easily adhere well to glass”. **Invalid source specified.**

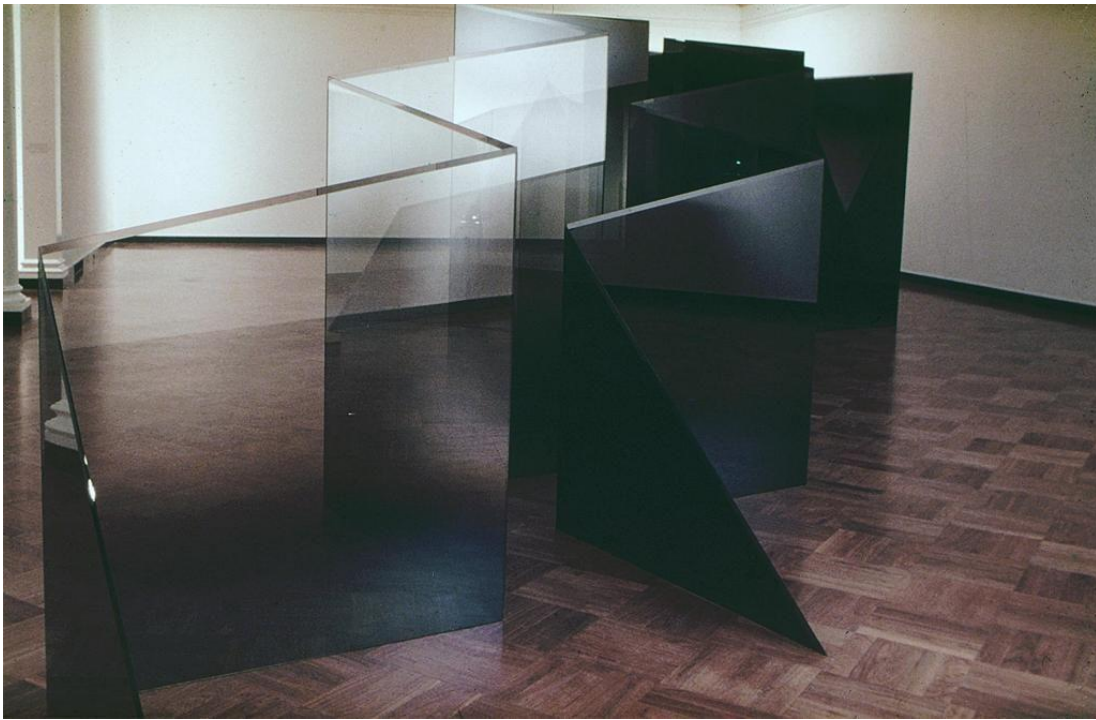


Fig.4: "Iceberg and its shadow", 1975, by Bell L

James Turrell was born in Los Angeles in 1943. Son of a very religious family with Quaker roots, his first encounters with light were during afternoon meetings in his grandmother's house. The beginning of his career did not go directly to the Art world. His beginning was as a pilot when he was 16 years old. His artistic career will begin while being a psychology major at Pomona College in 1965. He was interested in art history especially; he was drawn to the works of Mark Rothko of who he decided to see in one of his exhibitions. After seeing it, he felt disappointed as it did not produce the same effect as he thought to have when he saw it on a slide projector. This episode will mark the beginning of his career as an artist. While studying in Pomona, he began his experimenting with fire flames. During his period in college, he continues experimenting with this light. Turrell is recognized worldwide for his incredible light-installations. His works explore perception, colour, space and his main sensorial material is light, both natural and artificial. By controlling, forming and manipulating the qualities of light he creates experiences where the viewer perception can apprehend a feeling of disorientation and confusion. He is one of the former artists associated with the art movement Light and Space which began the middle of the 60's in South West of California. Turrell's work purpose is to create spaces where the viewer's perception is captured by light and colour.

The most famous works of Turrell are the Skyscapes, in which the ceiling of the room has a big hole where the visitor can appreciate and enjoy the colours of the sky. The natural light creates a luminous atmosphere and environment inside of the room as we have seen in The Mark Rothko Chapel. For him, “Light is not so much something that reveals, as it is itself a revelation” (Shaub, 2015).



Fig. 5: "The Color Beneath", 2013, Turrell J.

2.7 Summary

From the beginning of the world, light has been a constant focus for studies in all different fields. Light connects us with religion, culture, societies and history. It is the thread for everything we know and we don't about our world. This chapter had as the main focus to provide a theoretical context with which this research has supported its method, practical exploration and conclusions. From phenomenology and the theory of perception by Merleau-Ponty, who opened up discussions for this research, on how to approach light and its innumerable aspects within spaces as well as, giving the first step forward toward the understanding of how we experience spaces through movement. In this chapter, it was also clarified the aspect of the contrast between light and dark, approaching it from different perspectives and fields; architecture, fine arts and design. This golden rule in this research is the tool, with which I aiming to communicate and interpret my perception about spaces. Last, but not less important, this chapter has approached light as a source of inspirations by looking through the achievements of the group of artists from Light and Space who following their own questions about perception, embraced light as their primary medium to create their work.

3 Methods

This chapter has as the main purpose to explain the strategy required to provide answers, conclusions, results and contribute with some guiding knowledge for perhaps further studies. The methodology chosen in this research is an effort to explore the ways that light influences the experiences with spaces and as a result, new meanings and familiarities can be created. As well, the exploration of light through the contrast between light and dark will be approached to discover its use in the description and communication of the soul of spaces in an artwork.

How can light affect our experiences of spaces? How can the contrast between light and dark be used for communicating and interpreting space in a work of art?

This research uses a qualitative method which proposes not only to build a visual idea of how light behaves through the contrast of light and dark at certain times, but it is also an exploration that seeks to expand the possibilities of how to describe a space through significant experiences, that is, where the aesthetic and emotional are equally validated, as a part of the essence of experiences. For instance, the reactions that my body may generate during the entire exploration such as; body postures, different moods, augment of sense new smell, different sensations by the changing atmosphere that provokes for example; walk through a tunnel feeling the cold inside, or the warm sensation of having light in the face is data that is crucial to observe.

3.1 Phenomenological Approach

“Any attempt to gain a comprehensive understanding of the human mind must at some point confront consciousness and subjectivity –how thinking, perceiving, acting, and feeling are experienced is one’s own case”. (Gallagher & Zahavi, 2012, p. 19)

Phenomenology studies the essence of a phenomenon, therefore the researcher who is looking to explain it, requires an attitude that is always reflective and observant toward the phenomenon and to everything that concern how “human beings live through experiences in the immediacy of the present that is only recoverable as an elusive past” (Quinn P., 2015,

p. 115). From the phenomenological approach, I have considered three main ideas with which I have based the method chosen on this research.

The first idea is in connection with the way we encounter the phenomenon (object). This research takes some of the ideas that Husserl described concerning the natural attitude of the observer towards the phenomenon. An attitude that each of us possesses in a form of previous experiences, which causes preconceptions in the way we approach things around us. To eliminate this process, within the phenomenological approach we must use “bracketing” a method through which we suspend all kind of biases, allowing us to have a raw experience. The natural attitude is approached in this research, as a reminder to keep a level of openness to perception, approaching experiences as if I was discovering things for the first time, using my senses to my best ability. Children's attitude is very similar; they are ready to learn in such a spontaneous way, without the troubling of subjectivity. This position in front of the phenomenon will be considered within the observations in terrain which includes; natural and urban spaces, as well as the attitude to approach my creative process at home.

The second idea concerns Merlau-Ponty and his recognition of the body as the main perceiver. In my process to understand my experiences with light regarding the contrast of light and dark, this research approaches experiences not only labelling them as visual but also as experiences where the entire body participates in perceiving. Body and embodiment are fundamental parts to sense the phenomenon. Merlau-Ponty conceives the body not only due to its physical presence but also as a body that perceives and senses through movements. Movements are how body and mind are united; the subjective and objective are present within the body in movement. This positions me as the observer, but also, as the object to be observed, rendering myself with the spaces. This approach is also a central point to observations.

The third idea concerns the validity of the exploration and the objectivity of the method. There is a constant question in my head regarding how a method helps us to keep control of the data gathered and retain creative freedom during the creative process. In my exploration, the “subjective data” is produced by senses, feelings and moods while the experiencing is happening. This is the invaluable importance of this data, which is the base of the phenomenological approach which seeks to understand the essence of experiences.

On the other hand, it is important to maintain a certain control over the data gathered, to meet certain scientific conditions that allow me to select and analyze it. This is the data that corresponds to the aesthetical qualities that light provides to spaces, which I will be experiencing through my observations. This is the main core to explore how the contrast between light and dark helps us to describe and communicate spaces in a work of art and how my creative process will be served by it. Therefore, reflectiveness through documentation is necessary.

3.2 Research methodology

Light has different ways to unveil its visual power and therefore, each person perceives light and its effects in different ways. In the same way, the contrast between light and dark is perceived. I took a chance and tried to come out with a strategy that could keep the objectivity of the analysis within the entire exploration, without losing the poetic side of my descriptions. Therefore, perception within the exploration plays an enormous role, given that it is a mixture of sensations and consciousness during the practical exploration.

3.2.1 Observations

Observations help us to acknowledge what is happening around us. Therefore, it is fundamental that we practice to become skilled observers and persevere on dedicated and reflective observations. "Indeed, a major purpose of observation is to see firsthand what is going on rather than simply assume we know" (Quinn P., 2015, p. 331). Through my exploration, the key method to gather information was direct observations. This method allowed me not only to put myself as the observer who was receiving the information but also to become the subject that needed to be observed, to register my responses. To keep a systematic record of what was happening; my observations were recorded with voice recordings, pictures, notes, sketches, and sometimes with short videos. Observations are a powerful tool that allows researchers to "systematically documenting what they see, and reporting what they learn for our common benefit" (Quinn P., 2015, p. 329). Besides keeping a steady source, descriptive notes were written to self-reflect over what I was seeing and feeling, gaining a deeper understanding of my experiences. The notes are written in retrospect, which helped me to review and experience them again. In this way, I was able to describe my experiences as if I was living the experience in the present moment and "first-person" (Quinn P., 2015, p. 115).

Being a qualitative exploration, I will be able to generate my own research material and data; by visiting specific places such as natural and urban environments, and by producing my artistic work. Observations are the method which produces important data; which are personal reflections that help to select relevant material and finding the commons to be categorized and analyzed. These reflections "on action and in action" (Gray, C., & Malins, J., 2004) will be translated into pictures, drawings, sketches and descriptive notes. In addition, this research involves producing my artwork which will be translated onto charcoal drawings and acrylic paintings to gain an important practice and knowledge about the use of contrast to communicate and interpret spaces in a work of art, which finalizes with the production of an art installation.

3.2.2 Practical exploration: Strategy

3.2.2.1 Phenomenological observations in the field:

Phase 1: Series of light moments.

Goal:

Explore moments of light and to what extent these moments can influence and create different moods and feels of spaces.

The phenomenological observations in the field took place between July 2020 and February 2021. They were performed in a series of visits to different places which included spaces in nature and urban environments, which started as specific sites to visits such as the park next to my house, Frydentopp and Kverndammen in Porsgrunn; some of the pictures were taken during walks with no specific direction. This way, I was able to capture a variety of light moments which were determined by the time of day, the season of the year and different weather conditions. These observations were documented with descriptive notes, pictures and sketches made in my process diary. The series presented in this phase was divided into two categories: day (natural) light and night (artificial) light. This selection was made after the pictures were taken, in this way I avoided having an intention that could interfere with the spontaneous attitude I was looking for.

Merleau-Ponty and his phenomenological approach are fundamental in this phase. To perceive or sense, my body moves, and through this, perception occurs before consciousness awakes. The way that we become aware of things, under Merleau-Ponty is through embodiment perception. The videos, pictures and sketches are the concrete

material of what I perceive, as well as the concrete presence of light moments. I see them, without changing them or controlling them. “Body is a form of consciousness” (Romdenh-Romluc, 2010, p. 62) and through it all senses are open to perceiving.

Repetitive visits to the places during this phase were the way to understand not only the experiences with light but also space where I live and stand. The more frequent I engage and blend with the surroundings and the landscapes, the more chances I will have to build up my concept about the spaces. Therefore, it was important at this stage to create a connection with the spaces so; I can feel part of them. In this way, I can allow myself to concentrate on sensing. To do it, I will only walk and let my imagination run free, taking random photos of elements that capture my attention of the moment. Yet, there is no intention behind it. Light is always there. This is the phase where I will try to blend in with nature.

3.2.2.2 Phenomenology and the soul of spaces:

Phase 2: Series charcoal

Goal:

To find the essence of my experiences collected in the previous phase and divide them into two aspects: The emotional meaning of how I felt and the objective meaning of what I saw.

The illustrations with charcoal were done from October 2020 until January 2021. Throughout this phase, my goal was to interpret the emotional side of my findings in phase 1. I recall how I felt during my walks and analyse through detailed observation, what was the light doing on the picture, its source and direction. To begin this phase, I looked at the pictures I took in phase 1 and selected those that had the potential for further work using charcoal. The creative work presented in this phase is based on three main sources: the phenomenological observations with descriptive notes of my experiences in situ, my dated notebook with sketches and the pictures taken in those moments.

I chose charcoal to work with for two reasons; first, drawing with charcoal is a technique with which I did not have much practice, and with which I had always difficulties translating three-dimensional images onto two-dimensional formats. Therefore, working with this art medium would be a good opportunity to get a deeper insight into this technique, as well; this insight would be useful in my future lessons teaching this technique. Second, charcoal had a

presence being an organic material, in the sense that allows a more tactile and direct experience between the material and hands, as it does not go through another medium to use it. Besides, the direct contact between skin and material made this body experience more meaningful and tangible.

The phenomenological approach is present in this phase, during the creative process. Looking at the pictures with no intention behind them, I found myself immersed in another spatial situation. While I was looking intensely at the pictures I relived the emotional and bodily experiences lived in the pictures as if I was there again. Body and mind became immersed in that memory. The pictures became the exact description of my experiences. Then, I began to paint, moving my fingers in order to control the charcoal, moving my arms to release the tension in my fingers, then my body which at some point needed to move around the room to stretch. This is the method that I repeated during the entire phase 2. With time, my fingers, arms and body did adjust, as if they had memorized how to approach the charcoal and the illustration.

The description of each of these series has two types of analysis; first, a phenomenological description where I describe my experiences while I was drawing and painting. Second, is a description with a technical and detailed observation, in which I tried to decipher the source of the light, directions and effects produced by the light in the particular picture seen. Here, I chose to make technical descriptions of the actual work with objective registrations, to look at possible comparable findings.

3.2.2.3 Ideas into forms:

Phase 3: Black and white series

Goal:

This phase of black and white aimed to simplify the experience by capturing the essence of the images and transforming these observations into practical work, as well as to explore my artistic side by producing personal works.

The paintings shown in this phase were made between October 2020 and January 2021. Some of the paintings were created during and after the charcoal phase.

This phase corresponds to my practical exploration working with an acrylic medium, as part of my personal interpretation of the contrast between light and dark. During the process of

exploring contrast, a constant question was how to deliver an image of space, where the essence could be described and communicated simply. In the previous phase (2), I explored how charcoal could be useful to express the emotional side of the experiences by working with different tones between light and dark, creating and finding a focal point to begin a composition to finally shape the space.

In this phase, one of my goals was to explore my artistic side by producing personal works. My choice was to achieve a work that could be abstract and minimalistic. I was inspired by the work of Larry Bell, whose first works were focalized on how to achieve three-dimensionality on canvas. In his work "*Little Blank Riding Hood*" from 1962, after several intents, he realized that by reducing the imagery on the image and the brush strokes, he could concentrate the focal point in only one shape. In the same way, minimalist painters used this method to make viewers concentrate on the object in the space. Therefore, to begin this series, I concentrated on the high contrast between black and white and with it; I painted the main subject of the picture and removed all the details and objects around the subject. My intention with this was to avoid producing a figurative copy of the photos and produce my own perception of the space using the contrast of black and white.

The phenomenological approach in this phase connects Merleau-Ponty and his ideas of how artists deal with what they see and how it is communicated onto their works. Artists, especially painters make lucid visions of the visual experience they perceive in reality. What artists produce is their perception of their visual experiences and not, a recreation of them. The relevance in this idea is directly connected to what is intended in this phase, which is consolidating and materializing my perceptions by reproducing my own work, or under Merleau-Ponty my perception of my experiences. In respect to the body, movement and perception, Merleau-Ponty theory connects us with the minimalism routes which are grounded on embodiment and space. Phenomenology looks to find the essence of the experiences, and in this phase, I am approaching it by reducing everything that does not represent the essence of the space I am looking at. Same as the previous phase, the observations are based on the actual pictures. The body remembers and acts by moving the eyes, looking for a focal point to rest and begin the composition.

The description of each of these series has two types of analysis; first, a phenomenological description where I describe my experiences while I was painting. Second, is a description with a technical and detailed observation, in which I tried to transform the essential objects

in the images into simple geometric shapes. As well, technical descriptions of the actual work with objective registrations have been registered in order to look at possible comparable findings.

3.2.2.4 From 2D to the box:

Phase 4: Installation

Goal:

To work in a three-dimensional space where the emotional and the objective side of my experiences and findings can come together in an artwork. As well, create an artwork where the viewers can perceive and experience their interpretation of space.

Phase 4 is presenting my proposal for the exhibition, which corresponds to a series of pictures in which I am presenting the last trial towards the installation. These experiments with silhouettes began as a way to self-reflect and explore my findings in a three-dimensional format. This is a phase where I begin to interpret my discoveries of how contrast was helping me to describe spaces, in terms of effects, different values, and different types of light (natural and artificial light) and also, was the beginning of my creative process to convey all that I have learnt and understood in a three-dimensional format. As well, in this phase, I am applying a mix of the techniques learned in the previous phases to concrete an artwork that can represent the entire practical exploration. Throughout the entire exploration I have used, pictures, descriptive notes (which are written in a retrospective form) and sketches to keep a constant source of inspiration and guidance to remind me how I have been and I will proceed and where my findings come from.

Three main ideas have been used in this phase to put together the installation: Immersion, three-dimensionality and movements in the space. During my research, I have referred to spaces in three main ways; the first one, as the place where we live or our closer surroundings, second, the sense of atmosphere that creates an idea of space, which is in my research refers to the emotions, moods and feelings that I am going through while I am experiencing those spaces and third, the space which is created by the contrast between light and dark in spaces. Immersion, in art, is usually a term used to describe an artwork/installation art in “which viewers can physically enter, and which often described as “theatrical”, “immersive” or “experiential” (Bishop, 2005, p. 6). This definition is one of the keys to this phase since it is also related to the idea of movement.

The phenomenological approach in this phase has its routes in what Merleau-Ponty described as perception embodiment. Here not only the body participates in sensing and experiencing but also, is the body that completes the artwork. Given that this research is seeking to find out the influences of light in our experiences with light, this phase seeks to subject the viewers to take part in experiencing through their perception. This is an act that Merleau-Ponty enhances and describes as a perception that is not passive or entirely visual is instead, a combination of the visual, bodily and emotional. As well, I am coming to the point to discover the essence of our experiences with light within the spaces by connecting these two elements through the contrast between light and dark. Here contrast also plays a role within the perception, because it is the tool that I will use to create a sense of space, that I expect viewers can make their own.

3.2.3 Practical exploration: resume and selection

The categories in each Phase are part of the development of the study of contrast and their associations that in this research have been observed. From the first phase in which the selection was made after the observations took place until the last phase 4, in which the techniques were elected to consolidate the three main ideas for the installation. Additionally, all the observations after phase 1, were made from the actual pictures taken during the visits and walks to the spaces in nature and urban environments.

Phase 1: Perception in the field:

- Phenomenological observations: pictures, notes, sketches and voice recordings

Phase 2: The soul of spaces

- Series charcoal: Drawings at selected pictures using charcoal.

Phase 3: Ideas into forms

- Series black in white: Paintings at selected pictures using acrylic.

