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Scoping review of Health Promoting qualities of Cultural Heritage Sites – Theoretical analysis and Development

Martin van der Maarel

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Scoping Review of Health Promoting Qualities of Cultural Heritage sites – Theoretical Analysis and Development

Martin van der Maarel

Supervisor: Elizabeth Marcheschi, Swedish University of Agricultural Sciences, Department of Work Science, Business Economics and Environmental Psychology

Examiners: Caroline Hägerhäll, Swedish University of Agricultural Sciences, Department of Work Science, Business Economics and Environmental Psychology & Åsa Klintborg Ahlko, Swedish University of Agricultural Sciences, Department of Landscape Architecture, Planning and Management

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Abstract

Today, research and theories about health promoting environments often describes how and why certain environments are more qualified than others to support health outcomes. The environments that are suggested to possess these health promoting qualities are in most cases characterized by the presence of natural elements. But seeing how the world consists of so many types of places with various distinctive features, the possibility of other forms of health bringing qualities must exist. And given the fact that new, alternative methods are needed to deal with the increase in modern day public health issues, other forms of environments should be examined. This work tries to account for this knowledge gap by exploring and investigating the health promoting qualities of cultural heritage sites. Cultural heritage sites have been shown in previous research to possess some qualities that might support health and well-being but have not been investigated thoroughly. A scoping review was therefore applied to identify factors in existing research of cultural heritage sites that could indicate some form of health-related process. Then, current theories of environmental psychology and health, related to the reviewed research were broken down and analyzed in relation to what type of mechanisms and dimensions lies behind them. Finally, a synthesis was made of the different thematic factors and a new theoretical framework is proposed, describing how cultural heritage sites can be used and further studied as health promoting environments.

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1. Introduction

Research today within the field of environmental psychology and health has come to more and more clarity that spending time in natural environments has a positive impact on human well-being (Grahn & Stigsdotter, 2010; Terry Hartig, Korpela, Evans, & Gärling, 1997; White, Pahl, Wheeler, Depledge, & Fleming, 2017). Experiments made have often compared how humans behave and perform in relation to their mental capacity, whilst spending time in a natural environment compared to time spent in an urban environment (Van den Berg, Joye, & Koole, 2016). These tests conclude that the natural environments have much more potential to restore mental energy and reduce stress than urban ones. But seeing how there are other types of environments than just the archetype natural and urban, which are the ones usually being tested in these experiments, is there a possibility that other places have the same health promoting capacity that nature is supposed to have? New studies are beginning to show tendencies to exactly that, investigating more man-made, “cultural” environments. Research that has been focusing on investigating human made environments, both historic and modern, shows indications that these alternative environments have the potential of being as health-promoting as natural ones (Bond, Packer, & Ballantyne, 2015; Cameron & Gatewood, 2000; Packer & Bond, 2010).

In Swedish, the term *kulturmiljö* (translates directly into cultural environment) is used to describe a place where the whole environment has in the past been affected by people, and to varying degrees, was characterized by different human activities (Génetay & Lindberg, 2015). The most closely related term in the English language would be cultural heritage, which also exist in Swedish (*kulturarv*), but is partly separated from cultural environment. In English, the term cultural environment rather refers to the immaterial, socio-cultural atmosphere that exist between different people (Bail, 2014), and not the physical environment that is sought after here. From a Swedish perspective, cultural environment rather acts as a part of cultural heritage, which is according to the Swedish National Heritage Board’s definition: Cultural heritage refers to all material and immaterial expressions of human influence. This definition could be considered too broad for this context, so instead, two separate definitions found below that only relates to the physical environments will be applied. Further on, the term *cultural heritage site* will henceforth be the used definition in this text, to describe the environmental qualities that are being investigated, which comprises the following definitions:

- Cultural environment refers to the entire environment influenced by people that, to varying degrees, was characterized by different human activities. The cultural environment includes not only the physical content of the landscape, but also intangible phenomena such as place names or phrases that are linked to a place or area. The cultural environment is part of the cultural heritage (Génetay & Lindberg, 2015).
- Environments with a cultural-historical value where most of the environments are protected or designated by law, such as building memories, world heritage sites, cultural reserves or national interests (Riksantikvarieämbetet, 2017).

An important aspect to add before proceeding further is that when speaking of terms in relation to a physical, cultural “place” compared to green environments is that the two type of setting are often intertwined. For instance, a garden is a man-made setting, but it is as well a cultural one. When speaking of cultural heritage site in this thesis however, it is the intention only to focus on environments with some form of cultural-historical buildings linked to the environment (although green features may still be present).

Linking cultural heritage sites to the health-promoting functions they may provide, a hypothesis would be that they will give the visitor a deeper historical insight to the environment, the so-called time-depth, making it possible for the viewer to perceive the age and history of the object/monument/site, and therefore, lead to deeper reflection, imagination and additional mental recovery. This psychological process could therefore be a slightly different one compared to how restoration works in natural environments and is a topic worthy of deeper exploration. This paper will primarily aim to explore the existing research surrounding the experience of visits to cultural heritage sites to address whether these environments could act as health promoting. Secondly, this thesis will also investigate if current theories surrounding health and place are applicable to the found literature and could be used to explain the health-related outcomes. By doing so, an attempt to identify the effects of cultural heritage sites will be made, to find out which processes are linked to the material and immaterial environment of these sites and if and how they are important for well-being. The final outcome of this procedure is that this text will hopefully act as a knowledge base and framework for future practical studies with a more empirical approach.

2. Aim

- To explore what is known about cultural heritage and health-related outcomes in modern research
- To find out which different factors or dimensions of cultural heritage sites could act as health promotive compared to theories related to natural environments
- To develop a new framework for understanding the potential health-related outcomes of cultural heritage sites and add to future knowledge surrounding these phenomena

3. Background

What is a health promoting environment? To break down this concept at first, the standing definition of *health promotion* is the process of enabling individuals, groups or societies to increase control over, and to improve their physical, mental, social and spiritual health. It covers a wide range of social and environmental interventions that are designed to benefit and protect individual people's health and quality of life by addressing and preventing the root causes of ill health, not just focusing on treatment and cure (Eriksson & Lindström, 2005; WHO, 2009). A health promoting environment would then be an environment that promotes this enablement and simply makes it easier for people to act on their health positively, or directly impacts their health in some manner (Stokols, Grzywacz, McMahan, & Phillips, 2003). Regarding the question which environment is health promoting or not, it is now clear that natural environments (forests, parks, shores, mountains, etc.) have a higher potential of contributing to people's health than modern urban environments (car parks, inner city centres, shopping malls, traffic dense streets, etc.) (Terry Hartig et al., 1997; Pasini, Berto, Brondino, Hall, & Ortner, 2014; Van den Berg et al., 2016). There almost seems to be a spectrum of health-promotiveness where nature lies at one end, the most promotive, and the urban environment at the other end, being least promotive. This is what most research has found when investigating health-promotive environment but seeing how these two environments were often the only ones investigated, it is no surprise. At the same time, more effort is made on increasing urbanization in today's society, which in turn has led to an increase in stress related illnesses, sick leaves and physical inactivity. This in turn leads to national economic issues, premature deaths and overall a decline in human quality of life (Srivastava, 2009) (Wang, Xue, Liu, Chen, & Qiu, 2018). It is estimated that more than half of the world's population are now residing in urban areas and it is expected that by 2050, 70% of the world's population will be living in cities (WHO, 2016). Other alarming data shows that stress related illnesses continues to increase rapidly, contributing to a higher mortality rate due to cancer, suicide and work related accidents (Salleh, 2008). The cost that all these issues leads to for the society becomes too difficult for ordinary welfare states to handle, with an increase in waiting lists for many psychological conditions. As an example, mental illnesses in Sweden is said to cost the society over 60 billion SEK (ca 5,7 EUR or 6,2 billion USD) each year and the figure is only rising. (Sanandaji, 2017) Here is where the concept of health promoting environments now come in. Research in the field of environmental psychology and health is rather new and stretches back to around the 1970's, where experiments were being done on people on sick leave, with severe stress and fatigue. Letting them spend time in natural environments, in this case, wild forest, the patients quickly recovered and were able to return to work in a much faster rate (S. Kaplan & Talbot, 1983). Since then, more and more findings have emerged, investigating the psychology, physiology and the physical environment, trying to describe theories and explain how and why these environments have these effects on the human mind.

In order to investigate the broad scope of this subject, one must first understand what health is and how the final result of a health bringing process occurs. There are currently many definitions of health, the most predominant being the World Health Organization standing description: "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" (WHO, 2002). Although many alternative definitions now exist, this version has

been the most dominant one since 1946. New research has begun to revise this definition and suggested a possible expansion of this version, and propose an addition of a *spiritual* concept of health (Larson, 1996), a proposition that will be discussed later on in relation to the topic of this text. Other existing definitions tend to either be focused on a more pathological definition, concluding that health is only the absence of illness, or a salutogenic perspective, where health and disease can be considered the extremes on each end of a spectrum, and people are instead sited on various grades in-between the two factors (Annerstedt, 2012; Antonovsky, 1996). Needless to say, despite the correct standing definition of what health is, the final goal is for the individual to recover if health is poor, but how exactly does that really happen when speaking of health from an environmental psychology perspective?

Most research within the field of health and place tends to focus on how mental health and energy could be restored, in people who suffers from stress related problems. There are currently a lot of terms describing different conditions caused by stress, given the fact that stress is in most cases the cause of the problematic symptoms and not a final diagnosis. Here follows a brief explanation of the different terms used when talking about stress related illnesses. Stress is instead a biological mechanism in the body that occurs when the human body faces challenges and needs to be focused and active on a higher level than a normal resting state. The medical definition of stress when speaking of bodily reactions is: *“a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation”* (Merriam-Webster, 1995). It is when the body faces too much stress (e.g. by being exposed to dense urban environments) that pathological conditions may occur, and may take the form of further illnesses and diseases, like depression, anxiety, heart diseases, etc. It is therefore why the clarification is needed when speaking within this context, stress is in itself NOT an illness or a condition, it is a natural reaction in the body. It is when the human organism faces too much stress that leads to further problems that could severely affect a person’s health (Salleh, 2008). Another common condition that often is the result of too much stress is called exhaustion disorder (also known as burnout syndrome), a condition that occurs after long term exposure of mental strain with little or no recovery, impacting the everyday function of a person and leads to sleep deprivation, anxiety and depression. In most cases, a person with exhaustion disorder is not able to work and is often on sick leave (Sonntag-Öström et al., 2014). Though research often speak in these terms of different illnesses and conditions, the most reoccurring one is called mental fatigue. It is a mental state caused by an overuse of cognitive abilities (like studying, or other mentally demanding tasks), and much like physical fatigue it is a form of tiredness or depletion of resources that needs to be restored (Qi et al., 2019). In order to do this, the mind has to be presented with lesser stimuli, in order to recuperate and recover.

