Human Landscape Perception

Report on understanding human landscape perception and how to integrate and implement this in current policy strategies

Executed for the AONB High Weald Unit, UK

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“It is all about perception”

Content

Summary

In this report the dimensions of human landscape perception are explained and clarified in order to inform the AONB High Weald on understanding how people experience the landscape.

First an introductory overview is given on European and English landscape perceptions through time, with an additional explanation of global perceptions by highlighting some diverse cultures. The aim here is to create awareness about the horizontal and vertical changing perceptions about the landscape, stressing that people have experienced the landscape differently over time and also might do that in the future. Differences in landscape perception are exhibited, simply stating that how we look at the landscape is different from other people, and even different from our ancestors. Furthermore basic concepts about landscape perception are explained. Much landscape research focusses on the visual world, but we do have to keep in mind that a landscape is perceived through all senses. The definition of perception can be derived from that: perception is the process of experience organized and interpreted information extracted from sensations. Because perception is influenced by feelings and opinions, it is inherently subjective. Differences between lay men and expert perceptions are evident, meaning that in policy we have to keep in mind who is making the valuation, even though many policies nowadays focus only on the expert view. The Landscape Character Assessment Guidance for England and Scotland 2002 and the Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England have been critically reviewed, with the outcome that the documents need improvement on the aspects of coherence, and academic based public preference strategies. Some key points are derived from the report. Most policy documents claim to be objective though they are certainly not. Also there seems to be a gap between academic theories and applied policy strategies, in which policy is not updated to the newer existing theories.

By creating a better understanding in landscape experience, further policies about landscape perception can be well underwritten using this report, and can be used to form a basic understanding of how to implement public perception into policy strategies.

Introduction

The European Landscape Convention (2000) defines 'landscape' as an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. Any discipline concerning landscapes is therefore inevitably bound to acknowledge the importance of public perception and integrate it in their actions. Not only in the UK, but all over Europe policy makers have tried to integrate public perception into their strategies. Even though much attention has been given to the concept of perception in policies, the actual application of public perception in policy has to be reviewed. The concept of perception is used in many policy documents, without questioning the actual meaning of the term. There is a lack of basic understanding of public perception and experience, and how to successfully implement this into practice.

This report is executed as an internship project on behalf of the AONB High Weald Unit in order to reach objectives stated in the AONB High Weald management plan. The aim is 'to acknowledge and increase people's understanding of our shared cultural values and aspirations for the High Weald', with the rationale: 'to ensure that people's perceptions and social and cultural aspirations for the landscape are recognized and taken into account of in AONB management'. In this report the dimensions of human landscape perception are explained and clarified in order to inform the AONB High Weald on understanding how people experience the landscape. The goal of this project is to support and underpin the objectives stated in the management plan, by offering an up to date and critical insight in theoretical and methodological backgrounds in landscape perception research. Eventually the High Weald Unit has the intention to develop a method on how to assemble people's perception of the High Weald, and this document is a first start for reaching that objective. Hence, this report can be used to inform the AONB on producing future policy documents about landscape perception. Furthermore the goal of this report is to inquire the AONB High Weald Unit on human landscape perception, so that they can raise awareness amongst policy makers, local authorities and the wider public. This report aims to challenge the existing profession about landscape perception in policy strategies and academic research. Landscape perception should be integrated effectively into policy strategies and some suggestions are made in this report to stimulate this to happen.

The methods and theories used are mostly based on disciplines concerned with psychology, and social, cultural and historic geography. The literature used is extracted out of the Wageningen University Library Catalogue and documents present at the High Weald AONB Unit.

In the report, first an introductory overview is given on European and English landscape perceptions through time, with additional explanation of global perceptions by highlighting some diverse cultures. In this chapter the intention is to exhibit differences in landscape perception, stating that how we look at the landscape is different from other cultures, and even different from our own ancestors. In the second chapter a theoretical insight is given into landscape perception research explaining how perception works using a multidisciplinary approach. In chapter three a critical review is given on current national policy measurements such as the LCA and the Guidance for assessing landscapes for designation as NP or AONB in England, addressing the difficulties in implementing human perception in an effective way. Also enhancements are suggested by linking academic empirical studies together with applied policy strategies. In the last chapter, research methods are

explained on how to measure landscape perception on a landscape scale. The focus is on methods that try to get an idea of how people perceive a particular landscape such as an AONB.

AONB High Weald

The High Weald is designated as an Area of Outstanding Natural Beauty (AONB). It is one of the 50 AONBs within England and Wales. AONB's are together with National Parks and Heritage Coasts collectively known as protected landscapes. In contrast to National Parks, AONBs are largely managed by local authority advisory committees, are gentle rather than dramatic landscapes, are mostly located in lowland areas, and are not bound to offer public recreational opportunities as part of their designation. AONB's are designated on their account of their natural beauty and with the aim of conserving and enhancing it.

The High Weald AONB Unit is a strategic, specialist team that works on creating a further understanding of the High Weald. Also they advise on its management and enable action to conserve it. The Unit works on behalf of the High Weald Joint Advisory Committee (JAC) which is a partnership between the Government and 15 local authorities. Within the partnership agreement between JAC members, 14 activities are set out for the AONB Unit. The activities are undertaken within the context of the AONB Management Plan and a three-year business strategy. The Management Plan is a statutory plan produced under the Countryside and Rights of Way Act 2000 (CRoW) for the High Weald area. As required by the Act it sets out local authority policy for the AONB and is used to assess how public bodies, statutory undertakers and holders of public office fulfil their duty to have regard to the purpose of conserving and enhancing the natural beauty of the High Weald. Natural England has a statutory power to designate land as Areas of Outstanding Natural Beauty.

1. Historic development of landscape perception

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> *'We should not just accept the way we look at the landscape now without considering our historic and cultural background'*

In this chapter an introductory overview is given on Western-European landscape perceptions through time, with additional explanation of global perceptions highlighting some diverse cultures. The aim here is to create awareness about the horizontal and vertical changing perceptions about the landscape, and that we should not just accept the way we look at the landscape now without considering our historic and cultural background. Our perceptions nowadays are all derived from previous perceptions, influenced by factors such as culture. Transitions like globalisation enhance connectedness all over the world, and an understanding of differences in landscape perception is needed in order to communicate with each other about the environment. In this chapter the intention is to exhibit differences in landscape perception, simply stating that how we look at the landscape is different from other people, and even different from our ancestors.

1.1 European landscape perception through time

Many traditional archaeologists argue that it is difficult if not impossible to use the archaeological record to recover past beliefs. Behavioural psychologists argue that we can never know what someone else is thinking in the present; we can only record their behaviour, which can be externally measured and observed. This stresses the difficulty in trying to understand peoples mind which are not just long dead, but were also members of an extinct culture. Archaeologists have to deal with this by using only remaining artefacts. So, why would we try and understand people's perception in the past? Johnson (2002) gives three reasons for this. First, some archaeologists would argue that you can never scientifically verify someone's thoughts. However, assumptions are always made, whether 'scientific' or not. We always make assumptions about past thoughts, as for example the simple typology of pots. Because they show similarities, this design must have something to do with shared meanings in de minds of the makers of the pots. In reality, archaeologists have assumptions about behaviour as 'common sense'. However, what is common sense to us might not be common sense to them. Second, if you compare archaeologists with historians, historians use mostly textual evidence. These kinds of documents are clear statements of thoughts, so why not find it even as important in archaeology, which also studies the history of men. Third there is a philosophical point to do with the way we study human societies. Trying to describe human behaviour is simply impossible without using predefined concepts. Generally people have a reason to act, for example the design of the pots in a certain manner must have had a reason.

1.1.1 Prehistory

- Landscape had two main functions during prehistoric times: functional and ritual;
- Individual experience is influenced by social codes.

It is useful to try and reconstruct how the environment and social space were perceived by past societies. The perception and experience of landscape in prehistoric times is however bound to the need of understanding the individual who perceives the landscape. It is to say that these individuals, their dimension, character and individual attitude towards observations are determined by social codes (Boado & Vazquez, 2000). Studying perception on an individual level is however very subjective, and focussing on a social scale might be a good way to strive towards objectivity. Next to social constructs, prehistoric artefacts in their original context can give an idea of how they have been perceived over time. For example megalithic elements are nowadays perceived as being impressive and formidable. The only sources that are available for getting to know and understand the perception of prehistoric people on their environment are the remnants of artefacts studied by archaeologists. To be able to rule on prehistoric perceptions, we can only indirectly interpret these remnants.

The spatial distribution of artefacts can give an insight in people's lifestyle and on how they used their environment. Most prehistoric settlements are to be found on environmental gradients. In that way they were able to optimally profit from the available natural resources without putting too much effort in it. Examples are transitions between land and water, high and low, dry and wet, fertile and less fertile. Furthermore settlements are found on boundaries between open and closed environments. While the other transitions can be explained by the necessity of resources, the latter can be explained differently using the Prospect Refuge Theory (Appleton, 1975). There are two fundamental points to this theory: that the attractiveness of landscape is related to its suitability as human habitat, as is mentioned before; and that human beings particularly like to see without being seen. Humans need to be able to identify their prey; humans are not quick runners and cannot combat, so we need to use our environment to hide from those that are hunting us. Appleton seeks the attractiveness of a landscape in the potential for seeing (prospect) and divides them into two forms: the panorama and the vista. The panorama is ideally 360˚ with a broad and long view. The vista however is much narrower and is a restricted view where the horizontal dimension is severely restricted, but gives a greater feel of control. When it comes to vistas Appleton adds two further elements: the deflected vista is the view along a vista, a river or road perhaps that bends left or right. This gives a sense of movement which draws people towards it to see the next vista. There is also the peephole vista, where vision is restricted in the vertical dimension also, as when the branches of the trees overhang over the road. It is worth mentioning that the theory of Appleton is applicable within different time layers: it can explain how the landscape was perceived in ancient, prehistoric times, but it is also commonly used nowadays by architects when creating new landscapes.

Within all of these views, there are points of secondary prospect symbols (Howard, 2011). They suggest that the viewer could gain an improved view, a further view, or a different perspective view. This could be a ridge, but also symbolic or ritual elements such as megaliths. It is good to add the importance of logistic symbols here as well. It is well known that for example burial mounds have been used as landmarks in prehistoric times for navigating throughout the landscape. This can tell us something about the way prehistoric people perceived and used their landscape: burial mounds must have been visible, recognizable, and laid therefore prominent in the landscape. In short you could say that the landscape had two main functions during prehistoric times: functional and ritual.

1.1.2 Antiquity

- A beautiful landscape was perceived as arable land tamed by 'the powerful hand of the master with the aid of the plough';
- The interaction the Romans had with the landscape they invaded were mostly military and ritually based.

The Greek philosophy has had a big influence on the Roman perception of their environment. Plato (428-347 BC) had a philosophy which was focussed on human beings and society. He writes: 'I cannot learn from the landscape and the trees, from people in the city I can'. Still Plato was not ignorant of his environment. In *Critias* he describes the visual landscape of Athena and its unfertile ground as the cause of natural hazards and deforestation by humans. Plato's pupil Aristotle (384-322 BC) believed that natural things, which means things that naturally grow, move and change, have a goal (which is called *telos*). For example an acorn has the goal to become a tree. Nature therefore has a purpose itself, and is not steered by a higher power or force. Plato as well as Aristotle were strictly empirical: they believed that knowledge comes from sensorial perception. They had a big influence on the great Roman philosophers Cicero and Seneca. They all believed in the ideology that nature is meant to serve humans directly or indirectly. As Cicero writes: 'What more do I need to say of oxes?... Their neck is made for the yoke and their strong broad shoulders for the pulling of the plough.' (Schouten, 2005). Gods were directly linked to nature: every god had its own tree, and forests were sacred. Also people enjoyed nature. Poets praised the beauty of the landscape, even though focussed on the landscape which humans had civilized and tamed by 'the powerful hand of the master with the aid of the plough' (Sophocles, in his play Antigone). Commonly speaking, de Romans and the Greek were not fond of wilderness. Beauty was perceived as a landscape with arable land, abundant vineyards and olive gardens with a clear and cool pond overshadowed by fruit-baring trees (Schouten, 2005).

> *'I cannot learn from the landscape and the trees, from the people in the city I can'*
> *- Plato (Critias)*

The Romans invaded Britain around 43 AD. They came into a landscape which was already influenced by humans. It is unlikely that the Romans will have experienced or understood place in ways that are comparable to the West-European thoughts today (Rogers, 2008). However, it is still useful to try to understand the way Romans must have perceived their environment. The interaction the Romans had with the landscape they invaded were mostly military and ritually based. The settlements they build where of a defensive spirit, and seemed to have clear boundaries. Also they were placed within a landscape of pre-existing significance, formed by prehistoric inhabitants. Roman settlements were built on already existing settlements, and were therefore positioned in the same way and for the same reasons as mentioned before in prehistoric times. Furthermore the trade, industry and survival where important indicators for the ability to settle there. Water seems to play a special part within the preference of settlements, mainly for ritual functions (Rogers, 2008). There is much evidence that water was important in Roman religious belief. Also water seems to have been used to demonstrate mastery over nature and the ability to control the uncontrollable (Purcell, 1996).

1.1.3 Middle Ages

- Wild nature was the place were demonic creatures roamed;
- Wilderness is godless.

After the fall of the Roman Empire Western Europe became influenced by the Latin Christian culture with its capital city Rome. Even now the Greek and Roman philosophies had their influence on the theological movements about God and the Creation. However, these discourses were not accessible to the medieval society. Here people thought that the world existed of numerous dark and man hostile powers, such as demons. The demonic was adjunct to wild nature. In the early Middle Ages great parts of Western Europe were uncultivated or overgrown since the fall of the Roman Empire, and were referred to as chaos where demons and devils roamed. The wild was seen as exactly the opposite from the divine paradise, were Satan attempts to distract people from Gods work. This is apparent from the myth of the Wildman, a creature that lived in the wilderness being half human, half beast. People feared this Wildman and ascribed harvest failures to this creature. It is clear that the people in medieval times had a negative attitude towards uncultivated landscapes. Therefore monastery's had the duty to cultivate the godless wilderness and transform it into paradise on earth. A place where cultivated nature was really cherished was the *Hortus conclusus*: the enclosed garden. It was used for all sorts of pursuits, but the most important one was devotion viewed in the religious symbolism of the garden (Schouten, 2005). However, not all countries in the early middle ages had the same opinion about nature. Especially monasteries in Ireland show more affection towards nature. A lot of monks chose the life style a hermit, living in the forest and wilderness. They expressed the privilege of living in seclusion and admired the beauty of nature. This tendency towards nature might be explained by the pre-Christian Celtic engagement with nature (Schouten, 2005).

1.1.4 Renaissance

- Pastoral landscape is praised;
- Wilderness is associated with re-finding yourself or resistance;
- Because of the presence of absolutistic monarchs in France and Great Britain the old meaning of the word as a restricted piece of land, changed and referred to the 'appearance of a land as we perceive it' and 'the section of the earth surface and sky that lies in our field of vision as seen in perspective from a particular point'.

At the end of the Middle ages, the revival of the cultivated delightful arcadia is at hand. Literature appears in which the pastoral landscape is praised, which especially has to do with the urbanisation of that period all throughout Europe. Moreover the wilderness became a place where you could let go of all conventions and re-find yourself. Shakespeare's play *As you like it* confirms this way of looking towards nature. In this play a duke is exiled from his domain and searches his refuge in the Wood of Arden. Here he sees through the vanity of court life and regains faith in truth, love, freedom and justice. At the end he returns to his court life. Sometimes wilderness is also an icon for resistance against foreign and threatening cultural influences. For example Robin Hood is connected to the

forest of Sherwood. In the 16th century during the Tudor period, Robin was seen as a respected and royal nobleman. The origin of this story about the rebel Robin Hood can be found in the time when the Normandy's ruled over England, and they wanted to use the already heavily exploited forests for their own benefit. Robin Hood stood symbol for the traditional way of forest usage (Schouten, 2005).

During the Renaissance, landscape and art is something to be perceived by the individual. The human action and emotion are becoming more important, and landscape is often used as a contrast for human activity. Landscape is more used as a background for biblical stories, and is depicted more realistic than before. Later, landscape is more often used as a reference for Antiquity. Furthermore during the Renaissance, science and technology develop strongly, and voyages of discovery are made. Another important development according to the perception of people towards the landscape is the change in the meaning of the word 'landscape'. Because of the presence of absolutistic monarchs in France and Great Britain the old meaning of the word as a restricted piece of land, changed and referred to the 'appearance of a land as we perceive it' and 'the section of the earth surface and sky that lies in our field of vision as seen in perspective from a particular point' (Olwig, 1996). The usage of the term landscape is nowadays still a very aesthetic and unmaterialistic in France, Great Britain and their former colonies. In Germany and the Netherlands, the old meaning of the word as a restricted piece of land is much longer maintained because of the retention of autonomous entities (Drexler, 2009). From this aesthetic response, the development of a landscape sensibility emerges based on a visual perception that promoted a means of engaging with and expressing feelings toward the natural world (Olwig, 1996; Cosgrove, 1998) Therefore landscape was explained by geographer Denis Cosgrove as a 'way of seeing' (Cosgrove, 1998).

1.1.5 Enlightenment

- People find the landscape only beautiful when it is cultivated, and forests should be planted in perfect symmetry.

During this period the cultivated arcadia becomes even more civilized. People find the landscape only beautiful when it is cultivated, and forests should be planted in perfect symmetry. For example in the 18th century a French scientist count de Buffon states: 'How beautiful she is, this cultivated nature!'. The opposite of this civilized arcadia is the wild nature with the character of horrifying disorder. For example the English dictionary for poets in around 1650 characterizes 'forest' as: terrifying, gloomy, savage, forsaken, solitary, dreary, uninhabited and crawling with beasts (Schouten, 2005). Even though this description seems unrealistic, during this time period natural science became very important and scientists tried to account for natural processes. From this rather rational discourse, Romanticism was derived.

> *'How beautiful she is, this cultivated nature!'*
> *- Count de Buffon*

1.1.6 Romanticism

- Romanticism is not entirely new on the acknowledgement of landscape as an aesthetical value, however the search for a moral meaning of nature is new;
- Rise of the Beautiful, Picturesque and Sublime;
- This was an age of elites, where we hear very little from the people who worked the land.

This discourse considers the rationalism of the 18th century as a reduction of consciousness and sets this off against emotion, intuition, and imagination. It can be seen as a way of feeling, a state of mind in which sensibility and imagination predominates over reason. An important aspect of Romanticism is the special regard for nature. Romanticism is not entirely new on the acknowledgement of landscape as an aesthetical value; however the search for a moral meaning of nature is new. Landscape painters such as Constable and Turner were searching for the substantiality of nature. 'To seize nature in the most profound expression, in the most intimate sense, in that thought which raises all beings toward a more sublime life (…), that is, the mission of art' (Honour, 1981). These painters do not make an empirical and naturalistic display of reality, but try to visualize the invisible unity of life in which the identity of humans, plants and animals comes together (Koppen, 2002). The Victorian age which belongs within the Romantic period saw the triumph of the aesthetic tradition of landscape in a time when it became very significant to most artists, not only in Britain but also in France, Germany and the United States. The beauty of nature became for many the ultimate demonstration of the power and handiwork of God. These included the whole of the outdoors such as mountains, stormy coasts, barren moors and heaths, marshes and the fen country (Howard, 2011).

We must keep in mind though, that this was an age of elites, where we hear very little from the people who worked the land, whose view of landscape was probably very different. The most important figure is Edmund Burke, a major orator and politician, as well as aesthetic thinker. He defined the idea of the Beautiful and counter posed this with the Sublime. The Beautiful is a liveable landscape, providing elements for the success of the human species. All the elements in this landscape are gentle, such as slopes which are not too steep (Howard, 2011). Gradients will not be too abrupt. A famous landscape architect who was mainly influenced by this idea of the Beautiful was Lancelot (Capability) Brown. The Sublime was less welcoming, and is inimical to humans; the hills are mountains with steep slopes and sharp edges. However, the Sublime attracts because of the human need to test itself. You could compare it to a horror movie: it is scary, but you still want to watch. In the 1790s the Beautiful and the Sublime where joined by the Picturesque. This firmly puts landscape as a pictorial object. It was considerably rougher that the Beautiful, but not as dark and overwhelming as the Sublime. Rivers are particularly favoured along with amid woodlands and valley sides (Howard, 2011).

1.1.7 Modern Age

- Occurrence of multiple paradigms with a holistic approach towards the landscape.

In the 19th and 20th century, landscape is seen as an ecological system. There is coherence between natural patterns and processes; the approach towards landscape is very holistic. This new interest for nature can be explained as a reaction upon urbanisation and industrialisation. Between 1900 and 1950, three paradigms can be explained: Ecological determinism, possibilism and ethnocentrism. Ecological determinism claims that nature determines the behaviour of human beings. Possibilism explains that human and nature have a mutual interaction; the landscape provides possibilities for humans, and humans provide possibilities for nature to develop. Furthermore there is ethnocentrism. This paradigm appoints regional differences as cause of different populations and races (Wiley, 2007).

During the 60s and 70s New Geography was popular. The believe was that landscape features could be measured in an objective and positivistic way. At the end of the 80s a lot of critique occurred on this quantitative discourse. Now New Cultural Geography recognized the importance of individuals. Every person and every group perceives a landscape is its own way, assigns its own meanings to it, and produces its own representation of this landscape. This new cultural approach focussed on landscape as a social construct: each individual, group and society construct their own image of the landscape, depending on their own past and social context (Cosgrove, 2008). Paradigms, discourses and other theories on landscape perception that are still applicable to current perception research will be extensively explained in the next chapter.

1.2 Global cultural perception through time

The West-European and partially British way of perceiving and experiencing the landscape over time is not something which should be taken for granted. The West of Europe is highly influenced by Christian manners, while there are many other parts in the world where landscape and nature is differently perceived. The way we look at the landscape is very culturally driven, and therefore we need to make a notice of the variance of landscape perceptions globally. In this paragraph some important world cultures will be depicted, and how these cultures look at their environment.

1.2.1 Aboriginals

- The landscape became the bearer of the life force of the dreamtime creatures;
- Human, landscape and nature are a coherent unity.

For the original inhabitants of Australia another landscape exists next to the visual landscape: the dreamtime. This dreamtime started by the arrival of mythic creatures that created the existing world. These creatures were all different: some were shaped in human form, others like animals. Many could change form as well. Their names live on in many dreamtime myths such as the rainbowsnake, fertility mother, red kangarooman and longneck turtlewoman. While traveling they shaped the earth, the sky, the clouds and the seasons. The dreamtime creatures did not only make the landscape, they also made the plants the animals and the humans. Most creatures left the human environment by

losing their original shape and transformed into spiritual creatures bound by certain features in the landscape. Therefore the landscape became the bearer of the life force of the dreamtime creatures. Nowadays the dreamtime creatures are still present. They keep the seasonal cycle in balance, they make sure the soil is fertile, make plants grow and renew all life forms. The landscape is according to aboriginals not only alive, but it is also sacred. Human, landscape and nature are a coherent unity that is bound to the life source of the dreamtime. Furthermore aboriginals make a clear distinction between the in- and outside of things. Within lies the original power of the dreamtime, while the outside is only the visible and physical expression of it (Schouten, 2005).

1.2.2 Hinduism

- The world is cyclical and humans are submissive to it;
- Trees, animals and mountains are sacred.

The most substantial part of Indian perception is that the world is cyclical: the wheel of time rotates according to the infinite cosmic law in which every turn the universe arises again. Also human beings are submissive to the cyclical world, *samsãra* is the circle of life and death. Its *karma,* meaning the result of its actions, keeps men bound to the world and brings him back all over again. Only when he finds the divine primal source within his soul and perceptions from deep within, he can unleash the chains of *samsãra.* This stage of true understanding is called *moksha.* This religious belief is not always called Hinduism. During the beginning of the 19th century English writers started to entitle the social-religious tradition of India as Hinduism, even though Indians call their tradition *sanãtana dharma,* meaning eternal law. Earth and nature are perceived as a revelation of the absolute, a visible expression of the deep within entity.

An English traveller who explores India in the 16th century describes with astonishment the hospitals for sheep's, goats, dogs, cats, birds etc. When animals have become old or became paralytic, they are nurtured in these hospitals. Respect for all forms of live is imbedded in the Indian tradition and a prohibition on harming living creatures is very important in the Indian ethics. This does not only count to living animals, but also to plants. The needless felling of trees is therefore seen as a crime. Furthermore trees are according to the Indian tradition residences of many gods and supernatural creatures, which make forests holy and need to be treated with respect. The forest refers to wilderness, where humans can retreat in order to surrender to spiritual practices. Traditionally 3 types of forest were distinguished: the entirely wild forest, no human being entranced that forest; the forest of mortification, a place where people withdraw themselves into the life of a hermit; and the forest of prosperity, here people could harvest and gather food. Another landscape feature next to forests, are mountains. They are also divine to the Hindus, as mountain tops are settlements of the Gods. Next to mountains and forests, every landscape that is related to water is sacred. The most famous example is probably the river Ganges, where countless amounts of Indian pilgrims bade in the holy water every day (Schouten, 2005).

1.2.3 Islam

- The children of Adam are placed above all others that he created;
- Both the Bible and the Koran put human beings in a prominent place in relation to other creations.

The God of the Islam, mostly called Allah in Arabic, is the same transcendental God as in Judaism and Christianity, and the Islam is closely linked to Jewish and Christian traditions in religious terms. Both the Bible and the Koran put human beings in a prominent place in relation to other creations. The Koran states that Allah: 'puts the children of Adam above all others that he created'. Landscape and nature are perceived as the making of God, but do not receive devotion or compassion from the Muslims. Only in the 13th century, landscapes become important when they form a background of story scenes within miniature art. They do not have an independent theme and are also not meant to visualize reality: they only want to stimulate imagination. Bedouin populations mention nature in a poetic context, mainly focussed on the beauty of flowers which arise after the fall of the rain. The cultivated landscape such as constructed waterways, orchards and gardens are scarcely mentioned in Arabic poetics. This might be explained by the disregard of the Bedouins towards sedentary ways of living.

Landscapes are most mentioned as gardens. Poets use the gardens as a setting for their stories, in which they represent the earthly paradise. Gardens are more inside than outside oriented and are surrounded by a high stone wall. Furthermore Islamic gardens are ornamental and pleasure grounds to reflect the glory of its ruler (Schouten, 2005).

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2. Landscape perception explained

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In this chapter basic concepts concerning perception are explained and what influences our perception of the landscape. Furthermore existing theories and theoretical frameworks on landscape perception are used to obtain an understanding of the knowledge about perception 'out there', whether that is academic or applied knowledge. Because historic landscape research is closely interlinked with general landscape research, a paragraph is dedicated to theories and frameworks on historic landscape perception. Eventually some examples are provided how the frameworks are implemented in policy.

2.1 What is landscape perception?

2.1.1 Landscape

- The domain of landscape research focusses on the visual world of landscape;
- However, a landscape is perceived through all senses.

Landscape means so many different things to so many different people, that it can be seen as no surprise that many avoid using the word. This includes both the European Union and the UK government, both of which tend to use the term 'environment'. Howard (2011) describes in his book 'Introduction to landscape' a clear distinction between the different approaches towards landscape based on historic paradigms. To get an idea of how people value the landscape, it is necessary to unravel the meaning of landscape a bit further. To do that, the structure set up by Howard (2011) is used.