Phase 4: 2D to 3D

- From the process of drawing and painting to installation

Table 1: The table is showing how the practical exploration was divided and categorized

CONTRAST BETWEEN LIGHT AND DARK	
<p style="text-align: center;">Phase 1: Light moments Observations: Nature and urban spaces Pictures, descriptive notes, sketches and drawings Daylight – Nightlight</p>	
<p style="text-align: center;">Phase 2: Series charcoal Observations: Nature and urban spaces Descriptive notes and drawings Light – Dark</p>	
<p style="text-align: center;">Phase 3: Series acrylic, Black & white Observations: Nature and urban spaces Descriptive notes, sketches, drawings and paintings Black – White</p>	
<p style="text-align: center;">Phase 4: From 2D to the box Observations: Nature and urban spaces Pictures, sketches and painting Installation</p>	

4 Practical exploration – Creative work

The practical exploration involves 4 phases, in each of these phases I will also carry out a few trials. The data collected at each stage of the study was taken through observations, voice recordings, sketches, and associated photos, journal notes, and conversations with friends and some colleagues. The phenomenological perception is presented through passages recorded while the data was collected. These passages are present in each of the phases, they are described in the first person and they are accompanied by selected images to facilitate the understanding of the text.

Table 2: Shows the different phases of the practical exploration and creative work

Phase	2018 – 2019	2020	2021
Practical exploration – Phase 1			
4.1 Light moments			
Creative work - Phase 2			
4.2.1: Series charcoal: drawings			
4.4.2: Series acrylic, black and white paintings			
4.3 Phase 4: From 2D to the room			

4.1 Phase 1: Light moments, phenomenological observations

Table 3: Overview phase 1

CONTRAST BETWEEN LIGHT AND DARK	
Phase 1: Light moments	
Observations:	
Pictures, descriptive notes, sketches and drawings	
Natural daylight	Night light/artificial light

The idea of this phase 1 was to observe how light behaved not only during the day but also how it behaved during the night with artificial sources. Given that the observations were made from June 2020 to February 2021, the light changed from one season to another. This characteristic is noticeable especially in those pictures that were taken from the same point.

The main source of natural light is the sun, which will make light have different characteristics at different times of the day or in different weather conditions. As well, given that the purpose of this phase was to observe how light behaves in different spaces, the exploration contemplated different scenarios such as spaces in nature and urban spaces. The goal in this particular point was to have as many examples of light's behaviour as possible, so natural light and artificial light could have the chance to act and make visible their effects at the same time. Generally, the route followed during the visits was similar, which means that I walked and made temporary stops to take photos from where I was standing at that precise moment. Occasionally, I changed the locations, this allowed me to have more opportunities to see the effect of light in different scenarios. Sometimes I changed also the route to varyate the perspective of the place and eliminate patterns that could interfere with the live-in experiences. Sometimes also, I changed the speed of my walking, to see if this affected my experiences, for example, where my eyes were drawn repeatedly to the same point.

This phase comprises five groups of pictures; each of them has been selected to produce a wider range of visual and body experiences. The pictures show my most remarked visits to the places chosen as well areas where long walks took me. In all of them, my senses, the mood, the vision and even more my body postures were affected by that particular moment of light. The following groups are; lines follow shadows, limitless environments: nightlight immersive environments, sense of depth day and night, skylight, contrast the minimalist environment and light illuminating surfaces.

4.1.1 Lines follow the shadows

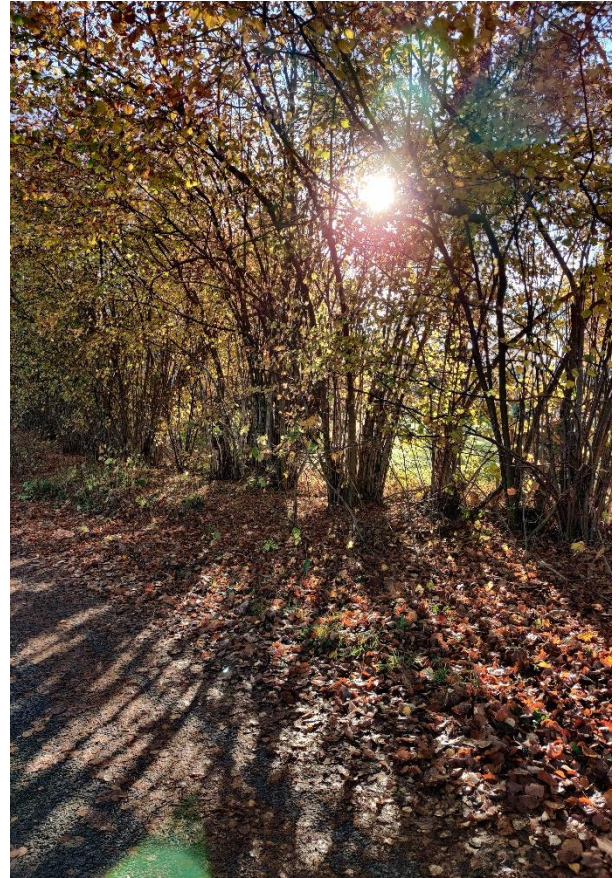
October 2020

It is Sunday morning; the sky is clear and blue. I can smell the rain from last night. The fallen leaves cover the ground, but some trees keep the colour green. Some trees have already lost many leaves and light come through the trees and hits the ground. I feel the ground soft,

and I look down while walking. I see that the leaves on the ground have created paths. They look browner. The sunlight is coming from the north and is hitting my face and eyes. The sun is behind the trees forming long and defined black shadows on the ground. Lighter and darker contrast occurs on the ground. A series of darker and define lines have emerged. I follow the dark long shadows on the ground. The sun moved the lines too. In addition to this observation, I sketch to capture the effects. I continue looking at the shadows coming out from and in between the branches. From where I am standing, I see the light hitting the threes on the side. The trees look huge; the diagonal shadows of the trees have created a pattern on the ground. I turn to look at the sun that is between two trees, and the leaves on the ground scattered on the ground look darker. I move toward my right, to avoid the sun in my eyes. The entire landscape has intense colours and now evens the sky look shinier.



Pictures 1 and 2: Show the light passing through the trees. Shadow spreads on the ground of Kverndammen, Porsgrunn.



Pictures 3 and 4: Vallejo, C, (2020): These pictures show the light passing through the trees. Shadow spreads on the ground of Kverndammen, Porsgrunn.

This effect will appear many times on my visits, black, dark, light and white areas. Space becomes bigger, everything looks shinier. This observation corresponds to one day visiting Frydentopp. The phenomenon I have concentrated on today was the long and dark lines coming from the trees. Along with the visit, the lines have been outlined in different sizes and forms, they have covered the ground in different shadow patterns, some long and thin others, small and round covering the entire paths with small dapples of light.

4.1.2 Experience and finding

Light makes shadow lines on the ground when it hits the trees.

The result is a linear pattern of shadows that are projected and spread diagonally across the ground. The trees standing in front of the sun cast dark and sharper shadows (Fig. 2 and 5) while the trees standing further away from the sun cast softer and more diffuse shadows (Fig. 2 and 5). The direction of the shadows continues to be linear but differs in

size and brightness. The distribution and thickness of the branches cast more complex and less uniform shadow patterns. The shadows of the trees were stretched out and spread on the ground and it was possible to visualize the shape of the trees and perceive the dimension of the space, the wider the line on the ground, the wider was looking the path I was walking on. A strong contrast effect between light and shadows can be seen by the eyes. This effect also turns to become an immersive experience; it is an embodied encounter that takes place within the space. The body becomes part of the space by walking, moving along, and paying attention to these little experiences of light. An example, the shadows of the trees that cover the ground can also cover our bodies (Fig. 5). Also, light appears does it as dapples lights on the ground, covering some of the areas with small light and dark spaces (Fig. 3 and 4). To be able to see this effect, the sunlight should be clear and not obstructed by clouds or fog.

Through the whole experience in this day walking around, from one point to another, the light was perceived also through smells, colours, and temperature. A feeling of happiness was present; the shinier the light the happier was the sensation. The patterns also covered the body. From the phenomenological point of view, while the movement is taking place, the body immerses itself in this feeling and becomes part of the landscape and while doing it, it is submerged by these natural patterns and textures.



Picture 5: Vallejo, C, (2020) Picture shows the light passing through the trees. Shadow spreads on the ground of Kverndammen, Porsgrunn. (Private photo)

4.1.3 Limitless environments

Frydentopp and kverndammen, Vestsida in Porsgrunn
November 2020

A day of free walking to Frydentopp and Kverndammen in Porsgrunn, I see the fogginess out on the street, is early. I walk first to Frydentopp; I look at the trees and the path going up to the top. I want to see what is behind the fog in front of me. My first reaction, curiosity, and then I continue walking. I have the sensation of walking through fogged glasses. I am avoiding looking at one point. I just keep walking.

“Is a foggy morning and I can smell the humidity, the day before it rained. Before entering the forest, I stop and observe there is a kind portal at the entrance of the forest. The fog covers everything, space is blurred, and I can hardly see what is on the other side. The light is filtered through the fog and I feel a bit disoriented, the space seems endless”.

This is one of my first experiences where I felt disorientated. I know where to go but because the fog covers the landscape it feels that the forest does not have walls or an ending. The forest has become unknown and unpredictable. My feet are trembling as I walk. I move toward the fog, body and mind are working differently. I continue walking. The green colours are strong next to the brown colours of the ground. Now, I am at the top of Kverndammen, what I thought was a heavy fog, it has dissolved. I feel happy. The entire space around is humid and refreshing. My eyes can see different layers. The objects close to me look brighter, everything behind disappears with the fog, like a second layer. The whole visit went on for around 45 minutes. In this walk, I focus my attention on the fog, its density, and how light cover some areas of the landscape. Is a new feature that light has given me, a three-dimensionality effect with contrasts between black, white, and grey colour.



Picture.6: Vallejo, C, (2020). The picture shows the fog in the forest. The trees in the background seem to vanish in the distance, Frydentopp, Porsgrunn (Private photo)



Picture 7: Vallejo, C, (2020). The picture shows the entrance to the forest at Kverndammen, Porsgrunn. (Private photo)

Picture 8: Vallejo, C, (2020). The picture shows the view of the river at Kverndammen, Porsgrunn. (Private photo)



Picture 9: Vallejo, C, (2020). *The entrance to the forest, Kverndammen in Porsgrunn.* (Private photo)

Picture 10: Vallejo, C, (2020). *A foggy path by the river, Kverndammen in Porsgrunn.* (Private photo)

4.1.3.1 Nightlight immersive environments

Small Square next to the Skien station, Skien

Everything is very quiet and silent, there are no people around. The fog has taken over the streets and my favourite place near to my house. I've been walking for a while now around the streets close to my place. I stop a few seconds to look at the Led lights on the street.

Now, I'm standing in my preferred spot counting the trees, there are five. Behind the tree in the centre comes out a light that gives the impression of the moon rising. The snow has been on for several days and the feeling of holding back too.



Pictures 11 and 12: Vallejo, C, (2020). The picture shows the fog in the Skien night. Left picture: The LED lights by the sidewalk seem to vanish in the distance. Right picture: The light by the side of the house creates a quiet atmosphere of (Private photos)



Picture 13: Vallejo, C, (2020) Night lightning in a public park at night, Skien. (Private photo)

4.1.4 Experience and finding

Light diffuses the remote landscape when it hits the fog / when light is reflected by the fog.

One of the important characteristics of light is its ability to pass through materials or objects. The natural phenomenon that is observed in the pictures (Fig. 6 – 12) is the mist in the landscape. The light appears to be softer and more diffuse. The foggy pictures captured a mysterious and mystical image of the forest, park and street. This is a series of pictures that were taken with daylight and light night in different visits. In all the pictures (Fig. 6 – 12) the mist has created a feeling of emptiness in the space due to the lack of visibility. Some of the areas are covered by condensed mist, which made the details of the trees, roads and plants look softer and blurred, and at times made them disappeared. This creates images that become almost invisible as if the mist has erased pieces of the landscape right before my eyes.

Walking, moving and positioning myself in different points of the landscape was key in these observations. In the picture taken in daylight (Fig, While I was moving, the sensation of endless space appears. Although the fog is not intense in the pictures while approaching and walking through the fog, there is the sensation of passing to parallel space. The mist is acting as a blurry curtain or window, which imposes a presence in front of the eyes as if different layers are dividing the space.

The brightness produced by light filtered through the fog changes from one layer to another one, the change is felt once the foggy curtain/window is crossed. In terms of visual elements, we can distinguish the back, the middle, and the front ground of the landscape.

In the pictures that show the fog in the night (Fig, 11 – 13), the light appears to be diffused by the fog, and the source is the street light, which acts also as a point of attention. Unlike the photos of the day, the mist appears covering the entire space around me. The phenomenon observed is the mist which makes the visibility becomes weaker. As it does it, other senses begin to work and be alert; hearing, smell, touch, and taste become sharper. During my experiences with mist in the landscape, the body temperature was changed by the humidity of the air during the fall and the cold air during the winter. The body began to perceive not so much with the vision but also, with the sense of smell that was sharpened and began to feel, for example, the wet grass and leaves. The audition also took a leading role, the sound of the water in the river, the trees moving with the wind and tenuous

movements of the bushes began to appear when the body suspended the constant thinking allowing the body to stop and contemplate the landscape to experience these magical and inspiring moments that evoked feelings of nostalgia and absence.

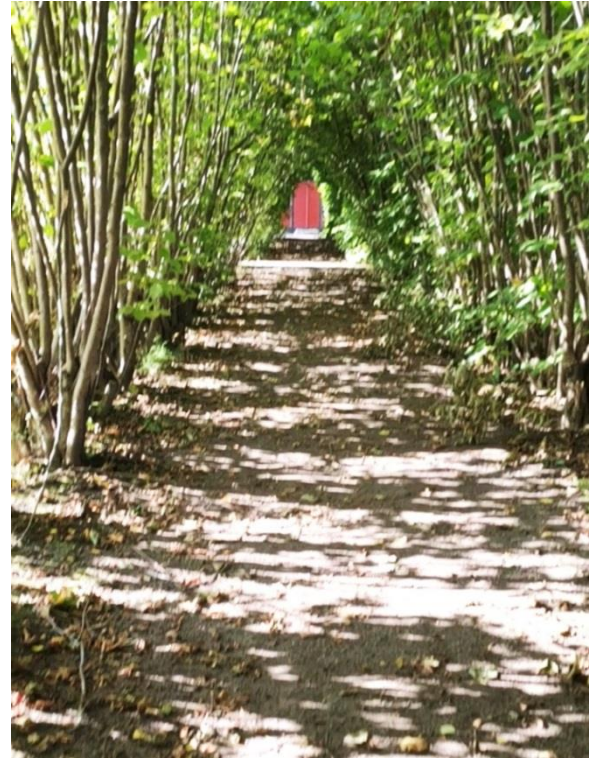
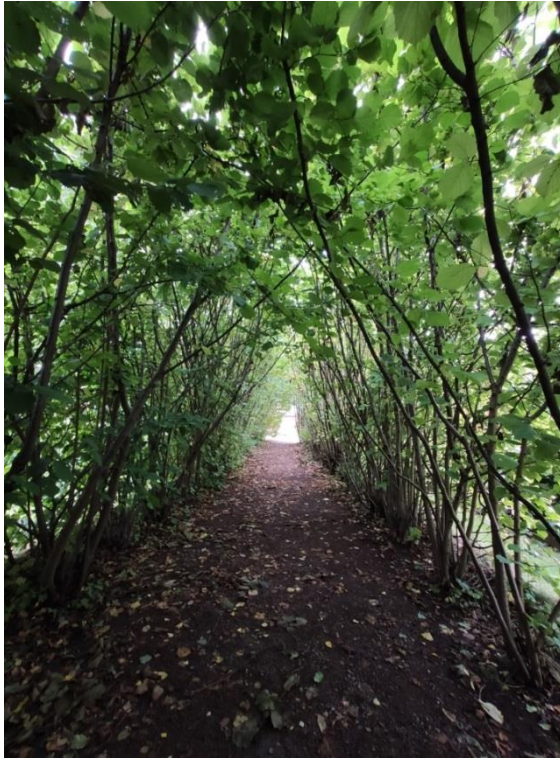
4.1.5 Sense of depth

Kverndammen, Vestsida and Porsgrunn Museum the Parsonage in Porsgrunn
September 2020

Today I walked without direction around the city. The weather changed two or three times during my walk. Sometimes the sun was bright and warm, other times, the clouds covered the sky, and everything felt cold. I'm not looking for anything. The photos I am taking are completely random. I want to seat in somewhere quiet; I am walking inside the Museum the Parsonage in the middle of Porsgrunn. I have been many times here. Today I turned to the left side of the big house; a place I have been also too many times. The flowers and plants have no shadows, their colours are strong but they have no shades. The sun has gone. I discover for the first time a tunnel going from one end to the other one, covered by trees. I go inside. The exit looks very distant from the entrance, with one small arch at the end of the tunnel. I enter and begin to walk toward the exit; the green colours of the branches at the end of the tunnel become more tenuous. The tunnel seems longer if my attention goes towards the end. I enter again, this time in the opposite way. The sun has come out; the entire tunnel is full of beams of light on the ground.

This walk is one of my first intents to observe closely my surroundings without putting my personal history on the present moment. It is difficult in this museum since it is a place full of memories of my first years in Norway. I am trying hard. I keep walking back in forward through the tunnel. Without intention, the tunnel has become a new thing for me in the garden. The sunlight is appearing and disappearing making small dapples of light on the ground. When the dapples of light are visible and the light passes right through the foliage, I see myself covered by these textures and the space between the entrance and the exit becomes larger in width. My walk continues to Frydentopp. The sun is reaching the top, it feels warmer and I am feeling with more energy to keep walking. I am coming to Kverndammen, everything is greener and brighter. I follow the path that goes to Klyve; I see the foliage of the trees very full. At the end of the path, I see the arch that trees have formed

with long branches, the grey colour contrast with the strong green colour of the leaves. I see the exit and I walk toward the end.



Picture 14: Vallejo, C, (2020). The picture shows the tunnel in the garden of the Museum the Personage in Porsgrunn. The light changes every 10 minutes on the same day (Private photo)

Picture 15: Vallejo, C, (2020). The picture shows the tunnel in the garden of the Museum the Personage in Porsgrunn. The light changed on the same day (Private photo)



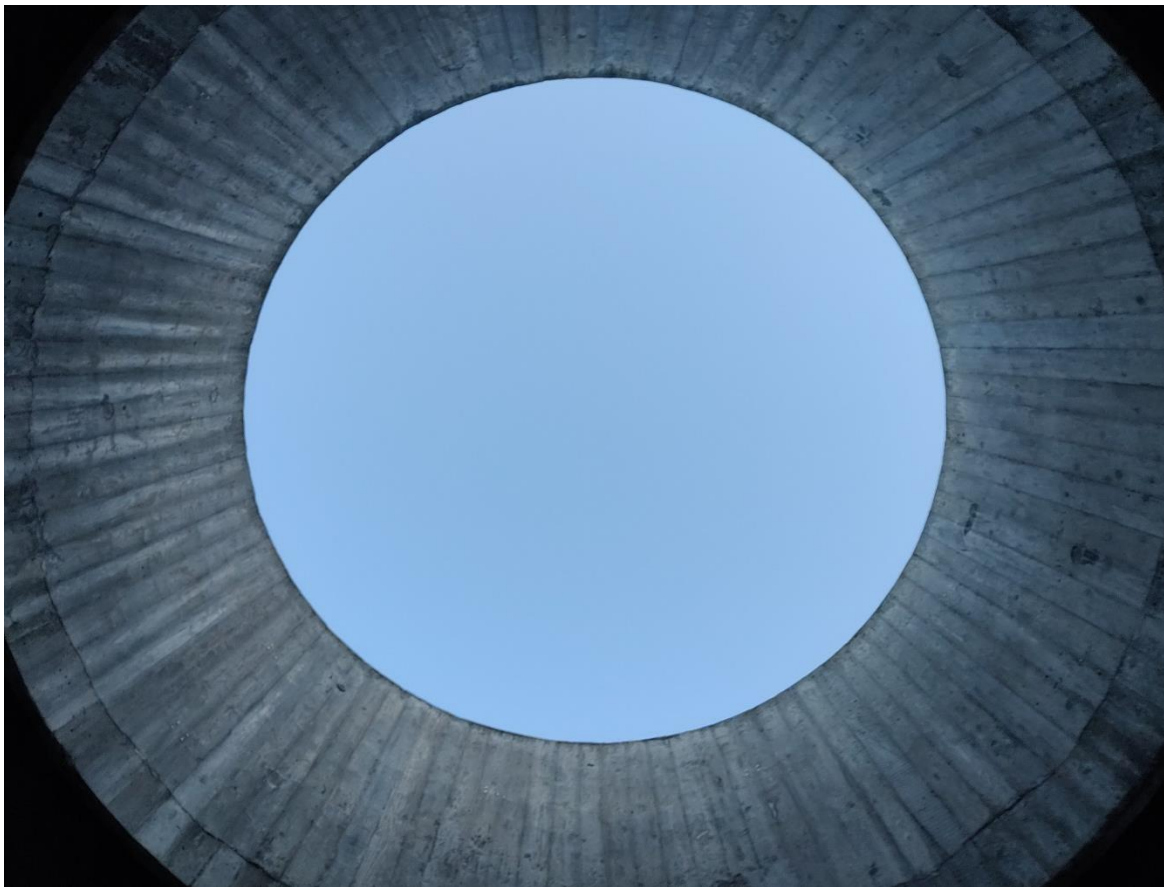
Picture 16: Vallejo, C, (2020). The picture shows a path that goes along Kverndammen, where the trees have created a leafy tunnel. The grey path seems larger and longer in contrast with the leafy and green foliage (Private photo)

4.1.5.1 Sense of depth, the underpass in Myren

Still seems summer, days are still long. I have walked this underpass many times, the feelings always change. Today I enter, I stop at the entrance, and I notice that the exit and entrance of the tunnel have an irregular form. After watching the exit for a while, I feel the sensation of imbalance. My eyes are trying to adjust to the irregular shape of the square exit. I take a few steps forward, I stop, I move from one side to the other one. I move forward and I move back guards again. I see the lines of the cement forming a ring around the skyscape. I raise my head again to look at the sky and I close my eyes quickly, my body loses balance again. Now, I turn my head from right to left. I see that light forms semi-circles on both walls, the rest is dark. The entrance looks further away.