3.1. Relevant theories in Environmental Psychology for Health promoting human environment interactions

This section will cover theories and research accounting for the topic of human-environment interactions and health related outcomes. Focus will mainly lie on theories describing aspects or qualities in the environment, that has been proven to increase social and mental health and well-being (and also to some extent, the physical health). This section will therefore act as a theoretical standpoint for the comparison of health, place and cultural heritage that will follow

later in this text. The purpose is thus to investigate and compare the different concepts, to establish if current literature surrounding cultural heritage sites will display similarities with research done in natural environments.

3.1.1. Bottom-up and Top-down perceptual processes

When experiencing the environment around us, the information that finally reaches our mind comes through the body's sensory organs, such as the eyes, ears, skin, nose, etc (Mather, 2016). This allow us to perceive the world by using this information to create an image of what kind of environment we live in. It is the brains way of organizing and interpret the sensory stimuli, to identify what is being experienced, in the form of shapes, sizes, melodies, loudness, faces, objects, and so on (Bell, Green, Fisher, & Baum, 2001; Mather, 2016). Perception is therefore both the function of neurological pathways and the final, cognitive understanding of the perceived stimuli (Bonaiuto, Giannini, & Biasi, 2003; Mather, 2016). Perception differs from sensation in the way how the brain forms the final product of the stimuli provided by the senses. This "product" could be in the form of affects, like fear when hearing a dangerous animal, beauty when seeing an aesthetically appealing image, disgust when smelling something unpleasant, etc.

Since vision is the strongest of the human senses, taking up the majority of sensory processing in the brain, a lot of research in the field of environmental psychology has been focusing on visual cues in the environment. A reoccurring theory when talking about visual processing and perception is what is known as "bottom-up" and "top-down" processing (Kinchla & Wolfe, 1979). E.g.: When viewing an object, let's say a tree, the visual cues would then be lines that together sums up the object that is being viewed. Meaning that the stimuli drives the perception, and without the ability to recognize the object as a tree, the object has no direct cognitive meaning. This is how "bottom- up" processing works. In opposite, "top-down" processing refers to how the perception is guided by preconceived knowledge that already exists in the mind, to create a recognisable image of what is being viewed (Kinchla & Wolfe, 1979; Teufel & Nanay, 2017). The person viewing the tree in this example, does not need to process the image of the tree in the same way, because the knowledge of what a tree looks like already exists in the mind. The perception is here derived from cognition. How cognition affect or even drive perception is a long-debated question and is an important factor to have in mind when speaking of the precognitive expectation and memory of an object that is about to be viewed, seeing then that the perception already exists in the mind before perceiving it (Teufel & Nanay, 2017). It is an interesting topic when it comes to linking visual processing to environmental psychology and health-promoting environments and will be further analysed in the results of this thesis.

3.1.2. Restoration, Instoration and Recreation

One of the founding theories that begun to explain how environments have different health promoting potential was the Attention Restoration Theory (ART) by Kaplan and Kaplan (1989). This section will explain some of the existing terms that is used when trying to describe the healing potential of restorative environments, which is the foundation of ART, then other similar concepts relating to this will also be mentioned. Beginning with ART, this is a theory focusing on four qualities in the environment that is said to promote mental restoration (S.

Kaplan, 1995). ART explains how mentally demanding task requires so called directed attention, which when depleted leads to directed attention fatigue. According to Kaplan (1995), this could be restored whilst spending time in environments that attracts involuntary attention, which is instead effortless and do not have capacity limitations. The four components (or aspects) of a restorative environment are as mentioned before:

- *Soft fascination*: This occurs when viewing aesthetically appealing objects in the environment that arouse interest and curiosity, but not so much that one has to focus too hard understand what is viewed and as a result makes the person reflect and recover more easily.
- *Compatibility*: Meaning that the environment is compatible with human inclinations. To function in a restorative seems to be more effortless than in civilized “human environments” and implies that there is a form of resonance with the person and the place. Compatible environments therefore meet the expectations of the person.
- *Being away*: Speaking in both objective and subjective terms, being away refers to the person feeling like he or she is far away from normal settings, both physically and mentally.
- *Extent*: The quality that encourages the visitor to be totally emerged in the environment without any unexpected features, meaning that the person does not feel out-of-place and is somewhat familiar with the qualities in there, without having visited the place before.

(Kaplan & Kaplan, 1989)

Kaplan & Kaplan (1989) thus promote natural environments as the most restorative compared to urban environments, though newer research explains that other environments could possess these qualities.

Another term linked to restoration is what is known as instoration, a relatively new word in this field, which is used to describe the acquirement of new mental resources that exceeds the ones already possessed. As (T. Hartig, 2017) describes it:

“A family of processes engaged in encounters with particular environments that involve the acquisition of new resources; a person may for example become more self-reliant or self-confident, acquire new skills, or gain in physical fitness. The term was introduced into the literature to distinguish restorative effects from effects that do not involve the renewal of depleted resources; not all benefits of environmental encounters are restorative benefits”. (T. Hartig, 2017)

Instoration may prove to have an important role when speaking of mental processes and benefits from visiting a particular environment, seeing that restoration is not the only benefit that a health promoting site may have. This could prove valid when investigating other environment than natural ones.

The final term that will be highlighted in this section is recreation, which instead focuses on describing the leisure activities that can take place in outdoor environments and is more

directed towards the social experiences and physical activities that the environment promotes, like hiking, running, picnics, camping, etc (Andkjær & Arvidsen, 2015; Margaryan & Fredman, 2017). Recreation is therefore not necessarily a psychological term but seeing how the leisure activities provides several benefits for people's health, both in the form of relaxation and physical activity, it is a crucial factor that proves other health bringing aspects from the outdoor environment than direct restoration. Though it should be said that recreational activities do have the potential to add and promote mental restoration and instoration, and that the visit in itself will often have many benefits added together, not just only one (Andkjær & Arvidsen, 2015; Lekies, Yost, & Rode, 2015).

3.1.3. The role of Aesthetic Environments for Health promotion

When speaking of what physical qualities the health promoting environment has that makes it so appealing to watch and spend time in, it is important to note that these physical attributes are not always easy to define, due to the subjectivity of the person viewing it. One place that is pleasant for one person may not always be equally appealing for another. But some research has tried to investigate what it is in the physical environments that makes people feel better whilst viewing it and uses our biology and senses to explain these effects.

Regarding neurophysiological mechanisms and responses that happens in the body when viewing patterns in the environment, some findings suggest that so called fractal patterns play a role in whether the visual impact is aesthetic and pleasant to look at or not (van den Bosch & Bird, 2018). Fractal patterns are complex and very technical to describe in depth, but they are essentially reoccurring fluctuations in lines, displaying silhouettes in naturally formed objects (Taylor et al., 2005). This could be in the form of a contour of a bush, a horizon with a predominant tree line, the branching of a tree or the growing pattern of a leaf. Often unique to the geometry of fractals, is that the patterns will continue to spread and evolve if a picture of such an object is enhanced (e.g. if a picture of a tree is magnified, the branches will still resemble the form of the tree in a smaller shape) (Annerstedt, 2012). New research is beginning to show that viewing these objects has the effect to change human physiology, e.g. lowering stress and restore attention. The now standing theory is that fractal patterns are more easy to process than more artificial shapes, thus resulting in a more fluent perception intake without stressing cognitive processes (Joye & van den Berg, 2011).

Overall, the research investigating the perception of aesthetic environments find that viewing natural images, objects and landscape is more pleasurable than modern, artificial ones (Hermes, Albert, & von Haaren, 2018; Van den Berg et al., 2016). This has been a topic of investigation for some time now, deriving from a ground-breaking finding in the 1980's showed that hospital patients recovering from surgery, needed less medication and healed faster if there room window overviewed natural scenery (R. Ulrich, 1983). This led to the development of a theory known as the Stress Reduction Theory (also known as the Aesthetic Affective Theory), which explains how viewing natural scenery impacts the physiology of the human body, in a way that finally leads to a reduction in stress.

3.1.4. Evolutionary Theories and Health related outcomes

Though many theories investigate the present and direct psychology of environmental experiences to explain the phenomena of health promotion in different places, there are some that instead suggests that the well-being is aroused because we are evolutionary programmed to cope and function better in them. For instance, the Biophilia hypothesis suggests that human beings have a preprogramed tendency, or instinct to seek contact with nature and natural lifeforms, because of our own biological origin (Kellert & Wilson, 1995). The human being is thus said to almost “crave” nature in a manner, but is stopped due to impact of modern civilisation, and it is here the conflict of the mind occurs and stress will be a factor. Lacking the opportunity to visit natural environments, the emotional affiliation we have with other species is removed, which in turn leads to negative consequences in relation to our everyday functioning (R. S. Ulrich, 1993).

A similar theory focuses more on the physical environment that humans arose in, mainly *savannas*. The theory, not surprisingly called the savannah theory, explains that since human evolved throughout millions of years in the same environment, we should be biologically programmed to function better in a one similar to a savannah type. Such environments often possess the same physical features, like open field with good overview and prospect, scattered plants and trees to provide shade and protection (Oriani, 1980). Provided with these features, the human mind is said to feel more safe and at ease, over-viewing and controlling the prospect of the environment, and used in a modern context, it could explain how some landscapes can be used to reduce stress (Grahm & Stigsdotter, 2010).

3.1.5. Place Attachment and Social factors influence on health

The relationship between person and different places plays a big role when it comes to defining factors in the field of health promoting environments. Research regarding psychological attachment to different places have found that these bonds plays an important role for the general well-being of people today (Ujang & Zakariya, 2015). Since this topic is both broad and complicated to grasp, this section will only cover a general overview of place attachment and how it links to personal and social health, to get an overview of why some places are important for different user groups. To add another link to the topic of this thesis, the importance of heritage will also be presented in short.

The process of forming a bond to a place is often presented as complex and often there are an abundance of factors involved, like time, size of environment, individual preference, personality, ethnicity, building type, etc (Scannell & Gifford, 2010). The importance of the result from this process is how the individual well-being is affected, and that is what is being covered here. The place in itself will often be considered a meaningful one, in the form of e.g. a home or an environment which is linked to an emotional experience that happened there (Lewicka, 2011). These environments thus provide the user with safety, emotional stability and security, reflection opportunities, feelings of belonging, etc, which are factors directly linked to personal health (Ujang & Zakariya, 2015).

The place could also be a social one, in the form of a neighbourhood or a community, creating a link to the social environment which people live in and reside. Having a connected life has been proven to play an important role in the everyday well-being of people, which in turn is linked to emotional ties and attachment with the neighbourhood itself, forming a so-called social identity, meaning that a person feels as a part of a societal group. A thriving community is therefore easier to be attached to, linking the importance of not only physical places, but social ones as well (Forrest & Kearns, 2001; Perkins & Long, 2002; Twigger-Ross, Bonaiuto, & Breakwell, 2003).