According to Howard (2011) there are two predominant threads on landscape, these being the idea of the cultural landscape, and landscape as a picture. Two further threads are the ideas of landscape as a scale of operations and landscape as scenery. Furthermore the threads of landscape as a sense can be added. Cultural landscape is an idea which is embedded within the discipline of geography: 'The cultural landscape is fashioned from a natural landscape by a cultural group. Culture is the agent, nature is the medium, the cultural landscape the result' (Sauer, 1925). The term cultural landscape can be seen as a landscape which owes its appearance significantly to human action. The term 'culture' can be defined as all human activities that are not purely physical such as breathing. One culture will differ from the other for example how the landscape is managed, how nature is conserved, and the way people farm the landscape. The emphasis in cultural landscape research has been mostly on the past and on surviving physical evidence. Therefore archaeology has been important in discovering the historic landscape. An important essay on cultural landscape was made by Dennis Cosgrove (1993) and his mentioning of the Palladian landscape. He explains that Veneto was designed by Palladio for Venetian families to display their power. The landscape therefore was a theatre, a stage in which people could express themselves.

The landscape can also be perceived quite differently as being a picture. This way of looking at the landscape was prominent in landscape painting and had started in England from the seventeenth century. This discourse was highly influenced by Italy and the Netherlands. During the eighteenth century, landscape was an aristocratic phenomenon, a way of looking that belonged to

the landowning class, and which people of the middling sort slowly acquired as part of their cultural capital. Landowners created due to technological developments large areas of recreation which appeared to be natural: the landscape garden. Landscape painting was an essential part of this upper-class possession, and the artists were often staying in the country estates they depicted. Later photography became important and was highly connected to tourist activities.

There are two other significant concepts of landscape, which have in common an element of scale. It can be said that landscape is 'out there'; it is not indoors unless we bring it in as decoration in our rooms. Landscape as wilderness is very common in the USA, and is metamorphosed beyond visual scenery to a close connection with nature. Wilderness developed here a recreational value. Furthermore this concept of landscape had something in common with the aesthetic view as visual appreciation is a critical element in making judgements about landscape quality. This appreciation is however mostly based on 'naturalness'. The scenic elements are more difficult to distinguish as they relate to the complex interactions of environment, landscape, wilderness and nature. The scale in which these elements appear are important to understand the landscape appreciation. This threat recons that the landscape scale is the size that can be seen, and does not only look at one element in the landscape. The usage of landscape as 'the wider surroundings' then becomes closer to the concept of 'setting'. When it comes to the management of such a place, not only the historic element will be protected, the rest of the setting is just as important as the element itself.

It is clear that in the domain of landscape research the focus lies within the visual world of landscape. But if your idea of landscape is only pictorial, what is the point of smelling and listening to it? For example when people are asked about their love for a particular place, their description will concentrate on the sound of birds or water, or the feel of the sand underfoot. Therefore some authors put more emphasis on the landscape and its senses (Tuan, 1971, 1974: Bunkše, 2007). Bunkše (2007) sees landscape as 'a unity in one's surroundings, perceived through all the senses'.

2.1.2 Perception

- Perception is the process of experiencing organized and interpreted information extracted from sensations;
- Perception is one of the modes of experience and is interrelated with consciousness;
- Memory plays an important role in perception;
- Landscapes themselves do not intrinsically have perceptual qualities, only living beings ascribe value to them;
- Evaluation and perception are closely related.

Landscape perception can occur through communication media such as photographs, films, paintings or texts, or through direct bodily experience (on site experience). Perception through bodily experience can be more clearly linked to an understanding of landscape as an area of activity, in contrast to an understanding as picture or scenery (Eiter, 2010). According to Bell (1996) perception refers to "the activity carried out by the brain by which we interpret what the senses receive. It is not merely a factual reporting, but tends to be referenced to associations and expectations already in the mind of the beholder" and is derived from the Latin perceptio, from the verb percipere 'seize, understand' (Oxford 2013a).

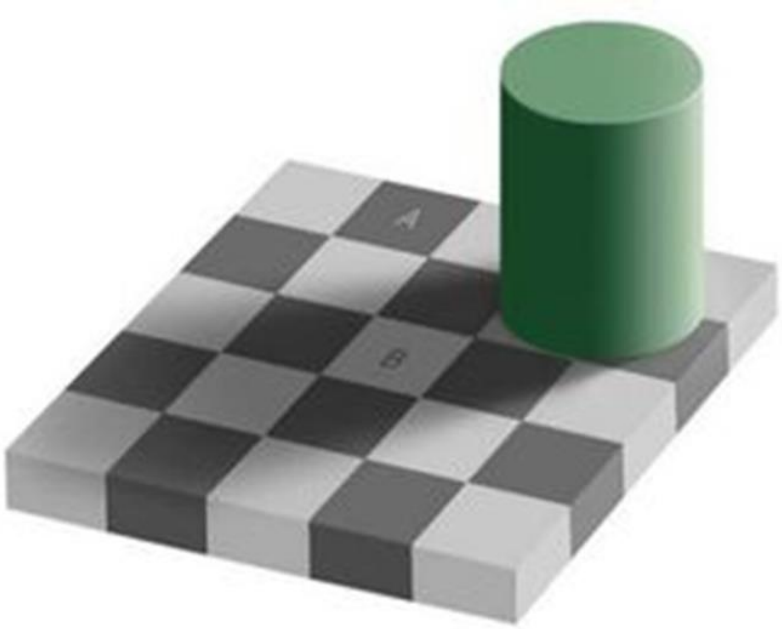
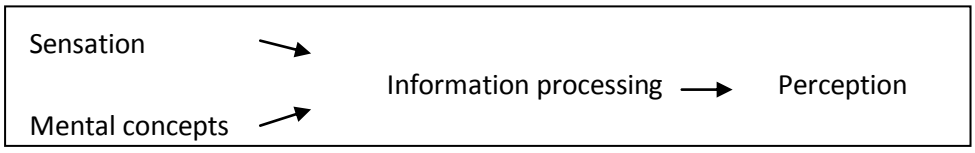


Figure 1: What is the difference between square A and B?

The 'camera metaphor' states that we record the outer world like a camera. Even if there is such a thing as 'the world as it is', it does not work like this. For example figure 1. Try to find the difference between square A and B. Almost everybody would say that square A seems to be darker than square B. This is actually not the case. Square A and B have exactly the same colour. We do not see the world as it is, as we see that the squares have different colours, while they are actually the same. This can be explained by the difference between sensation and perception. Sensation is the intake of raw information by using our senses such as touch, sight, taste, smell or sound. Sensation brings information from the outside world into the brain. Perception refers to the way we interpret these sensations and therefore make sense of the world. Before sensation becomes perception, the information sent to the brain by the senses is analysed and interpreted. This is done by the memory of previous experiences: we need an 'x' in our minds that makes us structure and recognize whatever our senses take in. This 'x' is called mental concept by Jacobs (2006). Without these concepts in perceptual experiences, recognition would be impossible. Perception is the process of experiencing organized and interpreted information extracted from sensations. To simplify the process of perception:



We have mental concepts for different categories, e.g. the tree in your back yard could be the place you were raised, or the mental concepts that relate to specific events such as your tenth birthday. Mental concepts are mutually connected. This means that somebody's mental concept for a specific place might become connected with mental concepts that represent personal memories of that place, mental concepts that denote general knowledge of that place, mental concepts that reflect value judgements etc. Thus, people gradually develop networks of place meanings. (Nijhuis et.al, 2011).

Sound is said to have an equal significance with sight. A study has shown (Carles et. al, 1992) that children's preferences are at least as dependent on sounds as on vision, and in some cases even more so. Some studies show other outcomes: Nijhuis et.al. (2011) state that mainly vision stands out, because it covers 87% of the sensory perception. Music is also an integral part of the pastoral tradition with shepherds playing their panpipes. Natural music, such as birdsong is one of the most obvious sounds that connects us to the natural world and thus is an integral part of romantic conceptions of place. Two types of noise can be distinguished, the ambient and the sudden. Ambient noise can be ignored as our hearing system filters out the sounds which are not 'important' for survival (Howard, 2011). This ambient noise can be divided into two types of experience: repetitive sounds which have a loud, fast rhythm are arousing (i.e. heart-rate rises with increasing tempo and volume), while slow, soft sounds are soothing, inducing corresponding physiological changes (Strang, 2004). Sudden noises however are picked up by the ear system excellently, because those kind of noises might be a threat. Apart from birds, wind and water are the two great producers of sound in the countryside and are mostly seen as welcome (Howard, 2011). Picture for example the scene of a garden with a pond; the reed makes a distinctive soundscape and the water of the pond splashes firmly. However little studies are known about sound and how this influences the landscape perception, it is clear that the importance of sound should not be forgotten.

The landscape of smell is even less studied than sound. This can be explained by it being part of the 'earth-bound senses' namely smell, feel and taste. Cultivating those senses and developing discourse about them, and incorporate them into landscape enjoyment, is much more difficult than having a discourse about sight and hearing, for which there is a rich and well developed symbolic language through different types of media (Bunkše, 2007). Even though understanding smell is very complex, we should not underestimate its importance. The part of the brain concerned with smell is very close to some of the memory centres, and it is widely believed that smell and memory are themselves closely linked. We also seem to react to smell a great deal more often that we are consciously aware of (Cornish, 1935). Places which we identify as 'smelly' do have a negative perception output, which means we will think the landscape unpleasant. On the other hand, places with pleasant odours such as flowers, the seaside, herbs and a waterfall can make the environment very enjoyable.

At first it might seem that taste does not belong to a landscape. This is because landscape is outdoors, and taste usually comes into play indoors. But this exclusion of taste is a largely British prejudice, which is not shared in for example France. Here the word 'terroir' means 'all the products of this land'. French towns will at least have one shop which is focussed on terroir, and will include many products and dishes which are locally produced. For example Burgundy is not only a cultural landscape, you can also buy it in a bottle. So in France it is routine to see (and perhaps smell and hear) a landscape and perceive the terroir it reveals. This way of perceiving is not as common in Britain, however it is difficult to look at the landscape of central Somerset, and not be well aware that this is Cheddar cheese country. In relation to taste, we might see the landscape through our stomach (Bishop, 1990). For example the north of Europe was attractive by its wheat and harvest as a primary staple diet. These rich cornfields were often depicted as a Georgic image that appealed directly to bread-eaters. Also one of the English landscape features is the habit of grazing livestock in the fields often all year round (Howard, 2011). It is questionable whether such imagery appeals directly to our taste buds, but we can say that a lot of cultural historical landscapes are formed and shaped by our sense of taste.

The feel of sand through the toes might be of a pleasant nature, while others might experience it as an unpleasant sensation. The most obvious leisure activity related to the sense of touch is having a picnic; here you have the full opportunity to ultimately feel the landscape you are in. Touch sometimes has a mere practical aim, such as identifying a tree by the feel of its bark, or rub the sand between your fingers to identify the soil type. However the primary value of touch is having a physical connection with the landscape (Howard, 2011). All activities you undertake in the landscape have to do with physical contact: people walk, cycle, swim and climb trees in their environment and utterly enjoy it. For example the contact with water by immersion enhances a state of weightlessness, and a feel of difference with normal life. This can be explained by Johnson and Johnson & Odent (1994, in Strang: 2004) who state that immersion mimics the prenatal experience which is found to be very comfortable.

> *'The primary value of touch is having a physical connection with the landscape'*
> *- Howard (2011)*

Now we know what perception consists of, we need to try and understand how perception works. As already mentioned before, we first need to sense something before we can perceive. Look at figure 2. We perceive this picture as being Egyptian Hieroglyphs. We perceive this picture as being Hieroglyphs not because we have seen these particular figures before and remember them, but on another basis. We perceive Hieroglyphs because we possess concepts that we use to analyse sensory information. This means that we possess concepts of Egyptian Hieroglyphs. Because this sensory information fits in these concepts, we perceive the picture as being Hieroglyphs. Without these concepts it would be impossible to perceive the picture as such. These concepts are acquired during the course of life. Therefore concepts can be called the units of memory. Generally we can distinguish different types of memory. First, there is explicit (also called declarative) and implicit (called non-declarative) memory. Explicit memory consists of those concepts we are able to be aware of. Other implicit memories play no direct role in consciousness, but do play a role in behaviour. For example walking down a road without paying attention to it implies the use of concepts, such as a concept for legs used for walking and a road. Walking is an example of a skill concept, which is created automatically by repetition. Explicit memory is subdivided into semantic and episodic memory. Semantic memory is for example the knowledge that Moscow lies in Russia, without actually having been there. Episodic memories refer to recollections of earlier experiences such as having seen the Big Ben in London. To state it a bit more plainly: there is a difference between knowing something and remembering something.

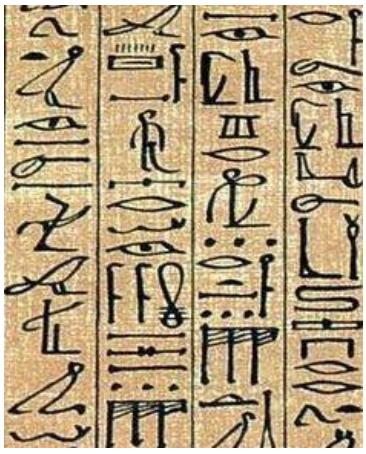


Figure 2: Egyptian Hieroglyphs

According to Wöbse (1982) the way we perceive landscape is always a combination of objective facts, memories and expectations. Also Bourassa (1988, 1990) states that the perception of landscape is determined by a biological, cultural and personal component. The former two might be a common good to certain groups, as the latter is individually different. These factors are again influenced by 'objects' and 'subjects'. An individual who perceives the landscape as an observer sees the landscape with its objectively identifiable structural features. This is called the 'object perspective'. The 'subject perspective' focusses on the individual as the perceiving subject with his or her sentiments, needs and impressions and they are supported by psychological theories (Jessel, 2006). Figure 3 gives an overview of this concept.

Perception is a complex and broad term which is related to a mix of psychological and physiological processes. It is about processing of information (cognitive), the feeling of emotions (affective) and peoples preferences (evaluative). Landscapes themselves do not intrinsically have perceptual qualities, only living beings ascribe value to them. Evaluation and perception are closely related. According to Dembo (1960), the attributes by which things are distinguished are also seen as qualities; 'perception is the seeing of qualities'. Craik and Feimer (1987) state that the identification of criterion attributes 'usually implicates values and valuation, which can be encompassed by the general construct of environmental quality' (Coeterier, 1996).

> *'Perception is the seeing of qualities'*
> *- Dembo (1960)*

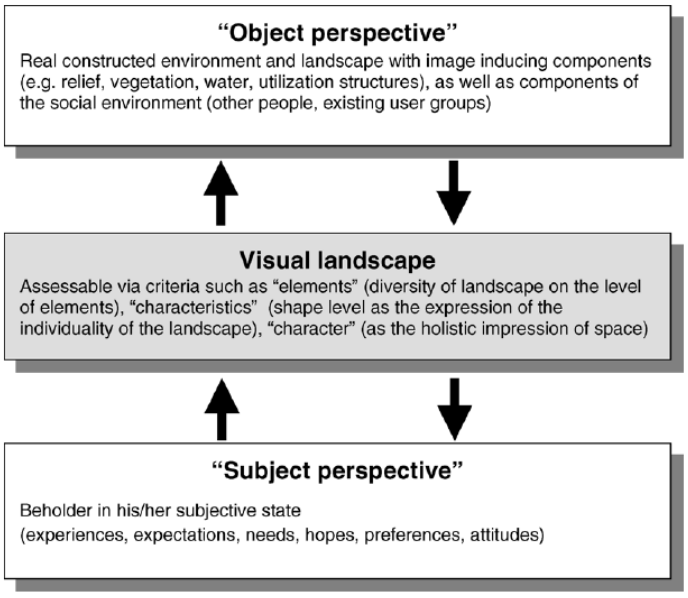


Figure 3: Formation of the perceived landscape impression as a result of the interaction between the 'object perspective' and the 'subject perspective'. (Jessel and Tobias, 2002, p. 217)

2.1.3 Emotion

In order to understand landscape experience, an account is needed of the way evolutionary or biological factors may influence experience. Next to cultural and personal influences, evolutionary factors play an important role in trying to explain human preferences. Studies show that some

similarities in landscape preferences can be found in most humans. In evolutionary landscape experience research, preferences are seen as emotional reactions. We are capable of having emotional states related to landscapes. They can be positive or negative (Jacobs, 2006). Emotions are complex coordinated responses of an organism to important, for example life threatening, situations. Prototypical emotions as fear, anger, disgust and happiness have a long history of evolutionary development. An example can be found in organisms which have a lower consciousness than human beings. Here emotions coordinate the most important facets of organism-environment interaction: avoiding danger or seeking shelter. Emotions, as for instance fear, automatically engage and modulate many different psychological and physiological parameters, in order to prepare the organism to deal with an emergency. The reaction goes as follows: the focusing of attention, the release of hormones, changes in muscle tension, the redistribution of blood, an increase in respiration (Karmanov, 2009).

Darwin (1872) argued that a number of emotional expressions are similar across cultures. He also noticed that people who are born blind, showed the same facial expressions in emotional states. Blind people could not experience and learn these facial expressions, so this response must be innate. Another aspect Darwin noticed is that many emotional bodily reactions are the same across species. For example, the erection of body hair in dangerous situations happens to dogs, rodents, horses etc. The fact that similar body expressions can be found across cultures and species, can only be explained by the assumption that these bodily responses are innate and evolutionary developed. In later studies, these assumptions were confirmed. Ekman (1992) identified the facial expression of happiness, anger, fear, surprise, sadness and disgust as being universally recognized.

The existence of these basic emotions does not exclude cultural or personal differences in emotional behaviour. Stimuli that trigger emotional responses can be influenced by personal history and culture (Damasio, 2001). However, there are also natural triggers. They can lead to emotional responses without any previous learning process involved. For example, rats show a fear response to a cat, even though they are raised in isolation and have thus never seen a cat. These responses are increased heart rate and freezing (LeDoux, 1996). Learned triggers assets of learning responses to categories of stimuli. This process of a stimulus getting associated with another stimulus is called conditioning. This can be done without being conscious of it. This means that emotional learning can occur without conscious memory (Jacobs, 2006).

2.1.4 Experience

- Experience is a qualitative aspect of consciousness, and is probably described most correctly as feeling.

Perception is one of the modes of experience; the other modes include dreaming, imagining and thinking in natural language. Landscape experience is perceptual experience by definition; perceiving is a prerequisite for most other modes of experience (Jacobs, 2006). Experience is a qualitative aspect of consciousness, and is probably described most correctly as feeling (Karmanov, 1999). Therefore experience is more feeling and emotion based. Experience is often called the content of consciousness (Chalmers, 1995; Nagel, 1974; Searle, 2000), that is, the stream of phenomena that pop up in our conscious mind. Experience and consciousness are intertwined: experiencing something implies being conscious of something, while being in a conscious state implies experiencing something. For example Chalmers (1995) states:

"When you look at the page, you are conscious of it, directly experiencing the images and words as part of your private, mental life. You may have vivid impressions of coloured flowers and vibrant sky. At the same time, you may be feeling some emotions and forming thoughts. Together such experiences make up consciousness … (Chalmers, 1995 in Jacobs, 2006)"

We can identify different modes of experience. Lormand (1996) distuinguishes between:

"Perceptual experiences, such as tastings and seeings; bodily sensational experiences, such as those of pains, tickles and itches; imaginative experiences, such as those of one's own actions or perceptions; and streams of thought, as in the experience of thinking 'in words' or 'in images' (Lormand, 1996 in Jacobs, 2006)"

In each mode, every single moment of experience can be different even though they all share the fact that they are conscious. Jacobs (2006) distinguished several properties of consciousness and experience:

- Qualitative

Consciousness is qualitative. For example seeing a tree differs qualitatively form smelling a perfume. You cannot state that the experience of seeing a tree is larger or smaller than the experience of smelling a perfume.

- Subjective

Consciousness is subjective. Is exists only when it is experienced by some human or animal subject. We do not have access to the experience of another person, we only have direct access to our own minds. Therefore, consciousness is essentially subjective.

- a Unity

Consciousness is a unity. All conscious experiences become part of one unified conscious field. A state of consciousness at a particular moment is not separated into different parts. All different aspects of a moment, such as feeling the wind standing on a hilltop looking out at the sea and tasting the saltiness of the air, are unified into one experience.

- a Process

Consciousness is a process. The contents of consciousness constantly change. Two moments of experience are never completely the same. For example when you looked at a table before you had dinner there and after dinner, you will experience the table differently, even though the object of your experience is the same.

- Continuous

Consciousness is continuous. We always experience, except when we fall asleep, go into coma or die.

- Structured

Consciousness is structured. Regularities are found in our experience. For example when you have learned that a table is a table, the next time you see a different table, you know it is a table and not a chair. We structure images, which makes us able to experience different objects and classify them.

- Intentional

Consciousness is intentional. With other words, it is impossible to be conscious without experiencing something. Even when you close your eyes, you will not be able to stop experiencing.

- Comes in a mood

Consciousness comes in a mood. At every moment we experience, we are in a particular mood, whether bored, excited, sad, happy, etc. Most of the time, we do not pay attention to our mood. Even a neutral mood is in theory a mood, and can therefore be recognized as a being in a particular mood.

- Has a centre and periphery of attention

Consciousness has a centre and periphery of attention. We are able to influence our consciousness to switch between aspects, or details of the contents of our consciousness. Also aspects of our surrounding which we find irrelevant will be ignored by our consciousness.

- Gestalt structure.

Consciousness has a Gestalt structure: we tend to integrate loose stimuli into a coherent experience. Figure 4 is an example of how the Gestalt structure works. Looking at it, we will see a triangle. Nevertheless, the picture consists of three dots and three lines. In our minds, we integrate these dots and lines into a triangle and we project this triangle into a picture.

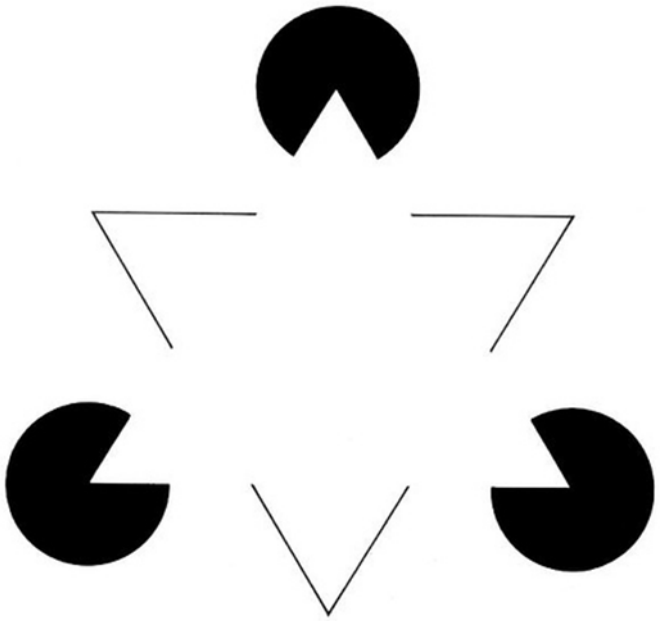


Figure 4: The Kanizsa triangle

2.2 What influences our landscape perception?

- Landscape perception is influenced by individual factors, cultural factors and the physical landscape

Now we have a better understanding of what perception actually is, it is useful to make sense of the factors which influence our perception. Various studies have acknowledged the influence of personal history and culture on perception (Aoki, 1999; Damasio, 2001; Jacobs, 2006; Taylor & Lennon, 2012). Jacobs (2006) divides the landscape in three separate realities: Matterscape, Powerscape and Mindscape. Matterscape is the physical reality, Powerscape the social reality and Mindscape is the inner reality. These factors are not only of use to understand the landscape itself, but also to be able to understand which factors influence people's perception of the landscape. Figure 5 shows a simplified model of the influence that certain factors have on perception. The factor physical

landscape is about the tangible, objective elements of a landscape. It is about the material reality, the fact that certain matter exists. For example rocks exist, animals exist, and trees exist. The fact that this landscape exists, is the first factor that makes us able to perceive. However, the physical landscape does not stand alone. The physical landscape affects culture and culture on its turn influences the landscape. For instance fishing cultures flourish near the seascape, but people from these fishing cultures will build their houses near the sea and change the physical landscape. Culture is about the social interaction between individuals. It is about shared values, shared interests and shared rules. These are all created by the ones who form the social group. To make it even more complex, an individual can be part of different cultures which then influences the individual. Therefore the individual influences culture, but culture also influences the individual. The individual factor is about personal background of an individual human being. It is about the inner, subjective intake of information such as individual values, judgements, feelings and meanings. An individual inevitably reacts to its environment: we cannot walk through a wall. The other way around, the individual forms its landscape as well. Think for example about a garden, one person can decide how the garden is going to look like. To make the circle round again, how the garden looks like is decided by the individual, culture and the physical landscape. It should be clear that all factors influence each other and through this interaction, certain perceptions about the environment will derive.

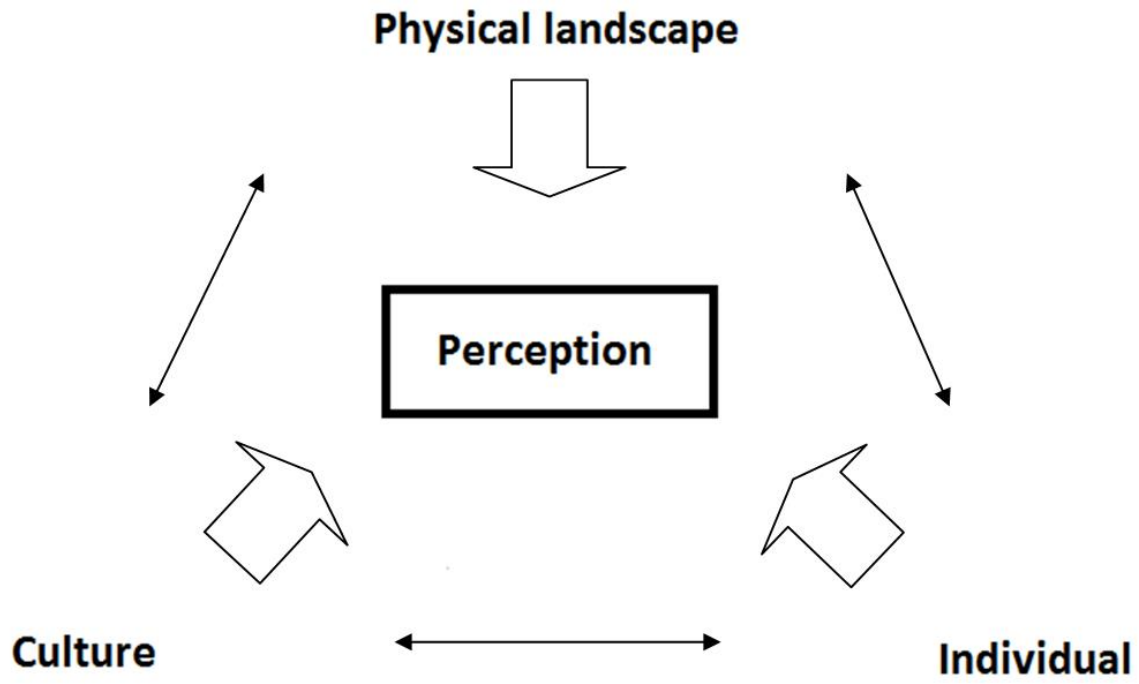


Figure 5: Factors that influence perception

2.2.1 Physical landscape influence on perception

The objective and material reality is the starting point for perception. In order to give a certain meaning to an object, the object itself must exist. A tree and water exist, even though we are taught that a tree is called a tree, and that water is called water. It still is there: you can see it, touch it, smell it, hear it and taste it. The physical landscape is a system of facts to which laws of nature apply. Disciplines related to investigating the physical landscape are ecology, geology, hydrology, soil science and environmental science. The fact and laws that describe the true landscape apply to

everyone. Of course there can be disagreement about whether a certain statement is true or not, but this does not mean that true facts, agreed on or not, do not apply to everyone. For example it is true that water flows downhill. This is true for everyone regardless of what an individual may believe.