Picture 17 and 18: Top -Left: Interior view of Myren underpass in Skien. Right top: Underpass entrance view sketch (Private photos)



Picture 19: Skyscape, Myren's underpass in Skien (Private Photos)

4.1.5.2 Sense of depth – Nightlight

Klosterøya, Skien

This is the second time I decided to walk through this tunnel at night. I start to walk without paying much attention to the details around. I am more concerned with the idea of crossing the tunnel at night, without many people around. I am walking at a continuous pace, I don't want to turn around and I don't want to stop either. I can see the lights are changing colours as I walk. Now, I am in the middle of the tunnel, the light turned red, my hands and my back are cold. For a few seconds, the space becomes completely dark. I continue my walking slowing down my pace, the lights keep changing colours. Now I stop for a moment, I turn to my left and I see that water has filtered through the wall. A single drop is falling fast wetting the floor. The sound is a deep echo, I am not comfortable, the tunnel is empty and extremely quiet. Now I am walking faster as I can toward the entrance concentrating only on the exit.



*Picture 20: View from the entrance of the Klosterøya's underpass, Skien (Private photos)
Skien, October 3.*

Today, I decided to take a short walk down to the main avenue. I can hardly feel my nose and my eyes tear because it's very cold. The street looks empty, I can only see a silhouette on the other side of the street. There are few lamps on this side of the street, and its look is dark. I try to move fast because now my knees are cold. The shadows follow me along the way, there too many trees on this side of the street, feels like I´m walking in a tunnel. I stop for a few seconds in the dark to look at the bright light at the end of the street, I take a few steps forward keep looking at the light, there is still a long way to go, it feels like the road never end.



Picture 21: Tunnel trees perspective view in the night, Skien (Private photos)

4.2 Experience and finding

Light can enhance the experience of depth / the effect of perspective (in a one-point-perspective)

The contrast between light and dark appear in form of textures on the surfaces which provides the eyes with a sense of depth. The first two pictures (Fig.14 – 16), show an underpass created by foliage and trees at The Parsonage Museum in Porsgrunn. Both pictures were taken on the same day. The sunlight varied during the visit, for minutes was very clear and luminance, and in other minutes the clouds covered the sky, making the scene darker and opaque. In Fig. 14, the clouds are covering the sun so what is seen is the bright green color and leafy trees on both sides contrasting with the neutral and darker brown ground, which is cover with some leaves. The sense of depth is given by the changing light that goes from a cloudy day to a very luminous day. In the foreground, the details of the branches and leaves appear bigger. Along the tunnel, until the end, the contrasting texture of the trees begins to shrink making look the interior path longer than in reality is.

In Fig. 15, the direct sunlight is filtered through the trees, as the light passes through, small dapples of light are covering the ground, making spaces of light along the tunnel. The picture looks very busy in textures, the effect of the depth has been reduced by the busy contrast between the foliage of the tree and the patterns of dapples of light on the ground. The same effect can be seen in Fig. 16, where the strong green color is itself a statement, in contrast with the neutral color of the path. Fig. 24 has the same effect, however, the sources of light are the street lights that have cast light and dark lines on the ground. Spaces of light and darkness can be seen disappearing along and until the end of the tunnel created by the dark contrast of the trunks and branches of the trees.

During the visits to Myren (Fig. 21) the experiences lived inside the underpass changed as the seasons changed. The focusing also varied. In this particular visit, I concentrated on crossing the tunnel, putting attention to the material of the underpass and the textures the concrete had. In Fig. 21, the concrete gives a sensation of heaviness. This visual effect makes the underpass feel cold, not only for the material but also for the absence of architectural details which makes the attention drawn to the elliptical space on the ceiling,

which allows the natural light into the interior, and to the irregular shape of the entrance and exit of the underpass.

Figure number 20 shows the underpass situated in Klosterøya in Skien, the contrasting colors, between red, green, blue, and orange not only make the underpass more attractive to the eyes and welcoming to people to cross but also, they are contributing to avoiding the dark, lonely and scary feeling that underpasses made with concrete, give especially in the night. The contrasting colors are creating a sensation of depth while shifting from one color to another one. This underpass is inviting you to go through it with the body in motion, from the entrance to the exit. The body in motion has been affected by colors in two ways in this underpass. One by the effect of temperature given by the cold blue and green and the warm sensation provided by the colors red and orange. On the other way, the effect of shifting colors along the underpass gives the sensation of walking from one area to a new one. Only by the body in motion, the eyes can see the full contrast and can adjust to the changing condition of the colors.

4.2.1 Skylight

I previously mentioned that many of my pictures were taken on my outdoor walks. The pictures below show a light transition of a cloudy shiny sky to a dark sky. At this exact moment, clouds were moving and passing faster covering the sun. As light is trying to go through the clouds became dark and the sky and the landscape turned grey. The phenomenon lasted 10 minutes, between 5.00 to 5.10 pm.

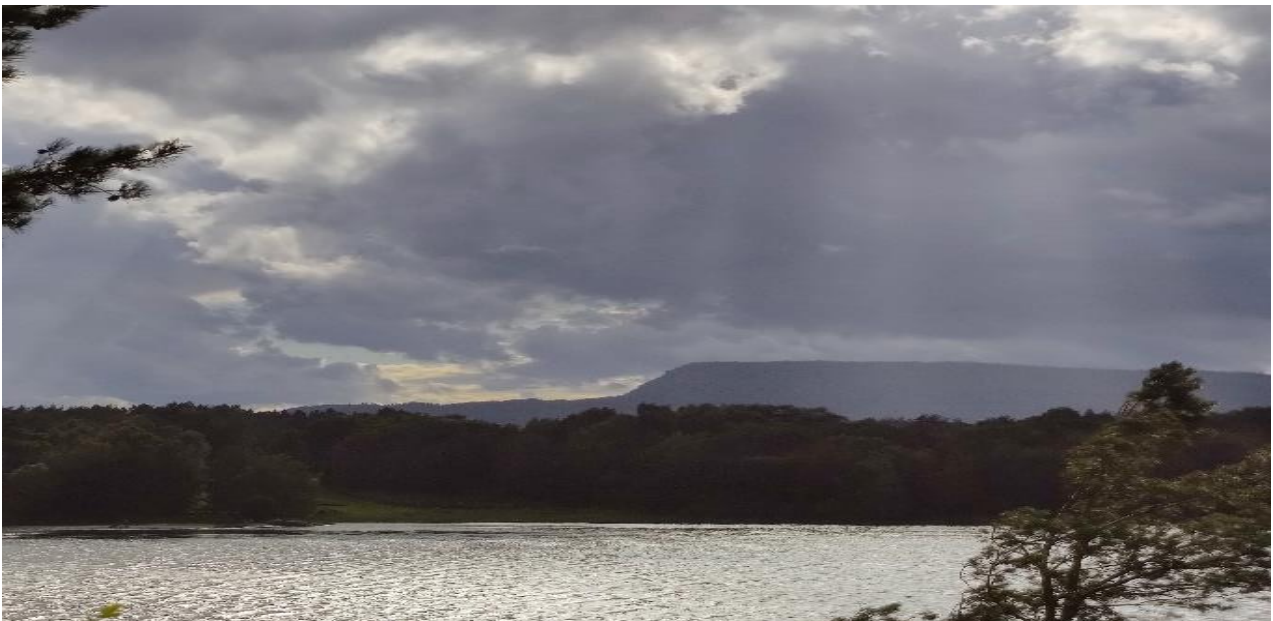
I am looking at the sky; I have been doing it for 4 minutes in the same place. I turn to face the sun to take pictures, but after a while, I start to feel cold and move to the right trying not to lose my focal point. The sun appears and disappears as the clouds moved. As the clouds move and cover the sun, the temperature changes as well. The sun comes out again, I feel warm but for just for a few seconds until the largest clouds cover the sun again and everything turns grey and cold again.

August 2020

The sky is bright blue; I can barely look at the sky. Is windy, and for a few minutes the clouds cover the sun and I feel the cold on my back. The clouds are moving fast, and the sun

appears again. I am moving to my left because I feel very cold. Now, the clouds cover the sun completely. The sky and clouds are grey. I keep moving without losing sight of the sky. Now some rays of light are passing through the clouds hitting the sea almost in the middle. The landscape turns grey; I see clearly how the wind is shaping the sea surface into long but small waves. The waves are moving fast to the right, I see the contrast of the dark clouds over the water, the trees turn to a darker green and the scene looks dramatic. The wind is stronger now; the clouds move again, rays of light appear between the clouds, the blue sky shines again.

I am looking up to the sky again; the sun disappears behind the clouds. I can hear in the distance seagulls and some people talking. It is a sunny and windy afternoon in Oslo. Light is calling me, so to try to capture the moment; a single cloud covers the sun. The water and clouds turn grey and as I look toward the light, I can almost see a single sunray entering the clouds and hitting the water. This is the light that makes me connect myself to the place I am standing now.”



Picture 22: Vallejo, C, (2020) Skylight effect on the sea surface (Private photo)



*Pictures 23 - 26: The pictures show some examples of the sky can have with different light conditions
(Private photos)*

November 2020.

There are no people around us, my breath is shorter and faster. I turn to my left and I feel absorbed by the beautiful water reflection. The sky is lighter but still, there is a dark mood, its cold, and wet” (Personal journal, Nov.2, 2020)

“In the distance, light is floating and moving, my body is tense again. Everything around is silent, but I can hear a waterfall. We passed the bridge we walk down. The road cannot be seen, it can only be felt. I stop by the river for about 15 minutes. The temperature dropped suddenly, and I can feel the cold breeze on my nose and cheeks”.

There are not many people around, and it feels calm and quiet. I can hear the water hitting the edge of the dock and the sound of the traffic in the distance. I find myself absorbed in the intense light and colors that are changing in the sky, I can see how the houses and buildings disappear in front of my eyes. I take my phone to capture the time-lapse of the sunset and the first thing I see is a pink line in the sky that slowly grows, after three minutes the pink line turns orange, blue, and violet. Although was very cold, the light colour changed the whole moment went from cold to warm. (Journal notes and voice recording)



Picture 27: "Sunrise", north-east view side from Porsgrunn Bridge (Private Photos)

Experience and finding

The light behind clouds makes dark shadows on the front of the clouds. Light through clouds makes arrays of light that illuminates surfaces on the ground (or the sea)

The light behind clouds makes dark shadows on the front of the clouds. Light through clouds makes arrays of light that illuminates surfaces on the ground (or the sea)

Figure 22 shows a light sky condition with high contrast created by the dark clouds and the sunlight behind them, with the sunlight behind the clouds organic shape and volume is revealed. The clouds with small holes between them allowed sunlight to pass through the dense clouds and create soft beams of light that hit and gently illuminate and enhance some of the details of the sea surface. The grey sky gives the sea a greyer look and creates a very sensitive and contemplative mood. Although the landscape looks completely grey, still the eyes are guided to the soft lines of beams of light. Fig. 23 the translucent clouds allowed the sunlight to pass through them, and vibrant red and yellow colours in the sky created the sky condition that is reflected across the water. The sky looks bright and the intensity of light create a dramatic and warm atmosphere that is impossible not to perceive. The strong experience is perceived by the body through senses due to the intense colours that spread and filled the whole landscape. The house in the back look further away and small due to water reflects light into the landscape. The contrast revealed in this picture is created by the blue and orange colour in the sky and the whole scene.

4.2.2 Black and white, minimalism and landscape

Kverndammen, Porsgrunn

I am walking through Kverndammen very often, but never in the night. I am not alone on this tour; my nephew and my sister accompany me. I do not feel comfortable walking in the forest alone, either during the day or night. Perhaps is the silence and the feeling of been unaccompanied.

The last time I was here was in August; still, I could see the landscape with a very shiny green colour. Even if I know this place, I always forget the way and I get disoriented. At the entrance of the forest, I decide to make a stop, not because it was planned but because my vision is getting blurry. There is so much snow, it is a snowstorm. It is not completely dark and I am walking looking at the snowy ground. There is a path formed by the footprints from

people, that is more visible than what is around, everything around is white. I walk for another 3 minutes, the trees look bigger, the light is gradually disappearing, and then the path is no longer visible.

“As the light goes out, the trees begin to look huge, and I don’t recognize the space anymore. My body is tense and anxious” (Personal journal, Nov.2, 2020)

Then I decide to walk close to my sister and a few meters further on we have found a dam, I recognize this place (I am thinking). The dam is made of concrete and creates a good contrast in the dark. We have stopped for the second time to look at the reflection of the landscape in the small lagoon (Photo 32, Nov 2020). I keep walking, and I feel passing over obstacles on the ground. My steps make sounds on the snow. I don’t much, only my ears hearing while I am breaking bushes, and kicking stones. I am walking with my fingers crossed; I do not want to find anything unexpected along the way. We stop once more to rest and relax. I see we have passed a second bridge. Some parts of the river are frozen. I can see the contrast of the foam that makes the torrent of the river falls. I kept walking. Then I look up at the sky, it feels very wet and cold.

“Light alone can (also) create the effect of an enclosed space (...)” “I have a terrible fear of the dark, not being in the dark but rather being in the forest alone at night, or in dark areas... In my drawings, I trying to highlight the light that makes me feel safe” (personal voice recording, November 2020)



Picture 28: Vallejo, C. Kverndammen, Porsgrunn. The trees in the background create a vanishing perspective (Private photo).



Picture 29: Skylight contrast, Kverndammen, Porsgrunn (Private photo)



Picture 30: Canopies of the trees view from upwards. Light contrast between the trees and the sky, create perspective. Kverndammen, Porsgrunn (Private photo)



Picture 31: Night skylight in the forest of Kverndammen, the reflection of the sky on the river at Kverndammen in Porsgrunn (Private photo)

4.2.3 Experience and finding

Minimalism: Strong reflection of light by white snow makes the trees and vegetation look dark (black). The sunset light from behind the trees makes them look black. Details of the trees disappear in the dark.

Light moments happen at any time. At the end of the day when the sun is beginning to go down, the darkness sets in and hides everything from our eyes. The picture 29 captures the light sunset from behind the trees and bushes. Within a minute, everything is black, thus it cannot be seen any detail on the trees. However, the silhouettes in contrast with the sky appear remarkably detailed as if they have been drawn. Sky and the elements in nature, during the sunset, create a high contrast moment of black and white. This contrast is intense, and let appear a mood of drama, revealing a new feature in the surroundings where the dark and black trees and bushes are the main subjects in the pictures 29 and 31.

The next picture 30 shows an overcast sky in the night in contrast with the dark canopies of the trees. Once again, sky and nature come together to create an atmosphere of drama, mystery, and even fighting moments. Although the contrast is lower than in the previous

picture 30, looking upwards, the silhouettes of trees and branches are delineated giving a sense of isolation and confinement. The sensation while looking upwards feels as if the trees have closed the space between the sky and the ground. The perspective looking from below also magnifies the sizes of the trees. In picture, the bright blue sky in contrast to the silhouette of the dark trees creates an atmosphere of peace, calm, and serenity. As well, only two colours; blue and black are appearing making the scene. The two predominant colours help to distinguish and recognize what is seen in the dark. There is a new natural element within the space that makes more interesting the view of the landscape and the experience is the presence of the reflection of the water that intensifies the sense of dimension and scale of the trees. Walking in the forest at night, listening to the sound of the water and the leaves on the ground awakes other senses. This experience could be negative due that we rely on our eyes to guide us. However, it is in these situations, where the body initiates an alert modus since we are unaware of what surrounds us. Only when we become part of nature, we become aware of things. In the dark, the body acts as an intuitive being and grasps the information by moving, is a body that possesses an awareness of its parts, and controls movements and responses in front of something unpredictable.

Picture 28, the minimalism in black in white produced by the monochrome of the snow in contrast with the dark trees. This is an experience that can deceive the eye first, for the size of the objects in front and, for the dimension of the space from where you are standing. Black and white pictures appear in the data with snow in the landscape. The wholeness produced by the snow makes disappear the details of the landscape. It is comparable with walking in the night; however, the snow shines intensely in front of the eyes producing certain dizziness while walking. The eyes look for an axis point to hold on to. In this experience, the eyes looked down to follow the path and marks made by the footprints of people. The size of the trees has changed too as if the snow has provided them with white colour heaviness. They look bigger and heavier as if they about to fall. It is known that our eyes rely on the distance of objects to calculate the size; however, the snow offers another effect caused by the monochrome of white. Everything looks darker and opaque, even the most colorful objects.

4.2.4 Walk in the night, the torch effect.



*Picture 32: The light of a Led torch creates an enclosed space. A walk at night in Frydentopp, Porsgrunn.
(Private photo)*

4.2.5 Experience and finding

Light from a lamp or a torch makes the surroundings invading you. As mentioned in the previous experiences, walking in the forest at night can awake positive or negative body reactions. The picture 32, shows my sister holding a torch and walking in the forest at night. I am about 100 meters behind her without any type of light. I am following her. The light from her torch is the only thing I can see. Without that light, I could not see anything. The bright light of the sky and the trees in the background look slightly blurry and further away. This is an experience where light is guiding and forces you to look ahead, due that the sides of the eyes are obscure by the darkness. From far behind, I can see the silhouette of my sister surrounded in a circle of light on a background of trees and bright sky. The light projected from the torch open an illusionary space and at the same time closes that space. Light is shaping a space of light in the dark. The torch can reach and illuminate only a section of the area she occupies, and it gives the impression that she is in a circular room where the black space around is the walls of the room. The absence of natural light makes the eyes look for a light point. The body moves towards the object of attention. One step is followed by the other steps until we reach the object of attraction. Once again, the experience of walking at night puts other senses alert and as a result, the body moves carefully, even with fear since things are perceived with greater intensity.

4.2.6 Light illuminated surfaces.

City of Skien

October 2020

In this walk I walked for almost forty-five minutes, looking to see the sunset. I have to find a good place to see the sunset, I am thinking. I stopped for a few minutes to capture the last rays of the sunset. The sun has already disappeared and I can see the clouds slowly turning dark. Upon the sky is still clear and blue. I see in front of me, the sky. From top to bottom the light gets lighter. I see areas of lighter blue, intense blue, red, and dark purple. On this day, I saw many interesting things that I was drawn to. While I am walking, the light of the streets is reflected on the ground. I see, yellow and white, mostly yellow.

“The sunset is in front of me. I don’t see people around, the city is disappearing into the night but, I can still see small points of light reflected in some houses. I keep walking, and the sun has already set, but even from far, I can visualize the city” (Voice recording).



Picture 33: Vallejo, C, (2020) Sunset in the city of Skien. (Private photo)

Light bounces off the path and opens the space.

“The immediate experience, it is a cold and dark night. In the distance, I hear a car and the sound of the train that has just arrived. I walk on wet leaves, staring at the ground with my fists clenched. Light is reflected on the leaves and it feels like autumn is already here. I return to my walk moving with my feet to open a new path between the leaves”.



