THE RHYTHMIC ESCAPE

Environmental Features in Landscape Ecology



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ABSTRACT

The aim for this research paper is to create a catalogue of environmental features found in natural environments which can be used as tools for my design process. The elements found would expectedly show characteristics which can benefit the human neurological and psychological wellbeing through their perceptive and sensorial form and pattern. These forms and patterns would be identified through case studies of rituals held in nature, whereas the shapes and arrangements are sought for to alter the rhythmic behaviours. The findings will later be architecturalised and transformed in the design process to propose architecture that enhances mindfulness living.

Keywords

Rituals, Rhythms, Territory, Mindfulness, Wellbeing, Neurophysiology, Environmental Features, Ecopsychology, Landscape Ecology, Proprioception, Interoception.



RESEARCH QUESTION

Which environmental forms and patterns within landscape ecology can manipulate rhythms and behaviour, and how can these be extracted to be reimplemented within the territory of architecture to promote wellbeing?

INTRODUCTION

Nature is often seen upon as greenery or the direct perception of trees, mountains and water. Yet, nature conducts a deeper knowledge beyond its stereotypical classification. It holds memory and energy, and can be manipulated and transformed. Culturally, nature has been central through history withholding specific meanings of belief, wisdom, knowledge and emotions (Han, 2016). It has been used as a tool to provide jobs, shelter, medicine, and in this current time: an escape. Historically, humans worked in nature and sought escape in a home. Today, most workplaces are not in natural environments but rather located in office buildings constructed within urban scapes.



PROBLEM STATEMENT

How can the healing features nature produces, both physically and mentally, be architecturalised and reimplemented within the architectural scale? First, one needs to identify those factors. When treated with respect, the spacious ambience of nature endorses physical and emotional freedom. It forms an outdoor room which is essential to thought and atraumatic development (Morton, 2007). This outdoor room becomes an ambient rhetoric that translate in the physicality of nature. An example Morton gives when explaining the 'outdoor room' is the ambience of the lawn which becomes an extension of the living room as an exterior carpet (Morton, 2007). Furthermore, nature could be referred to as the cosmos, due to the word's collective description of plants, landscape, animals, and other features that are not humans or man-made. The cosmos is a broad term that constantly gets affected by the chaos and territorialisation of its components (Grosz, 2008). Therefore, a better word for nature, in relation to the epistemic focus of this paper, would be landscape ecology. Landscape ecology studies pattern and interactions between ecosystems within a region of interest. However, by removing the environmental content from landscape ecology and focusing on the environmental form (Stewart, 2002), the focus metamorphoses the perceptive and sensorial forms found in the landscape environment that affects the rhythmic movement of humans through emotion. Accordingly, it is the epistemic focus of the bionomics regarding rhythmic and sensorial features within the landscape ecology of rituals, that will be of interest in this body.

The human-nature relationship is based on philosophical cores that holds human values and views of the landscape ecology. Landscape represents nature through the cultural wisdom held in the territory. The cultural filters are the drivers of the innovation within built environment, whereas wisdom of the bionomics translates into the execution of social construction (Han, 2016). This construction varies globally as the practice and wisdom of sociology and landscape ecology differ. Zakaria Djebbara found in his research that the way humans perceive and process environments, happens in the thalamus of the brain. However, as well as interpreting the environment, the thalamus gets affected when humans experience anxiety and depression (Djebbara, Architecture, Homeaostasis and affordances, 2022). Here, the link between environmental features and wellbeing is made. The processing of the environmental features in the thalamus can potentially be a great factor for promoting or preventing well-being. Behavioural spaces are territories manipulated in ways of unforeseen or contrasting and distinctive design choices, that change the moving and acting behaviour of the user (Roth, 2018). Therefore, researching potential effects landscape environmental forms have on the affordances and behavioural patterns through a neuropsychological approach, would open a further discussion on to what extent architecture impacts human's wellbeing. How can sensorial and perceptive environmental features in landscape ecology be architecturalised and translated into stimulation tools for our sensorimotor cognition?