Both the social and the physical place has thus been proven important when it comes to the attachment that people form with their respective meaningful environments, but what about the culture of the place? Helping to form attachment, factors such as roots, history and heritage should not be excluded (Manzo & Devine-Wright, 2013). People with the knowledge of the history of the place they lives in, along with knowing about how their heritage is connected to it, forms a stronger and more meaningful bond to that (Davis, Huang, & Liu, 2010; Manzo & Devine-Wright, 2013).

4. Methodology

This thesis sets out to explore and compare the current research regarding visits to cultural heritage sites to theories surrounding the health benefits of spending time in natural environments. The method of the thesis will consist of first: a literature search to collect the appropriate material of research that has investigated the experience of visiting cultural heritage sites. Secondly: A scoping literature review will be used to explore and draw out eventual themes of factors in cultural heritage sites that could be of importance for a health-promoting environment (but has not been brought up in research investigating natural environments). Third: a theoretical analysis will be made for comparison and implication of the collected material to standing theories of health promoting environments, to see if these theories show signs of being adaptable to cultural heritage sites. The final step is to develop the foundations of a conceptual framework for how cultural heritage sites could be used as health-promotive environments.

4.1. Methodological considerations

Due to the lack of knowledge in regard to Cultural Heritage sites and health promotion, it appeared relevant to first try to define the phenomenon and its dimensions/factors from a theoretical perspective by identify what is known, and then link that to existing theories and knowledge so that a potential framework for future investigation can be presented. Regarding the choice of search words and relevant combinations, it will be stated that these were chosen to find material linked to the field of environmental psychology and health, due to the field this study is produced within. It is thus, the *health effects* of the found material that are sought after here.

4.2. Scoping review

In order to establish if and why certain aspects in the environment of cultural heritage sites are beneficial for well-being, a scoping literature review was applied to identify the current literature surrounding health outcomes of cultural heritage sites. A scoping review is a method used when compiling the current research surrounding one or more subject, in order to analyse, compare and possibly establish new ways of interpreting the data in the relevant texts, and also to analyse similarities and to explore and develop themes of the findings (Colquhoun et al., 2014). This was done using a five-step model for scoping reviews based on the work of Colquhoun et al. (2014). The search for the literature was performed in the following data-bases; Google Scholar and ScienceDirect, between the period of 2019-03-15 to 2019-04-11. The search words were based on both the research questions and the theoretical background in the section about previous research, different Boolean factors were used to combine the search words in different ways to optimize the search. The search was first applied to Google Scholar, then ScienceDirect, and some alterations were made to the search words in the second search, due to the appearance of similar articles in the total hits and to expand the possibility of finding new material. The search brought a total hit of (N=126) papers, which abstracts were screened through in order to determine their eligibility for inclusion. A total of (N=35) papers were selected as relevant and were read in full-text. The inclusion criteria for retaining the material within this scoping review consisted of; the material should be peer reviewed, written in English

and accounting for factors relating to health promoting outcome of a cultural heritage site or landscape. No time factor was considered, due to the field of environmental psychology and health is rather new as previously stated. After the full-text reading a total of (N = 19) papers were retained and included in this work. A summary of the search is reported in table 1.

Table 1. Search strategy

Databases	Search period	Total hits	Included articles	Search terms
Google Scholar	2019-03-15 to 2019-03-26	N=87	N = 12	Culture* OR heritage OR site OR health promoting OR restorative OR place OR historical* OR user group OR stress reduction OR well-being OR mental health OR recreation (search words were mixed and alternative Boolean factors such as AND were used)
ScienceDirect	2019-03-29 to 2019-04-11	N=39	N = 7	Culture* OR heritage OR site OR health promoting* OR restorative OR landscape OR place OR historical* OR environmental psychology OR stress reduction OR well-being OR recreation (search words were occasionally mixed and alternative Boolean factor such as AND was used)

To then analyse the articles structurally, a thematic model was additionally applied to aid in formatting constructed themes. The themes that was produced from the literature search was then ordered according to topic and relevance in relation to the research questions. To draw help from previous methods concerning thematic development, a thematic analysis model by (Thomas & Harden, 2008) was applied here. This model proposes three stages that are used to develop themes, as following:

- *Stage 1. The coding of text" line-by-line"*, where relevant parts of the texts were brought up in relation to the chosen search words to be further analysed and put into context. All

the papers included were read several times to draw out relevant factors and create themes.

- *Stage 2. Developing descriptive themes:* Now grouping the chosen parts of the texts, a deeper analysis of the content was made, to categorize the finding into relevant sections to see if themes starts to emerge.
- *Stage 3. Generating analytic themes:* In this stage, the synthesis of the product took shape as the findings were compared to the research topic. This is where the final results of the thematic division are being structuralized for a better understanding, making sense of what is sought after. After this stage, the final content analysis was made.

For the analysis of the content, a process model proposed by (Mayring, 2002) was used, to formalize a structured analysis of the found material.

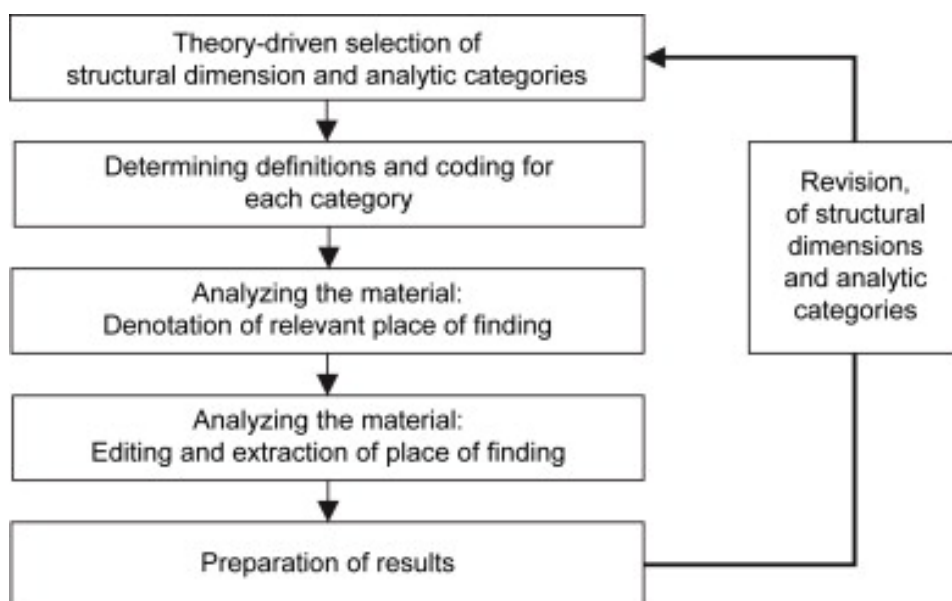


Figure 1. Process model of a structuring content analysis (Mayring, 2002).

4.3. Analysis of factors applying existing theories of Health promotive environments

To identify how the retained material from the scoping review relates to standing theories within the field of health and place, a theoretical analysis (Rocco & Plakhotnik, 2009) was performed. In total, (N=5) theories and concepts, belonging to the predominant theories and framework within the field of health and place, and reported in this introduction of this work, were selected. The application of these theories on the material included in this scoping review can be described as belonging to two major areas respectively, bottom-up and top-down processes of human-environment interactions.

4.4. Synthesising the material: The building of a framework

A final step of synthesising the material into a conceptual framework was performed by applying a critical interpretive synthesis methodology (Dixon-Woods, Agarwal, Young, Jones, & Sutton, 2004; Lorenc et al., 2012), which implies a three-step model for theory-synthesizing (Pound & Campbell, 2015). The remaining themes from the scoping review and previous analysis were broken into several factors aspects and then categorized and ordered according to shared similarities through thematic division. The different themes and factors were then ordered for points of convergence and divergence; bringing together those aspects that converge. Finally, a closer analysis of the product, including an examination of the applied processes was used to generating further theoretical insights and a more robust theory. A final theoretical model/framework was then created by putting together the converged aspects.

4.5. Ethical considerations

Nyberg and Tidström (2012) describe that each individual student and researcher has ethical and legal issues approach to the research being conducted. This is because the research must maintain high quality and a good scientific practice. Because of these approaches, the student or researcher should strive to give such a truthful picture of the problem that he or she is investigating (Nyberg & Tidström, 2012). Furthermore, Nyberg and Tidström (2012) describe three ethical principles that should be addressed regard. These principles are related to the American Psychological Association (APA) which is the model also used in this study. The three principles are as follows:

- Contribute to accuracy and accuracy in scientific knowledge.
- Protect the right to intellectual property, take into account copyright.
- Protect the participants' rights and well-being.

These principles were taken into account in the search that was carried out. Other ethical considerations that were followed in the creation of this thesis was derived from the Swedish Research Councils published guidelines *Good research practice* (Gustavsson, Hermerén, & Pettersson, 2011). Since no personal data or other forms of inquiry was collected for this thesis, the ethical considerations were mostly focused on collecting and presenting data in a truthfully manner that did not deviate from the original authors work.

5. Results

The final results are presented in three steps accordingly. First, a descriptive overview of the gathered material. Secondly, an application of standing theories in environmental psychology and health related outcomes was made, and third; a synthesis of the derived material from the two previous steps was performed.