Picture 34: Vallejo, C, (2020) Park going home, Skien. (Private photo)



Picture 35: Vallejo, C. Example of city light contrast created by the wet leaves on the ground. "An unwelcoming atmosphere it feels in the atmosphere", Skien. (Private photo)

4.2.7 Experiences and finding

Light can enhance and emphasize the experience of materials.

The light from the lamp bounces off the sidewalk and space are illuminated and perceived wider. The texture and characteristics of the sidewalk surface became visible and the objects that surround that space as well. The light is reflected off and hitting the surface of the pavement reveal and open the space. Pictures 34 and 35 both were taken on the same day and from the same park in Skien. Picture 34 the light from the immediate lamp creates an interesting and warm atmosphere that emphasize the features and material of the pavement. The surrounding darkness further emphasize the impressive contrast and highlight the little dazzling light coming reflected by windows and

4.2.8 Summarize of experiences and finding

Between July 2020 and February 2021, I visited and walked the same places during the day and at night. The material and data were gathered through voice recordings, drawings, and conversations with my family and friends. Thanks to the continuous visits to these places, I began to develop certain security and a sense of safeness. My body began to get used to the unevenness of the ground, the fear of the dark places decreased and my feet started to feel the terrain as if my body had memorized how to move around. The more time I spent in these places, the more attached I felt to them. The spaces have become part of my routine in the present moment.

Throughout this period, the landscapes, the temperature, and the light were changing and varying according to the season, the time, and the different spaces. In this phase of the practical exploration, it was important to discover the different spaces in a very spontaneous way. Many photos were taken during the day, however; to take pictures at night represented a big challenge. In these situations, I chose to let nature talks through the pictures rather than prepare the camera to capture the things that were around during the visits. In places like the forest, certain points of light guided me, for example, the dam that was in the middle of the way to cross the river in Kverndammen, or the little lights of the houses that I was able to distinguish in the distance. Another place, I found it difficult to take photos and visit the tunnel of Klosterøya in Skien, especially at night. During my first visits to the tunnel, my body was always anxious and nervous about being alone in the tunnel, so I would walk fast to get out.

In winter, the visits to the forest were reduced, however, when the snow came, the landscape became more attractive to go and enjoy. Therefore, I decided to extend the time of the walks for more than an hour. Since my body was recognizing the places, sometimes I changed the pace, making more stops and give extra time to explore and examine the space around with my eyes. Despite some inconveniences to collect data especially at night, I recorded and wrote in my journal many of the experiences. This allowed me to reflect upon the visits, especially when I felt that something has changed. The collection of the experiences in this phase are associated with emotions, feelings, and body reactions are perhaps the most important approach of this phase and the results of this will be the starting point for the next phase.

4.3 Creative work

4.3.1 Phase 2: Series charcoal

Table 4: Overview phase 2

CONTRAST BETWEEN LIGHT AND DARK	
Phase 2: Series charcoal	
Observations: Natural and urban spaces	
Descriptive notes and drawings	
Light	Dark

What can be transmitted about spaces using charcoal? Can I express the subjective experience using the contrast between black and white?

The drawings with charcoal were done from October 2020 until January 2021. In this phase, I looked for pictures where I could see light, natural or artificial, and its effects to create moods and atmospheres within a specific space. For example, streetlights in the night, streetlights illuminating the entrance of underpasses, skylights, light in the sunset, streetlights reflected on the pavement that could inspire me. These images served as the basis for creative work and allowed my imagination to run free and let the final drawing speak for itself. Throughout the creative process, I also tried to keep a record in the journal

of my emotions and feelings while I was drawing. I drew new sketches and run small experiments (appendix 1), to further create an interpretation of my visual experience by looking at the picture at that moment.

My observation in this phase started by looking at the pictures for a long time, after a while, my eyes were drawn to the lighter areas and I took them as the starting and focal point. From each of the groups shown in the previous phase, I selected one picture to reproduce and work with. The reproductions are not accurate because what I wanted was to capture the mood by quiet contemplation. After of examine the entire landscape, my work began by eliminating many of the objects that appeared in the original pictures. I worked the drawings with contrast, producing different lines and textures with strong or soft qualities to communicate and express the feelings of a particular experience. The original photo and the light effect I discovered was the main source for inspiration in how I later developed the rest of the charcoal drawings. The drawings presented in this phase were made using different materials (Table 5)

Table 5: Technique, materials and series important variables in phase 2

Charcoal Series	Charcoal drawing variables
<p>Techniques: Reductive charcoal drawing</p> <p>Materials charcoal</p> <ul style="list-style-type: none"> • White drawing paper • Charcoal sticks • Erasures • Drawing paper, • Pencil, 	<ul style="list-style-type: none"> • Light contrast • Soft tones between light and dark zones • Strokes to create texture. • Shading – value tones

4.3.1.1 *Series 1: Park by the Skien station: different angles*

The first space I selected to reproduce into a charcoal drawing was the park located close to my apartment. I chose this location as it is a spot that I would regularly walk through every day at different hours and which I stopped on multiple occasions at different points and viewing angles. The drawings below show the park from the same angle, facing the north figure 6 a and b. These first series do not follow any special technique, as it was my first intent to create charcoal. At first, I thought to include all the visual details and objects I

saw in the original image. However, the outcome was not satisfactory, and it took more time than expected.

Between the first illustrations to the second, I waited some days so I could reflect on what were the challenges of making the first drawings. To produce the rest of the drawings I used the technique of charcoal reduction, a technique that involves layering the paper with a thick amount of charcoal before starting the drawing. I repeated this process twice in some drawings and sometimes three times depending on the scene trying to capture the mysterious mood I saw from the original. When the background was completed, rubber was used to erase some of the charcoal to create depth, emphasis, and higher value areas, and conversely charcoal sticks are used to create contrast and darker tones.

During the making of this series, I wanted to recreate the dark and solitude atmosphere that the scenes at night have. To do it, I use only one dimly lit lamp to recreate the dark surrounding while I was drawing, so I could bring back the experience in the dark walking alone. After several trials, I realized that by using tonal values, mid-tones, and shadows I could get better and strong contrasts. As well, by eliminating big objects such as houses, trees, street lamps, cars, and people, I could concentrate more on the main subject and the effects of light within space, which in these series are the essence of the experience. Here, I took the opportunity to play more with my imagination by drawing deeper and darker lines in some objects and exaggerating the illumination projected by the streetlamps.

4.3.1.2 Trial 1

“I sit at my desk keeping my arms and the side of my left hand away from the drawing. I am holding the charcoal sticks as a pencil. I am looking at the picture closely, searching for lines and shapes. I do not have practice with this media, and I am anxious to begin. I am drawing lines without purpose, and then I drag the stick on the paper in different directions. Then, I move, I need to change the posture for my arm and hand. I press too hard the charcoal on the paper, suddenly pieces of charcoal are everywhere, and my hand feel dry. I have broken the charcoal stick with my hand” (Personal journal, 2020)



Figure 6 (right). Park in Skien. Top right (a) Details of the house. Bottom right (b) Texture details of the ground.

Figure 6 (a) I created a texture effect on the ground adding small light and dark strokes to create definition and contrast. (b) Houses were made only with a few lines that are not well connected to each other. There are some lighter values areas around the lamp, ground, and background. The focal point is not clear, it is a flat drawing that perhaps does not communicate or express a specific emotion or mood. To create the background soft tones of grey, I held the rubber as a pencil and I dragged it carefully on the paper.

4.3.1.3 Trial 2

“I am immersing myself in the picture, looking for a point of light to begin. Once I found it, the drawing began. I don’t know what to do, I just a draw what it comes to me first, I am feeling anxious. In this non-intentional drawing, somehow the experiences from the actual pictures take another meaning as If I am drawing a new picture with new experiences that evoke a different impressions and feelings”. (Note made while drawing the first charcoal illustration)

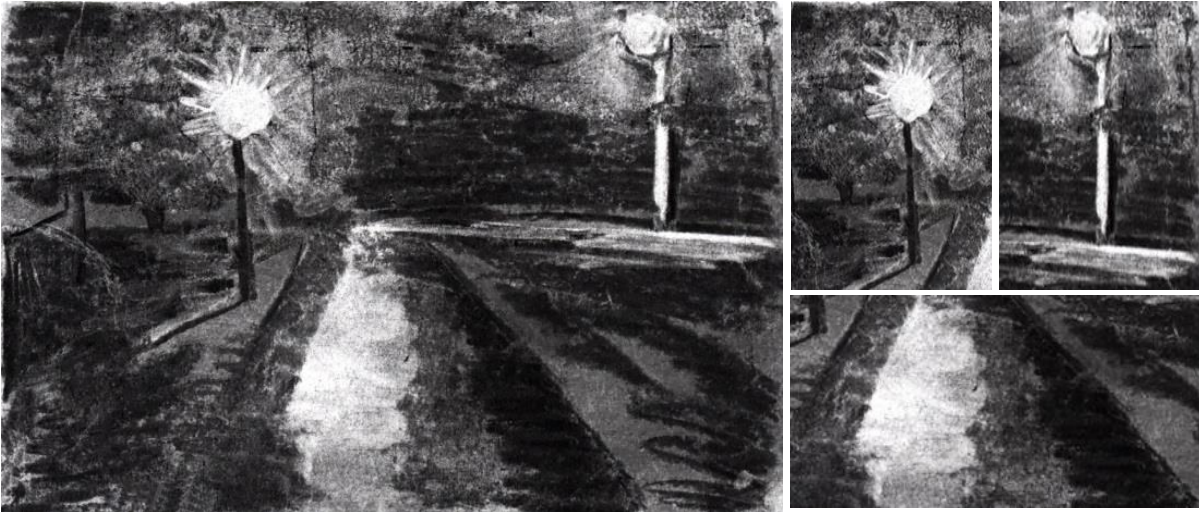


Figure 7: Skien park. Top – right (a, b): Details of the streetlamps. Bottom – left (c) Texture details of the ground.

Figure 7 Here I drew two lamps; the first is placed in the background and the second one in the middle ground. These two lamps are separated from each other by a path. Although the intention was to create only one focal point, I changed my mind and decided to emphasize the two lamps (a, b). I tried to give volume to the lamp in the background by adding a dark value on the right side of the pole. To create a path and mid-tones I used rubber. I erased some of the charcoal to illuminate the ground. In this trial, I made a few changes compared to the previous trial. In this trial, the texture effects and contrast with light a dark value were more evident.

“I am erasing out the area for the tree and a path, then I draw dark lines to create the tree. I stop for seconds to see the drawing from faraway. I am looking up and down until I see more details to adjust. I continue using the rubber to create contrast between light and mid-tones to give more drama to the scene”.

4.3.1.4 Trial 3

“I am moving around trying to find a good posture to draw. I place a piece of paper on the wall, and then I am ready to draw. I took the original picture wondering, what the best way is to draw wet leaves on the ground? How can make them real? I turn the light off for a few seconds to rest my ideas. I go back to face the empty piece of paper holding pieces of charcoal in my hand. One is white and the other one is black”.



Figure 8: Wet leaves on the ground, charcoal drawing, Skien. (Private drawing)

Figure 8, I started with the background in a light tone, a piece of soft paper was used to create a smooth surface finish. A horizon line at the top to divide the area, to create the path area, I traced diagonal lines that later were cover with small strokes that resembled the wet leaves. The consistency and the illusion of collection of strokes in light and dark values resembled the texture of the leaves spread on the pavement. The lightest tone value was placed in the centre to emphasize the path. With the eraser, I added darker tones to create high contrast between leaves.

4.3.1.5 Trial 4



Figure 9: Left-right a, b, c: Charcoal drawing process. (Private)

Figure 9 Masking tape was used to divide the paper into two segments. To create the background, I dragged the charcoal stick to give a soft finish. I removed the charcoal with a piece of soft paper. I added lighter tones to give expressive effects of mystery and fantasy to the drawing, by transforming the lightbulb of the lamp into a bright moon and the branches more like arms so that the tree could stand out.

4.3.1.6 *Trial 5*

Figure 10 is the last drawing created from the park in Skien, it is the best version from all previous trials. The focal point is the tree and the light atop it. Texture effects were created with different strokes gradation from a continuous hand movement. The drawing was made at night with only one source of light, my bed lamp pointing at the paper. The process is presented in the pictures below.



Figure 10: *Park in Skien*, final drawing. (Private)

4.3.1.7 Finding and experience

What can be transmitted about spaces using charcoal?

During the exploration in this series, one of the first findings was to discover how with the help of a focal point, everything or all the objects in a composition occupy a place or space within the space. As well, the way that objects around the focal point are placed, provide us with an idea of the dimension of that specific space. In the figure 6, there are two focal points; one is in front and the other in the background which makes notorious the distance between

them. The contrast between light, mid and dark tones enhance the illusion of depth and gives the effect of tridimensionality.

Can I express the subjective experience using the contrast between light and dark?

Using charcoal, the experience can be expressed by applying mid-tones and moving gradually from dark to light. Charcoal changes the visual experience expressing the subjective in a monochrome experience. Figure 10 the tree is the focal point in the composition and the contrast between black and white appears more visible using charcoal.

4.3.2 Series 2: Forest

The second space I selected to reproduce in charcoal was the forest. I visited and walked through the forest during the day and night, not every day but often. This particular space left me with many experiences because it allowed me to rebuild my confidence walking alone. Here, I started to collect data material in the summer of 2020 when the days were brighter and longer, which forced me to wait for long night walks. The night walks started in the middle of the autumn season. I chose trees to be the main subject for my next drawings out charcoal. The light was considered in this work especially when I tried to create moods and emotion. In this series, the trees are elements of memories, melancholy and protection.

4.3.2.1 Trial 1

“My hand is going up and down carefully, without using much pressure on the paper I go over a few times, to create dark lines. I am controlling my movements and the charcoal sticks while I’m drawing. I pause now. I create long lines in one direction and then I go over them in the opposite direction quickly, this movement enables me to work quickly in response to the impressions and memories of the tree. I take my drawing and I am thinking about that place which I see with trees. Did I create a new experience through these lines? What is left? And, what I cannot see? (Personal Journal, 2020)



*Figure 11: Top left a, and b: Drawing process.
Figure 11: Tree at Kverndammen in Porsgrunn (Private Photos)*

The process started the same way as the previous one, by checking the pictures already selected and look for the ones in which light interacted with space. It took time to start the first drawing mainly because when I began to examine closely the trees. I found many details, and I did not know how to start working on the structure and branches of the trees, so I decided to draw and focus on only one at a time. Figure 11 (a,b), I sketched the tree with very soft lines and then I covered it with masking tape to leave the area free for later. As I had done with the previous drawings, I begin to create the background by layering the

paper twice with a thick amount of charcoal because I wanted to get a very smooth background without gaps or textures. Then, I drew dark lines around the masking tape and build the structure of the tree. I started with dark vertical and parallel lines to create the trunk, then I took some time to start with the branches. The last part of the tree (Fig. 11), I begin to trace lines in different directions without thinking about leaves, at this point, I felt a bit frustrated because I had not planned out how to draw the leaves of the tree. I tried to create contrast between the branches by having thick and thinner lines. With a rubber, I erased some charcoal from behind and between the branches to create lighter areas to emphasize the top part of the tree. I tried to create some depth and shadows on the ground by adding some darker values, however, it was not very successful, it looks more like dark spots on the ground because I did not adjust for the light and medium values.

4.3.2.2 Trial 2

“I change rooms to continue drawing. I sit on my bed, is dark outside. My mind is going back to my walkings in the forest. Trees in the forest like the people, I'm thinking. My hand is shaking a bit because I'm holding the charcoal stick very tight. What is it what I'm trying to express? I need to move my arm and stretch my legs. I step back to see the drawing; it is not very inspiring. I look back at the original photo to find out where the lighter tones are. The photo is bringing back memories and ideas begin to emerge again. I start over again more motivated”.

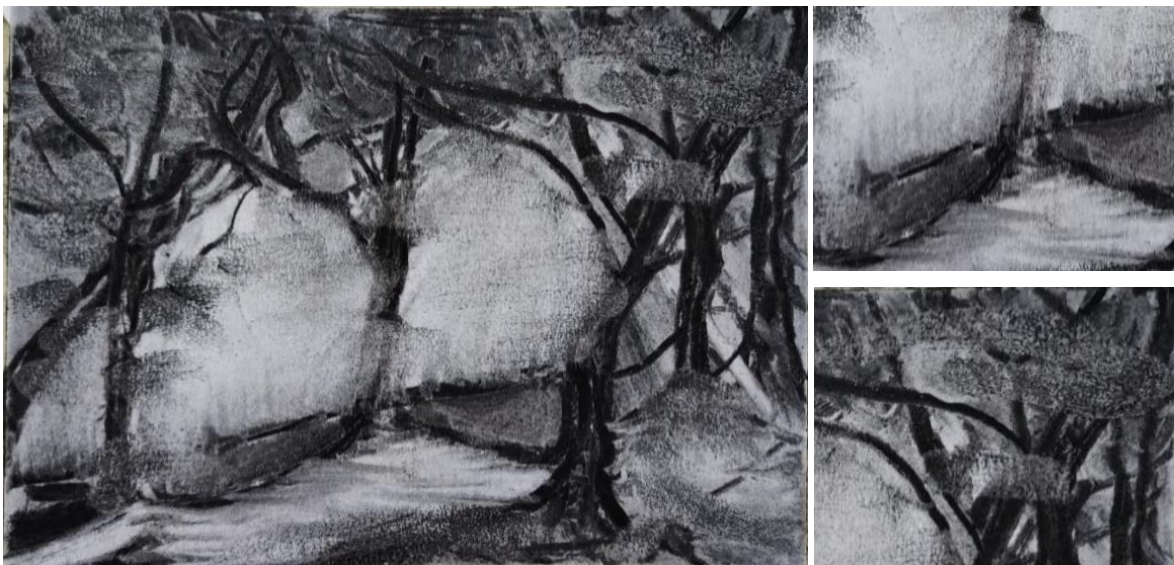


Figure 12: "Trees in the forest" Top-left (a): detail of the ground. Bottom-Right: Detail of branches.
(Private Photo)

Figure 12 I drew a diagonal line to establish the position of the trees in the background. Then, I added soft vertical lines for the trunks and branches. The accumulation of lines in different directions and sizes created a tonal effect that contrasted with the background which gave movement and emotion to the tree. With a rubber, I erased some charcoal from the background, especially between the branches to create lighter areas and emphasize the top part of the tree. I tried to create some depth and shadows on the ground, so I added some dark tones. The trees overlapping each other so I placed them just by the soft line I traced before. Finally, I drew dark trees to create contrast with the background and the ground. In this way, I tried to give them an organic feeling, as if they were real and alive.

4.3.2.3 Trial 3

“I stare at the photograph and follow the shape of the trees and their shadows. My first impulse before starting is to remove the sun. Instead, I want the moon behind the trees. I immediately walk to my desk to cut a piece of paper and to begin my drawing. It is a time of conflict. I decide to change the landscape with darker tones, and let the moon inspire me”.

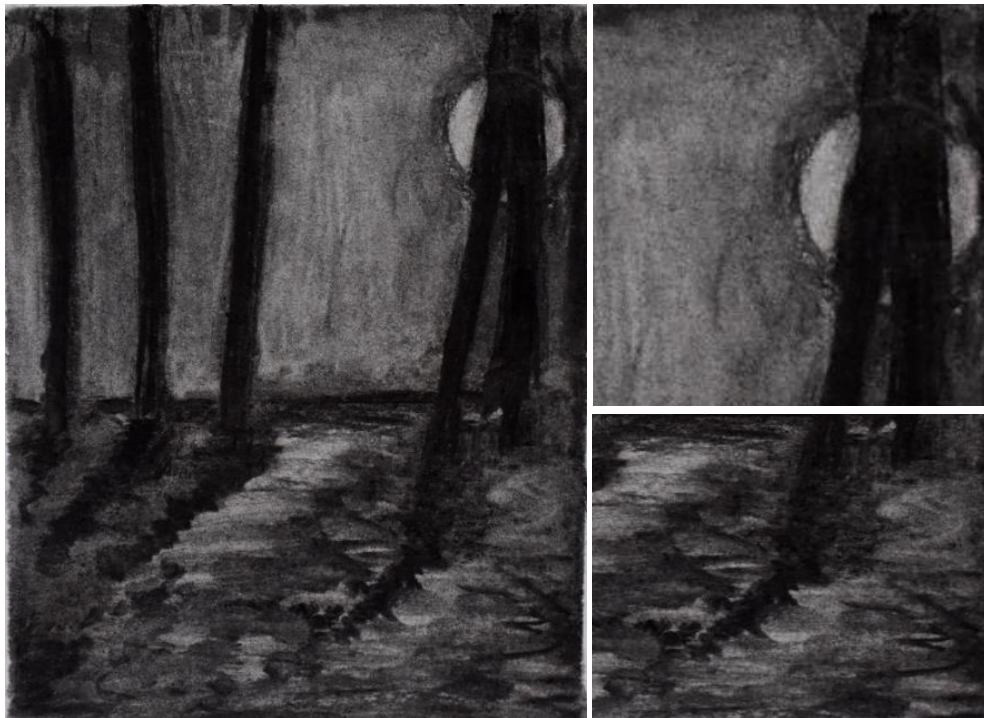


Figure 13: “Forest trees”, Kverndammen in Porsgrunn. Top –left: detail of the moon. Bottom-left: detail of the ground (Private)

Figure 13 Layers of charcoal were applied. I began drawing a relative dark value on the paper. The excess was removed later with a soft paper. A horizontal line separates the sky

from the ground and vertical dark lines were added to create the trees. I sketched the moon with a pencil, and then I drew the moon using rubber with high pressure to remove the charcoal to make it lighter, in this way the moon could act as the light point in the composition. In an effort to create a melancholic state, I used soft tones to create the background, by removing the excess of charcoal with the eraser. The texture on the ground, carefully I erased many small strokes in a vertical direction to add contrast between light and dark tones. I added dark values to emphasize the shadow on the ground; lighter values and focal point in this example were created on the moon.