THEORETICAL FRAMEWORK

Discovering that the environmental features and our sensorimotor response have a great impact on the well-being and behavioural patterns, one can start questioning certain design decisions made in the urban environment. Therefore, this paper will investigate the environmental impact landscape ecology has on the sensorimotor system and how landscape-inspired patterns and forms can positively adjust the individual's brainwaves for more mindfulness living. The focus will be on the amalgamation of rhythms and rituals conducted between landscape ecology and humans, and how to translate and transform these towards the interiority and exteriority of a spiritual retreat for self-healing and self-awareness. The formation of landscape ecologies does in many cases show a lasting and intimate relationship with anthropology through its human impacted patterns and morphosis. It becomes the spiritual relationship between people and ecology through powerful beliefs and artistic and traditional customs (Han, 2016). However, the harmonious human-nature relationships are decreasing, and with it disappears the cognitive healing power it holds. In The Netherlands, this might be due to the overly ordered urban expansion. With this said, there is an urgency to rebuild the relationship between humans and nature through re-learning the knowledge and philosophies landscape ecology produces, and reintegrate it in the daily human life.

The architectural and theoretical approach will focus on Northern Europe, more specifically, The Netherlands. The Netherlands is mostly a man-made landscape which is built on the knowledge and wisdom found in nature. Built up, the landscape of the country is socially constructed, meaning the construction has layers of meanings. These meanings are associated with the social subjects of construction, the cultural input process, and the construction process itself (Han, 2016). The man-made landscape is territory based on the reflections of relationships, memories, emotions, and deep social values. The aim is to extract rhythms, rituals, and patterns from the landscape environment to reimplement these as architectural processes. Can the architecturalised man-made reproduction of environmental forms and patterns within landscape ecology generate cognitive healing within an already man-made landscape such as The Netherlands?

This paper will combine phenomenological and praxeological epistemes with neuroscientific interest, researching how the environmental features of landscape ecology can positively affect behaviours, emotions, and rhythms. These three factors are important for the possible outcome of spaces that enhance mindfulness through design. In this research paper, the use of 'mindfulness' is used as a term to describe a state of awareness. It is a state where one is fully present in conversations and situations, aware of the surroundings, reflect on past experiences, and fully experience movement. The individual is one with its mind and body allowing for reflection and reasoning inward and outward. Mindfulness leads to inner healing and creates a state that projects positive energy and effortless rhythms. A state where the daily rituals become an emotional healing tool with environmental awareness.

Furthermore, the Buddhistic view of mindfulness has been explored through neurophysiological, subjective, and behavioural patterns without comprehensive and scientific framework (Brown, Creswell, & Ryan, 2015). Nonetheless, if categorising the mindfulness state within the brainwave frequency chart, this state of mind would possibly be activated during a larger production of the alpha brainwave which enhances relaxed focus, positive thinking, stress reduction, and fast learning (Vala, 2013). Perceptive and sensorial structures and formations, including architecture and landscape ecologies, articulate a boundary between self and the world which redefines the contour of the consciousness and externalises the mind (Pallasmaa, 2017). As the sensorimotor response gets affected by the environmental features of the immediate surroundings, man-made architecture and landscapes are projections and metaphors of the architect's mindscapes (Pallasmaa, 2017). With Pallasmaa's interpretation of the architects' mindscapes in his book 'The Creative Hand' in mind, the experience of the built environment in this century seem to show a disconnection between architecture for the mind and the finalised built structure.

Humans' sensory systems aims to structure a relationship with the world. To gain knowledge and skills of sociological and societal encounters, the human body and brain reside in the sensory and muscular memory that are embedded and encoded in situations of life (Pallasmaa, 2017). Juhani Pallasmaa explains in his book 'The Thinking Hand' that humans are unconsciously guided to the 'threshold of being' through aesthetical environmental features that restructure the biological and unconscious realms of the mind and body (Pallasmaa, 2017). This action maintains vital connections to the biological and cultural past and affects the behaviour to establish certain rituals that are rooted in the memory of the mind and body. In comparison, memory is also a large part of the growth behaviour and pattern creations found in landscape ecology.