5.1. Descriptive results of the material found by means of the Scoping review

Table 2. Articles included in the results

Study	Type of setting/environment	User group	Health related factors investigated
Ashworth (2008)	Heritage landscapes, Historical landscapes	General population, local residents	Place identity, Place attachment
Barton, Hine, and Pretty (2009)	Heritage landscapes*	General population, visitors (nearby residents)	Physical activity
Berto, Baroni, Zainaghi, and Bettella (2010)	Historical architecture, historical urban environment *	General population	Mental restoration (Attention restoration)
Boucher, Groleau, and Whitley (2019)	Cultural landscapes (cultural characteristics)	Local residents	Mental recovery, place attachments
Cameron and Gatewood (2003)	Historical sites, Historical architecture	Local residents, tourists	Numinous (spiritual) experiences, recreation
Chen and Rahman (2018)	Cultural tourist attractions**	Tourist	Recreation
Coburn et al. (2019)	Biophilic architecture***	General population	Mental restoration, Biophilic qualities
Kingsley, Munro-Harrison, Jenkins, and Thorpe (2018)	Cultural heritage sites, Historic sites	Local residents, Visitors	Place identity, place attachment

Lee (2015)	Heritage site	Tourists	Nostalgia (mental health), recreation
Levi and Kocher (2012)	Historical, religious sites	Tourists	Spiritual experiences
Nowell, Berkowitz, Deacon, and Foster-Fishman (2006)	Heritage sites (town with heritage values) *	Local residents	Place attachment. Place identity, Social identity
Ouellette, Kaplan, and Kaplan (2005)	Heritage, spiritual site (monastery)	Visitors	Mental restoration (attention restoration), spiritual experiences
Power and Smyth (2016)	Heritage sites**	Local residents	Place attachment, Place identity, social identity
Ram, Björk, and Weidenfeld (2016)	Historical sites, monuments, Heritage sites	Tourists	Place attachment
Ramzy (2015)	Historical architecture	None mentioned	Biophilic qualities, stress reduction
Simpson (2009)	Heritage sites**	Local residents	Place identity
Waitt (2000)	Historical site, heritage site	Tourists	Nostalgic experiences
Wilson (2003)	Heritage landscapes	Local residents	Place attachment, spiritual health
Zakariya, Harun, and Mansor (2015)	Historical site	Tourists	Place attachment

* Cultural heritage sites were not the only environment investigated

**Paper investigated the experience of a user group without the inclusion of a specific place

***Theoretical paper, only physical properties of places were investigated

Though not many papers were found, there are however tendencies toward that the health effects that were produced and presented as such in the articles could be derived from something more than what the current theories states. Qualities such as nostalgia and spiritual aspects were the ones mentioned that has not been investigated before according to current theories surrounding health and place. Other factors included were biophilic qualities, mental restoration, recreation and stress reduction. However, the most predominant aspects were the ones of place identity and place attachment, linking to the importance of local heritage identity for human health. Following section will present and shed light on the current themes that arose from the analysis of literature.

5.1.1. Thematic analysis of the material

The themes that arose from the articles retained are the following: N=4 articles were related to concepts of spiritual and nostalgic experiences, which were factors not relating to any previous theories, N=2 were linked to aesthetics features in the architecture, N=9 investigated place attachment and heritage and N=3 articles were related to mental restoration and recreation. Two different user groups were found tourist/visitors and local residents, though no clear differences were found between the user groups and health related outcomes. The themes are presented and analysed below.

5.1.1.1. Concepts of Spirituality, Nostalgia and Place

The findings from the review provided some new insight into what a place can offer a person that could potentially improve that person's health. One term that the review produced was *numinous*, derived from the Latin word "numen", meaning the arousal of spiritual or religious experiences, that gives the viewer a sense of awe and mystery. This links back to the background section of this text discussing the definition of health, there was a brief mentioning of the idea of spiritual health, which will now be brought up in relation to this section of the text. According to Larson (1996), an addition of spiritual health to WHO's standing definition (including mental, physical and social health) is proposed. It is mentioned that having a strong influence of spiritual activities could impact mental health and leads to a higher quality of life. That includes visiting such sites or monuments that indulges a spiritual sense. This relates to what the articles discussing numinous experiences proposes, which in turn provides indications that numinous experiences in such environments has a positive impact on health and well-being (Cameron & Gatewood, 2003). The user groups investigated in these studies were mostly tourists or visitors to the site, not surprising given the topic of the studies that investigated mainly tourists' attractions and retreats (Levi & Kocher, 2012; Ram et al., 2016). What is important to bring up in relation to this particular user group is that often there is some form of learning element combined with preconceived expectations involved when visiting a site as a tourist. It will generally be a history combined with the monument or site, explaining its creation and creator/builder, the time it has existing and the meaning it provides, something that will impact or influence the perception of the viewer. This also relates to nostalgic experiences that were found in the review, which is said by researchers to play an important role for psychological health (Routledge, Wildschut, Sedikides, & Juhl, 2013). Nostalgia is induced when facing and perceiving something reminiscent of older times, which could be related to personal experiences, but it generally refers to the longing for an idealized bygone time (Routledge et al., 2013). The perception itself is here regarded as a top-down processing of the visual image, seeing how without the knowledge of the site, the meaning of whatever is viewed becomes redundant. The history and time-depth of e.g. a monument helps the viewer to form an idea and enables them to visualize the creation and the time that has gone by until present day. The same goes with spiritual experiences, without any type of sacredness or sense of spirituality surrounding an object, the object itself could almost become useless. Both spiritual and nostalgic experiences induced by a site could therefore be said to impact health positively, if they are induced by cultural heritage sites in this context

5.1.1.2. *Physical Aspects and Aesthetics in Historical architecture*

The second theme that emerged from the search regarded the biophilic qualities of the architectural features of the buildings presented in the studies. Referring back to background section of this text, biophilic qualities means visual cues that are represented by biological/organic patterns, mostly found in natural environments, but they can also be found in architecture. This is usually presented in the form of fractal geometry, which is also mentioned in the background. Since these features have been proven to aid in stress reduction, they are key aspects when acting as health-promoting environments. The study most predominant to investigate this field that was found was Ramzy (2015), that found that several architectural features of historical buildings contains biophilic elements in its design, often resembling some form of plant patterns. Since such visual patterns and qualities has been proven to reduce mental stress, it is an important aspect to bring up when analysing health-promotive features in the environment. The fractal geometry of these buildings are also cues that tell how historical architecture could be more health-promotive than modern, more artificial geometric structures. Studies have shown that older architecture often contain more fractal geometry than modern ones (Ramzy, 2015; Taylor, 2006) Other studies focused additionally on aspects such as colour saturation and edge density, to yet again conclude: “Modern building is often dictated by efficiency and economic motives, barely leaving room for symbolic and stylistic references to natural contents” (Coburn et al., 2019). It shows how the complexity and richness of spatial, visual cues in architecture are important for human well-being and that these viewing patterns in the design also should not be overlooked when designing new buildings (Joye, 2007). It will also be mentioned here that several studies included here investigated both natural and cultural environments.

5.1.1.3. *Heritage and Place Attachment*

Throughout the time that modern research has investigated the concept of place attachment and place identity, there has always been a great deal of focus lying on the importance of heritage. The results from the literature search showed exactly this, with various aspects covering areas in the field of health-promoting environments. Numerous findings were related to how place and heritage are especially important for the health of different indigenous people around the world, that have somehow lost their connection to their land due to e.g. colonization (Boucher et al., 2019; Simpson, 2009). It was established in these papers how the link to the land that the people have been living in throughout history is needed, and that this link could be attached to various forms of objects related the land, the landscape itself or most often, monuments and relics (Zakariya et al., 2015). The health effects related to place attachments are mostly presented as psychological well-being, but the phenomenon is not always that simple to grasp. For instance, there is the possibility of a connection to the concept of nostalgia that was previously mentioned, but this will be discussed further on. In this section, there were studies related to both the user groups found in this literature search. There were local people, both residents and indigenous people investigated, as well as tourists and visitors. This gives the phenomenon of place attachments an even broader relation to how cultural heritage sites can be used as health promotive for various people. It is both related to the importance of land for the people belonging to it as well as people wanting to explore and learn more about it.

5.1.1.4. *Mental Restoration and Recreation*

Regarding the effects related to mental restoration, there were only a few articles addressing this matter in relation to cultural heritage sites. Ouellette et al. (2005) investigated if a monastery could be used as a restorative site, with positive conclusions. This was the only study that used the Attention Restoration framework (R. Kaplan & Kaplan, 1989), to the point where another site than a natural one was tested in the same manner. This gives a clue to how a cultural heritage site could potentially have restorative values, but regarding how it was monastery that was investigated in this study, there is a possibility for other cues in the psychological effects, other than have been produced by the physical environment itself. Again, spirituality comes in to context. Another of the found articles looked at how cultural heritage sites could be used for recreation, or more accurately physical activity (Barton et al., 2009). The results indicated that heritage landscapes have the potential of increasing activity in the form of walking and thus reducing sedentary behavior in visitors. Though more was expected to be found in the area of recreation, it is still a broad term that could be used to interpret many findings.

5.2. Application of derived health related factors to existing theories

From the scoping review, the results showed indication that cultural heritage sites can be linked to various theories surrounding health and place. These theories can be found presented in table 3 below.

Table 3. Theories derived from the scoping review

Included theories/concepts	Source material for each theory
Attention Restoration Theory	<ul style="list-style-type: none"> • Kaplan, R., & Kaplan, S. (1989). <i>The experience of nature: A psychological perspective</i>. CUP Archive.
Biophilia Hypothesis	<ul style="list-style-type: none"> • Kellert, S. R., & Wilson, E. O. (1995). <i>The biophilia hypothesis</i>: Island Press.
Stress Reduction Theory (alt. Aesthetic Affective Theory)	<ul style="list-style-type: none"> • Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In <i>Behaviour and the natural environment</i> (pp. 85-125). Springer, Boston, MA.
Place Attachment and Place Identity Theories	<ul style="list-style-type: none"> • Morgan, P. (2010). Towards a developmental theory of place attachment. <i>Journal of environmental psychology</i>, 30(1), 11-22. • Twigger-Ross, C. L., & Uzzell, D. L. (1996). Place and identity processes. <i>Journal of environmental psychology</i>, 16(3), 205-220.

To examine and analyze these theories in relation to the factors drawn out from the scoping review, the different theories will first be divided into two thematic sections relating to the psychological processes behind them. This was done to explain the mechanisms that could lie behind these processes and was performed using the perceptual model of *bottom-up* and *top-down* processing (Kinchla & Wolfe, 1979), as described in the background.

5.2.1. Bottom-up theoretical analysis

Three theories that showed implication of health related outcomes in relation to cultural heritage sites were Attention Restoration theory (R. Kaplan & Kaplan, 1989), Stress Reduction theory (R. Ulrich, 1983) and the Biophilia hypothesis (Kellert & Wilson, 1995). These theories are directly linked to bottom-up processing (as mentioned in the background), meaning that they explain psychological effects in relation to direct (often visual) input that need little or no cognitive processing. The visual perception of fractal geometry patterns is a good example of this type of processing. Since these types of patterns are proven to possess stress reducing qualities by just viewing them, the visual cortex will process these images without the involvement of any cognitive functions. How the body then responds physically will be in the form of hormonal release to reduce the level of stress in the body (R. Ulrich, 1983). Since fractals and natural/biophilic patterns are very much aesthetic components, and historical

architecture has been proven to contain these complex features (Ramzy, 2015), it will be proposed here that these qualities in cultural heritage sites have the possibility to reduce stress and promote health. However, regarding if the process would be exactly identical to the one taking place when experiencing actual natural environments is a question that cannot be answered in this thesis. And it cannot be said that the stress reducing effects would be equally potent when viewing historical architecture as it would be when viewing actual nature patterns.