4.3.3 Finding and experience

What can be transmitted about spaces using charcoal?

The accumulation of lines in different directions and sizes creates tonal effects and contrast between the object and the background. Depending on the source and direction of the light, we can see more details of an object in front of us. Drawing the trees was a challenge because of the number of details they have, especially in textures. I found that using lines in different directions I could give form and the illusion of texture to the trees, also served to create contrast between the background and the subject.

Can I express the subjective experience using the contrast between black and white?

The subjective experience is lived by connecting the body with the charcoal, and then the experience is expressed through the movement while drawing. The more realistic the trees are the less spontaneous the moment is. Therefore, the perception of the trees in this series is a process to achieve my perception of them.

4.3.4 Series 3: Underpasses

Inspired by urban spaces, I created three charcoal drawings taking as inspiration the different underpasses I visited (day-night) during the collection data period. In the underpasses, light and dark was found at the end of underpasses. As one moves through the underpasses a variety of feelings and emotions can be aroused especially at night. Being surrounded by walls can be unpleasant and frightening. The drawing below shows three underpasses visited, located in Skien. The length, the shape of the entrances, lighting of the interior, and the visibility are important aspects that can contribute to the way it is perceived in a narrow and enclosed space such as underpasses.

4.3.4.1 Trial 1

“While I’m drawing and reflecting on my real connection with underpasses, I believe that tunnels are a good physical representation of how as human we move through life leaving behind open doors. Sometimes there is not enough light inside and when is too much light we cannot see the outside” (Voice recording, 2020)



Figure 14: Top, bottom-left: Underpass n.1. The pictures are showing the same underpass looked from different angles (Private)

Figure 14 I trace lines to create a view in perspective. I draw a square frame and left it white to simulate the light outside in the street. In the picture, light is coming from outside and creates strong contrast with the dark interior. I pressed down the charcoal on the paper to create a dark value and then I held the charcoal transversely on its side and then, I covered with continuous hand movement the entire space except for the frame. I added texture details on the walls with fine lines of dark charcoal to give a more realistic impression of the concrete. Next, I shaped the entrance and the cast shadow projected on the right side applying a lighter value.

4.3.4.2 Trial 2

“My hand is moving faster with more control to create dark tones. In the process of drawing, I am experiencing some pain in my shoulder and back. I am moving to my sofa to feel more comfortable. I take the photo to count the spots of light inside of the tunnel, then and without hesitation I decide to restart the drawing session again”. (Journal, 2020)

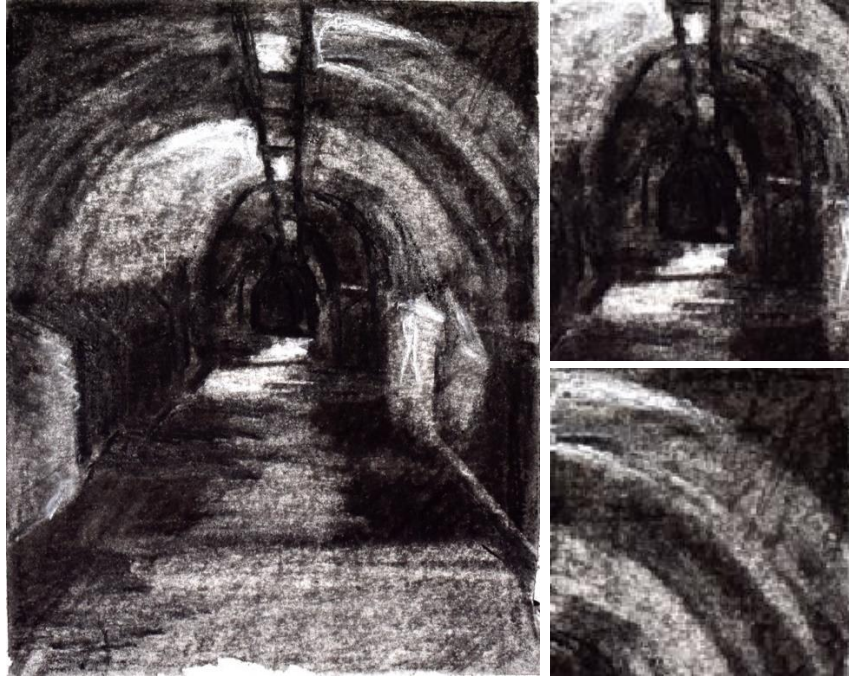


Figure 15: Underpass n. 2, Skien. (Private)

Figure 15 The same technique of perspective was used here. The following drawing shows at the end a half-circle frame to simulate the darkness outside. The contrast between the dark and light values was created on the floor and the ceiling using rubber with a smooth gradation between dark tones and mid-tones. Here, I wanted to emphasize the effect of light that was bouncing off on the walls and floor. In the same way, the feeling of being alone and scared is given by the cold and raw material of concrete.

4.3.4.3 Trial 3

“While I’m drawing, memories of James Turrel skylight pay a visit. I remember how the light coming from outside filled the entire room and how spiritual the experience was”

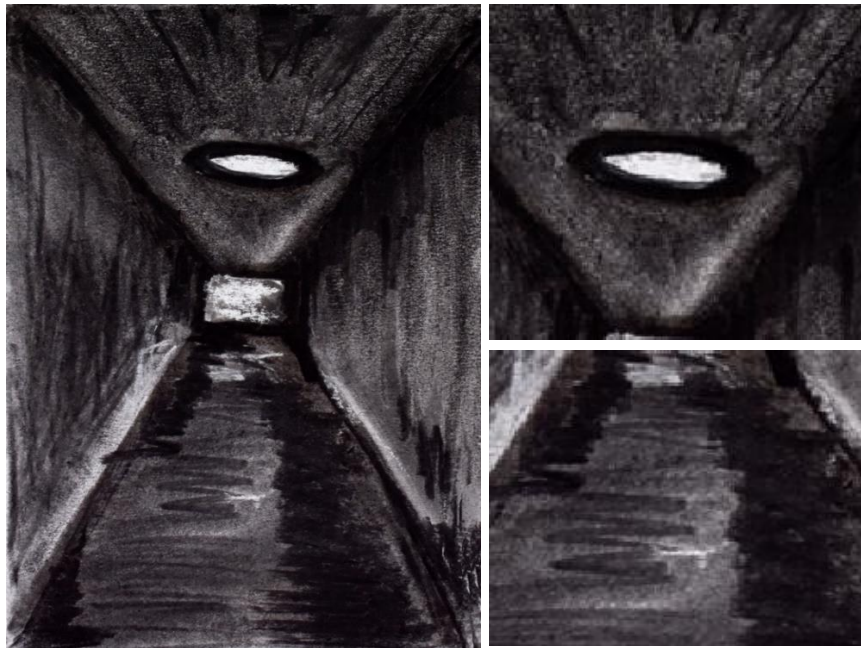


Figure 16: Underpass n.3, Skien. (Private)

Figure 16, a similar process was repeated here to draw the structure of the interior. In this drawing, the lightest values are created to emphasize the interior of the underpass. The underpass shows at the end a square frame and a circular opening on the ceiling filled with a light tone. To shape the walls, I applied a dark layer of charcoal near the edges and then I dragged the charcoal to create a slight gradation between light and dark tones. Texture details were added on the floor with dark tones to create a contrast with the grey tone of the floor. This is a trial that I created inspired by the installation of James Turrell and the feelings I had while I was inside. The concrete inside the tunnel, do not have details to distract your attention. The skyscape on the ceiling catches your entire attention and makes you raise your head to see the light coming through, I had a very peaceful and silent feeling with it.

4.3.4.4 Trial 4

“I find a posture that allows me to move my hand and arm free. Now, I have a routine before begin a new drawing. My thoughts in making involve spontaneous lines. I need to transfer memory that is stuck in my head, the dam. I step back and without losing sight of the paper, I outstretch my arm, and I’m tracing one single line with the eraser. I’m doing it twice from right to left making sure is completely brighter, I want to see light here. Then, I turn my attention to the background. I formed a new piece of rubber. I’m thinking about that night in the dark. I see the lights of the houses far away in the night. I’m making small strokes, like lines with deliberate pressure and only my hand is moving up and down”.



Figure 17: "Dam in the forest", Kverndammen in Porsgrunn (Private)

This is the final drawing created using the underpasses as inspiration. Figure 17 shows an abstract drawing of the dam looking from the top down the hill. Is an interpretation of what I saw in my first tour in the forest at night, is a view of the dam from the distance. To create it, I used the same technique as the prior drawings. I filled the background with charcoal, and then I drew a white diagonal line across. To recreate the glimmer of lights of the houses, I drew fast and spontaneous strokes in different directions and tones using the rubber.

4.3.5 Findings and experiences

What can be transmitted about spaces using charcoal?

The contrast between black and white accentuates the experience that was already lived. First the experience of being enclosed (Fig. 14); the high contrast gives you the sensation of being close to the exit because the exit is full of light. The opposite experience is in Fig. 15 where the sensation transits from feeling enclosed and trapped increases due to the dark exit.

Can I express the subjective experience using the contrast between black and white?

In most of the series shown, the experiences lived were transmitted with charcoal as they were. The association of feeling enclosed, trapped and sometimes frighten was evoked by

the contrast between black and white and the mid-tones. The last fig. 17 shows this association but in a different way, the black background defines the main white lines and the rest of the strokes. On the other hand, the black background is dimmed with the brightness of the light small strokes.

4.3.6 Summarize of experiences and finding

Continuous experimentations and observations contributed to improving techniques and observation. Drawing with charcoal encourages me to explore new ways of communicating personal experiences, for example through abstract work, where the interpretation of the essence of the experience was more important. Good posture, a suitable space was essential for working with the different scenes. I drew at night, sometimes with only a dimly lit lamp to recreate the dark surroundings while drawing to create a new experience. After several tests, I was able to see the improvements to create tonal values, mid-tones, and shadows to see better strong contrasts.

4.4 Series in black and white

Table 6: Overview phase 3

CONTRAST BETWEEN LIGHT AND DARK	
Phase 3: Series acrylic, Black & white	
Observations	
Descriptive notes, sketches, drawings and paintings	
Black	White

What are the elements that represent the essence of someone's experience of the space?
 Can I simplify the landscape by representing/picturing it in black and white?

The paintings were made between October 2020 and January 2021. Some of the paintings were created during and after the charcoal phase. The order of the paintings does not follow a chronological timeline, since they started as part of my self-reflective process while visiting the places and painting the charcoal illustrations. All the places were visited on different days and during different times of the days in June 2020 until February 2021.

The first place, I registered with acrylic, is the park near my house. The second was the Kverndammen forest in Porsgrunn, and finally, the third is a depiction of the underpasses

located in Skien. This phase of black and white aimed to simplify the experience by capturing the essence of the images and transforming these observations into practical work. By simplifying and reducing the details in the objects, I intended to control the focal point in a picture and eliminated all non-essential details to later transform it into a simple and abstract composition. By non-essential details I mean, characteristics such as surfaces, textures of the trees, ground, ceilings, and other objects were eliminated. The juxtaposition of light and dark produces contrast and sense of space. The process started with observations to identify main objects and determine the positive and negative space. The next, was where I use simple lines and shapes to emphasize the essential objects. The third and final step was to paint the areas that one chooses in black and white. The result is a new composition from the original. The black and white painting series presented in this phase were made using different materials (Table 3)

Table 7: Technique, materials and series important variables in phase 3

<p>Acrylic series</p> <p>Technique: Painting</p> <p>Materials</p> <ul style="list-style-type: none"> • White acrylic • Black acrylic • Pencils • Erasers 	<p>Painting variables</p> <ul style="list-style-type: none"> • Contrast (black and white) • Positive and negative space • Shapes • Lines direction
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4.4.1 Series 1: Skien Park

The following series of paintings shows a black and white composition created from the reference photos taken in Skien Park. The following series of paintings shows a black and white composition created from the reference photos taken in Skien Park. The compositions were created by selecting the objects to then breaking them down into simple shapes. Finally, the shapes were used to select and outline the objects.

4.4.1.1 Trial 1

“I took the photograph; the lamp object appears to be close in contrast with the dark background. I take a close view again, something is missing. I see a very fine line that goes down from the light but disappears behind the house. Then, I look to the ground and I see a

dark shadow. Using a pencil I drew a soft vertical line at the bottom to mark the floor. I took the picture again to find the right place to draw the shape of the lamp. Having drawn the shape I see in I paint everything in black acrylic paint except the lamp and the ground”.



Figure 18: “Black and white nightlight n.1 simplification”, Skien. (Private)

Fig. 18 (Right) in this example the street lamp and the path are the primary objects and make up the positive space. The amount of black that correspond to the negative space defines the positive space, which in this figure, is the streetlamp that appears to be closer to the eye.

4.4.1.2 Trial 2

“I look at a new picture; I see a lamp, light in the background and many leaves on the ground. I take a closer look and I see a diagonal line between the pavement and the grass. I follow this line; in the back, I see a vertical shadow with an interesting shape. I take my pencil and I draw the shape of the lamp and the lines that divide the pavement and grass, and the lines between the light and shadow in the back. I quickly take the brush and paint the lamp and the path and grass black. I move to the background and I paint the shape that light creates”.



Figure 19: "Black and white nightlight n.2 simplification", Skien (Private)

To create figure 19, the first step was to consider which parts were going to be white and black. I placed the figure on the wall to look if the white and black areas were harmonious. The areas in black including the streetlamp are the positive space. Opposite of the previous example (Fig. 18) here, the positive and the negative space are in balance because both positive and negative are almost in equal visual weight. The two white triangles on the ground are arranged in lineal perspective giving a sense of depth, distance and direction. Additionally, the white spaces or light spaces help to separate the background, middle, and foreground.

4.4.2 Experience and finding

What are the elements that represent the essence of someone's experience of the space?

The white or black areas define the edges of the positive space; the positive space always represents the essential elements that one decides to make emphasize (Fig. 18). In the first example, the white area is small compared to the black. The black area frames and highlights the main objects in figure 18, allowing the eyes to rest from the space surrounding them. In the second example (Fig. 19), the lampstands in a vertical orientation compared to the background and draws the eye's attention.

Can I simplify the landscape by representing/picturing it in black and white?

The simplification begins with the perception of the object and then comes the experience that is the connection between object-person. In the case of this series, the simplification begins with the closest object, the lamps. The experience occurs when one recognizes the object of attention and the surroundings disappear. The perception of this object that is presented in front is almost unconscious at the moment, but it is accompanied by previous experiences.

4.4.3 Series 2: Forest

The following series of paintings shows a black and white composition created from the reference photos taken in Kverndammen forest in Porsgrunn. Square shapes were used to mark objects and lines that were selected to create a minimal and less complicated image.

4.4.3.1 Trial 1

I try to find shapes in the picture. I select a group of trees as the main viewpoint and then I draw horizon lines up to the middle of the paper. I draw new vertical lines; to create the shape of the trees. Now, I pay attention to the ground, but I don't follow the direction of the shadows, instead, I trace vertical lines from left to right. I paint the shape of the ground and two shapes of the trees in black. I step back to see what else I can add, then I take a piece of charcoal and add a grey value to the painting.



Figure 20: "Black and white Forest trees simplification " (Private)

This is the first group of trees that I transformed into simple shapes. In figure 20, the primary objects were initially the trees, which I painted in black and white colour. Then I changed the

idea and added a grey value in some of the white vertical and horizontal areas to give an illusion of a three-dimensional space, where foreground, middle ground and background are visually defined.

4.4.3.2 Trial 2

“I look at a new picture, and I immediately block all details from it. I pay attention to cast shadow shapes on the ground. I turn to look at the picture for light areas and I see the round shape of the sun. The same shapes of light are cast on the ground. I sketch lines in different directions following the trees and shadows. I decide which part of the drawing to paint in black and which part to leave white. I start with black lines. I move the brush to the side to make thick lines and then; I go over the lines again to give a natural effect. I turn the paper upside-down to see if the painting reveals something else from another angle and then I add the final strokes on the ground to complete the painting”.



Figure 21: *“Black and white Forest trees simplification” (Private)*

To create this painting, I selected the trees at the left side with the sun at their back to simplify, as well as the shadows cast on the ground. The rectangles shown in the pictures are only a guide to show the selected shapes to be simplified. The white areas represent the positive space in figure 21. In this painting, my attention was to capture the contrast that makes the between light and cast shadows on the ground. As well, the white lines change

their direction in the lower part of the figure, which gives the illusion that the space continues enlarging.

4.4.3.3 Trial 3

“I take the pencil and I draw the second one. I’m interested in follow the lines and shape of the original tree and this takes extra time. Now, I trace in pencil a new line to create the ground. I paint the trees and the ground in black. I step back to see what else I can do, and I decide to apply more paint to fill some gaps”.



Figures 22 – 23: Left-right “Black and white forest trees simplification” (Private)

To create the first painting, I concentrated first on the two trees on the left side and I began to trace the lines directly, without making any sketch of the branches from the top to the bottom one by one, repeating the same movement until had the thickness I wanted to. The two trees and the area below the trees represent the positive space. The high contrast between the objects in black and the white background creates the illusion of proximity. This effect is visible between the two trees and between the background and the foreground. In figure 23, I repeated the same painting process without previous sketching. I began drawing the first three trees in front of the painting, and then I traced a soft line to create division or illusion of the ground. From that line the trees at the back were painted. Additionally, I drew another line which I placed higher within the picture to create the illusion of depth.

4.4.4 Finding and experience

What are the elements that represent the essence of someone's experience of the space?

The elements that represent the essence of this series are the direction of the lines and the arrangement that objects have within the space. The experience with lines and their direction help to perceive the dimensional characteristic of spaces. In the same way, the experiences that these series give us are that; we can experience the space without the need to be in the physical space.

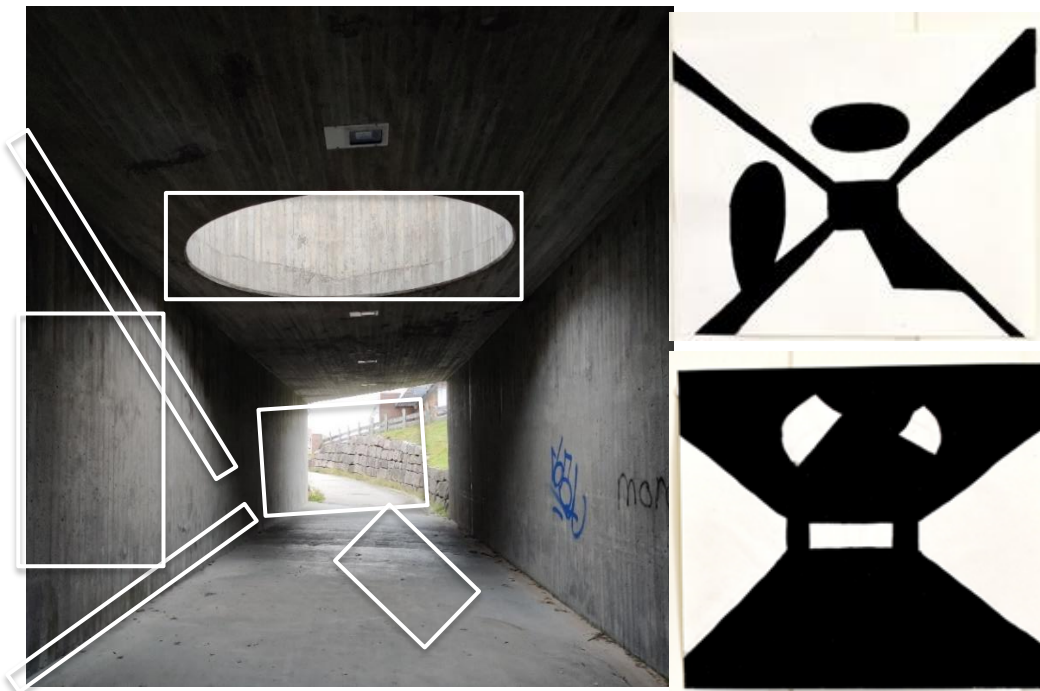
Can I simplify the landscape by representing/picturing it in black and white?