Rituals and ceremonies are basic human instincts that can be traced back over ten thousand years ago. They create comfort and continuity enabling human daily lives to be lived more mindfully (Montley, 2005). In comparison with mindfulness, rituals are also argued to strengthen humans' wellbeing which has been supported by neuroscientific and psychological research (Lamb, 2020). Rituals are tools to help refocus the attention on concrete behaviours through allowing thoughts, feelings, and perception to follow action (Lamb, 2020). The rituals in focus will be emphasizing the human-nature relationship. Pamela Montgomery explained rituals as a conscious act of connecting to the vast web of life. Expressions of gratitude for this connection is important to partner with all relations and to move into deep communion and finding the common union with Nature Consciousness (Montgomery, 1997). Montgomery describes Nature Consciousness as an intelligent level of consciousness within nature that functions as the architect within all forms (Montgomery, 1997). Therefore, when territorialising with a level of Nature Consciousness, the act of construction becomes an enhancement of the existing natural qualities rather than a destruction.

Meditational sessions can also become a ritual; however, rituals do in many cases integrate action in its procedure. Meditational practices are interoceptive practices (the body's ability to sense itself from the inside), whilst rituals are proprioceptive (the body's ability to sense itself in space). Mindfulness actions, as formulated in this paper, is a middle ground between proprioception and interoception. Continually, the commonalities of meditation and rituals is the integration of the four elements (fire, air, water, and earth) and the positive neurophysiological and psychological outcomes. Concluding, focus will be given on the healing power of the environmental forms within landscape ecology where rituals are held. The rituals of interest will investigate the process of preparation up until the execution process. Three case studies will be analysed focusing on the space picked within the landscape environment, preparations in terms of how they territorialise the space, and how these environmental features then are used to prepare for certain rhythms and behaviours to take place.

4: Meditation Within the Elements By Author

METHODOLOGY

Literature

Primary sources of literature will be used to gain a comprehensive understanding of the environmental features within nature and how humans interact with them. The main research will recognise patterns and forms that are re-occurring and rhythmic in the landscape ecology, specifically wood and stone. Many forms and patterns found in the ecology and cosmos have been used as inspiration sources for architecture tracing back to ancient times (Schmidt, 2012). However, this body will focus on the interest of their rhythmic behaviours that may alter perception and affordances.

Case studies

For the case studies, this paper will investigate three groups of people that worship nature. The underlying interest is to how these people pick certain locations and prepare them in ways that will fulfil the worshipping, and in return attain nature-healing. The environmental forms and patterns specifically looked for when inaugurating the space for rituals, and actions of territorialisation (subtraction and addition of elements) in preparation for the act to happen, will be the outcome of interest in these case studies. Intention, attention, and repetition are the three main investigation focuses when investigating the case studies which will allow for the understanding of why certain forms and features are used, where the emphasis is, and patterns that are created. The elements found during the investigation will identify features that draw the perceptive eye and stimulate the sensorimotor cognition. Correspondingly, the act of territorialisation demonstrates how humans subtract and add elements that will allow an outdoor room to be formed. The act itself is rooted in the memory of the body and mind, leading the human to territorialise the landscape ecology in certain ways that allow the basic human's instinct of rituals to take place (Montley, 2005). As a result, this outdoor room will catalyst certain behaviours and emotions that psychologically and neurologically changes the rhythms of the individual and enhances inner healing. After identifying these factors, the elements found will be catalogued to later become tools in the design phase.