The theories covering the aspect of biophilic aesthetic geometry as health-promoting would thus be the biophilia hypothesis and stress reduction theory (Kellert & Wilson, 1995; R. Ulrich, 1983). When it comes to attention restoration theory (ART) however, the case is a bit more complex. According to ART, there are four criteria that has to be covered when analysing a restorative environment (as previously mentioned) soft fascination, extent, compatibility and being away. To say that all these aspects involves bottom-up processing could be too hasty. To experience the sense of being away for example, there must be some cognitive functions involved, seeing how it is not only the physical place that has to be “away”, it is also a mental state. An interesting comparison could be made with the mental way of visualizing a place as it would have looked in previous times. Provided with the right background knowledge, there is a possibility of “time travelling” mentally, trying to depict and actualize how a cultural heritage site could have been viewed as it would when it was created, thus getting the sense of “being away”. When it comes to e.g. soft fascination, the process would instead be linked to aesthetic features, but the theory states that it is instead mental capacity that is restored instead of reduction of stress (Berman, Jonides, & Kaplan, 2008). It could then be said that ART involves mostly bottom-up processing, as Berman et al. (2008) states, but there are elements of top-down processing that could be beneficial when experiencing a cultural heritage site as health promotive. This paper will henceforth use the concept of “being-away” as a top-down process of perception, which next section will cover.

5.2.2. Top-down theoretical analysis

Regarding top-down perceptual processes and how they relate to theories of health and place, it is firstly not that simple to explain how one theory fits all the criteria of this from of processing. Top-down processing involves the cognitive part of the brain, meaning that the process is based on knowledge already existing in the mind (Kinchla & Wolfe, 1979). This makes it hard to know when experiencing a place that is said to be health-promotive which processes and information is involved. It is much easier to identify bottom-up processes, seeing how it is the visual impact of a scene that directly affects the mind without any cognitive action taking place. It could be said however, that the theory of place attachment would be an example of a top-down process, given the fact that the place needs to hold some meaning to the person experiencing it. Place attachment is already explained previously in this thesis; therefore, no detailed explanation will be made of the concepts behind the theory here. Instead, this section will focus on the relation between how place attachment forms in relation to the previously mentioned factors numinosity and nostalgia.

There are already factors mentioned regarding historicity and religion in the forming of an attachment to a place. A framework suggested by Scannell and Gifford (2010) indicates that

three different factors are needed when an attachment is formed: person process, and place, explain what type of individual is attached, which cognitive, behavioral and affective aspects are involved in the process and finally, which physical or social place is the attachment towards (see figure 2).

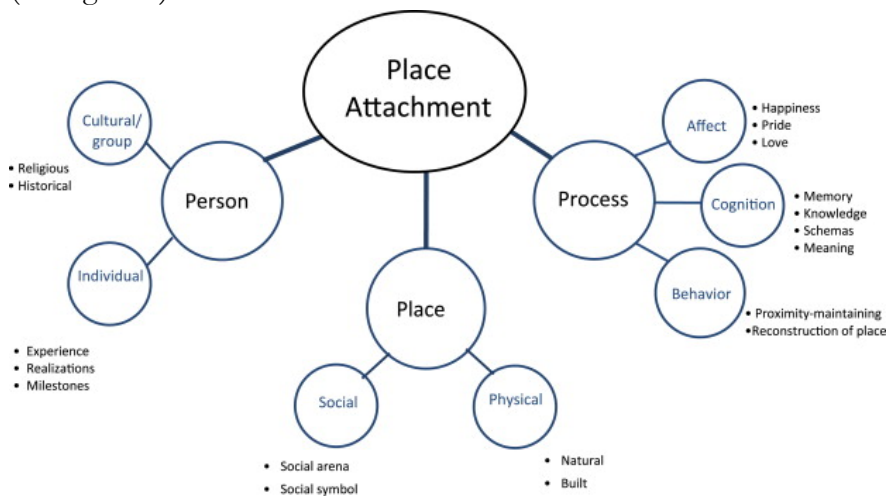


Figure 2: The tripartite framework by Scannell and Gifford (2010)

Seeing this, it becomes clear for a viewer that an attachment towards a cultural heritage site is possible, and the relevant factors are easily applied to the framework by Scannell and Gifford (2010). Numinosity could be compared with the religious factors and is dependent on the person itself, his/hers cultural belonging and beliefs. Nostalgia is instead a cognitive process, relating to knowledge and memories of a place (Routledge et al., 2013). It could be pre-conceived knowledge or newly acquired knowledge from experiencing a site first hand, learning about it on the site and blending the new knowledge with old memories and meanings. The question however if cultural heritage sites are easier to form an attachment towards is difficult to answer but seeing that these sites usually are more unique given their meaning and history, it would come to no surprise if that was the case. There are also indications relating to the place identity that cultural heritage sites could help to produce. The historical and cultural significance of a place has been proven to be important for the identity of a person or a whole society, thus strengthening their bond towards the place. The place is both a part of the people living there as they are a part of the place, forming a sort of meaningful symbiosis with the local area (Twigger-Ross et al., 2003).

The theories of place attachment and place identity are distinctively related to the concepts of numinosity and nostalgia and it is here indicated that these factors are indeed related to theories of health and place, thus linking cultural heritage sites a step further to health promotive environments. This concludes new findings linking to the top-down process of perception, relating to the meaning, the emotions/affectations and the cultural/spiritual significance behind a place and how that place would be important for people's health in regard to these aspects.

5.3. Towards a synthesis

Now that the different articles and theories are revised, analysed and data had been extracted from them, the step towards building a new framework can begin. This section will follow three different steps of synthesising a framework as described in the method section of this paper.

5.3.1. Synthesis preparation

To first synthesise this conceptual framework, the different factors and theories needed for this are presented below in table 4, to provide an overview of what pieces are needed to put together and how.

Table 4. Overview of relating concepts and theories of Cultural Heritage sites

Included health-promoting factors	Related theories and concepts
<ul style="list-style-type: none"> • Nostalgia • Numinosity 	<u>None</u> (newly acquired)
<ul style="list-style-type: none"> • Visually aesthetic features • Complex/Natural patterns • Fractal geometry 	Stress Reduction Theory (Ulrich, 1991), Biophilia Hypothesis (Kellert & Wilson, 1995)
<ul style="list-style-type: none"> • Soft fascination • Extent • Compatibility • Being away 	Attention Restoration Theory (Kaplan & Kaplan, 1989)
<ul style="list-style-type: none"> • Religion (or Sacredness) • Historicity • Memory • Knowledge • Meaning 	Theory of Place Attachment (Tripartite model by Scannell and Gifford, 2010)

Synthesising a new concept from aspects coming from very different theoretical background must be done with care. There must be no question regarding how the conceptual framework could be interpreted, and the background and motivation for the new concept must be solid. The health-promoting factors will therefore also be categorized into how there are related to perceptual processes as described in the previous section. Table 5 provides an overview of how the different categories fits in to bottom-up and top-down processes.

Table 5. Division of factors into processing functions

Top-down processing factors	Bottom-up processing factors
<ul style="list-style-type: none"> • Sacredness • Historicity • Memory • Knowledge • Meaning • Nostalgia • Numinosity • Being away 	<ul style="list-style-type: none"> • Visually aesthetic features • Biophilic patterns • Fractal geometry • Soft fascination • Extent • Compatibility

This division of factors shows again how the perception differs depending on the experiential qualities of a particular stimuli. Seeing how not only one factor contributes to well-being, the categorization of the different factors will simplify the understanding of which aspects are important for a particular type of perceptual process, thereby explaining the health promoting effects they might have. What is interesting with this categorization is that the bottom-up processing factors relates directly to theories and concepts about natural environments, whilst the top-down factors are not. Or at least, not directly. But relating back to cultural heritage sites, it is a further indication that the health promoting factors works differently than what has been investigated in relation to natural environments. To finalize this categorization, these health promoting factors will now be grouped in to different sections, explaining their similarities in order to synthesise them.

5.3.2. Synthesis

Table 6 shows how the different factors relates to one another, based on their qualities and what they have in common. The three groups: *spiritual*, *cognitive* and *aesthetic* were chosen because they sum up the total categorical effect of each health promoting factor.

Table 6. Categorization of factors into thematic groups

Spiritual (Top-down)	Cognitive (Top-down)	Aesthetic (Bottom-up)
<ul style="list-style-type: none"> • Sacredness • Historicity • Numinosity 	<ul style="list-style-type: none"> • Memory • Knowledge • Meaning • Nostalgia • Being away 	<ul style="list-style-type: none"> • Visually aesthetic features • Biophilic patterns • Fractal geometry • Soft fascination • Extent • Compatibility

Regarding the motivation for some of the factors grouping it should be said the qualities of some factors could overlap into the other group. For instance, extent and compatibility (derived from ART) may not generally be categorized into aesthetic features. It is, however, what relates to physical environment and what information the physical environment provides the viewer with. Aesthetic features in the form of visual stimuli have been proven, as mentioned several times in this paper, to be important for stress reduction. Seeing how cultural heritage sites need these aesthetic features to be health promotive, all the properties of visual stimuli will therefore be categorized in to aesthetic factors. Other examples of overlapping factors are historicity and meaning. Historicity is of course related to the age of actual site or monument, but it is also linked to the spiritual meaning of the site, the “numen”. It is a record of the place and its importance, because of the long time it has lasted there, almost creating an embodied spirit (Little, 2016; Maines & Glynn, 1993). The physical age and creation are instead more cognitive processes, relating instead to *knowledge*. It should also be stated that not all cultural heritage sites need to be linked to some form of religious activity, but that the spiritual effects that comes from religious meaning in a site are linked to spiritual health.

5.3.3. Framework proposal

Now that a model is starting to emerge, it is time for the final synthetic analysis, meaning a refinement of the previous section, in order to deepen the detailed understanding of the connection between different factors in the model. Figure 3 provides a finalized overview of the different factors and themes and their relation to one another, merging into a new framework.

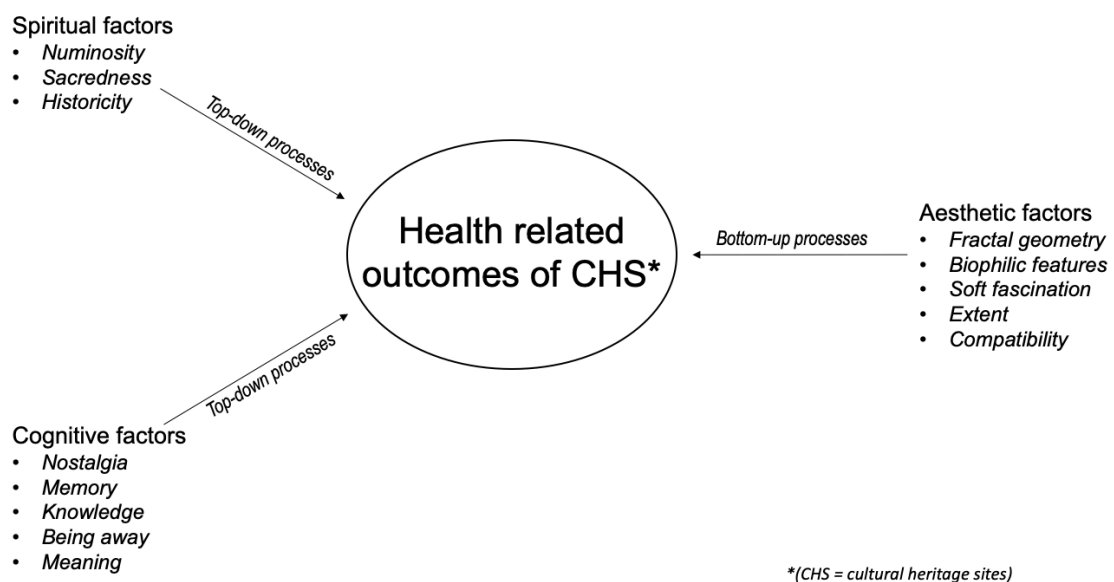


Figure 3: Model of health-promoting factors in Cultural Heritage Sites

The model in figure 3 should be interpreted as following:

- It is stated here, that the factors listed in the three categories are qualities that could potentially explain how cultural heritage sites can function as a health promoting

environment. This is a theoretical statement, therefore the usage of this tool in empirical/theoretical research should be made carefully and with consideration.