The contrast between light and dark from the reference can help to decide which object (s) or shapes will be the main attention of the picture.

The simplification begins with the perception of the object and then comes the experience that is the connection between object-person. In the case of this series, the simplification begins with the closest object, the lamps. The experience occurs when one recognizes the object of attention and the surroundings disappear. The perception of this object that is presented in front is almost unconscious at the moment, but it is accompanied by previous experiences.

4.4.5 Series 3, Underpasses

The following series of painting shows a black and white composition created from the reference photos of underpasses taken in Skien. Square shapes were used to mark the shapes and lines that were selected to create a minimal and less complicated image.



Figures 24 a, b & c: Vallejo, C., 2020. Underpass Myren in Skien. Right - top (a) and right - bottom (b):
Simplified Underpasses in black and white. (Private Photos)

Picture 24 (a) I take my pencil and draw diagonal lines from corner to corner and in the middle, I draw a square. I turn to see the picture again, and I notice a shadow is formed on the floor. I turn to the right and I see that light has formed a half-circle on both sidewalls. I paint the shadows and squares in black, then I go over the diagonal lines twice, then I continue with the edges and corners, this effect seems to open the space. Picture 24 (b) I choose to eliminate the shadows here. I paint the floor and ground black. I add dark edges to the square place in the centre. I look at the painting and I feel like the white area on each side reduce and enclose the space.

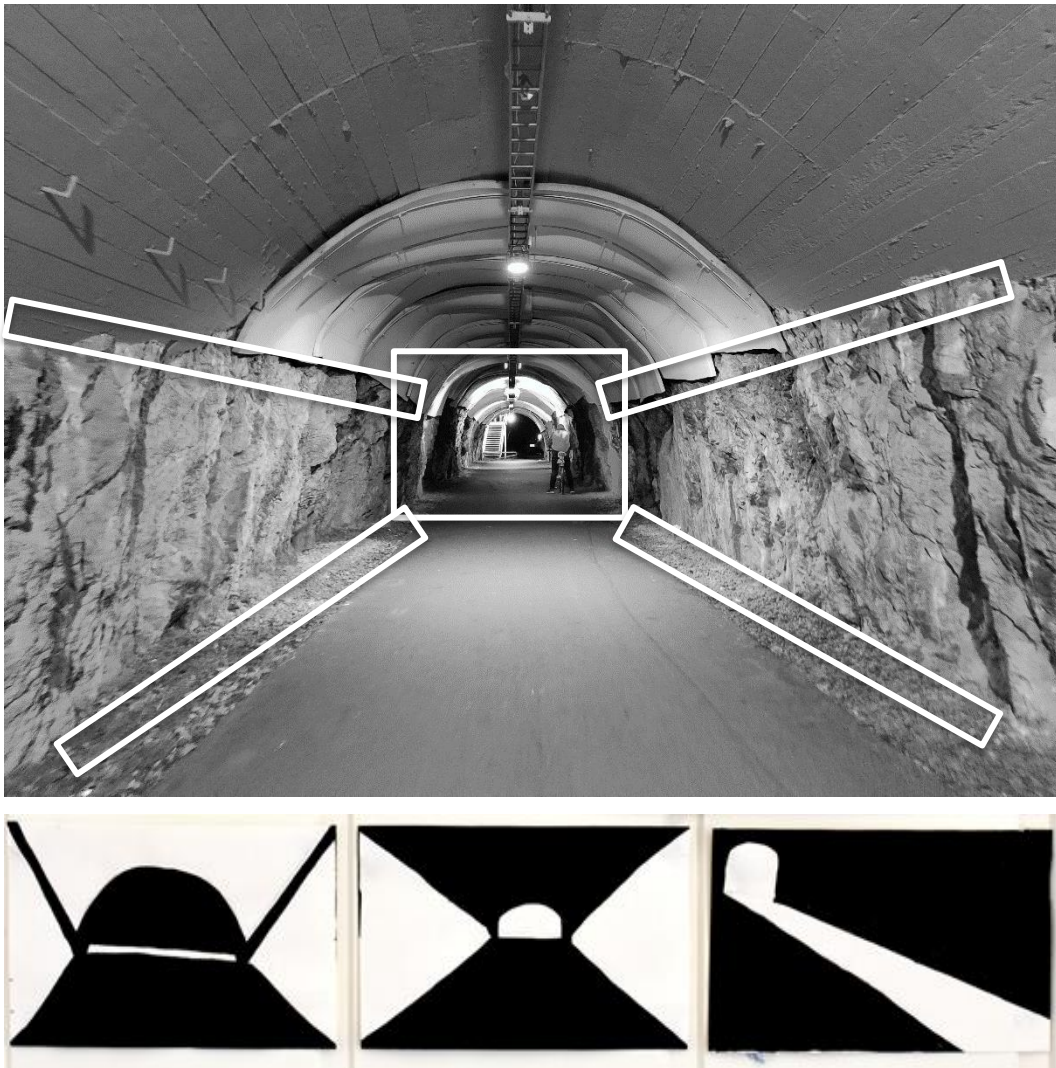


Figure 25: Top Klosterøya underpass, Skien. Vallejo, C. 2020 (Private)

Figure 26: Bottom (a, b, c) Simplified Underpasses in black and white. C, 2020, Skien. (Private)

Figures 26: (b, c). Here, the black areas on the top and bottom occupied more space and the interior look less high and a bit narrow. Looking from a side angle figure 26 (c) the white area or positive space looks like a long corridor that defines a direction that is emphasised by the big dark area or negative space.

4.4.6 Experience and finding

What are the elements that represent the essence of someone's experience of the space?

In the first example the black in the painting corresponding to areas of light and shadows. The white areas make the space look spacious but not deep because the dark edges lines define space.

The opposite effect is created when the main space is painted in black, then the impression changes and the space look smaller. The interior space of the underpasses looks different at a certain time of the day, especially at the night.

Can I simplify the landscape by representing/picturing it in black and white?

The contrast between shadows and light areas from the reference can help to decide which objects or shapes will be the main attention of the picture.

In this series, the simplification begins with the perception of the light or dark at the end of the underpasses. Then, the body perceived and experienced the illusion of width, length and high because of the distribution of light inside of the underpasses.

4.4.7 Series 4: The Dam

The following series shows three black and white painting of a dam located at Kverndammen forest in Porsgrunn. Square shapes were used to mark the shapes and lines that were selected to create a minimal and less complicated image.

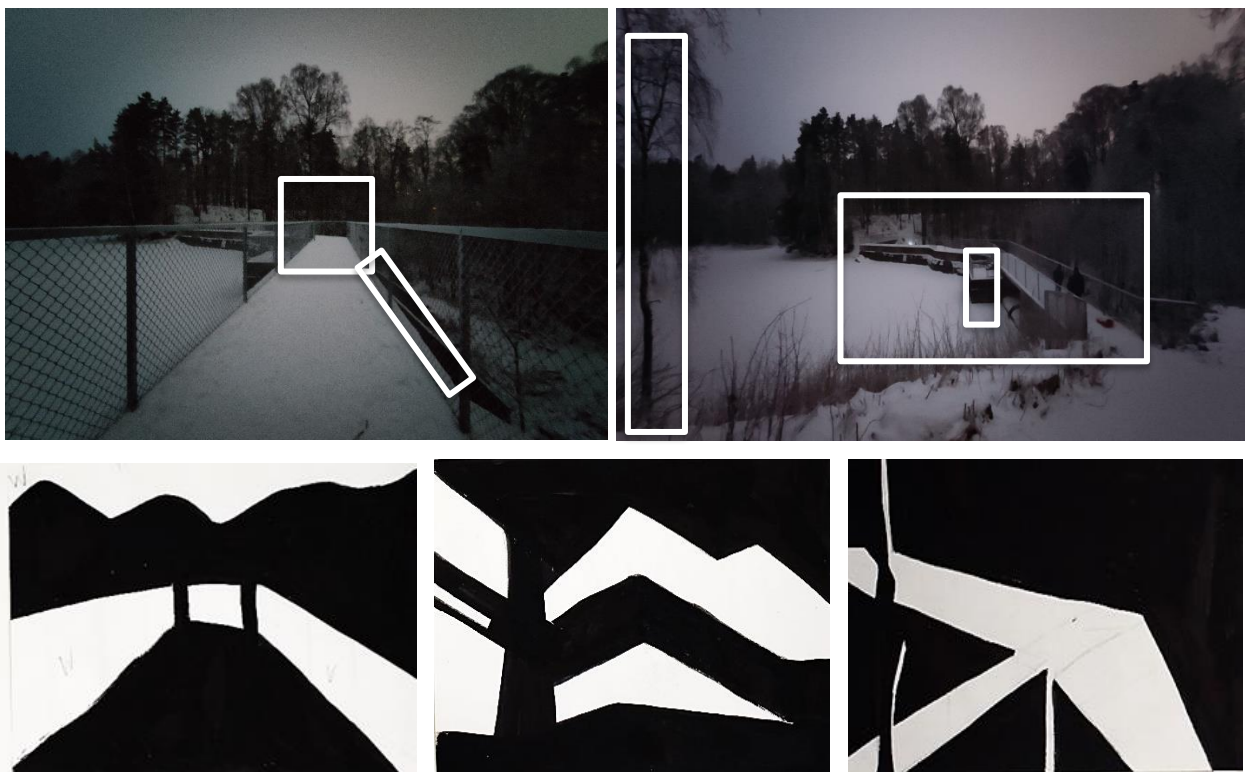


Figure 27: Vallejo, C., 2020. Left-right a, b; "Dam at night" Porsgrunn. C, 2020.

Figure 28 (a, b, c): Vallejo, C., 2020. "Simplified dam viewpoint".

“I stop for a moment to look at what is in front of me. I move forward, then I move to the right a few steps and the shape of the dam seems to change, like an optical illusion”.

Figure 28 (a, b, c). In the picture above I explore an object from a distance and different angles. I prepare three pieces of paper. I look at the photo and immediately memories of the dam coming to my head. I draw a horizontal line just in the middle of the paper. I want to place a point in the same line. Then, I draw diagonal lines from corner to corner as I did in the previous example figure 26. Now, I move my attention to the group of trees in the background. From the upright edge, I draw a line without lifting the pencil following the shape of the whole group of trees. I take a break to decide which part of the drawing will be in black. The trees are darker, so I paint the trees first and then, I paint the path of the dam in black and I left the side in white. Following the same process but from different angles, I drew figure 28 (b, c).

4.4.8 Experiences and finding

What are the elements that represent the essence of someone’s experience of the space?

The way that white and black areas are arranged in the space can give an impression of an open or enclosed space. In a big black space in which a white shape is placed, eyes are forced to look at it because what black values do is to shape or give emphasis to the white value. The orientation of shapes black or white can give and the direction of shapes helps to draw attention to a certain point or area.

Can I simplify the landscape by representing/picturing it in black and white?

The snow from the reference picture makes for a high contrast scenario and this helped to see the main object and shapes were taken to simplify the original image.

The simplification begins with the body moving to see the object from different angles and the eyes experienced the same object of different shapes.

The simplification continues according to the position of the body within the space looking at the object (s), front, side or top. The simplifications of the images changed because the view from which the object was viewed also changed.

4.5 Summary

Continuous experimentations and observations contributed to improving techniques and observation. This series of black and white encourages me to explore how three-dimensional images can be seen as two-dimensional shapes by concentrating on the contrast between light and dark. In addition to this, I could use the knowledge acquired in phase two, to identify how the mid-values can be shifted to the dark or the light. Through the creative exploration, experiences also were changing due to the simplification as technique help to create a new perception of the spaces and objects that were selected to compose each of the painting. The minimalism images give the eyes a chance to concentrate on one or two objects without getting distracted by other elements such as textures or colours. By doing this, the elements and objects that occupied the space without purpose are eliminated and only the essence of the experience remains.

4.6 Phase 4: From 2D to the room

Table 8: Overview phase 4

CONTRAST BETWEEN LIGHT AND DARK
Phase 4: From 2D to the room
Observations in this phase come from the first three phases; walks and visits to the natural and urban spaces, the charcoal drawings and the black and white acrylic paintings.
Pictures, sketches and scale model
Installation

The following phase intends to show how my findings and practical exploration have influenced the way I see spaces using the contrast between light and dark. Since the beginning of the exploration, the two research questions were constant. However, it was impossible to solve how to put together an artwork before everything could come together. Throughout my experiences, I came to notice the findings that were repeating in all the phases (1, 2 and 3) and with which I am intending to create my artwork. The sketches I present in figure 3 show three main proposals for my artwork. To simulate the space in a gallery, I created a frame to fit the projections. Here, I'm presenting the installation from three angles, one frontal, two sides and a corner (Appendix 1)

For my exhibition, I am intending to put together an installation using a mix of the techniques that I have learned in my exploration. The installation will consist of a projection of silhouettes on the wall to play with a sense of scale.



Picture 36: Vallejo, C, (2020) Frame scale model. (Private photo)

Phase 4 aims to work in a three-dimensional space, where the emotional side of my experiences, such as different moods and feelings and the objective side of my findings can come together as a whole. I am mentioning these two aspects of my research since they are the ground to explain the essence of my experiences with light, through the use of contrast within the spaces. For this installation, I want to work with the feelings that brought me to work with the contrast between light and dark and transmit the evolution of them during practical exploration. It was at the beginning of my research where I pointed out how afraid I was of the darkness of the night and dark places. These emotions have been evolving through my observations, as being the subject for my creative work and me, as being the subject to be observed. Nature, forest, nights and places we don't know can make us feel uncomfortable and frightened. These feelings, once we face them, can help to discover the reasons why we have them and learn how to deal with them. This is the message for my installation.

To start the selection process, I inspired myself with the works of artists from the Light and Space movement. These artists created installations where the aspects and influences of light in spaces were important. My question was; how could I produce a work that could achieve a sense of scale, a sense of three-dimensionality and that could be immersive?

Then, for the selection of the resources and the materials to be used in this installation, there was another question; how to produce an image that can have some motion and a sense of being alive? And lastly, and most importantly, how to use the contrast between light and dark to communicate my interpretation about spaces? Therefore, the selection for this installation came in this order; the sense of scale, three-dimensionality and immersion will be produced by the projection of silhouettes on that wall and slow-motion from the mobile, the motion will be achieved by making a small mobile hanging from the ceiling. In this regard, I want my silhouette to move harmoniously without any extra intervention. Nature and liveness, I will bring in the form of small cut shapes on white and black cardboard that will be hanging on the mobile. The light and shadows will be achieved by the light produced by the projector. Finally, two more resources have been added to produce a box inside the gallery. Two panels will be placed to make a corner that can contain the installation.

The following pictures () will show more or less how the installation will be put together in the gallery. However, the sizes have not been decided, these pictures will show how the installation should look. The models presented in this phase were made using different materials (Table 9)

Table 9: Technique, materials and installation important elements in phase 4

Techniques:	Installation variables
<p data-bbox="167 1254 702 1288">Light and shadows, paper silhouettes</p> <p data-bbox="167 1310 446 1344">Materials charcoal</p> <ul data-bbox="215 1366 774 1747" style="list-style-type: none"> • White cardboard paper • Scissors • Pencils, ruler • Wire • Round bend pliers and Cutter pliers • Tape • Mobile phone led torch 	<ul data-bbox="853 1254 1308 1467" style="list-style-type: none"> • Light contrast • Positive and negative space • Shadows • Silhouettes

4.6.1 Scale model 1

The scale model 1 was inspired by the trees in picture 13, phase 1. I wanted a picture that could show strong light, dark and shadow areas. After examining the entire image, I cut out a rectangle shape of paper. Then, I created an outline drawing of the trees and ground. The next step was to choose the positive and negative space and finally, I cut the negative space of the drawing. To use this design for the installation, I will need to repeat the same design to be able to cover a large area of a wall. I plan to place the cut paper shapes on a plinth, and to project the design on the wall, I will place a light projector behind the design.



Picture 37: Vallejo, C, (2020) Frame scale model. (Private photo)

4.6.2 Scale model 2

The scale model 2 is a paper mobile inspired by the trees in picture 13, phase 1. For this model, I used the shapes of the trees from the previous model (Pic. 37). I traced them twice on black cardboard, cut and split the shapes to get four individual branches. To make the wire structure of the mobile, I cut 2 pieces of wire and bent each in the middle with some pliers to create a loop. This part was the most complicated because the two pieces should be in balance. It is a simple structure, but it required time to manipulate the wire. Final, I used tape to attach the branches to each end of the wire and assembled all the pieces. For the exhibition, I plan to hang the mobile model from the ceiling and control the light toward the mobile to cast shadows.



Picture 38: Vallejo, C, (2020) Scale model 2 for the installation. (Private photo)

4.6.3 Scale model 3

The design on scale model 3 was inspired by the Myren underpass (Pic. 19) from phase 1. In the picture, the contrast between the natural light and the wall texture of the underpass interior is the key element. After examining the entire image, I cut out three squares of paper. Then, I selected three round objects of different sizes to trace a circle in each square. The next step was to cut the circles, then I took one of the squares and added more shapes that I cut after. To use this design for the installation, I put the three squares together to create an imaginary room. I used a torch to cast the shadow of the model onto the wall. For the exhibition, I plan to place the model on a pedestal and behind the design I will put a light projector.



Picture 39: Vallejo, C, (2020) Scale model 2 for the installation. (Private photo)

4.6.4 Projections in the room

How to produce a work that could achieve a sense of scale, a sense of three-dimensionality and that could be immersive?

The figures below show the projection of the silhouette designs on the wall. Since the room was quite small and the LED light from the torch was too soft and a bit diffuse, it was difficult to see the real effects of the shadows cast on the wall. Though, I had these complications, it is still possible to see an effect of depth in picture 40. In picture 41, the light level is soft and didn't have the power to hit the shapes of the mobile, but one can perceive the delicate movement of the suspended shapes and the shadows cast on the wall. It seems more than four shapes are moving at the same time. Here, the light escaped through the branches and couldn't touch the cardboard, so the shadows are not well defined on the wall. The picture is not framed as in picture 40, because the mobile was hanging from the ceiling.

The brightness of the light source and space where the shadow will be projected had a great impact on everything that follows, for example the size, sense of depth and three-dimensionality. The direction and position of the light source can also influence the perception of how mood and perhaps the emotions conveyed in the scene and the object is presented to us.



Picture 40 - 41: Vallejo, C, (2020) Test of light projection on the wall. (Private photo)



Picture 42: Vallejo, C, (2020) Test of light projection on the wall. (Private photo)

In figure 42, it is possible to perceive the effect of depth because the square shapes placed on the side give an effect of open room. I like this effect because it made me feel a sense of entering a room. It looks small but again, the light source is not strong enough and the contrast between the shadow and the white wall is low and the shape does not look defined.

4.7 Summary of practical exploration and creative work

To start the analysis of the experiences lived through the entire practical exploration in chapter 4; I decided to make a table, in which I located all the experiences and findings in different groups, to see a complete overview of all of them. In addition, I used colour-coded in order to find the commons and repetitions in all phase 1, 2, 3 and 4. The last phase, the number 4 represents my proposal for the exhibition, which by the time I made the table was not fully complete. However, my tests with the materials and techniques represent the final exploration.