The physical landscape plays an inferential role in the perception of a conscious being. The way people perceive the landscape is related to the properties of the physical landscape. Perception of the landscape is therefore influenced by the physical landscape.

2.2.2 Individual influence on perception

The European Landscape Convention (2000) definition of landscape as 'an area perceived by people' does not mention which people perceive the area. It does presume that all people are valid contributors to the meanings which will define the quality of the landscape. Some of the activities are much related to a certain type of landscape. For example bird watchers perceive the landscape quite differently than farmers, because their activity makes them focus on different things.

Academic background(Kent, 1993 in Aoki, 1999)

How people perceive the landscape is highly influenced by the knowledge people have. A study about human perception of in-channel wood showed that first year students perceived riverscapes with wood to be less aesthetic, more dangerous and need for improvement. However, many aspects of the riverscape perception are subject to changes as the student progresses in studying. The negative perception of wood at the riverside is reduced after the education of geography and biology students, but enhanced after water engineering studies (Wyzga, 2009). This makes clear that differences in education will stimulate different views on the landscape.

Hobbies(Kaplan & Herbert, 1987 in Aoki, 1999)

People enjoy living or being in an environment with possibilities to have hobbies. Obviously a space which provides leisure activities, will be preferred from a place where no hobbies are possible. We have to keep in mind though that places that offer room for many different hobbies, clashes might occur between different hobby practitioners.

Interest in the area (Zube, 1987)

To be able to understand people's perception of an area, it is needed to understand the difference in interest between people. Some people who use the landscape are attracted to the landscape because they are interested in it, while others might use the landscape because they live close to the place they work and have no further interest in the landscape. So there is distinction between people who are interested in the landscape and people who are not. However, even in the section of people who are interested, variances occur.

Age(Balling & Falk, 1982)

We can simply state that when you are a child, you perceive the landscape different from when you are an adult. This has a lot to do with height. When you are small, the world outside seems optically bigger. Furthermore age has a lot to do with life perception. For example, when a newcomer looks at old photos in the company of a long-time resident, he will notice that the old-stager sees much more than he does. However, the long-time resident might have difficulties in putting his place in a wider context.

Gender(Macia, 1979)
No reliable studies are known about the difference between male and female perceptions of the landscape. The earth and the landscape are worldwide very often referred to as being feminine. However, when it comes to perception we know not much about it except for prejudices. Some say that men biologically are better in orientating, because of their ancient role as hunters. Nevertheless research (Burke et al, 2012) has shown that there is no significant difference between males and females.

2.2.3 Cultural influence on perception

Nationality (Buyhoff et al. 1983 in Aoki, 1999)
Belonging to a certain nation means that people will probably have some shared values. Even though people with the same nationality are different in many ways, they are influenced by their national government, education system and other powerscapes.

Residential background of urbanization (Schroeder, 1983)
The study of Schroeder revealed two predominant groups of individuals. One favouring natural-appearing forest settings and the other preferring well-developed city parks. People who have spent most of their lives in urban areas were more likely to prefer developed parks, while people who have spent most of their lives in suburban rural areas were more likely to prefer natural forests.

Politics (Taylor & Lennon, 2012)
Political attitudes can change the landscape, and therefore influence the perception of people towards the landscape. For example nature associated landscape is a symbol or political and social space for the Chinese. The social elites cultivated their moralities or healed their wounds in nature while waiting for the call of the emperor to devote themselves to the society again. The houses of intellectuals in mountains, the scholars 'city gardens', were typical space to show their political attitudes. Politics also constructs boundaries between landscapes which are significant and insignificant and influences therefore the meaning, interpretation and priorities of stakeholders. Politics does not only influence the landscape in a direct way. Cultural history itself can be altered by political intentions such as propaganda and indoctrination. This is mostly due to political and social purposes. Cultural history is generally changed to maintain social control, transfer social values and ideologies, and to legitimate political practices (Duineveld, 2006).

Preparatory information (Danfort & Willens, 1975 in Aoki, 1999)
Preferences can be influenced by information. For example in a study by Eiter (2010) tourists disliked sheet-metal roofs. When people are aware that sheet metal is the authentic material used in many summer farming cottages dating from at least 1920, it may become more positive. Also people might view a body of water differently when it is described as a lake or a reservoir.

Professional experience (Buyhoff et al. 1978 in Aoki, 1999)
A person who has lived his entire life in a certain landscape will inevitably look at the landscape differently from a person who has only studied the area. Both have a different sort of knowledge: the

inhabitant has the experience with the landscape , while the scholar has the facts about the landscape. The knowledge that an individual or group possesses about their own environment can be called local knowledge. Professionals have a more universal scientific knowledge which can be called expert knowledge. Local knowledge has two separate dimensions: individual and collective. It is subjective and highly influenced by the social, spatial and historic context in which an individual or group is located. Local knowledge relates most of the time closely to the personal life history of the individual, and has therefore a strong emotional connection. Experts look at the landscape in a more analytic way. They use their knowledge to dissect a landscape into multiple elements, structures and patterns and try to understand them. Lay men, or locals, look at the landscape from a more holistic view. They see the landscape as one whole, as a collection of elements which are inextricably connected (Hidding, 2001 in Duineveld, 2006). Duineveld (2006) argues however that there is no substantial difference between experts and non-experts when it comes to the access they have to reality. Possible differences are created by variances of practice in which they produce knowledge. Scientists are people whose knowledge is produced within an academic environment in which a certain way of producing knowledge is demanded. Non-scientists produce knowledge outside academic practices, which does not always mean that the outcome is different from the knowledge produced by experts.

We should keep in mind that the difference between experts and non-experts is not black and white. There is a big amount of people who have the experiential knowledge of their environment, without having local knowledge as described above. For example, people drive the same route to work every day. They know that landscape from the experience of driving within it, but have no knowledge of the physical landscape itself. Looking from another perspective, an historic geographer who has lived in a certain landscape for a long time and has done research on the area, might call himself a real 'expert'.

Daily accessibility to the landscape (Nieman, 1980 in Aoki, 1999)

The daily landscape, for example where you walk your dog every day is perceived quite differently from the landscape you visit on a holiday and have never seen before. Both are appreciated highly. Daily accessibility will eventually enhance familiarity with the area.

Familiarity with the area (Wellman & Buyhoff, 1980)

People appear to make comparisons based on information of the area with which they are familiar to. Also familiarity is related to the individual feeling of belonging. Nieman (1980) states that people who are familiar with a certain landscape, time might blur the perception, blur the visual misfits and undesirable characteristics. Therefore the norm of the day to day existence becomes a comfortable situation which may partially account for the maintenance of the idea that the present residential environment is certainly the one with the highest visual quality.

Economics (Taylor & Lennon, 2012)

A lot of landscapes are formed for economic reasons: making the soil arable will provide the farmer an economic prospect and a way of living. This impact is intensely seen today in developments related to young people moving to the cities instead of staying in the countryside with no economic livelihood. Economists value landscapes in three different ways:

1. Optional value: People appreciate a landscape because of its opportunity to occasionally come there. For example somebody who loves the AONB High Weald but does not come there very often, would find it dreadful to find it build up with industry and houses erasing the woodlands and grasslands. He wants to retain the option of coming there.
2. Existential value: People can appreciate a landscape that they never will experience themselves. For example people may think of the Chinese wall as beautiful and valuable, without having the intention of going there themselves.
3. Bequest value: This is the value that a landscape has for future generations, and reflects how people value it from the current generation.

These values are difficult to realise through market mechanisms. For example people do not pay for the existential value of the Chinese wall. However, if you ask people what they would be willing to pay to secure it from being demolished you might have a better result (Klamer, 2009).

Religion

In the previous chapter, 3 different religions are described and how they perceive their environment. Nowadays a lot of these religions are practiced in other countries than they are originated. In Britain for example, you will find temples and mosques belonging to Hindus and Muslims. Christians feel a sense of foreignness towards mosques and temples and such buildings are symbols of otherness to outsiders (Shore, 2007). Part of this feeling of outsideness is not knowing how to behave. Many places and landscapes have a code of conduct that people may, or may not know.

Social values/rules (Taylor & Lennon, 2012)

Expression of culture is possible because of knowledge. For example you know that it is 'not done' to shout in a church or a funeral. As a child you have been taught how to 'behave': your family, teachers and friends provided you with knowledge on how to behave. This knowledge determined by culture. For example, during funerals in the West-European Christian culture you are supposed to be silent, while Balinese funerals are a true fiesta in which people do make a lot of noise.

The way people experience and behave is intensively influenced by culture. As we have seen before, cultural factors such as religion have influenced human perception of the landscape greatly. Culture consists of a set of collective habits and views. This means that culture contributes to the shaping of concepts in the individual's mind. Subjects encounter and interpret public expressions of people, leading to alterations of the mental concepts of the subjects. These are embodied in social rules. They are powerful and seen everywhere. Mostly they are part of our cognitive structure, which means that even perception is shaped by social context. When we consider perception, it is about attending to some things and ignoring others, in which we separate the relevant from the irrelevant. This 'foregrounding' and 'backgrounding' is influenced by social rules. For example in social relations, not each person is equally relevant, such as children. Social rules are highly complex and depend on the context and related status. They are carried out by verbal and nonverbal communication in which we create, send, receive and interpret signs and symbols (Jacobs, 2006).

Class

Class is a word not much used these days in polite discussions of social issues. We more seem to discuss power relations between different groups in society. Howard (2011) states that just as with all aspects of heritage, the wealthy buy a landscape or convert it to their own purposes, and has

always been done. Landscape conservation remains firmly rooted in an aristocratic past. The National Parks are used primarily by those with the cultural capital, the education and the mindset to appreciate their purpose and there is a significant degree of social exclusion operating here, which extends into ethnic and urban exclusion, much of it self-imposed. A lot of these national parks are extensive moorland landscapes. The attractiveness of these places, to most users, is 'getting away from it al', whereas a considerable number of potential visitors from the cities have no wish to expose themselves to such environments. To clarify this a bit, imagine being in a big city full with visual clues for survival and enjoyment. Rural people will often feel ill at ease in urban situations where they cannot read the clues. The countryside also has such clues, and many urban visitors are well aware that they do not have this set of skills. The National Trust has largely been equated with this view on an aristocratic past and landscape, though the organisation is now attempting to move away from that relationship. They believed that it was the English country house, the rural homes of the landed, titled and wealthy, that most represented the English heritage and were most in need of saving. In England the attitude remains deeply rooted among rich and poor alike, that the rich largely own the land and the poor want access to it.

Rural gentrification is a result of this difference between rich and poor. Heritage is owned by the rich, and the ability to work from home using the internet has attracted people to move to the countryside. Local people often feel aggrieved that the result is an increase in house prices to levels that cannot be afforded by their own children. A lot of these people move to the country following retirement, and become socially very active. Also others buy second homes in the countryside with great impact on house prices. These incomers are those most keen to protect local landscapes. There are many who rail against the gentrification of the countryside. Howard (2011) states that the UK's National Parks and Areas of Outstanding Natural Beauty have become a place for the wealthy to inhabit and the slightly less wealthy to visit. Landscapes can be seen as public museums or public libraries; services largely patronised by educated groups who are more than capable of campaigning to keep these services free of charge, always of course for the benefit of the pour. Unlike our forests and moors, the seaside is the most popular amongst the urban poor.

2.3 How does landscape perception work?

It is clear that landscape perception is influenced by many factors. It is not only about the environment: it is about the meaning you give to the sensations you perceive. The story told before, is even though it is already simplified, a complex narrative about how the brain works and processes information. Therefore I have produced a very basic visual model of how landscape perception works (figure 6). It must be addressed that the process of perception is heavily simplified and does not represent the entire procedure of perception. However, this model can give an elementary insight in the complex study of human landscape perception.

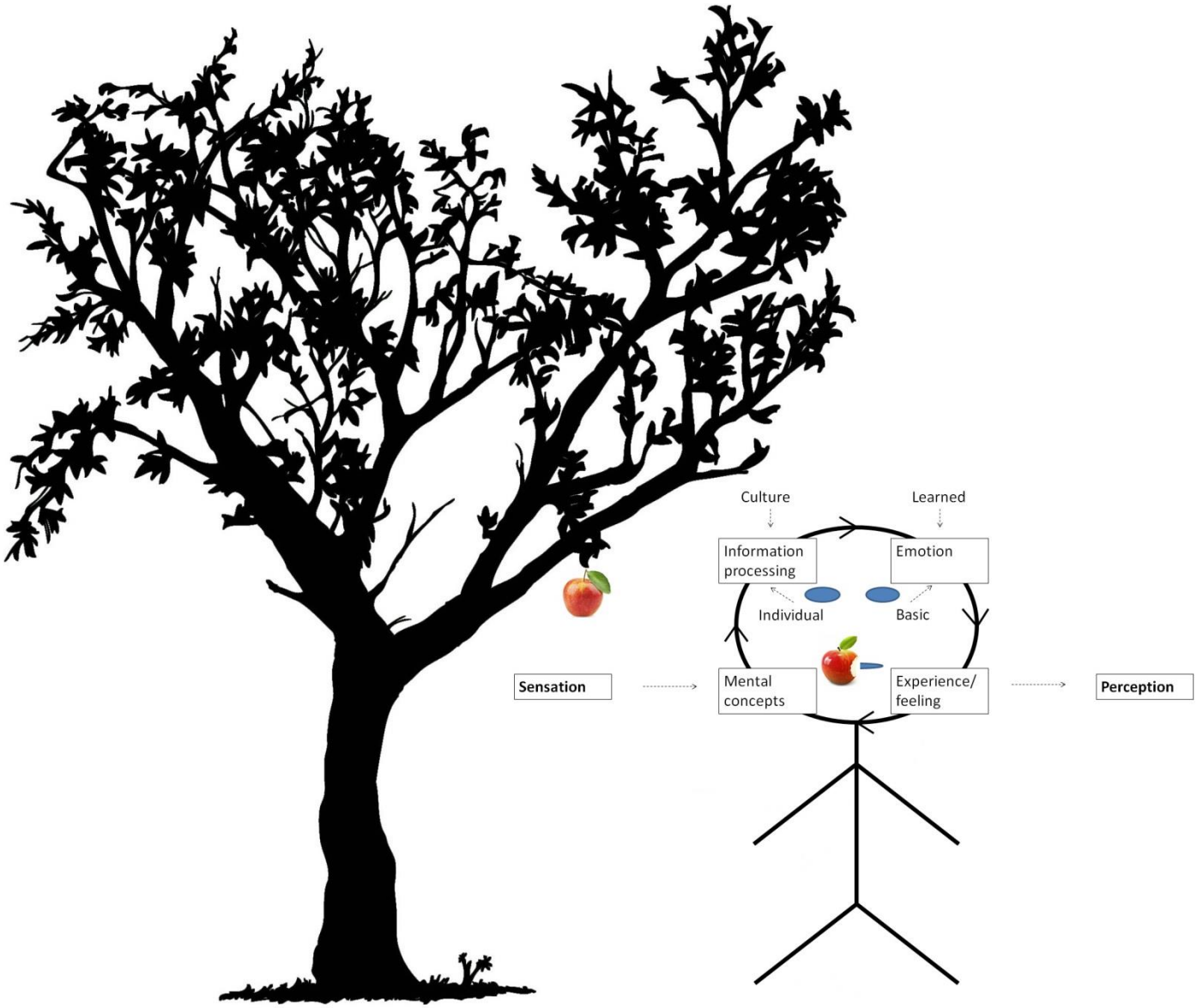


Figure 6: conceptual basic model on landscape perception

Picture yourself walking past an orchard in august on a sunny day. This is where the process of perception begins. First, you spot an apple. This is because your senses, whether that is vision, scent or sound, record an object. You see that this object is red, round and seems to be a fruit because it is hanging in a tree. You know this is an apple because the memory from a previous experience tells you that this is an apple. This memory can be called a mental concept. This mental concept recognizes the shape, form, smell, structure, context, feel etc. and identifies the object as being an apple. After the process of being aware of the fact that this object is an apple you start to process this information. Individual and cultural factors influence this processing of information. For example, it is culturally determined that you come from a place where we eat apples. Individually you might now something about how apples grow, or about the environment where it grows. A learned emotion might be that you particularly like red apples, learned from previous experiences. Your basic emotion is for example having the need to eat in order to survive. You might then experience that you feel the urge of eating the apple. When perception derives from this, you are trying to make sense out of the situation and understanding your experience. When you feel the urge of wanting to eat the apple, this entire process will start all over again. Mental concepts may tell you that the tree where the apple is hanging in, is not yours. Culturally it is determined that we are not allowed to steal. However, from an individual perspective, you might think that you have to ability to be so quick that nobody will notice that you have stolen the apple. Then, emotionally by seeing the apple, you start feeling hungry: your stomach might respond or you start producing saliva. This is indirectly also a learned emotion: as a baby you will probably not had this response when you first saw an apple, you have been learned to associate (conditioning) apples with food. As a result you might experience and be conscious of the fact that you are feeling hungry. In perception this entire process comes together, weighing all these emotions, mental concepts and information, by making sense out of the situation. Out if this perception, sometimes and action may derive: you might start picking the apple and start eating it.

As you might have noticed, this description is incomplete as well. For example, making the decision of picking the apple, brings a new sense to the model: touching. Touching the apple triggers again the entire process of perception: mental concept for apple, processing the feel of the apple, you have a certain emotion related to the apple resulting in an experience of feeling the apple. The same reaction will happen when you start eating the apple. This circle of perception will take place almost every time your senses pick up on something. Thus, this process will only take your brain a few seconds, after starting again and again. And every time this process takes place, you learn something, forming new mental concepts in your brain.

This process does also not always take place in the same routine. For example, basic emotions sometimes trigger a direct reaction, without information processing and using mental concepts. For example, seeing a lion triggers fear. A direct bodily reaction is an increasing heart rate and sweating. After seeing that the lion is behind bars and not of any threat to you, you start with the mental concept, information processing again, calming you down (Jacobs, 2006).

2.4 Theories and frameworks on landscape perception and preferences

A lot of literature is written about landscape perception, landscape quality and landscape character through different kinds of disciplines such as archaeology, physical geography, cultural geography, historic geography, psychology, philosophy and more. Because landscape perception is foremost about humans and their relationship with the landscape, the explained theories and frameworks will be based on psychological studies concerned with cultural geography and historic geography even though many other theories and frameworks exist.

2.4.1 Theories

- People show a preference for landscapes that provide prospect and refuge opportunities;
- We prefer landscapes with high coherence, legibility, complexity and mystery;
- Human beings have inherent need for connection with their natural environment and the other forms of life within.

Prospect-refuge theory

Appleton is a geographer who was interested in questions like 'What landscapes do we like?' and 'Why do we like them?' The prospect-refuge theory by Appleton proposes that human beings experience pleasure and satisfaction with landscapes that responds to their biological needs (Porteous, 1996, cited in Kaymaz, 2012). According to Appleton, aesthetic satisfaction is 'a spontaneous reaction to landscape as a habitat' (Porteous, 1996). This theory also states that people show a preference for landscapes that provide prospect and refuge opportunities. Humans, as well as most other living organisms have an urge to feel safe and to survive. For example when humans were still hunters and gatherers, a broad view would help to find food supplies, while shelter was necessary to feel save. Human senses are somewhat limited, and therefore the environment is used to protect us from harm. Therefore, according to this theory, humans prefer environments where we can observe and hide. However, there should be a balance between being able to observe and to hide. Places with low prospect and high refuge lead to feelings of fear and unsafety (Fisher and Nasar, 1992, cited in Kaymaz, 2012). Because this aspect of feeling safe, this theory can both be used for planning and design in urban environments as in rural areas (Kaymaz, 2012).

Berlyne's arousal theory

According to Berlyne, environmental perception is linked to the amount of conflict or uncertainty in the environment (Chang, 2009 in Kaymaz 2012). This theoretical framework consists of two main concepts: arousal potential and hedonic response. Arousal is being defined as the level of excitement and alertness, while hedonic response is something which is pleasant and rewarding to keep in touch with. This connection is revealed in figure 7. He established four factors which he called collative properties that determine the arousal potential of a stimulus: complexity (diversity of elements), novelty (presence of novel elements), incongruity (extent of miss-matching of elements) and suprisingness (presence of the unexpected). This hypothesis is U-shaped: a medium degree of arousal potential has a positive effect on preference, while low or high degrees of arousal potential cause negative response (Martindale, 1996).

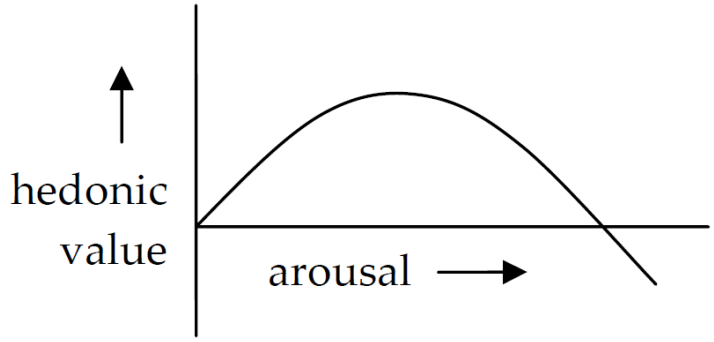


Figure 7: The hedonic value as a result of the level of arousal

Information processing theory

This theory by Kaplan & Kaplan (1989) is amongst the most well-known theories on landscape preferences. Information is the central concept of this approach. Humans gather information from their environment through senses, of which the mostly used is the visual sense. Kaplan suggests that information is derived through the content and organization of the environment. Organisation of the environment is important since it affects the degree of making sense of a place. The Kaplans came up with four informational factors which affect preferences of landscape:

- Coherence: Coherence of a setting is about the order and organization of its elements. When a place is coherent, people can make sense out of the setting easily. Examples are the repetition of themes and unifying textures.
- Complexity: Complexity looks at the degree of diversity of landscape elements. A complex landscape provides more information.
- Legibility: Legibility is about orientation. People need to find their way in order to feel safe and secure. You can think of distinctiveness, landmarks and spaciousness.
- Mystery: Mystery is related to the preference of humans to explore. Mystery motivates people to gain more and new information from a place.

	Understanding	**Exploration**
Direct scene	Coherence	Complexity
Inferred scene	Legibility	Mystery

Figure 8: The preference matrix

The preference matrix (figure 8) consists of two pairs of categories. First understanding and exploration. To gain knowledge, we must be able to understand what we see. To continue gaining this knowledge, a scene must invite exploration. Second, the direct and the inferred scene. The direct scene refers to the information that is directly available from the point of view. The inferred scene is the expectation of information to be found if one changes the point of view. According to Kaplan and Kaplan, we prefer those landscapes that score high values on all four factors.

The biophilia hypothesis

This hypothesis by Wilson (1984) proclaims that human beings have an inherent need for connection with their natural environment and the other forms of life within. This human preference for the

natural environment can be explained by the biological foundation as a result of evolutionary processes. If we look back many years ago, humans have been hunters and gatherers for the greater part of their evolutionary history. Therefore it makes sense that humans establish an emotional bond with nature and living organisms. Ulrich (1993) explains that during evolution certain natural settings provided rewards and advantages for humans. Positive responses to natural settings such as liking, might be influenced by biologically prepared learning (Kaymaz, 2012).

Gibson's Theory of Affordances

The theory by Gibson uses the term 'affordance' as a possible action which properties of an object allows or suggest for the observer. For example, a bin affords putting litter in it. Gibson states that although the needs of the observer can change, the affordance of an object does not change. This theory has received a lot of critique, but is still applicable for assessing landscape preferences and opportunities in relation to functionality.

Topophilia

Tuan (1974) focusses with his theory on the cultural dimension of landscape preference. Through the repeated occurrence of ordinary events one can accumulate a strong sentiment for a place which is termed topophilia. Thus this theory focusses on the historical factor of landscape perception.

2.4.2 Frameworks landscape perception

It is important to realize that not all theories existent on landscape perception and preference are named here. A selection has been made on the most cited and used frameworks within landscape preference research.

- The visual character of a landscape is dependent on indicators of complexity, coherence, disturbance, stewardship, imeagability, visual scale, naturalness and ephemera;
- Attributes that are important in landscape perception are unity, use, naturalness, linear time development, cyclical development, spaciousness, management and sensory aspects.

Framework by Ode et.al.(2008)

Ode et. al. has identified 9 factors describing landscape character based on theoretical research in relation to landscape perception. The focus lies on the visual character of a landscape. Links are established between landscape aesthetic theory and visual indicators, thus looking at what landscape indicators really indicate. These 9 factors are (Ode et. al: 2008, Tveit et. al:2006):

- Indicators of complexity:
  Complexity refers back to the information processing theory of Kaplan & Kaplan (1989). It addresses the diversity and richness of landscape elements and features, and the interspersion of patterns in the landscape.
- Indicators of coherence:

This indicator is also derived from the information processing theory by Kaplan & Kaplan (1989). It relates to the unity of a scene, with for example the degree of repeating patters of colour and texture as well as a correspondence between land use and natural conditions.

- Indicators of disturbance:
  Disturbance refers to the lack of contextual fit and coherence in a landscape. A high density of disturbance means a low coherence in the landscape.
- Indicators of stewardship:
  Stewardship refers to whether the environment looks managed. A sense of care and order should be present in the landscape reflecting active and careful management.
- Indicators of imeagability:
  Imageability is related to theories of spirit of place (Bell, 1999) and genius loci (Lynch, 1960). It reflects the ability of a landscape to create a strong visual image in the observer, so that the experience will be made distinguishable and memorable. This factor can be seen as the assemblage and totality of a landscape and its elements.
- Indicators of visual scale:
  This indicator uses the Appleton's prospect-refuge theory to perceive human preferences in the landscape. The visual scale describes landscape units in relation to their size, shape and diversity together with the degree of openness in the landscape.
- Indicators of naturalness:
  This indicators links directly to the biophilia hypothesis of Wilson (1984), which states that people naturally need to connect with nature. Here the natural state of the environment will be assessed.
- Indicators of historicity:
  Historical continuity and historical richness are presented in this indicator. Historical continuity focusses on the visual presence of different time layers in the landscape, while historical richness focuses on the amount and diversity of cultural elements.
- Indicators of ephemera:
  Ephemera refer to changes in the landscape that give a 'being away' feeling (Kaplan & Kaplan, 1989). For example changes related to the season or weather.