- Bottom-up processed factors are more objectively measurable, due to the nature of their physical qualities. Top-down processed factors are more unique for cultural heritage sites, but harder to grasp due to the qualities of subjective experiences. A mixed-method approach is recommended for future usage of this tool.
- The health-related outcomes may vary depending on both the individual and place, but objectively speaking they are the result of a particular experience in a cultural heritage site. Testing of this tool could increase the understanding of the importance of personal background/place qualities.

As many of the investigated theories and concepts suggests, the phenomena of health promoting environments are complicated to generalize, because it is always depending on the place itself. As suggested before, the qualities of one particular environment may not provide the subject with the expected effects, even though the category it falls within is said to promote health (Gatersleben & Andrews, 2013). This model is a suggestion based on a small amount of background information, more data and practical applications are needed to confirm the validity of the model.

6. Discussion

This thesis is an attempt to reduce the knowledge gap about the health-promoting effects of cultural heritage sites and to further act as a foundation for future research. The lack of previous knowledge surrounding this phenomenon is mirrored in the lack of modern tools to measure it. For example, it might be possible to investigate the process of restoration in cultural heritage sites, by using existing standardized measuring tools such as the Perceived Restorative Scale (Terry Hartig, Korpela, Evans, & Gärling, 1996), however, the chances are that this way of research method is inadequate for this particular environment (compared to a natural one for example). It appeared therefore of importance, to integrate what is known so far about cultural heritage sites and to match that with existing theories and knowledge about health and place studies. Theories are needed in this case to be able to develop tools for investigation, and also to identify the underlying factors at play between the human-environment interaction in cultural heritage sites, so that only relevant factors are investigated, and so that the tool developed grasps the psychosocial processes that are of relevance. It could be argued that the case with existing theories is, that they are simply not fully adaptable to explore the effects of alternative environments and should therefore, be developed to fit cultural heritage sites. For example, in the case of cultural heritage sites, there is often a historical factor to be considered, which creates a learning element about the origin of the place or object in question and how it has influenced the nearby culture. This is something that previous theories in environmental psychology and health outcomes have not mentioned, seeing how they only have been investigating direct visual impact, which again have been related more to the perception of natural environments. These opportunities for deeper historical insight could be a crucial factor for health-promotion and is one example of a missing element in most research within the field today. Because the findings from this thesis are rather new and no attempt at this sort of framework synthesis based on the experience of cultural heritage sites, there are several things to consider for the validity of the primary results, the limitations of the study and also the future applications of this new framework.

6.1. Primary findings

The primary unique factors provided by cultural heritage sites that this thesis produced were in the form of two types of experiences: *nostalgic experiences* and *numinous experiences* (or spiritual experiences). These have been proven before to possess qualities that benefit psychological well-being, and since studies point to these qualities being produced by cultural heritage sites, it is an indication that more health-promoting qualities in the environment exist than modern theories state. Different to visual factors in the environment, such as fractals and stress-reducing aesthetics, nostalgic and numinous experiences are perceived using top-down processing, instead of bottom-up processes. This is important to add, because how cognitive functions produce the cues of e.g. spiritual experiences based on preconceived knowledge. The health-promoting process is therefore a different one from e.g. experiences biological patterns in an environmental cue which leads to stress reduction, it is instead a mentalization of what meaning the object or site possess and why it becomes important for the viewer. The other health-promoting effects that the scoping review showed were related to the theories of place attachment, stress reduction, biophilia hypothesis and attention restoration. These

theories have already been proven before to indicate how the environment impacts health, and three out of four has been linked to natural environments (except for place attachment, which is unrelated to type of setting). Worth mentioning again is that several of the studies inquired for this paper examined both natural environments and cultural heritage sites, which implies that perhaps the optimal health promotive environment could be a combination of both. Since the model that was produced in this thesis does have the capacity to include natural environments in explaining how an environment can be health promotive, it is a question that could be answered when examining real physical settings. The natural environment itself could add further cultural value, contributing to a “story-like” or cinematic setting, being more explained by imaginative experiences as found by indulging in e.g. films and books.

There are several components to be considered when discussing the results of the theoretical analysis. The fact that the different aspects are divided in to two different ways of mental processing has its explanation in the complexity of perception of a particular environment such as the one examined in this text. There is not just one way of explaining how an environment can be health promotive, one must take into account that several factors in the actual environment can be interpreted in different ways. The analysis of these factors drawn out from the scoping review in comparison to the theories is needed to provide a new understanding of what a health promoting environment actually can be. Seeing how many theories explains the perception of nature in a bottom-up way, it is crucial to get an understanding of other forms of perception in relation to health. Also, with regards to how cultural heritage sites have not been analysed according to theories relating to health and place in this manner before, it is important to emphasize the need for a different methodology when investigating the perception of an actual site.

Looking deeper at the qualities of the different thematic factors, there are some components that require further investigation and analysis. Comparing with previous theories that focuses on perception of natural environments, there is now a new form of seeing what potential the environment offers in the context of health promotion. The health-related outcomes that the physical *natural* environment provides still comes from natural geometric patterns, and the effects themselves are still in the form of mental restoration and stress reduction (T. Hartig, 2017; R. S. Ulrich, 1993; Van den Berg et al., 2016). The question then lies in whether the spiritual and cognitive factors are depended on being emerged in the physical environment and if the term “environmental psychology” still can be used to describe this phenomenon. E.g. religious and spiritual activities can still take place without a particular physical place, and if knowledge, memory and nostalgia really are not present, there can still be an emotional and psychological benefit from experiencing an ordinary place with high meaning. What is suggested here is that these factors are both place and person depended, like a chemical reaction that needs two components, the preconceived ideas of the meaning that place is most likely to bring you will meet the expectations when you arrive there and not before. There is also the possibility of gathering new knowledge and meaningful experiences (see instoration, (Hartig, 2017)). Bottom-up processing effects on the other hand will only require the direct visual impact of an aesthetic scenery without any background knowledge relating of the meaning of the place. This again relates back to the two user-groups that was found in the scoping review. A place can have a lot of different meaning depending if you come there as a tourist or live in

the area as a local resident. There is maybe not a high possibility to acquire new knowledge and create new experiences if you are a local resident, but the place becomes more meaningful in another way for your heritage, as you already possess that knowledge. And the other way around.

Regarding the final meaning of the newly produced framework, it will be said that the model should be used as a knowledge base to increase the understanding of health-related outcomes from cultural heritage sites. Other applications of the model are yet to made, but some possibilities to add and extend the content of the model are more than likely possible. For instance, qualitative research about health-related outcomes from cultural heritage sites on a deeper level should be performed, to gain more insight in the subjective experience and phenomena other than the dimensions mentioned in the new framework.

6.2. Limitations of the study

Since the methodology used in this thesis consists of various complicated steps that eventually formed a final result, there are a lot of things to consider. Primary limitations to the studies validity would be that the theories and cultural heritage factors did not merge as was planned, therefore no new framework would be produced. The synthesis could also be too forced and performed in a way that is not reliable for future application, therefore, it is important to analyse the concepts, theories and factors with great care before the synthesis could start. Though it should be said that using reviews and theoretical synthesis are not an unknown method. Reviewing and synthesising theories have been applied several times and are proven to contribute new and validated theoretical knowledge and frameworks (Baxter, Killoran, Kelly, & Goyder, 2010; Bonell et al., 2013). The issue that lies in the context of this text and its methodology, is when different factors that may not have anything in common at first with the reviewed theories are applied which could lead to problems. Since no type of methodology similar to this has been found (to the knowledge of this author), it should be stated here that the results of this thesis should be reviewed with caution until this method has been validated in future research.

Regarding the search words that were used in this study, it shall be said that these terms were primary linked to the field of environmental psychology. That being said, there are some issues with this method, seeing how many articles that investigates cultural/historical environments are not linked to environmental psychology and health. This narrows the result of the literature search, and thus, gives the result of this study lesser validity. However, it will be stated that this limit was necessary for the inclusion of a described health effect in the found material. Future research should perform a broader literature search (e.g. in the field of archaeology) to add further knowledge to this subject and to increase understanding of the definition *cultural heritage site*.

All the studies used in this thesis were peer reviewed, which increases their validity. However, since this was done using a scoping review, and with a relatively low number of articles, it should be said that more background knowledge, and empirical studies are required to validate the model's authenticity. Also, since this paper is a master thesis, there is the question regarding

time spent on the paper that needs to be brought up, as well as this paper was written by one person, which limits the efficiency of reviewing the found material. A later revision of this studies method and results should be done in future research, to increase the validity of this thesis's outcome.

6.3. Future applications

Being a theoretical framework, the newly formed model can be used as a guide for creating e.g. new forms of inquiries for practical investigations of cultural heritage sites. As a suggestion for places that could be examined, using a research design based on the new framework derived from this thesis; UNESCO's World Heritage sites could be investigated, since they exist in a great number of locations, they are proven to possess values and qualities to be included as a cultural heritage site, and they are often visited by local residents and tourists (Di Giovine, 2008). The model/framework could also be used to explain different health promotive values of various heritage sites, to thus add knowledge to local organisations and communities about the value of a particular site. By doing this, the need for preserving heritage sites will also increase, since from now on, there are indications that proves that these sites possess other qualities than tourist attraction value or archaeological/historical significance. Since a lot of the qualities in the newly produced model relates to various forms of background knowledge, further suggestions could be that more information signs should be put up, which again could increase the health promoting value of the actual site.

7. Conclusion

The findings from this scoping review suggests that cultural heritage sites appear to possess health promoting qualities. This work presents the topic of cultural heritage sites and health related outcomes in a way that has not been described before by applying existing theories relating to health and place and then expand from them based upon the findings of the scoping review itself. The psychological mechanisms that are involved while perceiving cultural heritage sites as health promoting environments appeared to be different from the ones usually explained by the interaction of natural environments and the health-related effects.