Sámi people – Seidas

The Sámi people are indigenous people of the north of Europe, located in Norway, Sweden, Finland, and Russia. Historically, the Sámi people lived amongst nature, whereas today they have become partly modernised. Nonetheless, their religion is still based on an animistic ideology, meaning that everything - natural phenomena, inanimate nature, animals, and plants - has a spirit (National parks, n.d.). This group of people worship nature and execute rituals in a territorialised space within the landscape ecology. This space is called Seida and is carefully chosen following principles of certain characteristic environmental features sought for in nature. Families do in many cases have their own Seida, whilst some Seidas are used by the whole Sámi society (Nationalparks, n.d.). The rituals held at the Seidas worship nature and is a natural part of their everyday life. Seidas were often located and territorialised in spaces with specific stones or wood, whereas size, form and colours were of importance (Nationalparks, n.d.). When the location was set, the territorialisation process started where the Sámi people would alter the stones or wood into an imposing position (Nationalparks, n.d.). In this case study, the characteristics and rhythms of the Seida will be analysed alongside the peculiarities of the sought formations and patterns in the environmental landscape ecology to discover the behavioural and psychological effect they may hold.

Neo-Paganism in The Netherlands – The Circle

Paganism is a belief system with no built place for the sacred, like churches or temples. This belief system is often referred to as a holistic lifestyle and is based on the belief system of the 'witches' traced back in Dutch history (Smit, 2022). The holistic lifestyle encourages a human connection to nature and its rhythms and dynamics, which awakens the instinct and renews the connection with the hidden world behind physical reality (Smit, 2022). The pagans practice meditation and prayers which can be executed anywhere with the implementation of the four elements. However, there is one ceremonial practice which is prepared with certain guidelines. This formal group ritual is called "the Circle" and has a specific typology of fluidity and boundaries (Fralick, 2002). The ritual is held in a natural, yet man-made landscape that allows boundaries to shift according to the perspective and rhythms of the participants (Fralick, 2002). Unlike the Sámi's Seida, the territorialisation of the Circle is deconstructed after the ritual is over. This case study will be analysing the creation of boundaries and fluidity within landscape ecology, and how preparations for the ritual, in terms of territorialisation, is executed with an emphasis on perception, orientation, and rhythms.

Celtic people – Megalithic Structures

Celtic people lived in the Iron Age from 700 BCE to 400 CE and performed rituals in both nature and purpose-built temples. As this group of people does no longer exist, the research will be based on historical findings. The Celts, as the Sámi people, were animistic people and therefore believed certain natural sites had spiritual importance. These sites included hills and mountain tops, bodies of water, and abnormally sized and shaped trees (Cartwright, 2021). Points where movement of water joined were sanctuaried and used for social gatherings, whilst trees

like oak and beech were used as places for rituals (Cartwright, 2021). Additionally, Celts used megalithic structures as sacred spaces for their rituals, such as Stonehenge in southern Britain. In comparison to the Sámi people, the Celts built their sacred spaces close to or within urban sites (Cartwright, 2021). They combined architectural methods, like stone construction and wood poles, with earthworks. This case study will focus on the megalithic structures and analyse how the Celtic culture combined architecture, nature environmental features and the landscape, to construct sacred spaces for rituals that might hold important values of rhythms. These rhythms will be extracted and catalogued for possible cognitive effects.

Evidence based research

After the categorisation of the environmental features found to be more profound for humans, an analysation with a neurological approach will be done. They will undergo evidencebased research which will compare the elements with experiments formerly done on the sensorimotor cognition. Here, Dr. Zakaria Djebbara, with a background of architecture and neuroscience, will be used as one of the main sources. His ongoing experiments focus on the neurological importance architecture has on mental health and wellbeing. Djebbara's experiments and investigations will be used as comparison tools during the research, as he investigates how architecture has the power to heal through neurophenomenology. Mihaly Csikszentmihalyi's study on flow will also be of interest, specifically his book 'Optimal Experience: Psychological Studies of Flow in Consciousness', where he addresses the conditions of architecture and its impact on consciousness.

Expected result

The expected result from this research is to find forms and patterns in nature that unconsciously affect humans' cognition and wellbeing and can be used as design tools to create architectural rooms that will facilitate certain behaviours, emotions and actions. The catalogue of rhythms, patterns and form with their specific abilities, will later be used as a methodological instruction book during the design phase.