Categories

- Subject and experiences: Body responses
- Aesthetical experiences: Elements of attraction
- Acquisition of skills and knowledge of techniques
- Artistic relation with the subject through contrast

Using colour-coding helped me to see which of the categories were connected and how these were connected with my exploration. The method used in each of the phases was observations and my reflections over the experiences. From the findings found, the goals were formulated in form of questions in each of the phases during the creative work. The common goal for each of them was to describe and define the essence of the experiences with light within spaces. As well, the contrast between light and dark was explored in each phase using different techniques, variables and materials. All of them chosen and selected from the results and findings from the previous phases.

In the following part, each of the categories has written a summary of the whole exploration, based on the findings and their connections. Some of the connections between the findings have been explained in detail in my discussions in chapter 7.

4.7.1 Subject and experiences: Body responses

Body and emotional responses were a crucial part of my exploration, as they gave me the possibility to open myself to perceive the phenomenon of light and its influences without having a previous intention. In this category are presented findings that represent how my body responded to those encounters; in terms of body postures, effects on the vision and

senses, and the emotional responses which refer to the feelings and emotions felt while the experiences were happening. From the results in phase 1 (exploratory phase), the body responses are most in terms of the effects of light hitting surfaces and materials, the changing conditions of the light day and night, sources of light, foggy and snowy days, and the characteristics of materials of interior spaces such as the underpasses. The first body response that appears in all the phases is the sensation of dizziness or disorientation created by the fog (Phase 1: 4.1.3) which provided an illusion of limitless spaces on the landscape. The same experience appears in phase 2 (4.3.2.3), which is justified by the search for a focal point from which to start a composition, to then eliminate the extra visual information, leaving the essential parts that are more meaningful to the experience. As well, in phase 3 (4.4.1.1 – 4.1.1.2) the wholeness of the black backgrounds in this painting makes a remarkable visual impact as it occupies mostly the entire composition capturing the visual attention.

The senses were also influenced by the light in spaces. This is presented as one of the findings in phase 1 (4.2.2 and 4.2.4), with the experiences walking in the night. The first walks and visits during the night provoked frightening moments to which the body responded by opening arms trying to touch things, waking and alerting other senses than the vision. After the first visits, body and mind had already made some connections with the spaces, which made the experience less stressful. During the creative work, these experiences were worked during the charcoal series, painting during the night, lighting up my workspace with only one lamp to recreate the dark atmosphere in the forest. The same experience was lived inside the underpasses during day and night. This was worked using the extreme contrast between black and white, in phase 2 (4.3.4) and phase 3 (4.4.5). The materials, the absence of light and the lack of architectonic details intensified the experiences associated with isolation, desperation and solitude.

After several visits, the body responses, sensations and emotions felt during the exploratory phase 1, began to change and the body started to take other postures and feel comfortable walking during the night in the forest, however, the underpasses still presented difficulties to explore at night. The same feelings and emotions lived in phase 1, evolved in phase 4, where the frightening sensations were used to produce the final artwork. The body got used to in most of the cases, however, some of the experiences were reawakened in phase 2 and 3 while painting and drawing observing the same pictures.

4.7.2 Aesthetical experiences: Elements of attraction

During the execution of the practical exploration, the aesthetical experiences helped to understand how light being part of the landscape features, can bring a sense of atmosphere to spaces that we define in this research as the soul of spaces in phase 2. The encounter with the phenomenon in all the different phases provided me with an understanding of how certain elements in the space produce more visual impact than other ones. As well, findings these elements, one can discover the essence of the spaces by exaggerating them by using the contrast between black and white.

This is the case of the trees and lines which appear in all phases 1 (4.1.1), phase 2 (4.3.2), phase 3 (4.4.3) and phase 4 to give a sense of liveness to the installation. The trees made a big impression for their innumerable possibilities that in terms of aesthetic qualities produced in a composition, lines, sizes, textures, focal point and organic characteristics. In working with the contrast between light and dark, the trees have been explored especially for the light and shadows that prolong them on the ground providing a sense of depth and perspective in the space. The shadows that are the prolongation of the trees when the light illuminates them behind, is another element that stands up in all the phases, providing the spaces with different patterns (day and night), intensifying the sense of dimension in spaces, changing the effects between the objects and the background with their different directions and finally, providing us with a sense of orientation.

The qualities of the materials and surfaces that the light hits, is another finding that has repeated in all phases. The lack of light in enclosed spaces such as underpasses, made them appears heavier to the eye. This is seen in most of the tunnels series from phase 1 to 3. On the contrary, if the light went through elements such as foliage in pictures 14, 15 and 16, the visual effect makes divisions between light and shadows (light spots) or produces effects of three-dimensionality that textures provide.

Lines, trees and materials such as concrete of the underpasses, made a mark on my experiences, as they were the elements that my memory recorded, and which I used as a reference point to my creative process.

4.7.3 Acquisition of skills and knowledge of techniques

During my creative process, I used charcoal and painting to explore the use of contrast to find out how this golden rule could help to communicate and interpret spaces in an artwork. Continuous experimentations and observations contributed to improving and gain a deeper understanding of these techniques which made possible the creation of a series of drawings and paintings shown in phase 2 and 3. All these series were made by looking at the actual pictures taken on exploration phase 1.

After several tests, I was able to see the improvements to create tonal values, mid-tones, and shadows to see better strong contrasts. This can be seen in figure trial 4.3.1, fig. 10 that shows the final draw of a tree with a moon illuminating behind. The first drawings show more rigid strokes, as I was trying hard to emulate the real picture. This procedure, trying to imitate the real image, worked against at the beginning of this phase because in some way, stopped my spontaneity in my creative process, taking me away from experience with the phenomenon.

An important part of the charcoal series is the use of this technique to give an organic quality to the elements in my drawings. In the series of the trees (4.3.2) it can be seen how at the beginning of the series, the branches appear rigid with vertical and hard lines. During the process of this series, the challenge was to let my creativity flow and let the strokes come out as if I were touching the branches and perceiving them again live in the forest. This experience between the body and the emotive memory resulted in a composition where the strokes became loose appearing spontaneously (fig. 17) during the series of the dam in the forest. In Opposite to this, is seen in in the figure 14 from the series of the underpasses, which show rough and very strong strokes to work the surfaces to produce the feeling of isolation and fear.

In phase 3, the high contrast between the black and white allowed me to play with the focal point in the paintings as well as to define the essential elements to represent the experience in the painting. Painting in black and white changed the perspective in terms of three-dimensional effects. However, this technique accentuated more the sense of depth, playing with the directions of lines, grouping the elements in shapes to simplify the image. Another finding during this phase was through the learning of the technique simplification of the images.

Spaces until this time had been observed in terms of the physical environment. Examples of this are given in phase 1 (fig. 2). However, in this phase, all the drawings present the spaces in black and white. The simplification of the images took the observations and descriptions in terms of negative and positive spaces, this technique of simplification allowed me to use the contrast between light and dark to decide which object (s) or shapes will be the main attention of the paintings.

In phase 4 the techniques learned have come together in a work that has as the main topic the light and shadows projected on the wall. Here again, the effects of depth appear emphasized by the brightness of the light source, which has been placed in front of the box that acts as the gallery space. The direction and position of the light source can also have influenced the perception of how mood and perhaps the emotions conveyed in the scene and the object is presented to us. In this phase, the last finding corresponds to the actual installation in which the viewers will take part.

5 Educational Approach

In the following chapter, I intend to explain how my project can be useful in educational terms in two ways; first, how and why this exploration covers an important subject matter within the Art and Design curriculum in Norway and second, clarifying where this project stands and how accessible and useful it is for students today.

5.1 Educational area, Art and Design curriculum

To begin, I would like to briefly reflect on where I, as an Art and Design teacher am standing, and what beliefs and principles I follow to execute lessons and achieve goals. From the beginning, this exploration proved challenging. First, to decide which aspect of light I wanted to explore and second, how to address it in a way that is communicative. The third challenge was to prove the relevance of this research for education purpose.

“Education is a bold venture – particularly in the arts, because it involves the creative spirit of man. Knowledge of human nature – intuitive knowledge of human nature” (Itten, 1975, p. 6)

Before this exploration, although I had some knowledge about light and contrast, a constant question was in my mind of whether this study would enrich and strengthen my students in the art and design program. The entire research and the creative process were approached with spontaneous but reflective thinking and also, with a sense of intuition, especially in the way that the creative process was confirmed. An intuitive feeling is one of the greatest attributes that a teacher can possess and develop because it inspires children to follow their intuition and paths, wrote Johannes Itten in the introduction of his book "Design and form: the basic course at the Bauhaus" (1975). In this sense and my experiences as an Art and Design teacher I have understood with time that the role of a teacher is to recognize that all students are individuals with their own characteristics and talents, and therefore, my responsibility is to give them an opportunity to develop and improve those natural talents in their own good.

One of the core values and principles for primary and secondary education and training revolves around the relation between humans and nature. In this core, it is fundamental for

teachers to create an environment for students where contact with nature is present. Therefore, it “is to respect nature and develop climate and environment awareness” (Utdannings-direktoratet, 2021) which means that students should develop respect, experience nature and see it as a “resource of utility, joy, health and learning” (Utdannings-direktoratet, 2021). Thus, through this exploration, I have come to realise the importance of light not only as a source of creation but also, its role in the history of man. The more we learn about this source of energy, the bigger the impact will be to prepare ourselves for the future coming, as we understand our responsibility to protect our natural resources. Under this vision, the UN designated the “International day of light” on the 16th of May 2015, a day that celebrates the past and present discoveries within the field of science, culture and art, education and sustainable development. A closer understanding of this infinite resource with unlimited potential is the key to enable future inventions and innovations to improve our well-being. Thanks to the awareness of solar energy, new educational opportunities have been created for those who live in areas where there is no electricity (UNESCO, 2018). Many questions come from the awareness of light, especially if we think about how to incorporate this topic in the educational field, where students can develop a deeper understanding of this phenomenon. In this context, this research underlines the importance of light and how this resource influences the experiences of spaces.

5.2 Didactic of the method

5.2.1 Phenomenology of the Visual Art

In this research, I visited different places that included spaces in nature and urban environments. The method in this research had two approaches: The first was phenomenology, which allowed me to describe significant experiences and perceive spaces more subjectively and emotionally using reflections and observations. The second is an exploratory process where I have worked with charcoal drawing, painting, and 3D models to create an artistic expression. Subsequently, I have discussed and analysed common aspects that were constant in all four phases.

Phenomenology is useful to collect perceptions and describe thoughts and feelings of real experiences. Through phenomenology, students can study, explore and interpret the world around them as it is from a very personal point of view.

The framework for basic skills developed by the Norwegian Directorate for education defined five basic skills that contributed to the development of the students in which

include verbal and written skills. “Oral skills relate to creating meaning through listening and speaking” (Utdanningsdirektoratet, 2012, p. 6)

In art and craft, the students should practise these skills by reflecting on aesthetic experiences and creative process. The practice can be conducted through learning specific vocabulary, by participating in active discussions and through presentations. The development of oral skills in Art and Craft allows students to speak about their observations and experiences with tools, materials, and with different activities both inside and outside of the classroom.

The written skills in Art and Craft relates to the ability of students to communicate their thoughts, feeling and ideas through signs and symbols. This also means being able to write texts to explain and describe ideas, choices and opinions through practical work. The training and practice of the written skills can be done through written reflections, drawing, symbols and revise texts. “Written involves expressing oneself in appropriate and understandable ways of different topics” (Utdanningsdirektoratet, 2012, p. 10). By gathering insights, describing thoughts and feelings from personal experiences, students can improve both oral and written skills. In this matter, teachers must facilitate students opportunity to express themselves freely for their development of identity and individuality. In addition to this, when students can communicate and express their ideas freely, they can also explore their interests and strengths and gain confidence.

5.2.2 Observation as a method of learning

To stimulate learning in the classroom, students should be engaging in a variety of real experiences that can help students to see, perceive and appreciate the world around them not only through their eyes, but also through the whole spectre of senses. By exploring, students create a wide comprehension of themselves and the spaces of the environment they live in. Together with exploration also come active observation, awareness and a process of description to create an idea of the things students look at. “Slow looking and description are unavoidably linked, because when we take the time to observe things closely, we also usually describe them, either to others or to ourselves” (Tishman, 2018). Slow looking as strategy involves a conscious use of observation strategies that allow students to train and guide the eye with some grade of concentration and focus. Observation and description are not limited to write can also be done through drawing, sketches, and painting. Drawing from direct observation will provide students skills to draw from any

reference, additionally help them to create realistically and communicate and express their own experiences.

Within the Norwegian objectives for Arts and Crafts after seventh to ninth grade, it is specified that students should be able “to use digital tools to plan and present processes and products” (Utdanningsdirektoratet, The Norwegian Directorate for Education and Training, 2019). The use of digital technology not only promotes experimentation and creative self-expression but also engages students in collaborative activities outside the classroom. Additionally, the use of photography as an educational tool helps students to strengthen their observational skills and promotes a critical and realistic view of the world around them. Through photography in combination with outdoor activities teachers can cover a larger variety of topics. “We all need to be trained to be aware of what is around us, to sense the qualities or interrelationships of the colours, textures, noises, objects, and spaces that are part of our everyday life” (Eriksen & Smith, 1978).

This study opens many possibilities for interdisciplinary learning in which two subjects and topics can bring together concepts, techniques, methods or strategies of teaching in which students could explore a natural phenomenon such as light, develop observational and creative skills. The creative exploration enables students to develop strategies for verbal and written communication skills and explore their ideas to create and present an artistic expression.

6 Discussions

This thesis began by addressing light as the main topic and continued adding the exploration of how this phenomenon can influence our experiences with spaces. It took some time to narrow down what aspect of light I wanted to investigate and with it, be able to formulate a specific problem that could contribute to my field. Despite being tiring and exhausting, long-term exploration was the chosen process that has been a constant discovery with much information to take in and select and has been an enriching journey.

In an attempt to understand and explore the effects of light in different situations through the contrast between light and dark by the method of systematic observation, and self-reflection, has required me to be efficient when making decisions based on the challenges that have appeared throughout the process. I will discuss the research questions presented in this study which are as following: **How can light affect our experiences of spaces? How can the contrast between light and dark be used for communicating and interpreting space in a work of art?**

Through examples taken from the creative exploration, other aspects to be discussed are the similarities or variations from the four phases: Moments of light, Charcoal, Black and white and From two-dimensional to the room. The first part of the practical exploration consisted of observations that were documented with short videos, photographs and drawings in my process diary. The places chosen are those which I transit every day or have personal meaning to me, as they were the areas I first visited in Telemark. After this selection and organization, in the next phases, I was able to choose the media and technique to work with to continue this research, through a series of charcoal drawings and a series of black and white acrylic paintings. The last phase corresponds to my proposal for the exhibition which is a juxtaposition of the two previous techniques.

The following figure shows how the discussions will be approached by taking all the elements in this research and show how they connect each other and to the whole process.

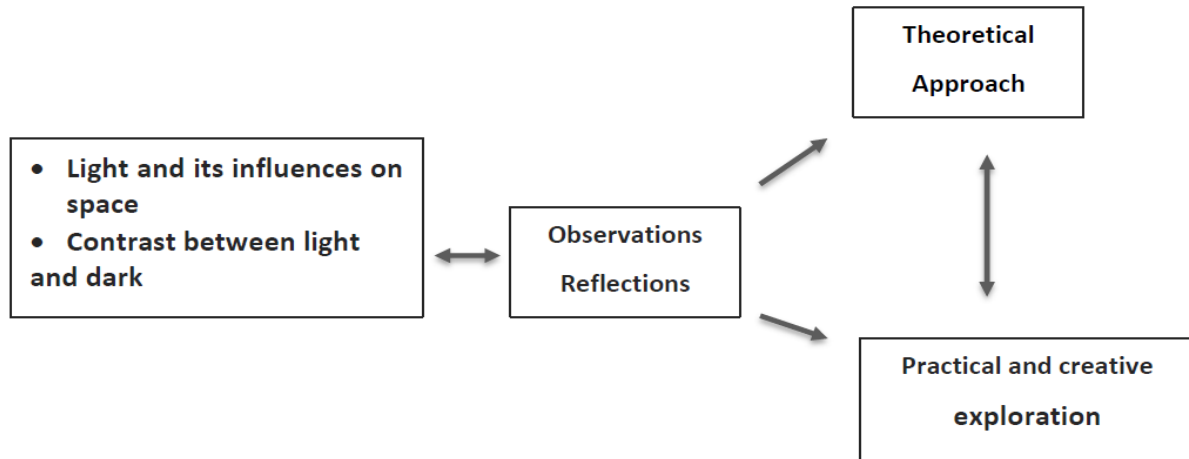


Fig. 29: The following figure show how discussions will be approached.

6.1 Light and its influences on spaces

Light, as the main phenomenon studied, is the source responsible for numerous experiences through days and seasons, transforms the way we experience spaces. The experiences and the observations show that light has the power to attract and stimulate our eyes by hitting and bounces the objects, through shadows, reflections or by being diffuse. Following this idea, light and space relate to each other through day and night experiences, light helps us to see the world, therefore the lighter the spaces the better we can perceive the world in front of us. Light as a reference point has been a common aspect that was constant in all four phases of my exploration. To illustrate this important aspect, I have chosen to use two examples of my practical exploration. The first one corresponds to picture 32 *Walk in the night, the torch effect* and figure 17: *Dam in the forest, charcoal drawing*. These are two different experiences at night but in the same place. In both, the body moves towards the light or to the object that projects light (Fig.17). Here, the absence of natural light makes the eyes look for a light point to move through space and in doing so, space is discovered as it is. In the series of paintings in black and white, I recreate the dam at night. Here, light still acts as a reference point but the experience of the space changes because I explore the object from a distance and different angles. It looks like the object moves when I move, and space is perceived differently. As an example, in Larry Bell's installation "Iceberg" 1975, the body discovers the objects as it moves around.

Light fills and shapes the space, this was an important aspect present through the practical exploration. Light itself has demonstrated the ability to pass through or bounce off materials and objects. Reflective, transparent or translucent materials were also the main properties used by the group of artists of the Light and Space movement who became fascinated by the application of new technology and the use of light to explore sensory awareness and the perception of viewers within the space. An example of this ability of light to fill spaces is in the experiences presented in the forest cover by fog picture 7. In this experience, light is filtered through the fog and creates a new space that becomes almost invisible. The experience of being inside that new space is more intense picture 6. By moving through space, the body feels and perceives the new surroundings that seem unclear, blurred and immersive. Although the fog is not intense in the pictures while approaching and walking through it, the other senses become aware of this new space, and the visual perception decreases due to the effect of the fog in the environment.

Another example of how spaces are filled and formed by light can be seen in the series of paintings in black and white, in Figure 24 (a) right- top. Here a new perception of space was presented. In other words, the experience has already been lived. By taking a new look at the same space, I have created a new visual experience in the form of a painting. The white areas suggest that the space is wide. Again, the body is the receiver; it perceives the world through sensory processes where physical space is lived. Through that example of contrast, it is possible to interpret what is seen and obtain information about depth, illumination, and position. The opposite effect can be seen in figure 16. In this painting, the light inside the underpass is low, this creates an unwelcoming and frightening atmosphere and the space appears narrower.

Throughout this research, we have seen that light and space are co-dependent. Light has contributed to the discovery of spaces in two ways: by providing aesthetical experiences and by creating emotional responses, moods and different atmospheres. An immersive environment can be seen in picture 14 and 15 tunnels in the garden of the Porsgrunn Bymuseum shows how light changes over time. In picture 16, the sunlight passes right through the foliage and through the entire path. This effect formed attractive patterns on the ground that provides an aesthetical experience and creates a magical atmosphere as it feels like light reaching out and as if it can touch us as we move through. The mood changes as the day progresses, the space looks darker and slightly different. The space feels narrow

because the light is found at the end of the tunnel. Artist Robert Irwin refers to light not only as a key to start and complete an installation but also as the main element that directs viewers to shift their perception while the movement is happening. Following this idea, he presented in *Untitled (down to dusk)* in 2016, an immersive environment where a flowing light is perceived as the people walk through the corridors, experiencing the effects of light filling the space.

Through the work with charcoal, I explored these emotional responses and moods by manipulating light with strong or soft qualities to communicate and express the feelings of a particular experience and space. A variety of different feelings were collected through this exploration. A melancholic and sad mood can be perceived in figure 8. This atmosphere was created with small strokes in light and dark values along the path that resembles the texture of the wet leaves spread on the pavement. The drawing shows an illuminated path that draws attention and invites you to walk along with it, with your imagination.