Attributes framework by Coeterier (1996)

This study was about dominant attributes in the perception and evaluation of the Dutch landscape. Even though this study is performed in the Netherlands, the attributes used for this study might be worth considering when making a framework for human landscape perception within the UK. The investigations were carried out amongst the inhabitants of different regions. Despite the great physical differences between the regions, there was much agreement on certain attributes:

- Unity:
  Unity refers to the landscape as a whole, which means that parts fit together and functions as a whole. Two things are important to unity: Are all the appropriate elements present? (Completeness); Are there no inappropriate or non-fitting elements? (wholeness). Absence of appropriate elements (incompleteness) is not valued negatively but the presence of non-fitting elements is. Rabinowitz and Coughlin (1971) found that preferences for landscapes are determined by the character of the whole, whereas disapproval is focussed on individual elements. For example, when a landscape adopts elements of another landscape type, it is

both corrupted and levelled. Elements that fit in a rural landscape do not fit in another type of landscape and vice versa. Therefore the character of the whole is more important than the character of the elements.

- Use:
  Use and unity are predominant in landscape perception and evaluation by inhabitants. Their perception has a social and not spatial basis; social forces determine the spatial expression of functions. On the basis of use, people distinguish different types of landscapes in the Netherlands: natural landscapes (forests, heaths, marshes), old rural landscapes (where no land consolidation has been carried out), modern rural landscapes, polder landscapes, urban landscapes and technocratic landscapes (industrial areas, infrastructural work). Each type has its qualities and may be valued positively, depending on the form and scape of its attributes. In the interviews people mentioned the importance of private use and the intensity of use.
- Naturalness:
  Naturalness is perceived differently by different types of people. Inhabitants give three criteria for naturalness. First is whether the environment gives the impression of having grown naturally and spontaneously. The second criterion refers to the way a landscape is designed. Natural is not straight lines and blocks, but unstructured mostly with natural materials such as wood and bricks. The last criterion states that flora and fauna determine the perception of naturalness.
- Linear time development:
  Development of the landscape in time is expressed by its historical character, the picture it presents of man's activities in different periods or eras. It is dynamic; showing how the landscape is developing in time, where and how it is renewing itself, adapting to modern times. The historical character of the landscape is a very important aspect of this attribute. It mainly manifests itself in cultural elements such as churches, castles, old farms, and old road tracks, but may be present in natural elements as well like brooks and old trees. Historicity is generally valued positively. Other attributes play also a role in the appreciation of historic elements: 1. Unity; does it still fit within its environment? 2. Use; does it still fulfil its function, or a function? 3. Management. When a historical element gets a new function, it is valued negatively if the signs of that function are too obvious, such as large parking lots, larger windows, a new façade, advertising board, ort the visible storage of goods. Also historical elements which are managed are valued higher than elements which are not. Also relicts are often valued negatively by inhabitants because they lack unity and use. They do not form a part of a larger whole any longer; they are misfits, disconnected from their environments, detached from the stream of culture. As long as elements have a function, they are valued higher than relics which do not have a function.
- Cyclical development
  Historically, the seasons have influenced our lives much stronger than nowadays. The seasons determine the flow of daily life less and less; they mainly influence recreational activities.
- Spaciousness
  All attributes have spatial aspects. Perception is influenced by factors such as: 1. The size and form of the open space, 2. The height of elements, 3. Texture and soil surface, 4. The

arrangement and patterning of the elements, their composition. These factors are used unconsciously by the mind resulting in one impression of spaciousness.

- Management:
  When it comes to management, too much and too little maintenance are both valued negatively; an 'optimization principle' is people's appreciation. Too much relates to a feeling of artificialness, while too little maintenance has to do with litter and abandonment.
- Sensory aspects
  This has a lot to do with identity. General information which derives from sensory perception is for example about the season. Specific information is commonly known by inhabitants who are able to identify their landscape by its characteristic set of sensory qualities.

2.5 Historic perceptions

- People have perceived the landscape differently over time, and the challenge lies within the management of a landscape to deal with these different perceptions;
- We assume that future generations like the same landscapes as we do, even though we know that landscape tastes change dramatically in time.

A major fraction of landscape studies has been the study of historic landscape, about the current landscape being the sum of continuous process of removal and construction of different landscapes over millennia, usually to equip the land to provide different functions. This historical palimpsest view has been very powerful in the UK foracademics such as historical geographers, historians and archaeologists. This view neglects the quality of a landscape according to its biodiversity, its productivity, the variety of meanings it holds to different people and aesthetic harmony. This paradigm is so powerful that when UNESCO documents refer to 'cultural landscape' in will be annotated into English as 'historic landscape'. This paradigm focusses too much on historic landscape, as if no other cultural value exists. The main problem conservationist's face is of course which time will be the base time for the intervention.

It is certain that landscapes develop over time, and attempts to produce landscapes of the past always is subject to major problems. It is most of the time difficult to choose which time period will be the reference. This problem occurs in building restoration, likewise it occurs in landscape management. When you return the landscapes condition into a certain period in time, the rest which is involved with the landscape has changed anyway. Think of the smell, the sound, the sight and the attitude towards the landscape; they are all different from the original setting. Moreover how can we replicate or empathise with previous mindsets? People have perceived the landscape differently over time, and the difficulty lies within the management of a landscape to deal with these different perceptions.

Management is often related to conservation, which means we have to preserve things and views for future generations. This does make sense, especially when it comes to educational importance. However, in managing our landscape, we make the assumption that future generations like the same landscapes that we do and that values of landscape quality are largely immutable. There is much evidence however, as seen in the previous chapters, that landscape tastes and

preferences change quite dramatically in short periods of time. This shifting pattern of preference has generational patterns: it seems that every 40 years there is a move to a new set of landscape preferences.

Next to the change in preference during the years, a change in preference within a year is common due to seasonal variation. A lot of landscapes such as gardens, fields and lakes are abandoned most of the year, and will become significant for one season. Furthermore we should not forget the other influential factors such as weather conditions, night and day, and dark or light. These factors are capable of transforming every landscape into an extraordinarily deep experience (Howard, 2011). For example mist can convert a muddy parking lot into a mysterious, interesting place, while the sun will make it look just like a common parking lot. It is important to realize these effects before deciding a technique of recording or mapping landscape quality.

Historians and architects may regard age as the most significant feature of any building, and many get into the habit of putting a date of construction onto the building or landscape. However other people may regard its size, functionality and most especially its inhabitants as important features. It is well to bear in mind the small difference between the words 'historical' and 'historic'. Anything old is historical; although the word 'old' is subjective, the word 'historical' is not particularly value laden. However, some historical things become labelled as historic by historians, which gives the historic object a value (Howard, 2011).

2.5.1 Why do people like history?

- People like the past because of familiarity, readmiration and validation, identity, guidance, enrichment and escape.

As far as we know, all societies and cultures have viewed the past as fundamental, often worshipping or at least venerating it. They have exhibited an interest in their past and have attached a special importance to it. For all these groups, the past as being mythical or real, had a nostalgic quality, both transcendent and emotional. Also the past has had a more functional character. It was seen as the source of authority, wisdom, values and morality. It served to guide, inform, and instruct those in the present. Each culture had individuals who were the keepers and tellers of the past. Initially they were seen as the wise men and the poets. This fascination with the past has continued to be important and functional over time and still is today. At first the educational and didactic uses of the past were the product of an oral tradition, but it was replaced by a written one. Over time, these written records replaced memory as the repository of the past, with societies becoming more literate (Rose, 2010).

> *'Without habit and the memory of past experience, no sight or sound would mean anything; we can perceive only what we are accustomed to'*
>
> *- Lowenthal (1985)*

Lowenthal (1985) conceptualizes six major benefits that are related with people's attraction to the past:

1. *Familiarity.* Knowledge of the past assists people in understanding the present. 'Without habit and the memory of past experience, no sight or sound would mean anything; we can perceive only what we are accustomed to'. From a psychological point of view, we give meaning to sensations which is called perception. I would argue that Lowenthal's mentioning

of that we only perceive what we are accustomed to, is a bit incomplete. For example innate emotional reactions: we do not have to have experienced these responses before, in order to perceive it.

2. *Readmiration and validation.* The past offers a standard for judgement. 'Historical precedent legitimates what exists today; we justify current practice by referring to immutable tradition'.
3. *Identity.* The past is essential to both personal and group identities. 'Ability to recall and identify with our past gives existence meaning, purpose and value'.
4. *Guidance.* The past can be also beneficial because of the lessons it teaches. We have to know the events of the past in order to make a better future.
5. *Enrichment.* The past is capable of enriching the present. An existing past history provides present individuals and groups with a family and national history.
6. *Escape.* The past offers one way of escaping the present. In this regard, the past possesses certain benefits that the present lacks. 'In yesterday we find what we miss today. And yesterday is a time for which we have no responsibility and when no one can answer back'.

According to Lowenthal, the above benefits have no sharp boundaries. Also some benefits might conflict with each other and the above list is not exhaustive (Lowenthal, 1985 in Chronis, 2005).

Artefacts, or remnants from the past fascinate us. They do however not tell something about the past in themselves. This is because the past does not exist according to Johnson (2002). We cannot touch the past, see it or feel it; it is utterly dead and gone. Artefacts actually belong to the present as they exist in the here and now.

> *'In yesterday we find what we miss today. And yesterday is a time for which we have no responsibility and when no one can answer back'*
>
> *- Lowenthal (1985)*

2.5.2 Framework historic perception

Lay people's appreciation of historic buildings (Coeterier, 2002)

- Lay people's value of historic elements is different from what experts value.

A study has been carried out about which criteria lay people use for the evaluation of historic buildings. Although this study focusses on buildings, a lot of the criteria may be of use for understanding the perception of historic elements within the landscape and therefore the historic landscape itself. People were interviewed in the south of the Netherlands, and four primary criteria for the appreciation of historic buildings were mentioned: form, information or knowledge, use or function and familiarity. These criteria are divided into primary criteria, secondary criteria and tertiary criteria. For an overview see figure 9.

Primary criteria	Secondary criteria	Tertiary criteria
Form	Beauty	Material
		Colour
		Proportions
	Completeness	Presence of relevant parts
		Contextual fit
		No deviating details
	Uniqueness	Individual expression
		Authenticity
	Good workmanship	Artistry
		Craftsmanship
Information	Identity	
	Background story	Personal value
		Communal value
Use or function	Function follows form	
	Maintenance	Class of the object
Emotional ties, familiarity		

Figure 9: Criteria for the evaluation of historic buildings (Coeterier, 2002)

When it comes to beauty, the tertiary criteria are material, colour and proportion. Natural materials such as wood or brick are generally appreciated. They were experienced as living, warm, intimate, cosy and attractive; while modern materials like glass, steel and concrete were often called cold, dead, repellent or barren. Some applied to modern colours as well. As to proportion, human scale was found important. Completeness is the second secondary criteria used in this framework. This is seen at two levels: the objects itself, as an assemblage of parts and the object within its environment, as an ensemble. Both are needed for a unite and coherent whole. For lay people, an historic building is complete if it still has its relevant parts and much of its original surroundings. Therefore strong deviating parts will lower the appreciation. Uniqueness is about the individual expression and authenticity of an historic building. For example in France there are many castles along the river Loire, but they all have this property of individual expression and specialty. Also the building should be authentic because imitations are generally rejected. Good workmanship has two tertiary criteria: artistry and craftsmanship. Artistry relates to the good expression of an idea. Craftsmanship is expressed by the artful use of materials and ornaments.

The second primary criteria is about information. There are two kinds of information, leading to two secondary criteria: information about the identity of a building, to which class of objects it belongs and information about the background of a building, its personal history, and the story it has to tell. The former kind of information was more important. If people did not know the nature of a building, they had difficulties in giving a mark for its appreciation. People mentioned that information does not enhance the beauty of a building, but it gives it more meaning, makes it more interesting. Information does also determine the communal value of an object. Remnants of an important happening in history strengthen the identity of the town as a whole. Information gives a building a place in history and in our common cultural heritage. However, for most of the respondents communal value did not play an important role in their appreciation. If they find a building ugly, they

would be happy to see it demolished, even if it was the last specimen of its kind. Another interesting outcome was that information and knowledge were more important to people with already a high level of education. They valued information higher and were more inclined to preserve rare buildings even when they are ugly.

Use is the third primary criterion. When a building is not used as it was originally intended, the respondents stressed the importance of the original form being conserved. They stressed that function must follow form, contrary to the adage in modern architecture where form must follow function. If adaptations are to be made they must be executed in such a way that the original form either preserved or can be easily restored. Besides the preservation of form, another secondary criterion is used: maintenance. Ruins for example should be protected against further decline, but do not need the same level of care in comparison with a castle. Use is also very connected with the character of a building or a place. An object's identity, the class to which it belongs, is important in people's evaluation of a new function.

Coeterier mentions that these criteria can be used for evaluating historic landscapes, but can only be partly based on them. He states that historic buildings are purely anthropogenic in character, while a landscape is formed by abiotic, biotic and anthropogenic factors.

Lay people and experts have similarities and differences. The four criteria important for lay people are not so very different from the ones used by experts. However, to experts, the value of historic elements or patterns is based on their information value. They say, the more complete and rare, the higher the information value. For lay people, information is less important than form. The study also shows that lay people do not think 'the older the better'. This is shown by the indifference people have towards archaeological findings. People feel not connected to it and restoration is often found unpleasant because of the imitation, which is contrary to authenticity. Furthermore the concept of rarity is higher valued by experts than by lay people. They find authenticity more important as a broader concept. It may permit several style periods together. When it comes to maintenance, the situation is reversed. This is more important for lay people than for experts (Coeterier, 2002).

To revise this framework by Coeterier, a consideration has to be made about the distinction between the expert and the lay people. In his article, there seems to be a clear difference between lay people and experts. I would argue that this difference is not that black and white at all. Local farmers and inhabitants may seem lay people in the first place, but they probably know more about their landscape and buildings than the expert himself. The importance of locality should be stressed here, probably even more with historic landscapes than with historic buildings. A lot of locals actually are the expert, and these people are not necessarily the people who enjoyed education or knowledge about its context. Furthermore landscape can be seen as the setting is which buildings appear. Therefore the criteria used might be different for buildings and landscape, but also might be the same, as they are interwoven with each other.

Overview of used frameworks in historic landscapes in Renes, J. (1999)

Since the seventies a lot of studies were conducted about the valuation of landscapes in the Netherlands. Every research was different, but some criteria were used more often: age, coherence, rarity, distinctiveness and recognisability.

Age

Instinctively, something which is old seems to be valuable. However, no evidence is given about which age is valued higher or lower: a mill from the 18th century is not necessarily more valuable than a mill from the 19th century. Something which is old can be an element which is build 50 years ago and can still be highly valued.

Coherence

Almost all literature agrees that an object is more valuable when it occurs in coherence with other objects instead of being an isolated object within the landscape. We still have to define what coherence is. Coherence is difficult to operationalize, especially when you assume the holistic vision that everything is coherent with everything. To structure this concept, a separation can be made consisting of: coherence in natural conditions (for example a settlement near to a stream valley) and genetic coherence (primary: parcellation which belongs to a certain settlement pattern, secondary: a settlement established near an already existing road).

Rarity

Is something valuable because it is rare? This actually depends on the chosen reference. This can be the national landscape, but also the regional landscape of the chosen study area. A validation system has been made based on the rarity study of Rabinowitz (1981):

1. Locally of frequent occurrence within different landscape types across different provinces;
2. Locally of frequent occurrence within one landscape type across different provinces;
3. Scarce everywhere, occurring in different landscape types and different provinces;
4. Scarce everywhere and limited to one landscape type in different provinces;
5. Of frequent occurrence in different landscape types, but in one province;
6. Of frequent occurrence locally in one landscape type and one province;
7. Scarce everywhere, occurring in one landscape type and different provinces;
8. Scarce everywhere, occurring in one landscape type and one province.

Distinctiveness

This factor may overlap a bit with the previous factor as a rare phenomenon will not be seen as distinctive. A better definition of the factor is: distinctiveness of the landscape genesis. This is the rate in which an element or pattern is an geographical expression of an important landscape development in the past.

Recognisability

This factor can be explained by the recognisability of historic characteristics and developments. There can be two developments. First, information can be added to an element without erasing traces from the past. Second, information can be added and erasing traces from the past. In the former, information is added, while in the latter information is deleted. Functionality can also be seen as a part of recognisability.

Historic meaning

Even though this factor is not used very often, it does give more attention to perception. It is focussed on the reference on historic moments in the past which are important for national cultural

history. For example happenings which were of importance on national level, such as battles or properties of important people. Also symbolic landscapes carry a certain meaning. Thirdly, same elements can be seen as an example for further developments. These are highly valued, as they were the first in their kind.

2.6 Implemented policy frameworks

Next to the existing theories on landscape perception, we have to take notice of some frameworks which are applied in policy strategies. It is necessary to address these frameworks next to the academic theories, as both disciplines are concerned with human landscape perception using a different perspective.

2.6.1 Historic geographical valuation

- Selection in spatial planning is needed because developments within society add constantly new elements to the landscape and fades out old elements and because we cannot 'fix' the landscape as it is dynamic;
- We have to keep in mind who is making the valuation.

The English poet John Betjeman once wrote a guide for parish churches. The criterion he used to insert the right church into the guide was: 'a church contains at least one object that because of aesthetical reasons is worth a bike ride of 12 miles against the wind'. This anecdote proves that choices have to be made; not only in tourist guides, but also in spatial planning (Renes, 1999). Selection is needed simply because not everything can be maintained. There are two reason for that according to Renes (1999). First, developments within society add constantly new elements to the landscape and fades out old elements. This can be done by passive abandonment or active actions such as demolition or derogation. Secondly there is the tendency not to fix the landscape because it is dynamic. To be able to play a role in the assessments, it is necessary to arrange an order in inventoried objects. Therefore the historic landscape needs to be valued, depending on the aim of the valuation system.

Of course using a valuation system has its advantages and disadvantages. It can make planologic decisions much easier and it can systemize regional and national planning opportunities concerning historic landscapes. Furthermore a framework can simplify and quantify the researchers own valuation. We have to consider that every research has to deal with decisions, so in that sense a researcher always values aspects in his/her research. On the other hand, landscape valuation has downsides. The most important thing is that every order leads to winners and losers. What might happen is that objects in a low valued area will be left alone, while others which are considered valuable receive all the attention and funding's.

Furthermore there is the problem of differences in perception between experts and laymen. Because of variances in knowledge and experience, people will perceive the landscape differently from one another. People who for example live in the High Weald, but do not have an expert knowledge about the area, they will perceive the landscape differently from a person who knows much about the area, but does not have the intense connection with the landscape as the person

who lives there. Therefore we need to keep in mind who is making the valuation. This division is however not black and white. A farmer who lived in the High Weald his entire life, but is also involved in a historic or nature community of the area, can call himself more of an expert than people who have only studied the area from far away and have not really been involved with the landscape. Also people might value the same landscape or same elements for different reasons: we have to try and find the common values.

2.6.2 Historic Landscape Characterisation UK

- Characterisation of landscape is a matter of interpretation and perception;
- When it comes to planning, decisions have to be made, so ignoring its importance by not valuing historic landscapes seems impractical;
- Landscape is perceived by people, but as perception is influenced by personal feelings and opinions, we cannot be objective.

The most common technique used in the UK, is that of Historic Landscape Characterisation. This method is trialled in Cornwall and has been adopted by various regions all over the UK (Howard, 2011). This method is transformed into 4 'waves' in which the method is adapted and improved. It attempts to map landscapes according to their historic, archaeological type. Even though the HLC is mainly focussed on providing information, it gives a good start for mapping the landscape in a successful way.

There is no overarching way of doing the assessment, so all projects differ a bit. However, al projects have used more or less the same guiding principles. The guiding principles set up by the first Cornwall project have not had major changes since, which makes it useful to discuss them a bit further. The first principle is to characterise the whole landscape, in the present day. This means that the landscape character should be described in its time-depth. That is to say change and earlier landscapes exist in the present landscape. This principle is also used in the main guiding principles for the HLC (Historic Landscape Characterisation). The second guiding principle within the Cornwall project is to be as far as possible objective, with areas of subjectivity made transparent. The third principle is that no part of the landscape will be considered of greater in value than another. Another principle is that the dominant historic landscape character should be identified which is done by generalisation (Aldred & Fairclough, 2003). These are all principles of importance to enable understanding about the focus of the project. Now we can compare them with the main guiding principles of the HLC. The first principle is already mentioned. The second principle is that HLC-based research and understanding are concerned with area, not point data. The third principle focusses on all aspects of the landscape which all are treated as part of the landscape character. The forth principle states that semi-natural and living features are as much of part of landscape character as archaeological features. Here the assumption is made that bio-diversity is part of the human landscape and is therefore a cultural phenomenon. The fifth principle states that characterisation of landscape is a matter of interpretation not record, and perception instead of facts. Landscape should be understood as an idea, not purely as an objective thing. The sixth principle focusses on people's view: it is important to consider collective and public perceptions of landscape alongside more expert views (Clark et. al. 2004). The last four principles are concerned with management and accessibility

of the maps and information, which are of no great importance to this story in relation to landscape perception.

Now that the HLC method is shortly explained it is useful to have a closer look at the pros and cons of this particular method. Even though there is no single national approach to carrying out HLC surveys (Clark et. al. 2004), we could treat the different methods alike, as they have the same basic focus. Looking at the general guiding principles of the Cornwall project, it is noticeable that they do not mention landscape perception at all. The main guiding principles of the HLC do mention landscape perception. The second guiding principle in relation to the Cornwall project is to be as objective as possible. This is a good aim, however reaching objectivity is within landscape assessments is scarcely possible. As the guiding principles of the HLC already mentioned, characterisation of landscape is a matter of interpretation and perception. Therefore the aim of trying to be as objective as possible and try and validate information as such is a good aim, even though it is unreachable. The third principle of the Cornwall project states that no part of the landscape will be considered of greater in value than another. This is quite an intriguing statement, as what can be the function of HLC rather than being informative? As for planning, decisions have to be made when it comes to landscapes, after all, it seems impossible to preserve the entire historic landscape. One of the guiding principles of the HLC also states that: 'Landscape is and always has been dynamic: management of change, not preservation is the aim'. This is totally agreeable, but how do you plan your environment if you do not value a certain landscape more than the other? Would you not rather put houses on a big grassland with less impact on the historical environment than placing them in the middle of, for example, an ancient woodland? When it comes to planning, decisions have to be made, so ignoring its importance by not valuing historic landscapes seems impractical.

Pointed out this problem, we can turn back again to the concept of objectivity. The Oxford dictionary (Oxford, 2013b) defines the word 'objective' as: not influenced by personal feelings or opinions in considering and representing facts. On opposite is the 'subjective': dependent on the mind for existence; actual. Science mostly focusses on trying to reach objectivity as much as possible. However in the field of geography, we have to deal with the landscape: 'The landscape is part of the land, as perceived by local people or visitors, which evolves through time as a result of being acted upon by natural forces and human beings' (European Landscape Convention, 2000). So actually, putting all these definitions together, landscape is perceived by people, but as perception is influenced by personal feelings and opinions, we cannot be objective. Of course this outcome is a bit oversimplified, but it surely states that it would be difficult to achieve objectivity within the field of surveying landscapes.

Another principle used for the Cornwall project is that the dominant historic landscape should be identified through generalisation. Generalisation is a good way of trying to increase the accessibility and interpretation of information. It can give a sight of broader patterns and strategic overview. The pitfall of generalisation can be that smaller interesting landscapes are missing out, or do not fit within the broader view.

Now the principles of the Cornwall project have been discussed, we need to take a look at the guiding principles of the HLC project itself. The principle concerned with area data states that no point data is used. In this case the decision is made not to highlight individual elements, but rather overall and general characters of the landscape. As long as this way of mapping is consistent, there is nothing to worry about, but point data can also be very interesting to use. Furthermore the third

principle states that all aspects of the landscape should be treated as part of the landscape character. This totally makes sense, as the project aims to be as objective as possible. A way of achieving this is to involve the entire landscape, and not be selective on which landscapes seem important to the expert or not. The forth principle about the equal importance of archaeology and landscape features makes the assumption that landscape is a cultural phenomenon. Things like biodiversity exist in a human landscape and can be enhanced by human interaction. The fifth principle states that landscape characterisation is a matter of interpretation and perception. Interesting is that there is no evidence of this principle to be integrated in the mapping process. The sixth principle about people's view mentions that it is important to take people's perceptions of the landscape into consideration. Also on this point no evidence is found on actions being taken.

It must be said that this method seems very useful to map a landscape in order to get an idea of the time-depth of the landscape. Yet, when it comes to mapping human perceptions of the historic landscape, the method seems insufficient. The method is highly focussed on the meaning and value of particular landscapes to particular academic disciplines, instead of focussing what the meaning of the landscape is given by local people or visiting tourists. This means that the different landscape types on the map may not relate to the experience or understanding of local people.

2.6.3 BelevingsGIS the Netherlands

- An assumption underlying BelevingsGIS is that the way people respond to the physical environment is partly evolutionary based, resulting in commonalities amongst subjects. Therefore, the landscape preferences of different individuals show similarities.

In 1999 Alterra research institute (Wageningen, the Netherlands) launched a project called BelevingsGIS (in Dutch, *beleving* means 'experience'). BelevingsGIS is a mathematical model that predicts the average beauty preference for landscape on the basis of physical properties of the landscape as represented in GIS datasets. An assumption underlying BelevingsGIS is that the way people respond to the physical environment is partly evolutionary based, resulting in commonalities amongst subjects. Therefore, the landscape preferences of different individuals show similarities. Individual and cultural factors influence the experience of landscape too, nevertheless, physical properties of the landscape can be used to predict landscape preferences. A literature study identified eight theoretical indicators that can be used to predict the average landscape preference. These indicators are:

- Abundance of vegetation
- Degree of naturalness
- Degree of variation
- Abundance of water
- Abundance of relief
- Degree of landscape identity
- Degree of skyline disturbance
- Degree of noise pollution

After a validation study, the indicators were changed. The first three positive indicators (vegetation, naturalness and variation) were integrated into one new indicator called naturalness, because the three indicators correlated highly. Secondly, the indicator identity did not correlate with the stated

preferences. Therefore, this indicator was replaced by historical identity. Third, a new indicator was introduced: urbanity. To sum up the second version of BelevingsGIS these indicators were used (Roos-Klein Lankhorst, 2005):
Positive indicators;

Naturalness

In this indicator the assumption is made that more naturalness will increase its attractiveness. Naturalness is referred to as natural vegetation. The valuation goes as followed. The indicator naturalness is the surface area per grid cell (6,25 ha) of natural vegetation. Forest and linear vegetation are both important, as forest is highly valued by people, and linear vegetation contributes to variation. Eventually the following classification is used:
0 <0.1% nature and <50% grassland
1 0.1-5% nature in which <0.1% is nature and >50% is grassland
2 5-10% nature and <50% grassland, in which 0.1-5% nature and >50% grassland
3 10-50% nature
4 >50% nature

Relief

The following classification for relief is used:
0 Landfills
0 Flat
0 Dike
1 Mound
1 Curving
2 Sloping
3 Hilly
4 Highness
It must be stated here that this indicator and how it is classified is highly influenced by the Dutch perception of relief. In the Netherlands hills are very rare, and therefore also highly appreciated. To make this indicator applicable to the UK, adaptations have to be made.