This paper has by reviewing and analysing existing literature and theories, proposed a new type of framework that could be used to explain how cultural heritage sites can be used as a health promoting environment. Therefore, this framework can act as a knowledge contribution for future research that seeks to explain how cultural phenomenon found in the physical environment might support health outcomes.

8. References

- Andkjær, S., & Arvidsen, J. (2015). Places for active outdoor recreation – a scoping review. *Journal of Outdoor Recreation and Tourism*, 12, 25-46. doi:<https://doi.org/10.1016/j.jort.2015.10.001>
- Annerstedt, M. (2012). Nature and public health-aspects of promotion, prevention, and intervention. *Socialmedicinsk tidsskrift*, 89(1), 82.
- Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health promotion international*, 11(1), 11-18.
- Ashworth, G. (2008). In search of the place identity dividend: using heritage landscapes to create place identity. *Sense of place, health and quality of life*, 185-196.
- Bail, C. A. (2014). The cultural environment: measuring culture with big data. *Theory and Society*, 43(3), 465-482. doi:10.1007/s11186-014-9216-5
- Barton, J., Hine, R., & Pretty, J. (2009). The health benefits of walking in greenspaces of high natural and heritage value. *Journal of Integrative Environmental Sciences*, 6(4), 261-278. doi:10.1080/19438150903378425
- Baxter, S., Killoran, A., Kelly, M. P., & Goyder, E. (2010). Synthesizing diverse evidence: the use of primary qualitative data analysis methods and logic models in public health reviews. *Public Health*, 124(2), 99-106. doi:<https://doi.org/10.1016/j.puhe.2010.01.002>
- Bell, P. A., Green, T., Fisher, J. D., & Baum, A. (2001). *Environmental Psychology*.—: New Jersey.
- Berman, M. G., Jonides, J., & Kaplan, S. (2008). The Cognitive Benefits of Interacting With Nature. *Psychological Science*, 19(12), 1207-1212. doi:10.1111/j.1467-9280.2008.02225.x
- Berto, R., Baroni, M. R., Zainaghi, A., & Bettella, S. (2010). An exploratory study of the effect of high and low fascination environments on attentional fatigue. *Journal of Environmental Psychology*, 30(4), 494-500. doi:<https://doi.org/10.1016/j.jenvp.2009.12.002>
- Bonaiuto, P., Giannini, A. M., & Biasi, V. (2003). *Perception theories and the environmental experience*. na.
- Bond, N., Packer, J., & Ballantyne, R. (2015). Exploring Visitor Experiences, Activities and Benefits at Three Religious Tourism Sites. *International Journal of Tourism Research*, 17(5), 471-481. doi:doi:10.1002/jtr.2014
- Bonell, C., Fletcher, A., Jamal, F., Wells, H., Harden, A., Murphy, S., & Thomas, J. (2013). Theories of how the school environment impacts on student health: systematic review and synthesis. *Health & Place*, 24, 242-249.
- Boucher, M.-E., Groleau, D., & Whitley, R. (2019). Recovery from severe mental illness in Québec: The role of culture and place. *Health & Place*, 56, 63-69. doi:<https://doi.org/10.1016/j.healthplace.2019.01.008>
- Cameron, C. M., & Gatewood, J. B. (2000). Excursions into the Un-Remembered Past: What People Want from Visits to Historical Sites. *The Public Historian*, 22(3), 107-127. doi:10.2307/3379582
- Cameron, C. M., & Gatewood, J. B. (2003). Seeking Numinous Experiences in the Unremembered Past. *Ethnology*, 42(1), 55-71. doi:10.2307/3773809
- Chen, H., & Rahman, I. (2018). Cultural tourism: An analysis of engagement, cultural contact, memorable tourism experience and destination loyalty. *Tourism Management Perspectives*, 26, 153-163. doi:<https://doi.org/10.1016/j.tmp.2017.10.006>
- Coburn, A., Kardan, O., Kotabe, H., Steinberg, J., Hout, M. C., Robbins, A., . . . Berman, M. G. (2019). Psychological responses to natural patterns in architecture. *Journal of Environmental Psychology*, 62, 133-145. doi:<https://doi.org/10.1016/j.jenvp.2019.02.007>
- Colquhoun, H. L., Levac, D., O'Brien, K. K., Straus, S., Tricco, A. C., Perrier, L., . . . Moher, D. (2014). Scoping reviews: time for clarity in definition, methods, and reporting. *Journal*

- of *Clinical Epidemiology*, 67(12), 1291-1294.
doi:<https://doi.org/10.1016/j.jclinepi.2014.03.013>
- Davis, P., Huang, H.-y., & Liu, W.-c. (2010). Heritage, local communities and the safeguarding of ‘Spirit of Place’ in Taiwan. *Museum and society*, 8(2), 80-89.
- Di Giovine, M. A. (2008). *The heritage-scape: UNESCO, world heritage, and tourism*. Lexington Books.
- Dixon-Woods, M., Agarwal, S., Young, B., Jones, D., & Sutton, A. (2004). Integrative approaches to qualitative and quantitative evidence. *London: Health Development Agency*, 181.
- Eriksson, M., & Lindström, B. (2005). Validity of Antonovsky’s sense of coherence scale: a systematic review. *Journal of Epidemiology & Community Health*, 59(6), 460-466.
- Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban studies*, 38(12), 2125-2143.
- Gatersleben, B., & Andrews, M. (2013). When walking in nature is not restorative—The role of prospect and refuge. *Health & Place*, 20, 91-101.
- Génétay, C., & Lindberg, U. (2015). Plattform Kulturhistorisk värdering och urval: grundläggande förhållningssätt för arbete med att definiera, värdera, prioritera och utveckla kulturarvet.
- Grahn, P., & Stigsdotter, U. K. (2010). The relation between perceived sensory dimensions of urban green space and stress restoration. *Landscape and Urban Planning*, 94(3), 264-275.
doi:<https://doi.org/10.1016/j.landurbplan.2009.10.012>
- Gustavsson, B., Hermerén, G., & Pettersson, B. (2011). God forskningsed. *Rapport*, 1, 2011.
- Hartig, T. (2017). Restorative Environments ☆ *Reference Module in Neuroscience and Biobehavioral Psychology*: Elsevier.
- Hartig, T., Korpela, K., Evans, G. W., & Gärling, T. (1996). *Validation of a measure of perceived environmental restorativeness*: University of Göteborg, Department of Psychology.
- Hartig, T., Korpela, K., Evans, G. W., & Gärling, T. (1997). A measure of restorative quality in environments. *Scandinavian Housing and Planning Research*, 14(4), 175-194.
doi:10.1080/02815739708730435
- Hermes, J., Albert, C., & von Haaren, C. (2018). Assessing the aesthetic quality of landscapes in Germany. *Ecosystem Services*, 31, 296-307.
doi:<https://doi.org/10.1016/j.ecoser.2018.02.015>
- Joye, Y. (2007). Architectural lessons from environmental psychology: The case of biophilic architecture. *Review of general psychology*, 11(4), 305-328.
- Joye, Y., & Van den Berg, A. (2011). Is love for green in our genes? A critical analysis of evolutionary assumptions in restorative environments research. *Urban Forestry & Urban Greening*, 10(4), 261-268.
- Kaplan, R., & Kaplan, S. (1989). *The experience of nature: A psychological perspective*. CUP Archive.
- Kaplan, S. (1995). The restorative benefits of nature: Toward an integrative framework. *Journal of Environmental Psychology*, 15(3), 169-182. doi:[https://doi.org/10.1016/0272-4944\(95\)90001-2](https://doi.org/10.1016/0272-4944(95)90001-2)
- Kaplan, S., & Talbot, J. F. (1983). Psychological benefits of a wilderness experience *Behavior and the natural environment* (pp. 163-203): Springer.
- Kellert, S. R., & Wilson, E. O. (1995). *The biophilia hypothesis*: Island Press.
- Kinchla, R. A., & Wolfe, J. M. (1979). The order of visual processing: “Top-down,” “bottom-up,” or “middle-out”. *Perception & Psychophysics*, 25(3), 225-231.
doi:10.3758/bf03202991
- Kingsley, J., Munro-Harrison, E., Jenkins, A., & Thorpe, A. (2018). “Here we are part of a living culture”: Understanding the cultural determinants of health in Aboriginal gathering places in Victoria, Australia. *Health & Place*, 54, 210-220.
doi:<https://doi.org/10.1016/j.healthplace.2018.10.001>

- Larson, J. S. (1996). The World Health Organization's definition of health: Social versus spiritual health. *Social Indicators Research*, 38(2), 181-192. doi:10.1007/bf00300458
- Lee, Y.-J. (2015). Creating memorable experiences in a reuse heritage site. *Annals of Tourism Research*, 55, 155-170. doi:<https://doi.org/10.1016/j.annals.2015.09.009>
- Lekies, K. S., Yost, G., & Rode, J. (2015). Urban youth's experiences of nature: Implications for outdoor adventure recreation. *Journal of Outdoor Recreation and Tourism*, 9, 1-10. doi:<https://doi.org/10.1016/j.jort.2015.03.002>
- Levi, D., & Kocher, S. (2012). Perception of Sacredness at Heritage Religious Sites. *Environment and Behavior*, 45(7), 912-930. doi:10.1177/00139165124445803
- Lewicka, M. (2011). Place attachment: How far have we come in the last 40 years? *Journal of Environmental Psychology*, 31(3), 207-230. doi:<https://doi.org/10.1016/j.jenvp.2010.10.001>
- Little, B. J. (2016). *Historical archaeology: why the past matters*: Routledge.
- Lorenc, T., Clayton, S., Neary, D., Whitehead, M., Petticrew, M., Thomson, H., . . . Renton, A. (2012). Crime, fear of crime, environment, and mental health and wellbeing: mapping review of theories and causal pathways. *Health & Place*, 18(4), 757-765.
- Maines, R. P., & Glynn, J. J. (1993). Numinous Objects. *The Public Historian*, 15(1), 9-25. doi:10.2307/3378030
- Manzo, L. C., & Devine-Wright, P. (2013). *Place attachment: Advances in theory, methods and applications*: Routledge.
- Margaryan, L., & Fredman, P. (2017). Bridging outdoor recreation and nature-based tourism in a commercial context: Insights from the Swedish service providers. *Journal of Outdoor Recreation and Tourism*, 17, 84-92. doi:<https://doi.org/10.1016/j.jort.2017.01.003>
- Mather, G. (2016). *Foundations of sensation and perception*: Psychology Press.
- Mayring, P. (2002). *Einführung in die qualitative Sozialforschung*: Beltz.
- Merriam-Webster, I. (1995). *Merriam-Webster's Medical Dictionary*: Merriam-Webster.
- Nowell, B. L., Berkowitz, S. L., Deacon, Z., & Foster-Fishman, P. (2006). Revealing the Cues Within Community Places: Stories of Identity, History, and Possibility. *American Journal of Community Psychology*, 37(1), 29-46. doi:10.1007/s10464-005-9006-3
- Nyberg, R., & Tidström, A. (2012). *Skriv vetenskapliga uppsatser, examensarbeten och avhandlingar*: Studentlitteratur.
- Orians, G. H. (1980). Habitat selection: General theory and applications to human behavior. *The evolution of human social behavior*.
- Ouellette, P., Kaplan, R., & Kaplan, S. (2005). The monastery as a restorative environment. *Journal of Environmental Psychology*, 25(2), 175-188. doi:<https://doi.org/10.1016/j.jenvp.2005.06.001>
- Packer, J., & Bond, N. (2010). Museums as Restorative Environments. *Curator: The Museum Journal*, 53(4), 421-436. doi:doi:10.1111/j.2151-6952.2010.00044.x
- Pasini, M., Berto, R., Brondino, M., Hall, R., & Ortner, C. (2014). How to Measure the Restorative Quality of Environments: The PRS-11. *Procedia - Social and Behavioral Sciences*, 159, 293-297. doi:<https://doi.org/10.1016/j.sbspro.2014.12.375>
- Perkins, D. D., & Long, D. A. (2002). Neighborhood sense of community and social capital *Psychological sense of community* (pp. 291-318): Springer.
- Pound, P., & Campbell, R. (2015). Exploring the feasibility of theory synthesis: a worked example in the field of health related risk-taking. *Social science & medicine*, 124, 57-65.
- Power, A., & Smyth, K. (2016). Heritage, health and place: The legacies of local community-based heritage conservation on social wellbeing. *Health & Place*, 39, 160-167. doi:<https://doi.org/10.1016/j.healthplace.2016.04.005>
- Qi, P., Ru, H., Gao, L., Zhang, X., Zhou, T., Tian, Y., . . . Sun, Y. (2019). Neural Mechanisms of Mental Fatigue Revisited: New Insights from the Brain Connectome. *Engineering*. doi:<https://doi.org/10.1016/j.eng.2018.11.025>