6.2 The contrast between light and dark

In the previous paragraphs, I have discussed three important aspects that helped me find answers for the first research question: How can light affect our experiences of spaces? I used examples from the theoretical approach and practical exploration to discuss similarities or variations from the three phases. Here, I used the same approach to discuss materials and techniques to answer the second research question: How can the contrast between light and dark be used for communicating and interpreting space in a work of art?

Experiences collected throughout the process will be also considered. I should mention that charcoal allowed me to create monochrome values and explore the contrast between light, dark and mid values. On the other hand, painting with black and white allows to work with high contrast and explore shapes and the design of patterns to create balanced compositions between light and dark. The phenomenological approach is present throughout the intensive observation in which the emotional and body experiences lived in the pictures are reawakened as if I was there again. Body and mind become immersed in those memories.

The first aspect to be discussed is the control of what happens with the viewers eyes by creating a focal point. The eyes explore what is in front and move from one area to another

area. The use of the focal point can be seen throughout the entire series of charcoal with some modifications in the series of black and white painting, in which the focal point is mainly created by simple shapes or objects. In figure 10, the focal point is the tree and the light at the top. The light values gave expressive effects of mystery and fantasy to the drawing. The lightbulb of the lamp was transformed into a bright moon and the contours of some branches were highlighted to make the tree appear more natural. The light here is the supporting element that leads the eyes and provides the viewers an aesthetical experience by exploring the details of the tree. Another example of the use of a focal point can be seen clearly in figure 18. The lamp appears to be closer due to the contrast with the dark background. Here, the white area is small and the black area frames and highlights the main object in the painting, allowing the viewers eyes to rest because there is only one point of interest.

The next aspect to discuss is how the use of value contrast conveys distance between objects. In figure 48, the underpass num. 2, the gradation between light, shadows and mid-tones creates a visual experience and an illusion of effective distance. A similar technique was used in figure 28 (c) Simplified Underpasses. In both cases, the contrast and balance between the black and white areas are visible. The areas painted in black, the ceiling and the bottom help to perceive the depth of the space. At the end of the underpass, the light that was left in white can be seen. Another example in which distance aspect is visible is in figure 23, the trees. A group of trees in front are overlapping the group of trees in the back and create an effect of distance. In the same way, the contrast between black and white seen in the figure helps to create an illusion of distance by intentionally organizing and placing the objects within the space. The same experience of distance is created in figure 20, by overlapping the trees with three different values. This technique was essential to create a sense of depth in the space. The dark value in the background is in contrast with the trees painted with grey and white. Here, it can be seen which trees closer and which ones are further away.

The final aspect considered in the discussion is the use of high and low contrast to create different moods and drama. The combination of light and shadow and their intensity, called “chiaroscuro” has been used throughout history as a tool to produce drama and high contrast in painting. In Caravaggio’s paintings, for instance, the dramatic light comes from experiences of the real world. It is the light we see in real life in sunrises, sunsets, or night lights. His images show a real, concrete, three-dimensional feature. Figure 13 display a

strong contrast between the trees and the background. The white value in the background and on the ground makes the trees look closer. Two elements help the eyes perceive the space; first, the dark line between the background and ground. Second, the effect created by the diagonal dark shadows in front of the trees. The dramatic light in this figure comes from the moon placed behind the trees.

In this exploration the determining factor for decisions about practical exploration is the contrast between light and dark.

How can the contrast between light and dark be used for communicating and interpreting space in a work of art? Looking back at the creative process of this work, the findings show that contrast between light and dark help to gain a sense of space which can be communicated and interpreted in a work of art. The findings show as well that the definition of spaces relates to an idea or sense of atmosphere that combines the aesthetic characteristics of spaces which are revealed and hidden by light, accentuated by the use of contrast.

The other aspect that findings and authors' literature shows is that light when revealing the aesthetical qualities of spaces, provide us with visual and emotional experiences that touch and influences our perception of spaces. This perception of spaces can be translated into different moods, emotions and feelings that connect us with them. In addition, we can also refer to the cultural background and personal experiences that each person carries with them. These factors will always play an important role when we confront and experiencing spaces.

Last, but not least important, is to discuss the method used to answer the research questions. The observations always provide an important part of the data that is objective regardless of the personal or individual experiences. This refers to qualitative aspects of the methods which can be accountable when it comes to interpreting or analyzing the data. In this research, the qualitative aspects refer to the selection of the data to continue working and the common aspects that are repeated in all phases.

7 Conclusion

This research approaches light focusing especially on how the contrast between light and darkness helps us to perceive and describe our spaces, discovering its role on the creation of new meaning in spaces. Reducing the visual information by increasing the focus on contrasts between light and dark in three different stages; through observation of different spaces, in a two-dimensional format and finally as part of an art installation.

My research questions were:

How can light affect our experiences of spaces? How can the contrast between light and dark be used for communicating and interpreting space in a work of art?

In order to answer the main problem adequately, questions have been made through the exploration for each of the phases. The relevant questions are:

1. What can be transmitted about spaces using charcoal?
2. Can I express the subjective experience using the contrast between light and dark?
3. What are the elements that represent the essence of someone's experience of the space?
4. Can I simplify the landscape by representing/picturing it in black and white?
5. How to produce a work that could achieve a sense of scale, a sense of three-dimensionality and that could be immersive?

These questions represent the method, aesthetical approach in the practical work, the educational potential and interdisciplinary strategy to present the observation of light and its influences on spaces.

This research has presented two main approaches to define the experiences with light. The first was related to the subjective experiences which are related to the emotional responses that the body confronting the phenomenon has. The second approach relates to the aesthetical experiences that light provides us within the spaces. In the same way, the creative part of this research has gone through these approaches by working with two different techniques to find the essences of the experiences. The findings show that the

essence of the experiences cannot be transferable to other people, as the experiences are only personal or individual. Therefore, as an educational strategy, can be used only to observe and describe the experiences but not as the only method to study the influences of light.

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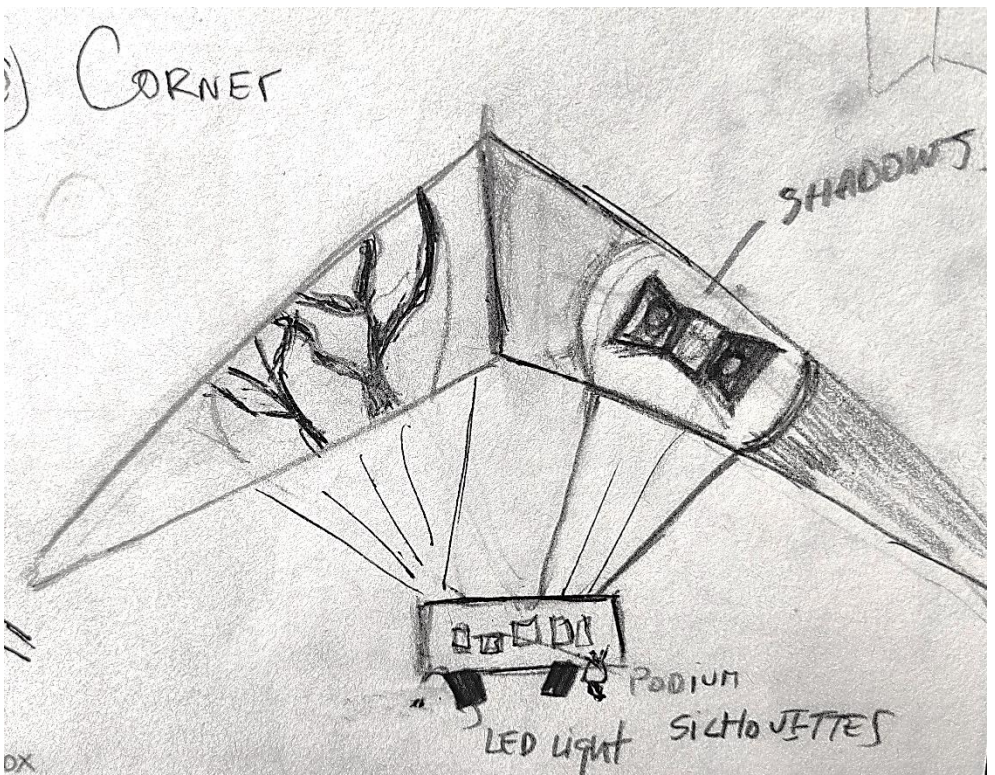
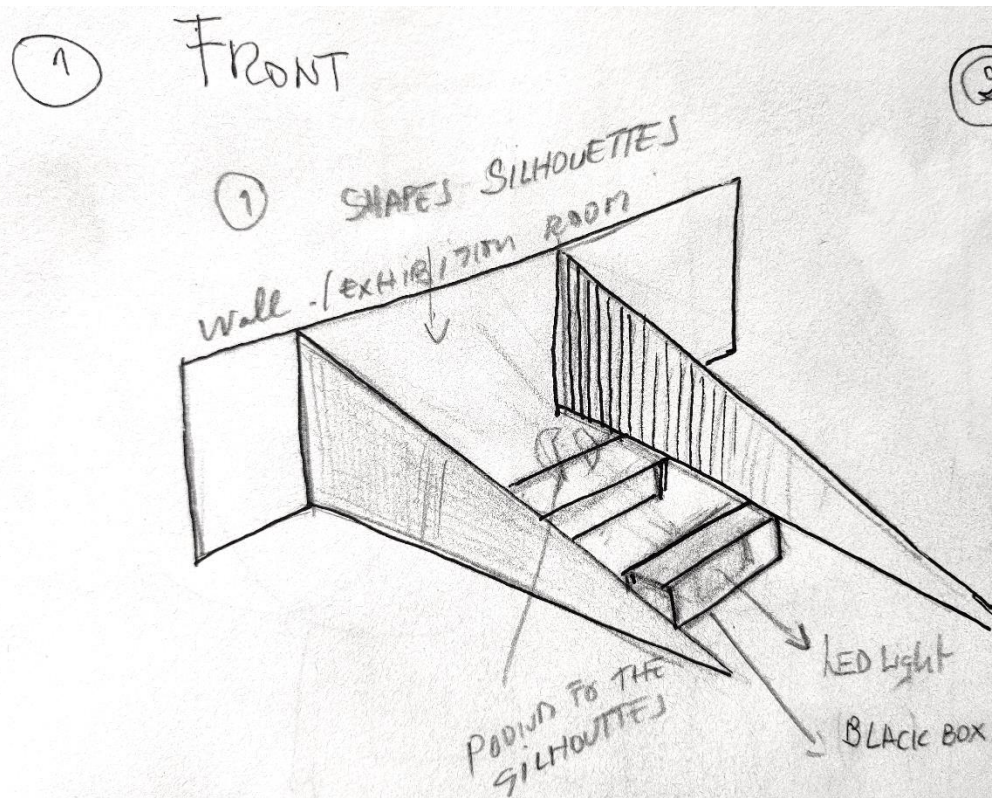
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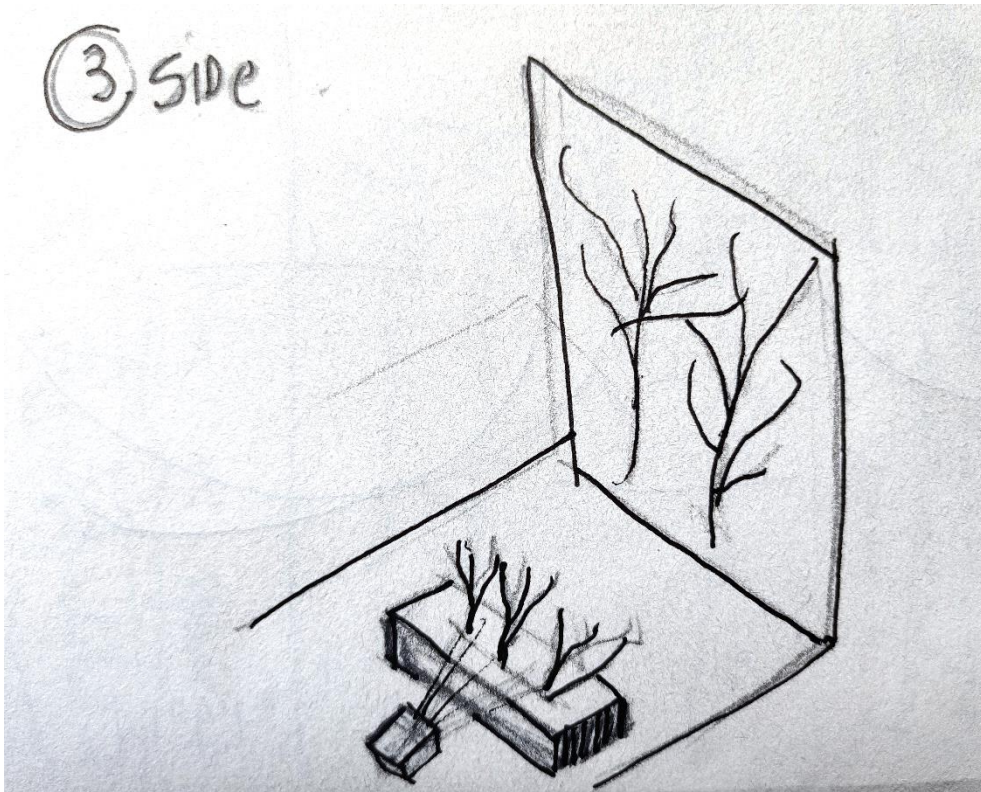
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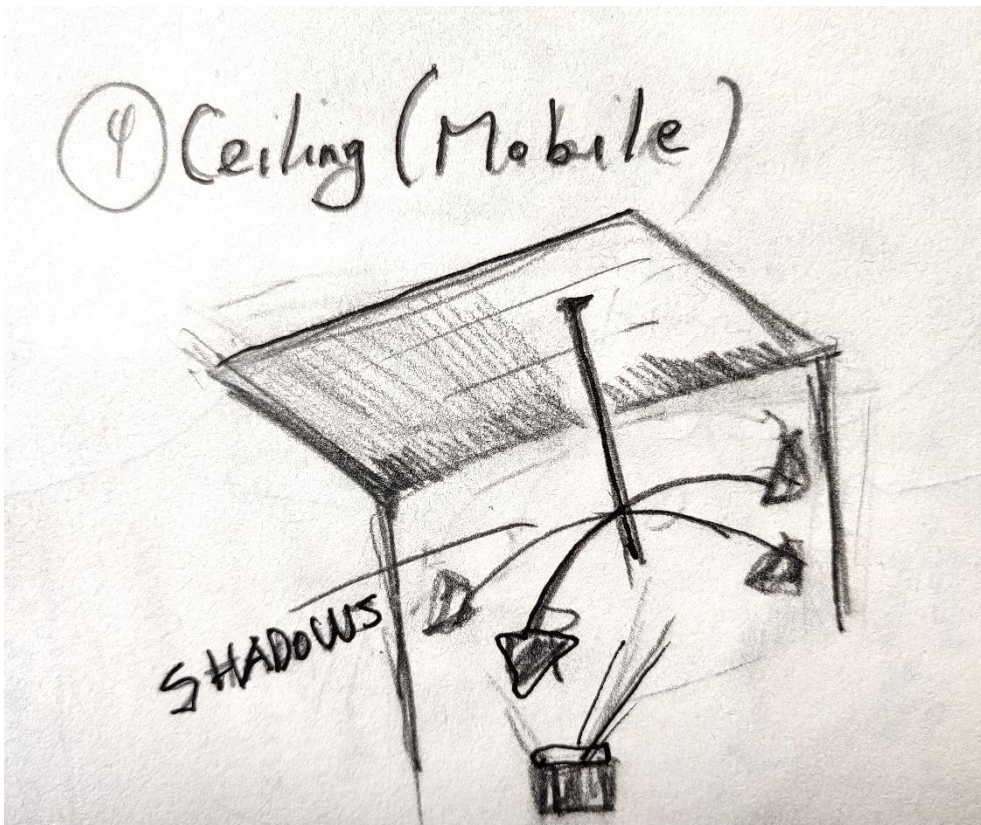
Sketch for the installation. Room experience



③ side



④ Ceiling (Mobile)



Appendix 2: Rays of light effect on the sea surface sketch (Private)

Phase 1: Private sketch



Appendix 3: Overview of the practical exploration and creative work

Phases Phenomenon	Subject and experiences: Body responses	Aesthetical experiences Elements of attraction	Artistic relation with the subject through contrast	Acquisition of skills and knowledge of techniques	Conclusions results
Phase 1 Patterns Foggy	<ul style="list-style-type: none"> • Immersion (patterns) • Disorientation • Emptiness • Vision decreases, other senses act • Solitude (underpasses) • Eyes perceive the contrast by moving the body • Contemplative mood • drama, mystery, and even freighting moments • isolation and confinement • peace, calm, and serenity • dizziness while walking • certain security and a sense of safeness 	<ul style="list-style-type: none"> • Patterns, long lines day and night • Fore-middle-background • experience of depth / the effect of perspective (in a one-point-perspective) • Material and sensation-concrete • Colours affect the experiences of spaces/passing from one area to another one • Organic shapes and volumes • Lines of colours produce perspective • silhouettes in contrast with the sky appear remarkably detailed • reflection lines of the water that intensifies the sense of dimension and scale of the trees • monochrome intensifies the size of the objects and the dimension of the space • material and contrast (source that is a yellow light) 			<ul style="list-style-type: none"> • Walking around, taking part of the phenomenon • Focal point • Body in motion • Focal point, illumination on the surfaces • Perspective looking from below also magnifies de sizes of the trees. • Alert modus, body acts as an intuitive being and grasps the information by moving • Memory and movements makes the spaces known •
Phase 2	<ul style="list-style-type: none"> • Charcoal changes the visual experience expressing the subjective in a 	<ul style="list-style-type: none"> • Lines in different directions and sizes creates tonal effects and contrast between the object 	<ul style="list-style-type: none"> • The more realistic the trees are the less spontaneous the moment is. Therefore, the 	<ul style="list-style-type: none"> • I found that using lines in different directions I could give form and the illusion of texture 	<ul style="list-style-type: none"> • Focal point dimension to the space

	<p>monochrome experience.</p> <ul style="list-style-type: none"> • The contrast between black and white accentuates the experience that was already lived. • The association of feeling enclosed, trapped and sometimes frighten was evoked by the contrast between black and white and the mid-tones 	<p>and the background.</p> <ul style="list-style-type: none"> • Position of the contrast between light and dark increases or decreases depth • between light, mid and dark, illusion of depth and 3D • 	<p>perception of the trees in this series is a process to achieve my perception of them.</p> <ul style="list-style-type: none"> • Drawing with charcoal encourages me to explore new ways of communicating personal experiences, for example through abstract work, where the interpretation of the essence of the experience was more important. • I drew at night, sometimes with only a dimly lit lamp to recreate the dark surroundings while drawing to create a new experience. • 	<p>to the trees, also served to create contrast between the background and the subject.</p> <ul style="list-style-type: none"> • The black background defines the main white lines and the rest of the strokes. On the other hand, the black background is dimmed with the brightness of the light small strokes. • Continuous experimentations and observations contributed to improving techniques and observation. • After several tests, I was able to see the improvements to create tonal values, mid-tones, and shadows to see better strong contrasts. 	<ul style="list-style-type: none"> • We can experience the space without the need to be in the physical space. • changed the pace, making more stops and give extra time to explore and examine the space around with my eyes
Phase 3	<ul style="list-style-type: none"> • The perception of the object and then comes the experience that is the connection between object-person. • The experience occurs when one recognizes the object of attention and the surroundings disappear • The perception of this object that is presented in front is almost unconscious at the moment, but it is accompanied by previous experiences. • The simplification begins with the 	<ul style="list-style-type: none"> • The direction of the lines and the arrangement that objects have within the space. 	<ul style="list-style-type: none"> • Subjective experience is lived by connecting the body with the charcoal, and then the experience is expressed through the movement while drawing. 	<ul style="list-style-type: none"> • The white area is small compare to the black highlights the main objects, allowing the eyes to rest from the space surrounding them. • The contrast between light and dark from the reference can help to decide which object (s) or shapes will be the main attention of the picture. 	

	<p>perception of the object and then comes the experience that is the connection between object-person.</p> <ul style="list-style-type: none"> • The perception of this object that is presented in front is almost unconscious at the moment, but it is accompanied by previous experiences. • 				
Phase 4	<ul style="list-style-type: none"> • The direction and position of the light source can also influence the perception of how mood and perhaps the emotions conveyed in the scene and the object is presented to us 	<ul style="list-style-type: none"> • The brightness of the light source impacts on the size, sense of depth and three-dimensionality. 			