Historical identity

In the Netherlands, the organisation *Monumentenzorg* (Monumental care) has data on monuments which are protected, in which also protected city and village view (*stads en dorpgezicht)* are included. The following categorization is used:
0 Grid cells with no city of village view and no monument
1 Grid cells within a range of 500m and 1 km from a city or village view
1 Grid cells which do not adjoin monuments, but lay within a range of 1 km
2 Grid cell within 500 meter of a city or village view
2 the eight grid cell adjoin to monuments
3 Grid cells which lie within 1 km of the grid cells adjoin to monuments and lie within 500 m of a city or village view.
3 Grid cells which directly adjoin grid cells with monuments en within 1 km of a city or village view.
4 Grid cells which are already protected due to the city or village views or monuments.

This indicator seems to be insufficient when measuring the landscape. It focusses mostly on already existing elements, such as monuments, and does not measure historic landscapes. Also there is no distinction made between visible and invisible archaeological artefacts.

Negative indicators;

Skyline disturbance

The disturbing elements which are used in this indicator are high rise buildings, pylons and wind turbines. The following classification is used to measure the disturbance value:

1 Grid cells within 2,5 km distance from a wind turbine
2 Grid cells within 1 and 2,5 km distance from high rise buildings or pylons.
3 Grid cells with 1 or more pylons within a distance of 1 km
4 Grid cells with more than 0.05 % high rise buildings within a distance of 1 km.

Urbanity

This is measured through a lot of available data about the Dutch landscape and where cities and industries are found. The categorization used is:

0 not urban
1 little urban
2 clear urban
3 urban
4 very urban

Noise pollution

The amount of noise pollution is measured by the RIVM (National Institute for Public Health and the Environment). This available date is used to label the amount of decibel:

0 <35db quiet
1 35-45 db little quiet
2 45-55 db noise
3 55-65 db much noise
4 >65 db very much noise

In the final experience map, all the numbers are assembled and the negative indicators will be deducted from positive indicators. These indicators explained 31% of the average stated landscape preferences. At first sight, this does not seem as a high percentage, taking into consideration that 69% is left unexplained. However, Jacobs (2006) states that this level of explanation is pretty high. At first 31% is more than nothing, which is the alternative as far as getting an image of the average landscape that cover the Netherlands is concerned. Furthermore, within social sciences, 31% is considered pretty good. BelevingsGIS can be used to make a spatial map indicating the average landscape preference and covering every part of the Netherlands. Such a map might provide policy makers insight in which landscapes are highly preferred and which are not. The map could also give some indications of where the existing landscape should be protected.

The downside of this method is that the outcomes of BelevingsGIS cannot be norms for rigorous policy measures. First, landscape experience is reduced to landscape attractiveness. Second, the model focuses on similarities across subjects which means that cultural and individual differences

are left out. Third, the GIS datasets used to calculate the predicted preferences are a reduction, since not all landscape features are represented in the database (Jacobs, 2006). Furthermore, this method is based on Dutch citizen surveys. Whether this method is applicable to the UK in current form is questionable; probably it is needed to test the method within the UK to be able to validate this method. Still, these indicators are based on international theories about landscape preferences, and might therefore still be useful to map perception preferences.

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Figure 2: http://www.ducksters.com/history/ancient_egyptian_hieroglyphics.php

Figure 3: Jessel, B & Tobias, K. (2002) Ökologisch orientiere Planung. Eine Einführung in Theorien, Daten und Methode Ulmer, Stuttgard, pp 470

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3. Reviewing policy documents concerning landscape perception

3. Reviewing policy documents concerning human perception

In this chapter a critical look is applied on national landscape policy documents, namely the Landscape Character Assessment Guidance for England and Scotland 2002 and the Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England. Improvements are suggested, and a new designation framework for the latter document is conveyed by implementing the usage of academic empirical and policy strategies together into a more coherent, reliable and valid structure.

3.1 Landscape Character Assessment

The Landscape Character Assessment Guidance for England and Scotland (Swanwick, 2002) is used by policy makers and practitioners in England and Scotland who need techniques to identify what gives a locality its own sense of place and makes it different from other areas, and which conditions should be set for any new development and change. The Landscape Character Assessment (LCA) is: 'The tool that is used to help us to understand, and articulate, the character of the landscape. It helps us identify the features that give a locality it's 'sense of place' and pinpoints what makes it different from neighbouring areas'. It is stated that the landscape 'results from the way that different components of our environment, both natural and cultural, interact together and are perceived by us. People's perceptions turn land into the concept of landscape'. Here they focus not only on visual perception, but also on 'how we hear, smell and feel our surroundings, and the feelings, memories or associations that they evoke'. The LCA acknowledges that people value the landscape for many different reasons of which not all relate to aesthetics and beauty, such as for wildlife, history, sociability and community. It is also recognized that these values play an important role in people's day-to-day lives, and can contribute to a sense of identity, well-being, enjoyment and inspiration (Swanwick, 2002).

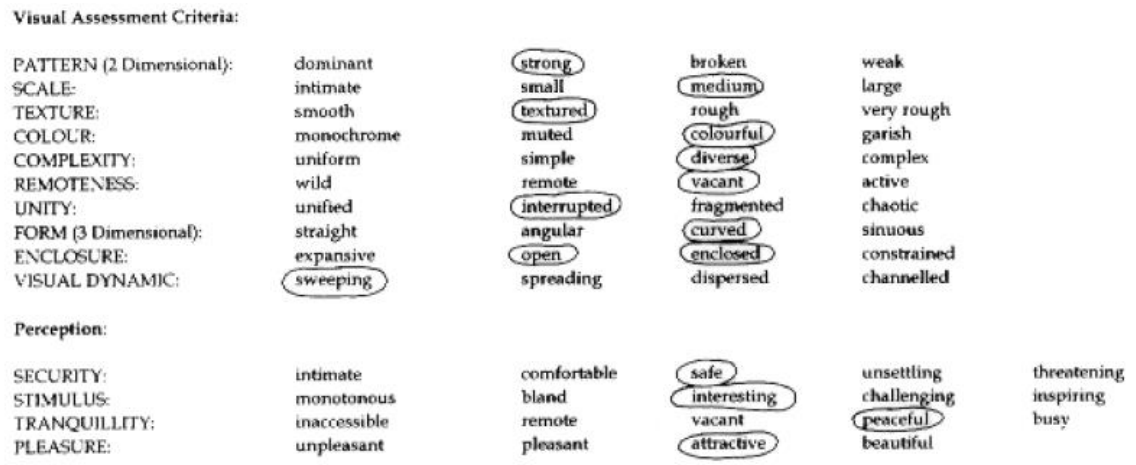
The LCA is divided into several main steps. The first stage of the assessment is about characterisation which is separated in 'practical steps involved in initiating a study, identifying an area of distinctive character, classifying and mapping them and describing their character'. Step 1 is defining the scope. This is about defining the purpose of the LCA and determines the scale and level of detail of the assessment. Step 2 is a desk study. This involves a review of relevant information to assist in the identification of areas of common character. In step 3 a field survey will be held, which is the first step considering perception: 'Field data is collected in a rigorous way to test and refine the draft landscape character types/ areas, to inform written descriptions of their character, to identify aesthetic and perceptual qualities which are unlikely to be evident from desk information, and to identify the current condition of landscape elements'. Step 4 is about classifying and describing the landscape character. The second and last stage is called 'making judgements'. The first stage is supposed to be an 'objective process, while the second stage involves an element of subjectivity which can be clarified by using criteria agreed beforehand'. Step 5 of the second stage is called 'deciding the approach to judgements', which is mainly about being able to make the judgements that will be needed to meet the objectives of the assessment. It states: 'Decisions will be needed in the role to be played by the stakeholders. Sometimes, especially if judgements are needed about landscape value, it may be necessary to look for evidence about how others, such as artists and

writers for example, have perceived the area'. The 6th and last step is called 'making judgements'. The main approaches to make judgements are landscape strategies, landscape guidelines, attaching status to landscapes, and landscape capacity.

3.1.1 Field survey

For a full understanding on the envisage of the Landscape Character Assessment I would like to refer to the document itself (Swanwick, 2002). This is because the aim of this report is to have a critical look on the perceptual and aesthetic involvement in the LCA, and not to give an overview of the method itself. Therefore we go directly to step 3 of the assessment, as here perception is first mentioned.

The introduction of this chapter states that a 'field survey provides the important ground level view that shows how the landscape is seen by people. It can also identify key elements or features that are not apparent from the desk study and it can help to record aesthetic and perceptual qualities of the area'. During the field survey, a route should be planned and each point should be publicly accessible and be firmly within the area in question. These points will be assessed by preferably one pair of professionals. The assessment will be done by a field survey sheet which includes a checklist of aesthetic and perceptual factors in order to be able to identify aesthetic and perceptual qualities of the landscape. Figure 10 gives an example of a field survey sheet displaying the part concerning perception. Here a separation is made between visual assessment criteria and perception criteria.



Visual Assessment Criteria:

PATTERN (2 Dimensional):	dominant	strong	broken	weak	
SCALE:	intimate	small	medium	large	
TEXTURE:	smooth	textured	rough	very rough	
COLOUR:	monochrome	muted	colourful	garish	
COMPLEXITY:	uniform	simple	diverse	complex	
REMOTENESS:	wild	remote	vacant	active	
UNITY:	unified	interrupted	fragmented	chaotic	
FORM (3 Dimensional):	straight	angular	curved	sinuous	
ENCLOSURE:	expansive	open	enclosed	constrained	
VISUAL DYNAMIC:	sweeping	spreading	dispersed	channelled	

Perception:

SECURITY:	intimate	comfortable	safe	unsettling	threatening
STIMULUS:	monotonous	bland	interesting	challenging	inspiring
TRANQUILLITY:	inaccessible	remote	vacant	peaceful	busy
PLEASURE:	unpleasant	pleasant	attractive	beautiful	

Figure 10: Example field survey sheet (ERM 2001)

The LCA states that survey methods such as checklists can be made out of elements which can be woven into factual, objective, written descriptions. However, also experiential aspects of the landscape covering aesthetic and perceptual dimensions should be given attention according to the LCA. Aesthetic aspects of the landscape character can 'still be recorded in a rigorous and systematic, in not wholly objective or value-free, way. In figure 11 the aesthetic aspects of landscape character are: scale, enclosure, diversity, texture, form, line, colour, balance, movement and pattern. In figure 12 some of these aspects are further explained originating from the Landscape Character Assessment.

Box 5.1: Aesthetic aspects of landscape character

SCALE	Intimate	Small	Large	Vast
ENCLOSURE	Tight	Enclosed	Open	Exposed
DIVERSITY	Uniform	Simple	Diverse	Complex
TEXTURE	Smooth	Textured	Rough	Very rough
FORM	Vertical	Sloping	Rolling	Horizontal
LINE	Straight	Angular	Curved	Sinuous
COLOUR	Monochrome	Muted	Colourful	Garish
BALANCE	Harmonious	Balanced	Discordant	Chaotic
MOVEMENT	Dead	Still	Calm	Busy
PATTERN	Random	Organised	Regular	Formal

Figure 11: Aesthetic aspects of landscape character (Swanwick, 2002)

Box 5.2: Some of the aesthetic factors in Landscape Character Assessments

Balance and Proportion

The relative quantities of different elements within the view affect balance and proportion. Criteria such as a 1/3 to 2/3 relationship (rule of thirds) can be used to assess how well balanced the landscape is in aesthetic terms. Temporal effects should be considered. Proportions may change with the seasonal addition or loss of elements.

Scale

Here the overall scale of the landscape must be assessed once the factors that define it have been established. These include the degree of enclosure by landform or woodland and the main positions from which the landscape is viewed - scale increases with elevation and distance. Scale is closely related to balance, proportion and enclosure.

Enclosure

Where elements are arranged so that they enclose space, this has an effect on the overall composition so that the space and mass become as one. It also has a great effect on scale due to the interaction of the height of the enclosing elements and the distance between them.

Texture

This varies according to scale, but can be defined in relative terms as coarse, intermediate or fine. Texture is determined by crops, tree cover, size of trees, species, size of fields, etc. It is an important contributor to design unity and diversity, susceptible to change by addition or loss of elements.

Colour

This refers to the dominant colours of fields, woodlands, the built environment and other landscape elements. It includes any notable seasonal effects due to farming activity and seasonal change.

Diversity

This needs to be assessed in two ways. First, within the boundaries of the landscape type the minor variations of the landscape should be assessed to determine overall how uniform or diverse the landscape is. Second, the diversity of a typical composition should be evaluated. Additionally, trends for change should be borne in mind, that is whether the degree of diversity is increasing or decreasing.

Unity

The repetition of similar elements, balance and proportion, scale and enclosure, all contribute to unity. The degree to which contrasting elements disrupt a composition depends also on the context. For example a single quarry in the midst of an otherwise unified landscape pattern may cause a high degree of discontinuity.

Form

This term describes the shapes of fields, woods, of linear features, of landform. e.g. rectangular, curvilinear, rounded, flat, etc. It is a very important factor in defining ancient or planned landscapes. We pick out forms and shapes very quickly, often on slight evidence.

Source: Based on Forest Authority England (1992) Forest Authority Guidelines on landscape assessment for Indicative Forestry Strategies. Unpublished draft, as in CCP 423, Countryside Commission.

Figure 12: Aesthetic factors (Swanwick, 2002)

The list of aesthetic aspects is said not to be comprehensive. The LCA document makes a separation between aesthetic aspects and perceptual aspects. Aspects of perception are said to be more subjective and 'responses to them might be more personal and coloured by the experience of the individual. Such factors include wildness, sense of security, the quality of light and perceptions of beauty or scenic attractiveness'. Also perceptions by other senses are mentioned such as noisiness, tranquillity and exposure to the elements. The LCA notes that that even in these areas of perception, an element of objectivity can inform such judgements. Here the example of remoteness is used, which is seen as an important dimension of wildness, and could be assessed by measurement of accessibility and absence of settlement. Even though the perceptions are now only based on expert knowledge, the LCA acknowledges that stakeholders will often have special knowledge about an area which will mean that their perceptions are influenced by particular associations which a landscape may have.

Next to filling in the survey, the two professionals need to make photographs of each survey point. The aim should be 'to record the variations in character, not just the most scenic views, and to create a record of typical aspects of landscape character in an area'.

3.1.2 Review field survey

- A sense of place as such does not exist, only someone's sense of place exists.

We have to keep in mind that this assessment method is designed to identify a localities sense of place and what makes it different from other areas. 'Sense of place' is also referred to as Genius Loci, which expresses the idea that places have a unique sense or identity. This concept is omnipresent in debates about globalization that affects the authentic sense of place, by imposing inauthentic or unreal meanings (Relph, 1976). It could be argued that the real identity of a place as such does not exist. The meanings that places have are ascribed by people, resulting in places that themselves do not have a set of meanings. A sense of place as such does not exist, only someone's sense of place exists (Jacobs, 2006; Selman, 2012). Taking this into consideration, the consensus amongst writers occurs that a sense of place is a combination of both the physical-environment and personal-social interaction in the place (Bradley et. al., 2009). As Tuan (2001) mentioned: 'Houses and streets do not of themselves create a sense of place, but if they are distinctive this perceptual quality would greatly help the inhabitants to develop the larger place consciousness'. Therefore Genius Loci can be useful when talking about a homogeneous community and how their experiences are of the place. This would also mean that the sense of place changes through time, as people and communities who perceive the place change over time. Therefore the usage of the term 'sense of place' is worthwhile, even though we have to consider the complexity of this particular expression.

To be able to put the Landscape Character Assessment into perspective, we have to analyse the paradigm in which this assessment is originated. During the 70s and 80s landscape perception and experience research expanded due to the growing awareness of degradation of the natural environment. The driving force behind this was the body of legislation in the USA and Great Britain that drew attention to the identification and management of scenic resources such as wild and scenic rivers, scenic and recreational trails, scenic highways, environmental impacts of major development projects including aesthetic impacts, coastal zone management and natural resource planning (Zube et al., 1982). The field of landscape perception developed its character through defining new

concepts such as scenic quality, landscape preferences and visual attractiveness. According to Karmanov (2009) most of the scholarly effort was used for empirical research to establish reliable and valid assessment methods for landscape perception. This research acquired knowledge from different research disciplines such as environmental psychology, landscape architecture and planning, cultural and human geography, and recreational studies. Landscape quality and scenic beauty have been investigated using a heterogeneous range of research methods from different perspectives. Zube, Sell and Taylor (1982) identified four paradigms in landscape perception research: the expert, the psychophysical, the cognitive and the experiential paradigm. The expert and psychophysical paradigm focus on applied research, meaning practical design and planning issues.

In the expert paradigm an expert evaluates a landscape, analysing it according to formal design criteria such as lines, textures, colours and shapes. This means that the physical features of a landscape are translated into formal parameters and relationships among them using indicators such as unity, variety and harmony. Then, predetermined guidelines order a number of dimensions like landscape quality and scenic beauty from high to low. This method of landscape assessment has been predominantly popular within the design tradition of landscape architecture (Karmanov, 2009).

In the psychophysical approach the perceived qualities of a landscape are derived from perceptual responses of different groups of respondents. These responses, for example judgements of preference or of scenic beauty, are systematically related to physical elements, sometimes resulting in mathematical outcomes. These physical elements or properties may vary from general attributes such as topography, water and the presence of vegetation to specific features such as number of trees per acre less than 20 inches in diameter or number of different species. The perceived qualities of a landscape are assessed by multiple observers whose ratings are usually combined into average responses. Statistical tests are applied to provide accurate and reliable measures of landscape qualities.

The cognitive paradigm research focusses on understanding the cognitive, emotional and behavioural responses of people to the landscape. The focus of the research is on the human aspect of human-landscape interaction. These studies tend to be only indirectly concerned with practical management and planning issues. Over the years studies have focussed on analysing the impact of a variety of factors on landscape perception and experience, as have been described in chapter 2. For example the theories by Kaplan & Kaplan (1989) and Appleton's (1984) prospect refuge theory are part of this paradigm. Furthermore, perceptual categories have been applied in a variety of studies such as visual openness or vegetation density. According to the cognitive approach, the process of landscape perception becomes a process of interpretation mediated by emotional responses to landscape, perceived meanings and physiological reactions.

Where the cognitive paradigm considers human responses to landscapes in terms of a complex stimulus-response relationship, although usually implicit, the experiential approach focuses in depth on the qualitative aspects of human-landscape interaction. These interactions are considered in terms of personal and group identity, emotional experiences and spiritual values. Such research methodologies are less concerned with the quantification of landscape and perceptual qualities, than with understanding the nature of the human-landscape relationship (Karmanov, 2009).

The method of field survey

- The objective approach assumes that landscape quality is inherent in the landscape, while the subjectivists approach assumes that landscape quality is in the eyes of the beholder;
- The subjectivist paradigm also judges beauty from the interpretation by the mind behind the eyes, instead of the objectivist paradigm who views beauty in front of one's eyes;
- The LCA is an example of the objective and expert-led approach;
- This approach has been increasingly rejected because of theoretical and methodological shortcomings.

By having a better understanding of the paradigm from which the Landscape Character Assessment is derived, we can analyse the method of the field survey a bit further. It is clear from the previously described approaches that step three of the LCA called field survey, is based on the expert approach. The aesthetic aspects of landscape character described in figure 11 evidently include indicators such as described above like lines, textures and colours. In figure 12 aesthetic factors and unity are also mentioned. Also the field survey is according to LCA preferably performed by two experts, which is also an indicator for the expert approach.

Using a method like this, the implicit assumption is made that a landscape's quality, scenic beauty or other experiential qualities reside in the landscape's formal and physical properties and can be determined through a competent inspection of landscape. This assumption is derived from the objective tradition within the philosophy of aesthetics (Lothian, 1999). Lothian (1999) explains that there are two approaches concerning the assessment of landscape quality: the objectivist and the subjectivist paradigm. The objective approach assumes that landscape quality is inherent in the landscape, while the subjectivists approach assumes that landscape quality is in the eyes of the beholder. The objectivist paradigm is the view that the quality of the landscape is an intrinsic attribute of the physical landscape, such as landform and water bodies. It views the beauty in the physical scene in front of one's eyes. The subjectivist paradigm considers landscape quality as solely a human construct, based on the interpretation of what is perceived through the memories, associations, imagination and symbolism it evokes. This paradigm also judges beauty from the interpretation by the mind behind the eyes, instead of the objectivist paradigm who views beauty in front of one's eyes. The subjectivist aims at an improved understanding of human responses to landscapes as a means of identifying the key factors which contribute to their quality (Lotian, 1999).

The Landscape Character Assessment can be seen as an example of the objectivist approach, mainly because the aesthetics are assessed by the physical (in the case of the LCA mainly visual) scene in front of the surveyor's eyes. It does not, as the subjectivist approach, interpret the landscape through perception influenced by memories, associations, imagination etc. Even though the LCA does use perceptual criteria, these are only assessed by a small couple of experts, which do not necessarily reflect the preferences of the general community. Because of this, the objectivist approach has been increasingly rejected. This lies according to Lothian (1999) mainly in its inherent subjectivity. The assumption it makes that quality is an inherent characteristic of the landscape means that this is assessed using a subjective approach. This means that the results lack replicability

(one expert perceives the landscape different from the other), are unlikely to be defensible in a judicial appeal (the method is statistically or scientifically scarcely valid), and will improbably reflect the preferences of the general community (Lothian, 1999). Also the method does not consider the individual, cultural and contextual factors which modify the perception of a landscape's formal and physical properties (Karmanov, 2009). The field survey is set up by an expert approach, and this approach has also been criticized for having inadequate precision, reliability, validity and sensitivity. These factors are general criteria traditionally applied to measurement systems of all kinds (Daniel & Vining, 1983 cited in Karmanov, 2009). This approach has not been adequately tested on these criteria. For example, judgements of landscape quality may vary significantly between different experts assessing the same landscape. Despite the theoretical and methodological shortcomings of the method, it offers some advantages. The method is not very costly to execute, which makes it due to the practicality an important and much applied method (Karmanov, 2009).

Perception vs. Aesthetics

- The aspects of perception are not more subjective than the aspects of aesthetics. They are both influenced by slightly the same aspects and are both originated from cognitive experience;
- Therefore perception and aesthetics should not be seen as two separate components, they should be seen as a whole.

In the Landscape Character Assessment, a division is made between aesthetic aspects of landscape character and perceptual aspects of landscape character. Philosophers make a distinction between the aesthetic object, the aesthetic recipient and the aesthetic experience. The aesthetic object is that which stimulates an experience in the recipient (Lothian, 1999). This experience might be originated from biological reasons using for example the prospect-refuge theory (see chapter 2), or from cultural reasons such as cultural identity and stability (Bourassa, 1988). Jorgensen (2011) states that people's aesthetic choices are embedded in complex webs of meaning derived from their self-hood, personal experience, sociocultural surroundings, and wider politic and economic contexts. As described in chapter 2, landscape experience is part of landscape perception. It is likely that perception and aesthetics are influenced by the same properties, as they can both be seen as part of an experience. The concept of aesthetics is very complex, mainly because it has to deal with subjective, intangible issues. There has been an overall shift in regarding beauty as inherent in the object (objectivist) to considering it as in the eyes of the beholder (subjectivist). As mentioned before the LCA is more focussed on the objectivist view, as is seen in the usage of aesthetic aspects of landscape character in the field survey. Nonetheless, there does not exist one view of aesthetics, only many (Lothian, 1999).

What we can derive from this information is that perception and aesthetics are in their base not very different from each other. Therefore I would like to raise questions on the separation which is made between aesthetic aspects and perceptual aspects. As is described by the LCA, aesthetic aspects of the landscape character can be recorded in a rigorous and systematic way, while the aspects of perception are said to be more subjective and 'responses to them might be more personal and coloured by the individual'. Based on the description of aesthetics above, I would like to argue that the aspects of perception are not more subjective than the aspects of aesthetics. They are both

influenced by slightly the same aspects and are both originated from cognitive experience. Perceptual aspects are described in the LCA as 'perceptions of beauty' and 'scenic attractiveness'. This is exactly the same as the aesthetic aspects, as aesthetics is 'a set of principles concerned with the nature and appreciation of beauty' (Oxford Dictionaries, 2013). Therefore perception and aesthetics should not be seen as two separate components, they should be seen as a whole. Landscape preference and perception studies as described in chapter 2 prove that the term beauty is successfully being integrated into the general concept of landscape experience.

Perceptual aspect

- In order to carry out a landscape character assessment using perceptual qualities, indicators based on academic research should be used and acknowledged by the LCA.

The factors of perception mentioned in the LCA are: sense of wildness, sense of security, the quality of light and perceptions of beauty or scenic attractiveness. Also noisiness and tranquillity are mentioned. No further aspects are stated, which seems, considering all the previously stated aspects in chapter 2, incomplete. For example, Ode et. al. (2008) distinguished the following indicators to describe landscape character: complexity, coherence, disturbance, stewardship, imeagability, visual scale, naturalness, historicity and ephemera. Coeterier (1996) described these indicators for landscape character: unity, use, naturalness, linear time development, cyclical development, spaciousness, management and sensory aspects. In chapter 2 the indicators by Ode et al. (2008) and Coeterier (1996) are described in further detail. Both frameworks seem to be highly compatible and show many similarities. In order to carry out a landscape character assessment using perceptual qualities, indicators based on academic research should be used and acknowledged by the LCA. This will give the LCA a better understanding of perception, but will also validate the method much further. The indicators now used is the LCA are simply incomplete, and omits a lot of important aspects considering landscape perception. It is another matter whether the survey is, after using these new indicators, carried out correctly. The survey will still remain of an objectivist and expert nature, which as described above does not seem to be the best way of capturing landscape perception.

3.1.3 Making judgements

The making judgement section in the Landscape Character Assessment is called 'a fast moving scene amongst practitioners'. The most important issue is deciding who is going to be involved in making the judgements. However, 'for practical reasons some assessments may still rely mainly on judgements made by professionals'. The involvement of stakeholders in this part of the process is found important if the judgements are to 'command wide support and are to be fully informed as possible'.

Situations in which a landscape is identified of requiring special attention, judgements 'must be based on the concept of landscape value'. This refers to the relative value or importance that stakeholders attach to different landscapes and their reasons for valuing them. The following criteria are used to set out the reasons for valuing the landscape:

- *Landscape quality*
  'The intactness of the landscape and the condition of features and elements'
- *Scenic quality*
  'The term that is used to describe landscapes which appeal primarily to the visual sense'
- *Rarity*
  'The presence of rare features and elements in the landscape, or the presence of a rare landscape character type'
- *Representativeness*
  'Whether the landscape contains a particular character, and/ or features and elements, which is felt by stakeholders to be worthy of representing'
- *Conservation interests*
  'The presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right.'
- *Wildness*
  'The presence of wild (or relatively wild) character in the landscape which makes a particular contribution to the sense of place'
- *Associations*
  'With particular people, artists, writers, or other media, or events in history'
- *Tranquillity*
  'A composite feature related to low levels of built developments, traffic, noise and artificial lightning'

These criteria can be used to identify valued landscapes that merit some form of designation or recognition. 'They can be used, either individually or in combination, to assist the definition of nationally important areas throughout England and Scotland', such as National Parks and Areas of Outstanding Natural Beauty.