- Ram, Y., Björk, P., & Weidenfeld, A. (2016). Authenticity and place attachment of major visitor attractions. *Tourism Management*, 52, 110-122. doi:<https://doi.org/10.1016/j.tourman.2015.06.010>
- Ramzy, N. S. (2015). Biophilic qualities of historical architecture: In quest of the timeless terminologies of 'life' in architectural expression. *Sustainable Cities and Society*, 15, 42-56. doi:<https://doi.org/10.1016/j.scs.2014.11.006>
- Riksantikvarieämbetet. (2017). Attraktionskraft kulturmiljö, Rapport.
- Rocco, T. S., & Plakhotnik, M. S. (2009). Literature reviews, conceptual frameworks, and theoretical frameworks: Terms, functions, and distinctions. *Human Resource Development Review*, 8(1), 120-130.
- Routledge, C., Wildschut, T., Sedikides, C., & Juhl, J. (2013). Nostalgia as a Resource for Psychological Health and Well-Being. *Social and Personality Psychology Compass*, 7(11), 808-818. doi:10.1111/spc3.12070
- Salleh, M. R. (2008). Life event, stress and illness. *The Malaysian journal of medical sciences: MJMS*, 15(4), 9.
- Sanandaji, N. (2017). Samhällsförlusten av sjukskrivningar.
- Scannell, L., & Gifford, R. (2010). Defining place attachment: A tripartite organizing framework. *Journal of Environmental Psychology*, 30(1), 1-10. doi:<https://doi.org/10.1016/j.jenvp.2009.09.006>
- Simpson, M. (2009). Museums and restorative justice: heritage, repatriation and cultural education. *Museum International*, 61(1-2), 121-129. doi:10.1111/j.1468-0033.2009.01669.x
- Sonntag-Öström, E., Nordin, M., Lundell, Y., Dolling, A., Wiklund, U., Karlsson, M., . . . Slunga Järholm, L. (2014). Restorative effects of visits to urban and forest environments in patients with exhaustion disorder. *Urban Forestry & Urban Greening*, 13(2), 344-354. doi:<https://doi.org/10.1016/j.ufug.2013.12.007>
- Srivastava, K. (2009). Urbanization and mental health. *Industrial psychiatry journal*, 18(2), 75-76. doi:10.4103/0972-6748.64028
- Stokols, D., Grzywacz, J. G., McMahan, S., & Phillips, K. (2003). Increasing the Health Promotive Capacity of Human Environments. *American Journal of Health Promotion*, 18(1), 4-13. doi:10.4278/0890-1171-18.1.4
- Taylor, R. P. (2006). Reduction of physiological stress using fractal art and architecture. *Leonardo*, 39(3), 245-251.
- Taylor, R. P., Spehar, B., Wise, J. A., Clifford, C., Newell, B. R., Hagerhall, C. M., . . . Martin, T. P. (2005). Perceptual and physiological responses to the visual complexity of fractal patterns. *Nonlinear Dynamics Psychol. Life. Sci*, 9, 89-114.
- Teufel, C., & Nanay, B. (2017). How to (and how not to) think about top-down influences on visual perception. *Consciousness and Cognition*, 47, 17-25. doi:<https://doi.org/10.1016/j.concog.2016.05.008>
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC medical research methodology*, 8(1), 45.
- Twigger-Ross, C., Bonaiuto, M., & Breakwell, G. (2003). *Identity theories and environmental psychology*: na.
- Ujang, N., & Zakariya, K. (2015). Place Attachment and the Value of Place in the Life of the Users. *Procedia-Social and Behavioral Sciences*, 168, 373-380.
- Ulrich, R. (1983). *Aesthetic and Affective Response to Natural Environment* (Vol. 6).
- Ulrich, R. S. (1993). Biophilia, biophobia, and natural landscapes. *The biophilia hypothesis*, 7, 73-137.
- Van den Berg, A. E., Joye, Y., & Koole, S. L. (2016). Why viewing nature is more fascinating and restorative than viewing buildings: A closer look at perceived complexity. *Urban Forestry & Urban Greening*, 20, 397-401. doi:<https://doi.org/10.1016/j.ufug.2016.10.011>

- van den Bosch, M., & Bird, W. (2018). *Oxford Textbook of Nature and Public Health: The role of nature in improving the health of a population*: Oxford University Press.
- Waite, G. (2000). Consuming heritage: Perceived historical authenticity. *Annals of Tourism Research*, 27(4), 835-862. doi:[https://doi.org/10.1016/S0160-7383\(99\)00115-2](https://doi.org/10.1016/S0160-7383(99)00115-2)
- Wang, R., Xue, D., Liu, Y., Chen, H., & Qiu, Y. (2018). The relationship between urbanization and depression in China: the mediating role of neighborhood social capital. *International journal for equity in health*, 17(1), 105-105. doi:10.1186/s12939-018-0825-x
- White, M. P., Pahl, S., Wheeler, B. W., Depledge, M. H., & Fleming, L. E. (2017). Natural environments and subjective wellbeing: Different types of exposure are associated with different aspects of wellbeing. *Health & Place*, 45, 77-84. doi:<https://doi.org/10.1016/j.healthplace.2017.03.008>
- WHO. (2002). WHO definition of Health, Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, New York, 19–22 June 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the World Health Organization, no. 2, p. 100) and entered into force on 7 April 1948. *Grad, Frank P.* "The Preamble of the Constitution of the World Health Organization". *Bulletin of the World Health Organization*, 80(12), 982.
- WHO. (2009). *Milestones in health promotion: Statements from global conferences* (6161115336). Retrieved from
- WHO. (2016). *Global report on urban health: Equitable healthier cities for sustainable development*: World Health Organization.
- Wilson, K. (2003). Therapeutic landscapes and First Nations peoples: an exploration of culture, health and place. *Health & Place*, 9(2), 83-93. doi:[https://doi.org/10.1016/S1353-8292\(02\)00016-3](https://doi.org/10.1016/S1353-8292(02)00016-3)
- Zakariya, K., Harun, N. Z., & Mansor, M. (2015). Place Meaning of the Historic Square as Tourism Attraction and Community Leisure Space. *Procedia - Social and Behavioral Sciences*, 202, 477-486. doi:<https://doi.org/10.1016/j.sbspro.2015.08.196>

Appendix A.

(Additional popular scientific summary)

To catch the Past for the Health of the future

Many of us has most likely viewed and experiencing some ancient important artefact that filled us with awe and wonder. It was almost like being presented with a glimpse into a past long gone, seeing something that has stood for hundreds, or sometimes thousands of years. History has taught us many things, as a common expression goes, but what manner of resources can it offer us today, other than lessons? New research is beginning to show that different material and immaterial qualities in historical and heritage sites has the potential of actually increasing and promoting health in people, just by being present near them.

In the field of environmental psychology, many researchers often seek out to explain how and if the surrounding environment influences and affect out well-being. Today, many theories surrounding this field have come to a conclusion that some environments actually do possess qualities that makes us feel better. These environments are often in the form of *natural* settings, containing lush greenery, staggering landscapes filled with lakes and mountains, shorelines stretching on for miles, and so on. It comes to no surprise that people with poor health (often raised stress levels and mental fatigue) have been proven under research experiments to feel much better when emerged in such natural wonder. But given the fact that many other environments exist in this world that affects us, to such an extent that we are changed by them, there must be other places than can promote health in a similar way. And there just might be. *Cultural Heritage sites*, a type of environment containing man made, often historical qualities with certain cultural value, have now been proven to possess the same type of health promoting effects as nature is said to have, but in a slightly different way. When viewing e.g. beautiful natural scenery, it is only a visual process (but still very effective). Instead, when experiencing cultural heritage sites, there is however an additional process at work other than the visual input. There is a type of spiritual connection with the place and its history, that is based on persons previous knowledge of what meaning such a place can have. Maybe it is a religious experience in an old temple, or a more nostalgic experience relating to heritage of your country. Either way, health has now been shown to increase. A new theoretical model was thus needed, to explain how these processes can work in cultural heritage sites. Such a model has now been made. Using scientific methods, based on previous research that investigated e.g. tourists' experiences in different historical and religious attractions and native people's connection to the monuments of their land, the first step was now made in this creation. After this, several theories that had been used to prove the health promoting effects of nature were broken down into pieces and merged with the findings from the previous literature, to create a new framework. This framework, or theoretical model, explained exactly the health effects that was mentioned above, and could thus be used to contribute to new knowledge, providing us with an understanding of why our past creations are so important for us now and in the future. History does indeed teach us many things, and its way of affecting us today will never cease to amaze.

Martin van der Maarel

Swedish University of Agricultural Sciences, 2019