DESIGN PROPOSAL

For the design phase, I propose a retreat where people can come to reground themselves through the teachings of rituals and restructuring of rhythms for mindfulness living, which they can reimplement into their everyday life. The retreat will be located in Rotterdam, a man-made city with a lack of landscape environmental forms located, in the man-made country of The Netherlands where the term 'landscape' was founded. The reason for choosing The Netherlands and not the country of my own origin, Norway, is due to its lack of immediate nature. Dutch people have to travel a lot further to experience less organised and more diverse environmental landscape ecologies than a Norwegian living in Norway for example. I found that this country has more necessity for a retreat which can offer ecological stimuli and stress relief through the use of nature-inspired elements that advocate inner healing.

Rotterdam is a city which already is filled with many man-made features yet little historic value. Due to the city's varied and obscure architecture, this city could be an exciting playground for architectural exploration without ruining the historic context but adding to it. During the design phase, the focus will first be approached from the inside following perceptive and rhythmic practices found in the case studies. The exterior will later be formed by the inside, becoming an extension of the interior and the surrounding landscape. By designing the façade with the same principles as the interior, the behavioural change will start when walking up to the building.

RESEARCH PLAN DIAGRAM

FASCINATION

THEORY

WELLBEING

RHYTHMS

TERRITORY

RITUALS

ECOPSYCHOLOGY

BEHAVIOUR

NEUROCOGNITION

MINDFULNESS LIVING

ENVIRONMENTAL FEATURES

PROPRIOCEPTION

INTEROCEPTION

METHOD

EVIDENCE BASED RESEARCH

CASE STUDIES

LITERATURE

SPACE SYNTAX

CATALOGUING

FILMOGRAPHIES

THEORETICAL RESEARCH

ECOLOGY WITHOUT NATURE, MORTON

TERRITORY AND RITORNELLO, **KLEINHERENBRINK**

CHAOS, TERRITORY, ART, GROSZ

DELEUZE ON MUSIC, PAINTINGS AND THE ARTS, BOGUE

FROM OBJECT TO EXPERIENCE, MALLGRAVE

UNDERSTANDING ARCHITECTURE, ROTH

PLACES OF THE SOUL, DAY

NEUROLOGICAL RESEARCH

NEUROSCIENCE AND ARCHITECTURE, DJEBBARA

THE EMBODIMENT OF ARCHITECTURAL EXPERIENCE, WANG

THE THINKING HAND, PALLASMAA

THE SCIENCE OF PERSONAL TRANSFORMATION, VALA

ARCHITECTURE, HOMEAOSTASIS AND Affordances, Djebbara



KEYS

RESEARCH



IN DESIGN PHASE



EVIDENCE BASED RESEARCH





TERRITOR RHYTHMS NEURO-COGNITION

PALLASMA

DIMENT

HTECTURAL

ERIENCE,

THE SCIENCE OF PERSONAL

BANSFORMATION,



TIMETABLE

WEEK



Fig. 8: Timetable By Author

KEYS



LITERATURE RESEARCH



CASE STUDY RESEARCH



EVIDENCE BASED RESEARCH



CATALOGUING AND CONCLUSIONS







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FIGURE LIST

Front Cover: Rasmussen, Tobine. The Ritual of Showering (2022). November 1, 2022. Model. Collage.

Fig. 1: . Rasmussen, Tobine. Architectural and Ecological Composition of Affordances (2022). November 1, 2022. Collage.

Fig. 2: .Rasmussen, Tobine. The (Un)Built Environment (2022). November 1, 2022. Collage.

Fig. 3: . Rasmussen, Tobine. The Human-Nature Relationship (2022). November 1, 2022. AI Generated Images.

Fig. 4: . Rasmussen, Tobine. Meditation Within the Elements (2022). November 1, 2022. Collage.

Fig. 5: .Rasmussen, Tobine. Neurophenomenology and Perception (2022). November 1, 2022. AI Generated Image. Collage.

Fig. 6: . Rasmussen, Tobine. Map of Rotterdam (2022). November 1, 2022. Map.

Fig. 7: Rasmussen, Tobine. Research Plan (2022). October 29, 2022. Diagram.

Fig. 8: Rasmussen, Tobine. Research Structure (2023). October 27, 2022. Timetable.