3.1.4 Review making judgements

Some of the criteria used to value the landscape are also used as landscape character indicators for perceptual aspects such as tranquillity and wildness. As described above, making judgements is about the involvement of stakeholders, and therefore we should focus on the criteria setting out the reasons of stakeholders to value the landscape. However, it is not stated how to use these criteria in practice or what to do with these indicators in the first place. It is merely mentioned that they can be used to identify valued landscapes that merit some form of designation or recognition. Yet, in what way are the stakeholders involved? How can we derive the value that stakeholders assign to the landscape from these criteria? This does not seem to be explained in the LCA document.

Leaving these questions aside, a closer look at the reasons for valuing the landscape is necessary in order to validate the usage of these criteria. Here also assumptions are made, because we can only try to interpret the, somewhat limited, information provided by the LCA. Primarily the frameworks provided by Ode et. al. (2008) and Coeterier (1996) will be used to refer back to. Ode et. al. (2008) distinguished the following indicators to describe landscape character: complexity, coherence, disturbance, stewardship, imeagability, visual scale, naturalness, historicity and ephemera. Coeterier (1996) described these indicators for landscape character: unity, use,

naturalness, linear time development, cyclical development, spaciousness, management and sensory aspects.

The first criteria is called 'landscape quality', which is about 'the intactness of the landscape and the condition of features and elements'. This criterion is probably mainly concerned with the historicity of a place, the management and level of disturbance. Using the word 'intactness' refers back to whether the landscape is still the same as it was before, therefore referring to the history of the landscape. The condition of features and elements is about the level of maintenance of the features and elements of the landscape, but probably also about the level of disturbance sensible in the landscape. These criteria can be validated by frameworks used by Ode et. al. (2008) and Coeterier (1996) by breaking it down into different levels.

The second criteria is 'scenic quality', which is 'the term that is used to describe landscapes which appeal primarily to the visual sense'. Ode et. al. uses the term visual scale to describe landscape units to their shape, openness, etc. This seems to be compatible with the criteria of scenic quality, and can be used as a condition for the reason why people value the landscape.

The third criteria is 'rarity' which is about 'The presence of rare features and elements in the landscape, or the presence of a rare landscape character type'. Coeterier (2002) found out in his study about the difference between lay man and expert perception, that the concept of rarity is higher valued by experts than by lay people. They find authenticity more important as a broader concept (see chapter 2). Therefore it might be better to use another criterion instead, which is more appealing to stakeholders than to experts, for example authenticity or distinctiveness.

The fourth criteria, 'representativeness', is about 'whether the landscape contains a particular character, and/or features and elements, which is felt by stakeholders to be worthy of representing'. Without the description of the LCA explaining what is meant by representativeness, I would say that representativeness relates to the value of the landscape as it represents a certain type of landscape, and that is why stakeholders might like it. The LCA however explains it differently by stating that a landscape contains a particular character which is felt by stakeholders to be worthy of representing. This however does not relate to the rest of the criteria, as they explain why a landscape is valued by stakeholders, and this explanation does not. Therefore this criterion should be rephrased or taken out, as it might relate to distinctiveness mentioned in the third criteria.

The fifth criteria is called 'conservation interests' and is described as: 'the presence of features of particular wildlife, earth science or archaeological, historical and cultural interest can add to the value of a landscape as well as having value in their own right.' Interest in a certain element of the landscape does influence the way people perceive the landscape. Conservation interest however does not explain the reason why people value a certain landscape. Interest does, but conservation interest has a different meaning. People can still value landscape or elements within the landscape, without wanting it to be conserved. For example, a deer in a forest has a wildlife value, but for management reasons people do understand they sometimes have to be shot. Therefore I would like to suggest that changing the criteria 'conservation interest' into 'interest' would be a better option.

The sixth criteria, 'wildness' is about 'the presence of wild (or relatively wild) character in the landscape which makes a particular contribution to the sense of place'. This criterion links with the indicator used by Ode et. al. (2008) and Coeterier (1996), naturalness. It is difficult to understand what is meant by wildness, even with the description of the LCA. The LCA does mention that remoteness is an important dimension of wildness. It is however not apparent from existing studies

that people value remoteness. An extensive description is necessary of the term wildness in order to link it to the indicators used in other frameworks.

The seventh criteria is 'associations', 'with particular people, artists, writers, or other media, or events in history'. This criterion is about historicity. People can value a landscape because they associate it with a certain event. This can be indeed with a popular person such as artists, but also because you associate a landscape with a memory, such as being familiar with a certain type of landscape. However, these associations can also be of a negative kind. For example a place where you had a bad experience as a child, will probably not be very valuable to you. Another example is a war memorial place. The association you have with the place might be very negative, even though the place is valuable to you. This criterion is very cognitive oriented, and is very much connected to knowledge and memory.

The last criteria is 'tranquillity'. It is said to be 'a composite feature related to low levels of built developments, traffic, noise and artificial lightning'. Ode et. al. (2008) would describe this as part of the indicator 'disturbance', while it would fit in the framework of Coeterier (1996) at sensory aspects.

After having discussed the strength and weaknesses of this method, we can conclude that there are some used in the LCA that corresponds to one or two indicators used by scholars. This means that some criteria can be academically based, and might therefore be found valid. Some criteria do not seem to correspond with other theories, and it is doubtful whether these criteria can be put into good use, without complementing them.

3.1.5 How to improve the Landscape Character Assessment

- Terms such as sense of place, perception and aesthetics are used without questioning the actual meaning of the expression;
- Indicators that measure perceptual aspects in the field survey seem to be incomplete and it is also unclear in the making judgements phase how to understand and use stakeholder perceptions in the actual Landscape Character Assessment;
- Surveys from the physical landscape will not suffice; it has to be based on an assessment of the peoples landscape preferences.

As previously discussed, we can find a significant amount of problems in the Landscape Character Assessment in relation to landscape perception. First of all we know now that this method fits into the paradigm of the expert approach to landscape perception, and to the objectivist approach. The objectivist approach is rejected because of the lack of replicability, lack of defensibility in a judicial appeal, and it does not reflect the preferences of the general community. The expert approach is critiqued for its lack of considering the individual, cultural and contextual factors which modify the perception of a landscape's formal and physical properties. Furthermore the expert approach has inadequate precision, reliability, validity and sensitivity. Terms such as sense of place, perception and aesthetics are used without questioning the actual meaning of the expression. Methodologically speaking, indicators that measure perceptual aspects in the field survey seem to be incomplete and it is also unclear in the making judgements phase how to understand and use stakeholder perceptions in the actual Landscape Character Assessment.

In order to tackle these problems in trying to formulate a solution, we have to go back to the paradigms in which this LCA is originated. Earlier we mentioned that the LCA is an example of the expert approach. Three other paradigms are distinguished by Karmanov (2009), whose pros and cons are worthwhile to discuss a bit further. The psychophysical approach is just as the expert approach focussed on applied research for practical design and planning issues. This approach is however more focussed on statistical tests, and preferences are systematically related to the physical landscape. Many studies have confirmed the reliability and sensitivity of the psychophysical approach to landscape perception. Whether the method can be called valid is mostly discussed on questions such as the use of photos of landscapes as substitutes for real landscapes and the suitability of public judgments for landscape assessment. In this method the individual, cultural and contextual factors explaining evaluations are not taken into consideration (Karmanov, 2009).

The cognitive approach uses quantitative methods to measure perceived landscape qualities. The reliability of these methods are concerned high. The validity of these methods is however less straightforward. It has often been suggested that people do not evaluate landscapes using cognitive constructs such as coherence or mystery (Aoki, 1999). They are only loosely related to identifiable and measurable physical features of landscapes, which makes it more difficult to apply in design and planning (Karmanov, 2009).

Within the experiential approach the researcher is allowed to gain knowledge which is inaccessible through other methods. The landscape is thought of as imbued with feelings, meanings and hidden narratives. Methodologies using the experiential approach are less focussed on the quantification of landscape and perceptual qualities. They try to understand the nature of human-landscape relations (Karmanov, 2009).

According to Karmanov (2009) these four paradigms of landscape perception and experience research are not in competition with each other. They are complementary as they explore the same human-landscape interaction through different angles. Many methods in landscape perception research were developed to provide reliable and objective tools to assist the processes of planning, design and management of landscapes. Therefore they provide a limited view of human-landscape interaction. For instance, it has been observed that landscape assessments primarily address what might best be termed the visual properties of landscapes and neglect the behavioural and experiential aspects of human-landscape interaction. A theoretical base for multi-disciplinary research on landscape perception is absent, and therefore disciplines have theories on their own without uniformity.

In the subjective approach, surveys from the physical landscape will not suffice; it has to be based on an assessment of the community's landscape preferences (Lothian, 1999). The subjectivist approach is replicable, and its findings can be taken to reflect the community and hence can be defended politically and its findings applied with confidence. The results are more likely to provide a reasonably permanent assessment of the landscape quality. This method does require a more extensive use of specialist skills such as the selection of participants, photography of scenes, management of sessions to rate photographs, analysis of the content of the photographs, and statistical analysis of the content with preferences (Lothian, 1999). We have to keep in mind though, that the way of assessing described by Lothian (1999) focusses on landscape quality assessment, and not landscape character assessment. The main difference is that 'quality' can be described as 'degree of excellence', while 'character' is value-neutral (Daniel, 2001). The LCA explains: 'Landscape Character Assessment is concerned primarily with landscape character, rather than with landscape

quality or value'. These latter factors are nevertheless still relevant when a Landscape Character Assessment is used to inform decisions, when judgements must be made about the implications of an assessment. As the LCA is intentionally a non-value-laden definition, the LCA does not provide which landscape is more excellent than the other. Yet, the LCA acknowledges the importance of valuing when planning decisions have to be made. The LCA makes a clear distinction between the two stages characterisation and making judgements. The first is as value free and objective as possible, while the latter is value-laden and might be more subjective. It is clear that the LCA does address a component of landscape quality, which therefore make the assumptions by Lothian (1999) applicable to the making judgements section.

Stage 1: Characterisation

- There is a consensus amongst scientists that the beauty of the landscape lies in the eye of the beholder and emerges from the specific characteristics of a landscape defined by personal preferences, so cannot be assessed by an expert in a valid and representative way as it is highly dependent on personal preferences.

A clear idea of the division which is made by the LCA between stage 1 and stage 2 is needed in order to review the methodology. Stage 1 is about the characterisation of the landscape and not about the quality or value of the landscape. The first solution could be to increase the validity of landscape characterisation by dividing the method in two: the first stage of characterisation only considers the characterisation process, without taking the aesthetic and perceptual experiences into consideration. The second stage then could be more focused on aesthetic and perceptual qualities. Previous studies (Karmanov, 2009; Daniel, 2001; Lothian, 1999) have shown that there is a consensus amongst scientists that the beauty of the landscape lies in the eye of the beholder and emerges from the specific characteristics of a landscape defined by personal preferences, so cannot be assessed by an expert in a valid and representative way as it is highly dependent on personal preferences. 'Beauty is not an objective characteristic of objects' (Karmanov, 2009), thus cannot be used to define a landscape character using aesthetic aspects as in the LCA. Therefore the best way to make the first stage of the LCA more valid, the aesthetic and perceptual aspects should be ignored. As is stated in the LCA, 'the process of characterisation should be an objective process in the main'. However, when you consider aesthetics, 'the concept of beauty describes the pleasure an aesthetic object gives to the mind and senses' (Karmanov, 2009, p 66). This means that using aesthetics in the characterisation process, you always are valuing the landscape in a certain way: you like it, or you do not like it. Part one of the LCA is not concerned with valuing the landscape, so in a sense we can conclude that aesthetics does not belong in this part of the Landscape Character Assessment. Only when the LCA acknowledges that the usage of aesthetic and perceptual aspects is dependent on the subjective experience of the expert doing the survey, this information might still be of use by complementing it with stakeholder experiences.

Looking at step 1 from another perspective, a less drastic solution is also possible. It seems that the LCA includes aesthetic and perceptual aspects to take along in the characterisation process, meaning that perception and aesthetics influence the character of the landscape. To increase the validity and reliability of the survey method, the perceptual and aesthetic aspects that make up the character of the landscape can be measured by a larger number of subjects. These people should be

representative members of the community and not specialists (Lothian, 1999). Both expert and public views are important, but can be assessed together, instead of only taking the expert view into account. An ecologist might find a heathland very diverse, while a landscape architect might find it simple. Thus, in order to improve the current methodology, more people might do the survey considering landscape aesthetics and perception. Only when the outcomes are relatively similar or show some resemblance this information is of use to the overall characterisation of the landscape. If the outcomes do not show any similarity at all, we should go back to the first solution of skipping the aesthetic and perceptual aspects in part 1 as then the method is invalid and unreliable.

Stage 2: Making judgements

Aesthetics, or rather perception does need to be addressed in the LCA. Understanding people's perception of a certain landscape is crucial in order to be able to make judgements about the landscape. An understanding of the importance or value that stakeholders attach to different landscapes is essential in the process of realizing a landscape character assessment.

In the first option described above, aesthetic and perceptual aspects are relocated to the second stage. Both options described above need a method to complement stakeholder perception of the landscape. Natural England has done an extensive qualitative social research on cultural services and experiential qualities, which might give an idea of how to use a qualitative method in a successful way. The outcomes of this research are displayed in chapter 4. A multi-method programme was conducted using a focus group, an extended creativity session and post-experience in-depth interviews. The focus groups were of a standard length of 1,5 hours and were kept relatively homogenous in terms of socio-economic characteristics and age. The extended creativity group were longer than the focus groups (around 2,5 hours) and included people who were more engaged with the landscape, were more expressive, or had more knowledge about the area. Also in depth interviews were carried out. This was an interactive approach towards the landscape, as participants were asked to go to part of the character area and experience it by walking or doing some other recreational activity. They were asked to be out for at least one hour and take pictures of positive and negative aspects of their experience. They were also asked to write a diary of their experiences and what they valued and to draw sketches if appropriate (Natural England, 2011a).

Even though this extensive method might be a bit impractical due to increasing costs and time, it does give a good example of how to get an idea of people's perception of the landscape. This method might need a bit of adaptation to its function, but the base of this method might as well be used for assessing landscape character[1]. Commonly, qualitative study designs are most appropriate when your interest is in studying values, beliefs, understandings, perceptions, meanings etc. This is because qualitative research is more flexible and adaptable to a particular place. Quantitative research has a focus on measuring the magnitude of a variation namely questions such as 'how many people have a particular value, belief, etc?' (Kumar, 2011).

[1] See http://publications.naturalengland.org.uk/publication/162029?category=31019 for more information about the research. NECR045 edition 1 - Annex A describes the method.

3.2 Designation strategy AONB's

The 'Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England' document (Natural England, 2011b), contains guidance on the relevant legislation and its application in practice. It contains a method for applying the legislation to the practical assessment of landscapes in designation decision-making. We will focus on the designation of AONB's, but because the designation of National Parks is assessed by the same technical criterion, natural beauty, we will be concerned with the aspect of National Park designation as well. An AONB in England is an area which appears to Natural England to be of such outstanding natural beauty that it is desirable that the protective provisions should apply to it for the purpose of conserving and enhancing the area's natural beauty. AONBs need to meet the natural beauty test, while National Parks also have to meet the recreation test. This guidance is supposed to be used once a project reaches a stage where the designation criteria need to be considered in detail.

Figure 13 shows the practical steps involved in assessing land for designation. Stage A divides the landscape into smaller area's and provides 'relatively value-free descriptions of the area'. Stages B to E are called the evaluative stage in which 'judgements are made about the value of the landscapes within that spatial framework and the course of action that should be taken'. Preferably according to Natural England, stakeholder consultation should be used in the character assessment in order to have a broad and supported consensus of opinion. This could be done by the Landscape Character

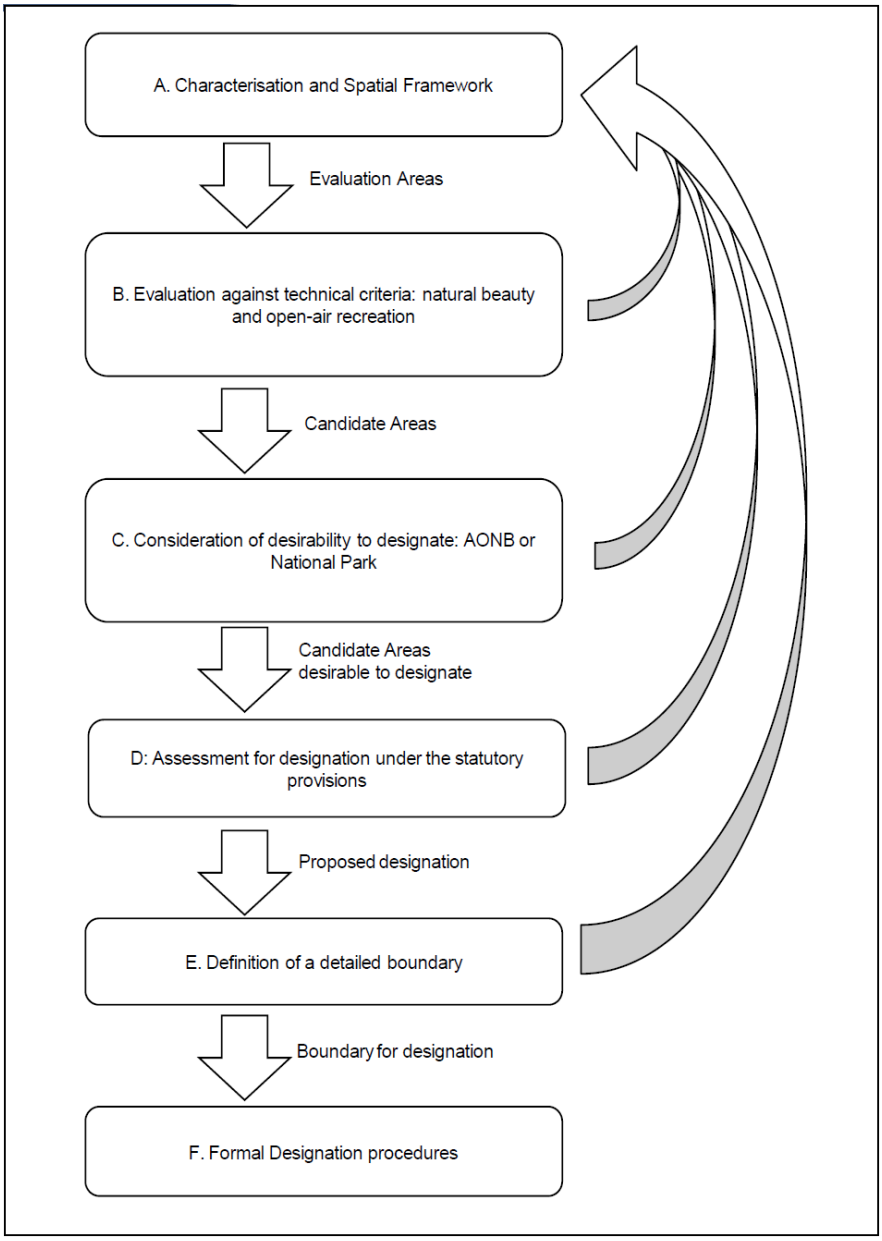


Figure 13: Steps of assessing land for designation. (Natural England (2011)[b])

Assessment as discussed in the previous chapter. Human perception becomes more important in step B where the evaluation area is evaluated against the technical criteria for 'natural beauty' in the case of AONBs. What these technical criteria are will be described later.

First we have to consider what Natural England says about the term 'natural beauty'. 'Natural beauty is not exhaustively defined in the legislation. It is also a very subjective characteristic of a landscape and ultimately involves a value judgment. In deciding whether an area has natural beauty, Natural England must therefore make a judgment as to whether people are likely to perceive a landscape as having sufficient natural beauty. In order to make these judgements (some of which are subjective) in a transparent and consistent way, this Guidance sets out which criteria Natural England intends to use'. Natural England has developed a list of factors that contribute to natural beauty. This framework is to be providing for an 'evidence-base which assists in making judgements in a rigorous and transparent way'. These factors have been drawn from the Landscape Character Assessment, and have been restated in figure 14.

Landscape quality This is a measure of the physical state or condition of the landscape.
Scenic quality The extent to which the landscape appeals to the senses (primarily, but not only, the visual senses).
Relative wildness The degree to which relatively wild character can be perceived in the landscape makes a particular contribution to sense of place.
Relative tranquillity The degree to which relative tranquillity can be perceived in the landscape[10] .
Natural heritage features The influence of natural heritage on the perception of the natural beauty of the area. Natural heritage includes flora, fauna, geological and physiographical features.
Cultural heritage The influence of cultural heritage on the perception of natural beauty of the area and the degree to which associations with particular people, artists, writers or events in history contribute to such perception

Figure 14: Factors related to natural beauty (Natural England (2011[b]))

Each of these factors are divided into sub-factors, which are judged by indicators. These indicators are 'statements of the features, characteristics and qualities which tend to indicate whether a particular factor is present'. This framework is presented in figure 15.

It is stated that, considering this framework, AONBs do not need to display a distinctive or coherent identity. A designation can contain different landscapes so long as the designation as a whole satisfies the natural beauty criterion. Also not all factors or indicators have to be present across a designation, and the weight and relative importance given to different factors or indicators may vary depending on the geographic context. It is not a ´tick box´ exercise and the AONB as a whole should be assessed by the technical criteria.

Appendix 1:

Evaluation Framework for Natural Beauty Criterion

The sub-factors and associated indicators should be regarded as a "menu" of examples (developed from past designations and subsequent consultation) from which those appropriate to the character of the landscape under consideration should be chosen, adapted or added to. There is no "scoring" involving accumulations of indicators and it is possible for a landscape to exhibit natural beauty or offer opportunities for open air recreation even if a number of the indicators shown in this appendix are not present.

Factor	Example sub-factor	Example Indicator
Landscape quality	Intactness of the landscape in visual, functional and ecological perspectives	Characteristic natural and man-made elements are well represented throughout
	The condition of the landscape's features and elements	Landscape elements are in good condition
	The influence of incongruous features or elements (whether man-made or natural) on the perceived natural beauty of the area	Incongruous elements are not present to a significant degree, are not visually intrusive, have only localised influence or are temporary in nature
Scenic quality	A distinctive sense of place	Landscape character lends a clear and recognisable sense of place
	Striking landform	Landform shows a strong sense of scale or contrast
		There are striking landform types or coastal configurations
	Visual interest in patterns of land cover	Land cover and vegetation types form an appealing pattern or composition in relation to each other and/or to landform which may be appreciated from either a vantage point or as one travels through a landscape
	Appeal to the senses	Strong aesthetic qualities, reflecting factors such as scale and form, degree of

Factor	Example sub-factor	Example Indicator
		urban influences
	A sense of openness and exposure	Open, exposed to the elements and expansive in character
	A sense of enclosure and isolation	Sense of enclosure provided by (eg) woodland, landform that offers a feeling of isolation
	A sense of the passing of time and a return to nature	Absence or apparent absence of active human intervention
Relative tranquillity	Contributors to tranquillity	Presence and/or perceptions of natural landscape, birdsong, peace and quiet, natural-looking woodland, stars at night, stream, sea, natural sounds and similar influences
	Detractors from tranquillity	Presence and/or perceptions of traffic noise, large numbers of people, urban development, overhead light pollution, low flying aircraft, power lines and similar influences
Natural heritage features	Geological and geo-morphological features	Visible expression of geology in distinctive sense of place and other aspects of scenic quality
		Presence of striking or memorable geo-morphological features
	Wildlife and habitats	Presence of wildlife and/or habitats that make a particular contribution to distinctive sense of place or other aspects of scenic quality
		Presence of individual species that contribute to sense of place, relative wildness or tranquillity
Cultural heritage	Built environment, archaeology and designed landscapes	Presence of settlements, buildings or other structures that make a particular contribution to distinctive sense of place or other aspects of scenic quality
		Presence of visible archaeological remains, parkland or designed landscapes that provide striking features in the landscape
	Historic influence on the landscape	Visible presence of historic landscape types or specific landscape elements or features that provide evidence of time depth or historic influence on the landscape.
		Perceptions of a harmonious balance between natural and cultural elements in the landscape that stretch back over time
	Characteristic land management practices	Existence of characteristic land management practices, industries or crafts which contribute to natural beauty
	Associations with written descriptions	Availability of descriptions of the landscape in notable literature, topographical

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Factor	Example sub-factor	Example Indicator
		writings or guide books, or significant literature inspired by the landscape.
	Associations with artistic representations	Depiction of the landscape in art, other art forms such as photography or film, through language or folklore, or in inspiring related music
	Associations of the landscape with people, places or events	Evidence that the landscape has associations with notable people or events, cultural traditions or beliefs

Figure 15: Evaluation Framework for Natural Beauty Criterion (Natural England, 2011b)

3.2.1 Evaluation framework for ´natural beauty´

- It is certain in the Guidance for AONB designation that judgement has to be made in order to value the landscape;
- No information is provided on how to involve stakeholders and how to measure whether there is consensus about the value of the landscape or not;
- The single use of experts in assessment methods is highly contested in landscape preference research;
- The practicality of the existing framework is questionable.

What was not so clear from the Landscape Character Assessment, but is certain in the Guidance for AONB designation (Natural England, 2011b), is that judgement has to be made in order to value the landscape. Designated areas are in a way more 'valuable' than others and the importance is stressed to enhance and conserve its natural beauty. It is stated like this: 'In the context of AONB and National Park designation, the value that is being assessed equates to the designation criteria for National Parks or AONBs'. This sentence explains that the designation criteria are tools to use in order to value the landscape. Nevertheless, questions need to be raised here. First of all, who is describing value to the landscape? Is the designation based on public judgment, or on expert judgement? This is not being stressed in the document, only it states that: 'where there is a consensus of opinion that an area meets the statutory criteria or should be designated, this helps determining whether it is accorded a special value that should be recognized. Views of stakeholders and the public can be strong indicators as to whether there is consensus about the value of a landscape'. Unfortunately, no information is provided on how to involve stakeholders and how to measure whether there is consensus about the value of the landscape or not.

The guidance is intended for usage by Natural England specialist staff to help identify whether land is likely to meet the statutory criteria for AONB or National Park designation. We can make the assumption that the designation criteria are being used by experts, and not by the public. As stated before during the critique on Landscape Character Assessment, the single use of experts in assessment methods is highly contested in landscape preference research. First of all the designation guidance seems to be using an objectivist and expert approach, just like the LCA. This method is inadequate and has a lack of replicability, judicial appeal, reflect of preference of the general community, precision, validity, reliability and sensitivity. The guidance for designation has some differences in comparison with the LCA. The guidance for designation tries to assess the landscape as a whole, and does not pick particular visual views as done in the LCA. The evaluation framework is set up not to tick boxes, but to 'provide a framework that assists in making judgments about natural beauty'. In what way this framework might assist in making judgements is left unanswered, making the practicality of this framework questionable. It does however intent to make judgments, which is different from the LCA where the aim is to be as value-free as possible.

If we ignore the usage of the framework for a moment, we can have a look at the criteria used in this framework from a human perceptual perspective. To get a better understanding of the criteria, they shortly will be described and discussed. Table 1 integrates the comments into a new framework, giving a start for implementing an improved framework for the designation of AONB's. This framework is supposed to be used for the initial aim to select an area for designation, but should also justify the existence of already designated areas.

Landscape quality

The factor 'landscape quality' is described as 'a measure of the physical state or condition of the landscape'. The first sub-factor is: 'Intactness of the landscape in visual, functional and ecological perspectives' with the indicator 'characteristic natural and man-made elements are well represented throughout'. Narrowing the terminology down, 'intactness' has a time-dimension to it. The landscape should be intact in relation to what? A landscape consists of different time layers and you can only choose a reference period of which the landscape shows intactness. This term is not very well used, and existing theories tend to show factors such as maintenance, unity or completeness instead. The indicator does seem to be of use, as it makes sense that in a designated area their characteristic elements should be well represented to make the landscape distinctive. This can enhance the unity of the landscape. Another sub-factor used is: 'the condition of landscape's features and elements' using the indicator 'landscape elements are in good condition'. Also this choice of words is contestable, as what is a 'good' condition? The ruins of a castle would in this framework be valued negatively, because the castle is not in good condition at all. What is probably meant by this indicator, is the level of maintenance. The ruin of a castle is valuable, as long as it is prevented from decay. A too high level of maintenance is also not appreciated, as this could forfeiture the authenticity of the castle. The last sub-factor within the factor landscape quality is 'the influence of incongruous features or elements (whether man-made or natural) on the perceived natural beauty of the area' with the indicator 'incongruous elements are not present to a significant degree, are not sensibly intrusive, have only localised influence or are temporary of nature'. First of all I would like to argue that this sub factor is only addressing the 'perceived' natural beauty. Let me sketch a situation here. A highly contaminated soil due to industrial garbage is not directly perceived by human senses. However, this must surely be an incongruous feature in the landscape even though we do not perceive it. Here I only want to state that we should not only focus on perceptual natural beauty, but try to look beyond that. The indicator however is usable, as it is about the incompleteness of the landscape. If there are many elements in the landscape which do not fit its character creating an incoherent view, is also likely to be less valued (Kaplan & Kaplan, 1979). Integrating the existing framework with the other mentioned factors, the sub-factors of 'landscape quality' will be 'Maintenance' and 'Unity'. Maintenance is indicated by landscape elements which are in good condition. This means that there should be a balance between many and little management. For example a hedgerow should be in a good condition. The sub-factor of unity uses the indicators completeness and incompleteness. Completeness is about whether all the appropriate characteristic elements in the landscape are present, where incompleteness is about whether there are any inappropriate or non-fitting elements present in the landscape. They are not present to a significant degree, are not sensibly intrusive, or have only localised influence or are temporary of nature. Non-fitting elements can be identified by not belonging to the landscape character.

Scenic Quality

- The usage of the terminology 'scenic' is wrong when also other senses are described;
- The combination of diverse elements together can also make the landscape distinctive or unique.

The factor 'scenic quality' is the second in the evaluation framework for natural beauty. This factor seems to relate to the indicator by Ode et.al. (2008): Imageability. 'Scenic quality' is described as 'The extent to which the landscape appeals to the senses (primarily, but not only, the visual senses)'. 'Scenic' is described by the Oxford dictionary (Oxford, 2013) as 'providing or relating to views of impressive or beautiful natural scenery'. This term is inextricably connected to view, which refers to the visual senses. Therefore I would like to argue that the usage of the terminology 'scenic' is wrong when also other senses are described. The first sub-factor is 'a distinctive sense of place' with the indicator 'landscape character lends a clear and recognisable sense of place'. This indicator seems to be imprecise as it is difficult to distinguish what a clear and recognisable sense of place actually is. Tveit et. al. (2006) explains that sense of place is a dimension of imageability, next to genius loci, uniqueness/distinctiveness and vividness. Imageability is defined here as 'qualities of a landscape present in totality or through elements; landmarks and special features, both natural and cultural, making the landscape create a strong visual image in the observer, and making landscapes distinguishable and memorable'. Landscape attributes for imageability could be spectacular elements, panorama, landmarks, water and iconic elements. Tveit et. al. (2006) conveys that potential indicators of imageability could be: viewpoints; presence of spectacular, unique or iconic elements and landmarks; presence of historic elements and patterns; presence of water bodies; percentage of moving water. Imageability highly relates to the term scenic quality, only is it more extensive and theoretically based. Therefore I would like to suggest altering the factor scenic quality into imageability. Sub-factors, based on the theory by Tveit et. al. (2006), could then be uniqueness or distinctiveness and vividness. Vividness can be described as 'that quality in a landscape which gives it distinction and makes it visually striking' (Litton, 1972 cited in Tveit et.al., 2006). We can see that even terms as distinctiveness and vividness overlap in a way, as they are both focussed on distinction. However, we could separate them by saying that distinctiveness concentrates on uniqueness in comparison to other landscapes (Green, 1999), while vividness focusses on the how striking a landscape is without comparing it to other landscapes.

Indicators for the sub-factor uniqueness/distinctiveness can be the presence of: natural and cultural iconic elements. These can be interpreted by elements such as, rare habitats, rare landmarks, and rare historic sites of national or international importance. Another indicator can be: presence of natural and cultural landscape characteristics. To site the LCA (Swanwick, 2002), characteristics are: 'elements or combinations of elements, which make a particular contribution to distinctive character'. So we could say that distinctive elements or combinations of elements should be present in the landscape. Especially the combination of elements should be stressed here: one particular element in the landscape could occur in multiple landscapes and does not make the landscape unique as such; the combination of diverse elements together can also make the landscape distinctive or unique. Also distinctiveness of the landscape by the use of other senses is essential for understanding the landscape's uniqueness. Using senses such as smell, touch, sound and taste, a landscape can also be found unique. For example the feel of uncommon sandy ridges, or the sound of a rare bird species, determines the distinctiveness of a landscape as well as the visual sense.

The other sub-factor, vividness, is the factor that makes the landscape 'visually striking'. It must be noted that the usage of the term 'striking' is highly unquantifiable, as a landscape can be striking for one person, but unnoticeable for the other. However, some elements do show a general striking effect on people. People find for example the presence of water mesmerizing, and people are

generally attracted to water bodies (Strang, 2004). We have to consider that when people experience water, they will be attracted to it; it does not mean that a place without water will be thought of as unattractive (places such as the Sahara desert are popular tourist destinations). Also an impressive landform can support the place to be memorable such as having a big contrast or a large scale. I would like to discuss the usage of the term vividness, and also the amount of weight put on each value. This sub-factor can be useful in terms of addressing the importance of scenic impressiveness. On the other hand, the value put on the landscape by this factor is very subjective and difficult or even impossible to measure and quantify. Also the value is very place dependent, as we can see from the indicator 'presence of water bodies'. It is important to be aware of the sub-factor vividness while assessing the landscape's natural beauty, but when we remember that this framework is used for the designation of Areas of Outstanding Natural Beauty, is seems obvious to give more importance to the sub-factor distinctiveness. This is because 'outstanding' seems to relate to a landscape which is different from others and makes it therefore of 'outstanding' quality. More weight should therefore be given on the uniqueness or distinctiveness of a place, rather than equal it to vividness.

Relative Wildness & Natural Heritage Features

- Many studies have shown that people prefer natural landscapes above artificial landscapes;
- Perceived naturalness is different from ecological naturalness;
- Naturalness is not primarily based on the presence of vegetation, but rather the way a landscape has grown organically, as a living organism;
- A 'sense of remoteness' as such is an incorrect indicator for naturalness;
- Buildings such as old farms and roads can also be perceived as natural.

The factor of relative wildness is highly focusses on the absence of human impact as the sub-factors are: 'a sense of remoteness', 'a relative lack of human influence', 'a sense of openness and exposure', 'a sense of enclosure and isolation', 'a sense of the passing of time and a return to nature'. The term wildness is according to Tveit et. al. (2006) a dimension of 'naturalness', which is defined as closeness to a preconceived natural state. Naturalness is a widely used concept amongst scholars as a key aspect of visual landscape quality (Lamb & Purcell, 1990; Wilson, 1984; Ulrich, 1993; Coeterier, 1996). Many studies have shown that people prefer natural landscapes above artificial landscapes (Wilson, 1984; Hodgson & Thayer,1980; Franke et al. 1983; Weichhart, 1983; Bernaldez et al.,1981; Ulrich, 1986). Wilson explains this by saying that human beings have an inherent need for connection with their natural environment because of the biological foundation as a result of evolutionary processes. Naturalness as a concept is generally used to describe how close a landscape is to a perceived natural state. Perceived naturalness can thus be different from ecological naturalness. For example, heaths are seen as less natural than forests, but from ecological perspectives they may be valuable to preserve. On the other hand, severely weed-invaded forests are seen as natural, despite the fact that their ecological values are diminished (Lamb & Purcell, 1990). Perceived naturalness is context dependent in the sense that what is perceived as naturalness in an urban setting might not be seen as such in a more natural context. A study by Schroeder (1983) revealed that people who spent most of their lives in urban areas were more likely to prefer developed parks, while people who have spent most of their lives in suburban rural areas were more likely to prefer natural forests.

However, we have to consider what naturalness really is. Coeterier (1996) found that to inhabitants, naturalness is not only or not even primarily based on the presence of vegetation, but rather the way a landscape has grown organically, as a living organism. Also studies of forest preferences have shown that a high degree of naturalness, as found in virgin forests, is not always perceived as positive (Lindhagen & Hörnsten, 2000). These findings indicate that the relationship between naturalness and preference is not necessarily linear. It is clear that vegetation is important in determining visual preferences, but the degree of actual rather than perceived naturalness may be less important (Purcell & Lamb, 1998). According to Tveit et.al. (2006), studies often fail to present clear and quantifiable definitions of perceived naturalness.

Parameters for assessing naturalness include indications that the landscape has developed naturally; natural elements, lines, patterns and materials; the presence of natural and semi-natural small biotopes and old trees (van Mansvelt & Kuiper, 1999). Coeterier (1996) distinguishes three criteria for naturalness perceived by inhabitants. They are explained in order of importance. First is whether the environment gives the impression of having grown naturally spontaneously as a living organic whole with its parts harmoniously fitting together, each having its function in the whole of the organism. In this respect old farms and sandy roads may give the impression of having grown naturally. The second criterion refers to the way a landscape is designed. Natural is not along straight lines and square blocks with uniform elements, but unstructured mostly with natural materials such as wood and bricks. Buildings entirely made out of concrete are often valued negatively. The last criterion states that flora and fauna determine the perception of naturalness, in which cows, rose beds and crops are perceived as natural too. Coeterier also states that the opposite of natural is artificial, for instance large, monotonous buildings, flat and cultivated fields, straight rows of similar trees: 'life is missing there'.

> *'The opposite of natural is artificial, for instance large, monotonous buildings, flat and cultivated fields, straight rows of similar trees: life is missing there'*
>
> *- Coeterier (1996)*

Going back to the existing framework for Natural Beauty, the first sub-factor used is 'a sense of remoteness' with the indicators 'relatively few roads or other transport routes 'and 'distant from or perceived as distant from significant habitation'. I would like straightforwardly state, based on previously explained theories, that a 'sense of remoteness' as such is an incorrect indicator for naturalness. There is no academic affirmation that roads and other transport routes are perceived negatively by people. Even, as previously stated, roads can be perceived as natural, and not artificial. Also, it is simply wrong to state that an area will be of natural beauty when a distance is perceived from habitation. As previously stated again, even buildings such as old farms can be perceived as natural. The second sub-factor 'a relative lack of human influence' with the indicators 'extensive areas of semi-natural vegetation' and 'uninterrupted tracts of land with few built features and few overt industrial or urban influences' can be argued as well. First of all, from a practical and landscape historical point of view, how can you say that a landscape is of natural beauty when there is a lack of human influence, while all landscapes (protected or not) in England are or have been influenced by humans somewhere in time? Also this sub-factor can be by no means an indicator for natural beauty as you consider that there is no scientific evidence for people liking landscapes more when it is not being influenced by humans (if such a landscape even exists). Because of the lack of scientific evidence to underpin these indicators, the contradictory use of 'semi-natural vegetation' as being an

indicator for 'relative lack of human influence', and the impracticable usage of terms, these two sub-factors are unsuitable for the evaluation framework. Two other sub-factors are 'a sense of openness and exposure' and a 'sense of enclosure and isolation'. Surely, both factors are each other's opposites: openness and enclosure, and exposure and isolation. This does not have to be problematic; the utility however of these factors is questionable. The outcome could be that a landscape is overall enclosed and isolated, or that the landscape is generally open and exposed. Both outcomes are equally appreciated. Because these indicators are each other's opposites, every landscape will be the one or the other, meaning that it is applicable to every single landscape. Therefore both sub-factors can practically not be indicators for areas of natural beauty. Also the sub-factor 'as sense of the passing time and a return to nature' with the indicator 'absence of apparent absence of active human intervention' can be rejected by reasons already mentioned.

It is certain that the framework should be adapted in accordance to the previously mentioned critique. The three criteria for naturalness mentioned by Coeterier (1996) can be used to redefine the factors and indicators used in the framework. Perceived naturalness is in line with the quality of unity, whereas unity refers to new attributes the parts do not possess and coherence is an attribute to the parts (Coeterier, 1996). Unity can be divided into the indicators completeness and incompleteness, as seen before, while coherence can be divided into 'vertical coherence', 'horizontal coherence', 'temporal coherence' and 'historical coherence' (Hendriks et.al. 2000a, b). Natural coherence is about the relationship between actual land use and natural conditions (Mansvelt & Kuiper, 1999). According to Kuiper (1998), landscape patterns should reflect the underlying physical processes that have shaped the landscape in order to be coherent. The three criteria for naturalness by Coeterier (1996) and the indicators for coherence by Hendriks et. al. (2000a, b) can be integrated into a new framework of sub-factors and indicators for the factor 'perceived naturalness'. Vertical coherence is about the visibility and expression of geomorphological and geological processes in the landscape. The vertical coherence in the appearance of a landscape reflects the way biophysical factors such as soils, water and topography are mirrored in the biotic factors such as flora and fauna of the landscape. The determining features are geology, soil, water, topography, vegetation and land use (Bohnet, 2011). This can be interpreted as that it should be possible for people to make sense out of vertical features in the landscape and how they interrelate. Horizontal coherence is about the impression that the environment has grown naturally spontaneously as a living organic whole with its parts harmoniously fitting together, each having its function in the whole of the organism (Coeterier, 1996). It is about the spatial link between visual, functional and ecological relationships in a landscape. The determining features are proportions in the landscape reflected in the spatial pattern of fields, hedgerows, riparian woods, woodlands, roads, buildings and so forth (Bohnet, 2011). Coeterier (1996) suggested indicators such as: presence of unstructured shapes without significant straight lines and square blocks, and presence of natural materials. Temporal coherence is about the expression of vertical and horizontal coherence through the seasons, and the development of the landscape in response to seasonal patterns. Historical coherence is about the perceptibility of the development of the landscape in time which is expressed by its historical character. It is more or less concerned with the picture it presents of man's activities in different periods, but also with the natural history of the landscape. This can manifest itself in cultural elements such as churches, castles, old farms, and old road tracks, but may also be present in natural elements like brooks, old trees and fossil rocks (Coeterier, 1996). When these natural and cultural elements highly and visibly interrelate with each other, you can speak of historical coherence.

Next to the criteria for naturalness used by Coeterier (1996), the actual presence of nature should not be forgotten. Ignoring the meaning of 'nature' for a moment, most people would agree that a bird is part of nature, as well as the berries and worms they eat. Therefore the physical landscape itself, including animals and plants, is important for determining the naturalness of a landscape. The first indicator for flora and fauna should be the presence of important or distinctive flora and fauna. Important flora and fauna is concerned with a scale, meaning the importance of certain species on a regional, national or international level. Distinctive flora and fauna is about the presence of characteristic species for a certain landscape. The second indicator is about the presence of important or distinctive habitats. There might be an opportunity to integrate these indicators with international and national policy such as the Bird and Habitat directive and Natura 2000.

Relative tranquillity

- Tranquillity can be seen as a quality, but not an indicator for Natural Beauty;
- What we should think about is whether an event 'fits' in the setting, whether something belongs in a certain context

Tranquillity is in the UK a widely used term in political context. It is considered to be a state of calm, quietude and is associated with peace; a state of mind that promotes mental well-being (Jackson et.al., 2008). In 2004, the Campaign to Protect Rural England (CPRE) commissioned a report to carry out a pilot study to develop a methodology to map tranquillity. Wide ranging responses of the public data was mapped and explored in this pilot study, and a methodology was developed to produce a map of tranquillity. The location of characteristics identified in this work is combined with the relative importance given to each characteristic based on the number of people that identified it. Both positive factors that contribute to and negative factors that detract from tranquillity are combined to give a score that represents tranquillity as a resource. The relative importance of each factor has been identified by the number of times it was stated by the public. In 2006 CPRE commissioned a project to map tranquillity on a national scale. 4000 respondents had to weight 44 option choices that contributed to, or detracted from, feelings of tranquillity. Seeing a natural landscape, hearing birdsong and seeing the stars at night scores highly in enhancing feelings of tranquillity. Hearing constant noise from traffic, seeing lots of people and urban development were the top three detracting from tranquillity (Jackson et al. , 2008). This study assumes that tranquillity is highly valued, while this very context depended. It is acknowledged by this study that tranquil areas are best defined in experiential terms as areas with the characteristics most likely to induce a state of tranquillity for people that are there. The problem with this approach, however, is that just as beauty is in the eye of the beholder, people will find tranquillity in ways and places that may be more or less specific to or hold associations for them, for example, their own gardens. (Jackson et.al., 2008). Unfortunately, the report itself does not mention anything further about this apparent problem. Tranquillity is an experiential quality, and is simply not measurable in a wider scale, even though the CPRE has produced a map. As is already mentioned, people can feel tranquil in their own, maybe urban garden, and does not reflect were people feel tranquil or not simply because this is different for everybody. Tranquillity can therefore be seen as a quality, but not an indicator for Natural Beauty. Therefore the usage and practicality of this term in the framework is questionable. It

only might be possible to measure tranquillity after the designation of an area, asking people which places can be called tranquil. But even this method will raise a lot of difficulties.

The CPRE study also gives a coloured image. For example seeing natural looking woodland, which is number four on what is seen as tranquillity by people, does not mean that people think of managed woodland as not tranquil. It excludes many images and could even be contradictory. On number two, people think that tranquillity is about hearing birdsong. But what about the noise that seagulls create in urban and rural places away from the sea? This will probably not be valued as 'tranquil'. However, when you are at the coast, you might find their sound 'tranquil', as you link seagulls immediately with the sea, creating a sense of belonging. Therefore I would like to argue that this is all situation depended. What we should think about is whether an event 'fits' in the setting, whether something belongs in a certain context. It is about whether there are any perceived disturbances in the landscape by people that weaken the natural beauty of the landscape. If there is an insignificant number of disturbances, the landscape might be perceived as being beautiful. Also all factors that are contributors to tranquillity can be linked to other already existing sub-factors. Bird song could for example be a contributor to perceived naturalness, as you would expect birdsong in hedges or in the forest. This is the same for the top 1 survey response, seeing a natural landscape.

Disturbance is also about familiarity. As described in chapter 2, there are two types of noise: the ambient and the sudden. Ambient noise can be ignored as our hearing system filters out the sounds which are not 'important' for survival (Howard, 2011). This ambient noise can be divided into two types of experience: repetitive sound which have a loud, fast rhythm are arousing (i.e. heart-rate rises with increasing tempo and volume), while slow, soft sounds are soothing, inducing corresponding physiological changes (Strang, 2004). Sudden noises however are picked up by the ear system excellently, because those kinds of noises might be a threat. Ambient noise can thus be filtered out of our hearing system, meaning that we sometimes would not even notice sounds. A common example is when you have an old winding-up clock in your house for a long time. You would not notice the ticking of the clock, even if you focus on trying to hear it. This is when your ears have filtered out the ticking of the clock, as being of no importance. However, when the clock is suddenly not ticking constantly, but taking pauses, you will notice the ticking of the clock. This is because you are familiar with the clock ticking in a certain pace, and when this changes, your hearing system will see it as a sudden noise, so notice it. This is also showing the difficulty of using the term no disturbance as an indicator for natural beauty. People experience disturbance differently, especially when it comes to being familiar with a sound or not. Also, Ode et. al. (2008) mentioned that a high density of disturbance means a low coherence in the landscape. If we interpret this the other way, this means that high coherence in the landscape inevitably results in low disturbance. Therefore we could say that also disturbance is already covered in the new framework, and it is thus not needed to add in the framework.

Cultural heritage

Many studies show the importance of the history of the landscape. Tveit et.al. (2006) identifies the concept historicity with the indicators historical continuity and historical richness. Historical continuity focusses on the visual presence of different time layers in the landscape, while historical richness focusses on the amount and diversity of cultural elements (Ode et. al: 2008, Tveit et. al:2006). Coeterier (2006) speaks of linear time development of the landscape in time which is expressed by its historical character, the picture it presents of man's activities in different periods or

eras. It is dynamic; showing how the landscape is developing in time, where and how it is renewing itself and adapting to modern times. Also the significance of the reference to historic moments in the past which are important for national history is stressed (Renes, 1999).

The first sub-factor of cultural heritage is 'built environment, archaeology and designed landscapes', with the indicators: 'presence of settlements, buildings or other structures that make a particular contribution to distinctive sense of place or other aspects of scenic quality' and 'presence of visible archaeological remains, parkland or designed landscapes that provide striking features in the landscape'. The second sub-factor of cultural heritage is 'historic influence on the landscape' with the indicators 'visible presence of historic landscape types or specific landscape elements or features that provide evidence in time depth or historic influence on the landscape' and 'perceptions of a harmonious balance between natural and cultural elements in the landscape that stretch back over time'. Furthermore the subfactors 'characteristic land management practices' and 'associations with written descriptions' are mentioned with the indicators 'existence of characteristic land management practices, industries or crafts which contribute to natural beauty' and 'availability of descriptions of the landscape in notable literature, topographical writings or guide books, or significant literature inspired by the landscape'. The other two sub-factors in the framework are about associations with artistic representations and associations of the landscape with people, places or events.

The framework presented by Tveit et.al (2006) might be of use when complementing the existing framework for natural beauty. They used the division between historical continuity and historical richness, with the factor historicity. The first important indicator is 'the existence of a significant amount of visible time layers providing evidence of time depth'. This can for instance be perceived by build elements from different ages or evidence from different land use through time. Furthermore, the symbolic meaning of elements and landscapes can enhance the historical continuity by changing meaning trough time. For example, a megalith may first had a symbolic meaning of a place where to bury the dead, but hundreds of years later it is seen as a landmark and a mythical place where ghosts and giants haunt the fields (a Dutch example is the 'hunebedden', big megaliths for burying the dead). Also this shows the historic continuity of a place. Therefore the existence of historic evidence of these different meanings through time in written, artistic, oral and material remains is essential in order to generate an idea about the historic continuity of a landscape. For every designation a research could be executed on historic landscape perception, meaning how people perceived the landscape in historic times. This might give a better understanding of the importance of the landscape, and historic perceptual continuity over time. Also the presence of a coherent mix between past and present land use gives a sense of historic continuity. Landscapes that contain both past and present can provide residents with a feeling of community integrity and richness. The historical continuity gives the landscape a depth of meaning and a sense of time, providing recreational resources and enhancing landscape aesthetics (Tveit et. al, 2006).

The second sub-factor is historical richness. Firstly this manifests itself, understandably, in the presence of cultural elements. These can be for example historical agricultural buildings, burial mounds, ruins, cairns, signs of earlier cultivation, fences, stone walls, historical roads and paths, but also brooks and old trees. The other indicator is about the presence of traditional land use, and patterns. This might be reflected in the visibility of traditional industries, but also the presence of other traditional economic land uses such as local craft skills. The last indicator is focussed on the reference on historic moments in the past which are of importance for national or international

cultural history. For example happenings which were of importance on national or international level, such as battles or properties of important people. It does not say that regional or even personal happenings are of no importance, even though we have to consider that this framework is designed for the designation of areas on national level.

Table 1: Revised evaluation framework for Natural Beauty Criterion

Factor	Sub-factor	Indicator
Landscape quality	*Maintenance*	Landscape elements are in good condition (Coeterier, 1996)
	Unity	- Completeness: Are all the appropriate characteristic elements present? - Incompleteness: Are there no inappropriate or non-fitting elements? (Coeterier, 1996)
Imageability	*Uniqueness/distinctiveness*	- Natural and cultural iconic elements or landmarks (such as the presence of rare habitats, rare historic sites, history of national importance) (Tveit, et.al, 2006) - Presence of natural and cultural landscape characteristics -Characteristic sensory stimuli
	Vividness	- Presence of water bodies (Strang, 2009; Litton, 1972) - Striking landform by a strong sense of scale or contrast (Tveit et. al., 2006) - Presence of striking viewpoints/panoramics (Tveit, et. al. 2006)
Perceived naturalness	*Vertical coherence*	- It should be possible for people to make sense out of vertical features in the landscape and how they interrelate
	Horizontal coherence	- Interconnectedness of its elements and structure as a

		whole - Presence of unstructured shapes without significant straight lines and square blocks. - Presence of natural materials (Coeterier, 1996)
	Temporal coherence	Expression of vertical and horizontal coherence throughout the seasons
	Historical coherence	Presence of coherent natural and cultural historic elements, which perceptually interrelate with each other
	Flora and fauna	- Presence of important or distinctive flora & fauna - Presence of important or distinctive habitats
Historicity	*Historical continuity*	- The existence of a significant amount of visible time layers providing evidence of time depth. - Existence of historic evidence of meanings of the landscape through time in written, artistic, oral and material remains. - The presence of a coherent mix between past and present land use.
	Historical richness	- Presence of cultural elements - Presence of traditional land use and patterns - Presence of reference sites on international and national historic moments

This revised evaluation framework for Natural Beauty Criterion is produced to underpin the difficulties of the existing framework in relation to contradictory factors, impracticability and lack of theoretical and academic evidence. This new framework is created to deal with these difficulties as best as possible, and tries to give an onset for a better functioning system which can be used for the designation of National parks and AONB's in England. The indicators used in the previous framework are translated into new indicators, together with academic evidence in order to make a more coherent framework. In the first place, it seems that this framework focusses on the expert view.

However, the concepts addressed in this framework can be also used in a more public oriented approach. Before an area is being designated, for practical reasons, first a professional will have a look whether the landscape is valuable from an expert point of view using this framework. Next to that, we can gain further insight in the value that people address to this landscape, using a public oriented method. Some methods are described in chapter 4 and can be executed next to this framework.

Even though the expert approach has been rejected by many scholars, I would like to contest that the usage of this approach itself is not incorrect: it is about the usage of both the expert and the public view integrating them together into an overall perception of the value of the particular landscape. This framework can give a structure for both the expert-led and public-led approach. Further research is needed on how to implement both views, but a least this framework can provoke a new approach towards applied landscape perception research. It looks at the landscape as a whole, but in further research the indicators can be narrowed down into more quantitative criteria.

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Figure 10: ERM (2001) Salisbury Plain Army Training Estate Landscape Character Assessment. For Defense Estates.

Figure 11: Swanwick, C. (2002) Landscape Character Assessment: Guidance for England and Scotland. The Countryside Agency and Scottish Natural Heritage. p. 34

Figure 12: Swanwick, C. (2002) Landscape Character Assessment: Guidance for England and Scotland. The Countryside Agency and Scottish Natural Heritage. p. 35

Figure 13: Natural England (2011b) Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England. p. 8

Figure 14: Natural England (2011b) Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England. p. 13

Figure 15: Natural England (2011b) Guidance for assessing landscapes for designation as National Park or Area of Outstanding Natural Beauty in England. Appendix 1. p. 24

4. Research methods human landscape perception

4. Research methods human landscape perception

Many theories exist on experiential qualities of the landscape. However, we must not underestimate the importance of research methods and techniques, as they eventually determine the nature of the data collected in support of these theories. Furthermore can these methods be used in planning policy, rather than for merely theoretical purposes. In this chapter we will focus on research methods that can be used to identify human perceptions of a particular landscape such as questionnaires, tests, physiological measures, observations etc. The emphasis is on providing guidance for the selection of methods by explaining strengths and weaknesses of these specific methods.

4.1 Methods

- A holistic experience can only be explored through its categorization into sub-processes, and no quantitative methods are available with which to research the holistic experience itself.

Interview

Interviewing is a commonly used method of collecting information from people. There are different definitions of interviewing. According to Monnette et al. (1986) 'an interview involves an interviewer reading questions to respondents and recording their answers'. Another definition is 'an interview is a verbal interchange, often face to face, though the telephone may be used, in which an interviewer tries to elicit information beliefs or opinions from another person' (Burns, 1997). Interviews can be classified into different categories. In a structured interview, the researcher asks a predetermined set of questions, using the same wording and order of questions as specified in the interview schedule. This is a written list of questions, open ended or closed, prepared for use by an interviewer in a person to person interaction. The main advantage of using a structured interview is that it provides uniform information, which assures the comparability of data (Kumar, 2011). Unstructured interviews are based on a clear plan that you keep constantly in mind, but are also characterized by a minimum of control over people's responses. The idea is to get people to open up an let them express themselves in their own terms, at their own pace. This method is mostly used when there is a lot of time available to do the research (Bernard, 2006). Semistructured interviewing has a lot of the qualities of unstructured interviewing, but uses an interview guide. This is a written list of questions and topics that need to be covered in a particular order.

Questionnaires

Within landscape perception and experience research the questionnaire is the most widely used technique (Karmanov, 2009). The versatility and the possibility of customizing questionnaires makes them a very popular research technique. The only difference between an interview schedule and a questionnaire is that in the former it is the interviewer who asks the questions.

Psychometric tests

In psychological research psychometric testing is a very common method of data collection. These tests are fully developed questionnaires, with known reliability, validity and population parameters.

These tests are norm referenced, which means that data exist about the range of scores that can be expected from the population under consideration. There are also criterion, also called performance, referenced psychometric tests with known expected standards of performance. These test have been developed to measure a broad range of mental characteristics: aptitudes, competence, personality traits, mood states, psychopathologies and attitudes. Psychometric tests are usually divided into four categories: projective tests, self-report inventories, objective tests and ideographic measures. Projective tests cannot be applied outside clinical context, which makes it not very useful in understanding human perception of a certain landscape. Self-report inventories, on the other hand, have been commonly used in landscape perception and experience to measure environmental attitudes. Commonly known inventories are the Profile of Mood States (POMS) and the Semantic Differential. The benefits of using such a popular test is that the characteristics are known which saves time, and it facilitates results to compare between different studies or areas. Objective tests are useful to reveal experiential states that are not assessable through use of research techniques that rely on verbalization of experience. Ideographic tests focus on individual respondents. A widely applied strategy is that of a repertory grid. The technique in its simplest form requires participants to compare and contrast sets of three elements (people, environment, objects etc.) using their own words and criteria. The method allows the respondents to choose their own concepts for the categorization of perceived experiential qualities. An advantage of this method is that it combines the ideographic assessment of an individual's construct with the possibility of generalization across groups of people through the use of statistical techniques. Another ideographic measure is the analysis of cognitive maps, a measure that was initiated by Lynch (1960). People are asked to draw a map of their physical environment which reveals the individual's representations of it. They might represent beliefs and conceptions/misconceptions about the spatial organization of the environment.

Psychophysical methods

Psychophysical research into landscape perception and experience uses techniques that allow the exploration of the relationship between experiential qualities of landscapes and their physical characteristics. In general, photographs of landscapes are used. The physical features of the depicted scenes are either described minutely or measured. These features are related to preferences or to judgements of scenic beauty by means of regression analysis. This technique is very well suited for research in the context of landscape design as it allows correlation of the perceived experiential qualities of landscape with their physical and formal counterparts. Therefore, it opens up the possibility of empirically testing the validity of landscape architect's assumptions about the perceived experiential qualities of landscape design. This is important both in a practical (creation of rewarding landscapes) as a theoretical sense (development of the theory of landscape experience) (Karmanov, 2009).

Psychophysiological methods

This method is concerned with the manipulation of psychological variables while observing the effects of such manipulation on physiological processes. This method has been an important complement to subjective psychological data, but seems not very usable in terms of deciding what people's perceptions are of a certain landscape or environment.

Observation

Observation can be seen as a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place. This is a traditional technique which is still very popular. It enables a researcher to study behaviour as it takes place in a variety of situations. Sometimes behaviour can be sampled by constructing simulated situations. However, simply watching and listening in combination with the recording or counting of phenomena generates a rich source of data. Currently observational techniques have been enriched by the use of covert observation at a distance using GPS or radio-wave tracking devices. The general problem of behaviour observation techniques is the difficulty of explaining the underlying mechanisms of and motivation behind observed behaviour, as these require insights into the cognitive and emotional aspects of human functioning (Karmanov, 2009). Even though there are difficulties with this technique, observations give a very good idea of the behaviour of people in a certain context, rather than the perceptions of individuals.

The measurement of experience usually involves a number of steps. To begin with, experiential states must be conceptualized in terms of specific experiential qualities, based on existing theories such as attractiveness and interestingness. Then the experiential qualities must be made measurable by relating them to an observable entity, such as verbal description of physiological or behavioural records. Finally, the observable entities are measured by means of a technique of measurement (Karmanov, 2009). Of course the objectivity such a method is questionable. Asking people to score their experience on a number of vague qualities as attractiveness, friendliness, or boringness is less objective when we for example try to measure people's intelligence. This is because there is a difference between 'judgements' in which a correct response can be given, and 'sentiments' when a preference is pronounced. Measuring perception is inevitably connected with sentiments, meaning that there is no right or wrong answer.

When a landscape is being assessed, categorization of experiential qualities always entails some loss of uniqueness through the reduction of a holistic experience to a number of elementary processes and components. A holistic experience can only be explored through its categorization into sub-processes, an no quantitative methods are available with which to research the holistic experience itself. It is simply impossible to measure an object without taking recourse to the measurement of its attributes and its particular features for instance its length, weight or colour (Karmanov, 2009).

4.2 Research methods in practice

- More experiential and multidimensional approaches by planners and policy-makers are needed for the future needs of areas.

Previously described methods have not all been used in a political context. Mostly photographic, schematic or virtual reality (VR) methods are being used to produce landscape character assessments, environmental assessments and landscape scenarios. More experiential and multidimensional approaches by planners and policy-makers are needed for the future needs of areas (Scott et. al., 2009). Several attempts have been made to map and assess landscape qualities in different countries. Some techniques that are used by governments will be explained here.

4.2.1 Study Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' Natural England (2011)

- This method seems also very useful in assessing one particular area such as an AONB.

Natural England commissioned this qualitative social research study to provide baseline evidence of the cultural services and experiential qualities that landscapes provide to society. England's landscapes provide a range of services to people, including spiritual enrichment, cognitive development, reflection, recreation and aesthetic enjoyment. A key task of this work was to understand whether such services correlate to particular landscape characteristics or particular landscape features. In this study eight National Character Areas were selected in which the whole landscape, landscape features, perceptual qualities and services were considered.

A multi-method programme was conducted using a focus group, an extended creativity session and post-experience in-depth interviews. The focus groups were of a standard length of 1,5 hours and were kept relatively homogenous in terms of socio-economic characteristics and age. The extended creativity group was longer than the focus groups (around 2,5 hours) and included people who were more engaged with the landscape, were more expressive, or had more knowledge about the area. Also in depth interviews were carried out. This was an interactive approach towards the landscape, as participants were asked to go to a part of the character area and experience it by walking or doing another recreational activity. They were asked to be out for at least one hour and take pictures of positive and negative aspects of their experience. They were also asked to write a diary of their experiences and what they valued and to draw sketches if appropriate (Natural England, 2011). This method was particularly used to assemble all data and find generalities. However, this method seems also very useful in assessing one particular area such as an AONB. In the focus group, a part of the interview was about location-specific perceptions. The format of these questions is displayed in figure 16.

LOCATION-SPECIFIC (20 mins)

- Looking specifically at their local landscape, (see map) and thinking about some of the issues we've already discussed what do they value in the landscape locally and why? (positives and negatives)

- When they think of this local area, eg The North Downs, what do they immediately think of? ie. what typifies it for them personally? Does it have a distinct character which unifies it or not? Which characteristics would they use to describe it to others and which would they not? eg. it is a gentle landscape…it is a dramatic landscape….

- How do they feel the local area has changed over the years, if at all in terms of:
  - its general character
  - level of development
  - condition
  - beauty
  - 'naturalness'
  - amount of wildlife or biodiversity

- What other changes have they observed and are these for better or for the worse? eg. changes in woodland, forestry cover, field systems?

- If the character has been affected by man over the years eg through various industries, mining, farming, quarrying, does this make them feel any different about the landscape or is that part of its character? Are the aware of/do they appreciate any type of landscape for its production capabilities as well as from a personal point of view?

- How does their local area 'match up' generally in terms of their image or experience of other types of 'landscape'?

- Do they feel lucky or unlucky in what they have locally? Are there any areas locally that they avoid, feel uncomfortable in/dislike and why?

- Please could they pick out (circle or underline) from the list (Showcard D) and from the photos (Photopack D) anything they particularly value about their own local area and also anything they do not like or value. General discussion about their choices and then what their area is particularly good/poor at delivering eg. relaxation, inspiration, recreation, history, calm etc.

Figure 16: Consumer focus group location specific format (Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Showcard D: List of features and characteristics for Character Area

Arden

A farmed landscape which is undulating and has much woodland.

Winding lanes and isolated hamlets.

Many small fields still remain from the pattern of the ancient landscape.

Different shaped smaller fields are bounded by hedges and interspersed with small woodlands. These areas contrast with larger and more even shaped fields located on former deer parks, rural estates. There are also many regularly spaced fields which used to be common land.

Many areas of old 'wood pasture' ie. large old oak trees, well spaced out on grassland and on small remaining patches of heathland.

Narrow, meandering river valleys with long meadows alongside the rivers.

The North-eastern industrial area towards Tamworth and Nuneaton is based around the former Warwickshire coalfield. It has distinctive colliery settlements.

The North-western area, towards Halesowen is dominated by urban development and landscapes influenced by the edge of developments and suburbs.

Figure 17: Consumer focus group location specific format (Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A)

Figure 17 displays a show card with characteristics of a specific area. These characteristics can be adapted to the particular area which is being assessed. Furthermore post experience depth interview were held after people were asked to go on a regular activity in the landscape. Figure 18 shows how this interview was conducted.

FINAL TOPIC GUIDE
NATURAL ENGLAND
EXPERIENCING LANDSCAPES

theresearchbox

Project 4176: Post Experience Depth Interviews
1.0 hour long

Introduction

- Household Make-up, Employment status
- Length of time living in the Area, Grew up in Country, Suburb or Town?

General usage of and attitudes towards Landscape

- In what sorts of ways do they use/experience the landscape/countryside?
- How do they feel about the landscape? Is it important to them and in what way?
- How often to they 'experience' the landscape? Is it mainly on holidays, week-ends or in their daily lives or as part of their jobs?
- And what kinds of landscape to they tend not to like or not be drawn to and why?
- How experienced are they eg regular walkers or occasional?
- Who went on the walk and is this normal?
- Would they have liked to have done anything other than walk eg cycling or any other way of experiencing the landscape?

Initial response to their walk

- Where did they choose to go for their walk and why? (draw on map roughly where they went)
- Were any other walks considered and then rejected? (Probe reasons)
- Did they enjoy their walk and why?
- What were the highlights and lowlights?
- What role did the landscape play in their overall experience?
- How do they think they benefited, if at all from this experience?
- What contrasts in the landscape did they notice?

Discussion of Diary (ask to see diary)

(If children present, ask to see any pictures and poems and have them described)

- Talking through the diary (Annex B), taking the main section what did they value most/least? What were their emotions, thoughts and feelings at the different stages? (Probe for what in the landscape actually caused each mood or emotion If group interview, check who wrote which bit and probe reasons for what they have written) Explain sections from diary as follows:
  - what they noticed
  - likes

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  - dislikes
  - positive emotions
  - negative emotions
  - benefits of total experience
  - change for the worse/better?
- Did they see any wildlife? What and how did this make them feel? Was it important to the experience? Were there any habitats they particularly thought should be preserved?

- What other qualities did they notice? For example, was how the land was managed/unmanaged affecting their experience?

Discussion of the Photos

- What photographs did they take and why? What did they like/dislike about them and what did they represent?
- Going through the checklist (Annex A) what did they choose for each area? If they found any of tasks difficult to do, why was this? eg. Because that landscape doesn't have it? (Interviewer writes the corresponding number on the back of the photo from the checklist or whatever they represent, if not on the checklist?)
- Did they tend to notice and value individual features or experience the character of the place as a whole?
- If there is some consistency in what was taken, ask why they have mainly taken 'open' views eg with lots of sky versus photos of XYZ
- Which is their best photo and explain why? ie the one that most epitomises the walk for them and why? (star item on back)

Overall 'valuation' of this landscape experience

- Overall, how much did they value this experience?
- Was there anything about the landscape that could be improved to enhance the experience?
- What did they most get out of this walk? How did they benefit, if at all?
- Was the walk they took good/poor at and the landscape they experienced helping to deliver any of the following:
  - recreation, exercise
  - ability to ponder/relax
  - a feeling of history
  - a sense of your local identity
  - learning
  - inspiration

- What would they most like protected in this landscape?
- What would they like most changed in this landscape?
- Do they think landscape should be a constantly evolving thing over time?

- If they were to lose something from this landscape, what would they most miss?
- If the landscape where to disappear, what would they say would be its epitaph?

- (IF TIME AVAILABLE) Describe the landscape in the following terms, if possible, and say whether the 'amount' of each was right for them personally? eg too much of one and too little of another eg Not open enough etc? (things that Natural England might be able to effect or influence)
    - natural and man-made features
    - a highly structured landscape or a simple landscape
    - a variety within the landscape or a single type of landscape
    - a feeling of openness, such as on a moorland or a feeling of enclosure such as in a wood
    - a 'wild' landscape versus a 'gentle' landscape
    - a highly managed landscape versus a landscape which is managed minimally
    - a remote landscape or a populated landscape

Figure 18: Post-experience depth interviews (Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A)

Second, the people are asked to go on a walk and assemble information by camera and using a diary (figure 19 and 20).

Annex A: CHECKLIST FOR WALK ACTIVITIES

CAMERA

We are interested in what you notice and how you feel during your walk. Please take photographs of anything in the landscape, whether it is a single thing like a tree or a hedge etc, a part of the landscape like a hill or a valley, or a whole view.

Take things spontaneously and allow all members of the group to join in.

You can take as many photographs as you like, but please try to take at least one in each of the following categories:

	Tick here when done
1. something attractive	
2. something unattractive	
3. something that inspired you	
4. somewhere where you felt a sense of calm or relaxation	
5. somewhere which was typically 'local' eg made you feel at home	
6. something or somewhere that gave you a sense of history	

PICTURES AND POEMS

If you or especially your children (if relevant) would like to draw a picture or write a poem after the walk we would also like to see this at the interview to discuss it with them too.

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Figure 19: Camera checklist (Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A)

DIARY (given to you by recruiter)

Annex B: LANDSCAPE DIARY

We would like you to keep a record of your trip into the countryside. When you are there, look around you and keep a record of anything special, for example:

- **aspects of the landscape that you particularly like**
- **features within the landscape that you feel are important**
- **any moods or feelings that the countryside gives you.**

Also keep a record of anything that you don't like, perhaps places that feel cluttered or uncared for.

And keep your eyes open for any wildlife. Also, try to notice any sounds and even smells (positive and negative)!

Write as much as you can as we will use this as a discussion point during our interview.

If you, your children or other members of the group would like to draw a picture or write something (a poem perhaps?) after the walk we would also like to see this at the interview.

Please complete this diary as you are going along – and/or immediately you get back home.

Thank you. And enjoy your time!

What was the day and date of your walk?	
Where did you go?	
How long were you walking for?	
How many people (including any children) were there altogether?	
What was the weather like?	

What are you noticing during the walk? **Make a list at different points during the walk**	What you notice……

Describe scenes or individual moments which you particularly like and say why.	What you particularly like…
Describe scenes or individual moments which you particularly dislike and say why.	What you particularly dislike…

Did you feel any positive emotions during the walk - eg peace, excitement? **Explain how you felt and what made you feel this way.**	Positive emotions and thoughts

Did you feel any negative emotions during the walk - eg fear, alienation? **Explain how you felt and what made you feel this way.**	Negative emotions and thoughts

What did you and/or your group most get out of the overall experience?	Overall experience
Was there anything in this landscape that you felt is changing for the better or worse?	Change for the better or worse?

Figure 20: Landscape diary (Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A)

To a general extend, the outcomes of this research are shortly described below.

- Building:

People appreciate buildings the most when there is a contrast between a mainly natural or green environment and a solitary building such as a ruin or a church. This would remind people of man's place in the world, that mankind can build, but that nature can also take over. Especially ruins are interesting: 'It's nice to stumble across historic remains and stuff. I like them if they are falling down, not if they are like, it's like a church that is still standing, that's not as fun.'

- Roads:

A sense of history and continuity was provided by places where people imagined many feet to have trod before, such as a drovers road, or a deep-cut path with high banks on either side. People imagined vantage points and outcrops where people would have gathered or met in iron-age times. For example: 'People have sat and appreciated this view over and over, generation to generation'.

- Geology:

Geology and pre-history was also mentioned as important, with examples like cliffs on the coast having constantly changed with the effect of the sea or movement of land masses. The presence of fossils or crustaceans in rocks and cliffs brought a sense of wonder.

- Man made features:

Features such as industrial sites, historical villages, farms, lanes, hedges and walls had a higher capacity to deliver a sense of history than did more natural landscape features such as grassland or marshland. However, some natural features could deliver a sense of history when geology had formed them. Hills and mountains did deliver a sense of history in terms of iconic views where people had stood before.

- Woodland:

Woodlands are considered to be treasured places, used to greater or lesser degree, but thought to be quintessentially British. Mixed woodlands were liked, but broadleaved woodlands were generally preferred to be within, especially for relaxing, magical moments. Deciduous woodlands were key to the aesthetics/colours of a whole view.

- Fields:

Overall, people had a preference for irregular-shaped and small field, and were against large-scale arable fields with no (or indistinct) boundaries. A field system was valued even more if there was a vantage point from which to view it, such as an open top or headland. These fields tend to be valued even more when in a valley bottom or stretching out beyond some downland than if purely on flatter land, though they were still valued.

- Moorland:

These lands were valued for their wildness and bleakness, but they were not always thought to be beautiful places by the majority of respondents. Some respondents stated that they felt to exposed within such landscapes, but thought that they fulfilled the role for a more exhilarating experience. Moorland could be more important for those living within it. Generally the sense of openness was considered to be the most important aspect of such landscapes. Moorland seemed to be perceived to deliver an intense experience, and could be seen as inspiring and spiritual, but was less likely to be calming or historical.

- Grassland:

Grassland was regarded as being flatland, which was by most people not regarded as a highly interesting type of landscape. It was imagined to be featureless.

- Villages:

Villages and rural buildings are generally considered to be an important part of the rural landscape. Villages and bars tended to remind people of an historic rural way of life that is important to them in terms of learning about man's past. Often the construction of cottages was talked about as being typical of the region, adding to people's sense of place. Often a village provided a start and finish for a walk, or where landmarks for a drive through the countryside.

- Boundaries:

Walls and hedges seemed to be correlated with the need to see field systems, patterns and farmland as part of the quintessential English view. Therefore they contribute greatly in terms of aesthetics of the whole view of the landscape.

- Openness:

On the whole, openness seemed to be valued more than enclosure for being a main contributor towards escapism. Furthermore, contrast between openness and closure stimulate this experience of impressive, openness and distance, seeing far-off horizons. This was important for calmness and a feeling of man's place in the world (Natural England, 2009).

This qualitative study provides a good overview of what people appreciate in the English landscape in a broad sense. Because of the consideration of the landscape in different levels such as the whole landscape, landscape features and perceptual qualities and services, the outcome of the study is useful for divergent disciplines. Even though this study has not been carried out in the High Weald, it does give a good overview of the overall landscape perception of the UK. In practical sense this technique can be used for a landscape specific survey, in which people can express their perceptions about a particular landscape. The outcomes of such a research could be, instead of focusing on a national scale, of importance for producing a method for local and regional scale, such as the High Weald. Because this method assembles people's views on landscapes from a two dimensional perspective, in essence multiple methods are used such as interviews and more activity oriented methods. A concern is however that respondents are considering the landscape solely in a passive way when using photographs, while activity oriented methods might be of a too active nature, not allowing the person to sufficiently reflect on their wider experiences of the landscape (Natural England, 2009).

4.2.2 A multi-sensory and multiple-perspective framework for assessing public perception of landscapes by Scott et.al. (2009)

This method is developed as a response against the landscape research and policy that have been pre-occupied with expert-led and visual approaches. This pilot technique captured the real time responses of walkers, mountain bikers, planners, councillors and land managers on pre-planned trips in Aberdeenshire. Each member of the research group took responsibility for a group. Potential participants were approached by a letter in which they were asked to partake in the research. It was not stated that they were interested specifically in landscape. The interaction with the landscape, whether it be professional or leisure orientated, was already pre-planned by the participant rather than arranged specifically for this research. The main collector of data was audio-recording the

experience. The researcher only questioned the participant in response to an action. During the activity, interactions and emotions were noted and the session was concluded with a general debriefing. This debrief indicated that both researchers and respondents felt comfortable with the approach. Of course some distorting effects might have been present, such as a distortion in their usual experience, but these effects have been minimised as much as possible. Despite these limitations, it was found that a relatively small sample of people with different interests in, or remits for, managing landscapes could yield rich data, providing insights into the professional, social, personal and emotional dimensions of landscape. This was achieved in a relatively 'natural' way where the stakeholder was free to explore and express their range of knowledge and feelings in response to their landscape experience. The method was also found manageable in terms of researcher's time input and extremely rich in providing insights into how landscape is perceived, interacted with and managed by different publics. In figure 21 the protocol is displayed, explaining general procedures to ensure the consistency of the method.

Scott et.al. (2009) state that the results of this method challenge conventional policy approaches. They mention that planners in particular have rarely achieved a multidimensional approach with their reactive, top-down approaches which largely request objections to proposals rather using a more open and positive style of engagement. This is a useful starting point for a conceptual framework, however the authors themselves state that further work is required to test these methods. This bottom-up approach, more related to peoples real experiences rather than expected experiences, might give a start for analysing people's perception of the landscape by introducing a new innovative method.

Box 1. Landscape Tours – Protocol

Structure and Techniques
Each session is likely to consist of the following four parts:

1. Preamble: **Explain** what our research is about and what we are trying to learn more about. **Obtain verbal consent** to use data for research (audio-record consent). State that **data/references will be anonymous**.
2. On-the-move **Observations** during landscape tour
3. On-the-move **Interrogation**
4. **Debrief** interrogation

On-the-Move Observations
Note:

- specific observations at stops or changes in route direction
- characteristics of landscape elements of interest
- social interaction
- location of viewpoints
- weather conditions
- body language
- emotions; mood

There is an important role for observing the people and their interactions, movements attention and moods. In groups the issue of social interaction is important. Try and capture these in your notes.

Audio-record observations/conversations.
Make sure to periodically test that the digital recorder is working.
Try and let people steer as much as possible. If they are uncertain as what we are trying to get out of this, remind them that we are simply accompanying them on their planned activities/work in order to find out more about how they experience and value their/ these surroundings.

On-the-Move Interrogations
In response to statements or other non-verbal communication prompt for their particular actions. Test resilience of answers. Do they tell us things just to please us, or do they give us 'real' explanations and answers? The aim is to find out about actual feelings and concerns rather than the informant's rationalisation of the matter.
On seeing or informant having mentioned specific locations or landscape elements or qualities, try and probe into the following: How does this make you feel? or How do you feel about that? And why?

Debrief Interrogations

- Follow-up on any observations or comments that you as researcher are unsure whether you recorded it correctly.
- Together with the informant, mark the route on the map.
- Get respondent to comment on the whole experience (some reflection may uncover important issues to do with the impact of a landscape experience after the event) and gauge how 'typical' it was.

Figure 21: Protocol for activity method (Scott et.al. 2009)

4.3 Discussion

- We need a method that can be used for multiple landscape, is multidisciplinary and people and expert driven.

Two methods have now been described, both using multiple techniques. As Karmanov (2009) argued: 'a theoretical framework for landscape perception research should…rely on the methods and theoretical insights from qualitative as well as quantitative research traditions'. This means that multiple methods can be used to optimize the ultimate theoretical framework to assess the perception of a certain landscape. Most methods focus on trying to generalize the outcome of the research into an overall view of people perception: what do people generally like and do not like. However, in practice, it is necessary to have a better understanding of how people perceive a certain landscape, and what characteristics of the landscape are valuable to people. As mentioned before, an example is that many theories have said that people prefer water. It is about the different qualities landscapes hold to people, which has to be identified by a multidisciplinary approach and method.

In this report, no particular method is chosen to be the best option for applied human landscape perception research. Both described methods give an idea of how policy driven research can also be based on public perception instead of expert perception. This does not say however that there are no other good options available: many research has been performed concerning landscape perception and preference. Methods which focus on the public perspective, depending on the aim of the research, need to be integrated in expert driven approaches. Also the method should be applicable to different landscapes, and can be coherently executed. The next important characteristic of the method should be that a multidisciplinary approach is needed, using theories from various disciplines.

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Figures:

Figure 16: Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Figure 17: Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Figure 18: Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Figure 19: Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Figure 20: Experiencing Landscapes: Towards a judgement-making framework for 'cultural services' and 'experiential qualities' NECR045 edition 1 - Annex A

Figure 21: Scott, A. Carter, C. Brown, K. White, V. (2009) 'Seeing is not everything': exploring the landscape experiences of different publics/ landscape research 34:4, 397-424

5. Recommendations

5. Recommendations

This report aims to challenge the existing profession about landscape perception or experience in applied science. Problems and difficulties within landscape perception research are addressed by criticizing existing methods and providing alternatives. Also a basic understanding of human perception is endeavoured to achieve, emphasizing the importance of the implementation of public perceptual work into planning and policy practices. Giving an understanding of how landscape perception works is important, as understanding a phenomenon enhances dealing with that phenomenon. In this report an example is given how to transform and improve existing policy frameworks into better workable, valid and reliable outlines. Academic concepts are integrated into policy strategies in order to provide a starting point for a more coherent, widely applicable method to include people's perception into planning policy.

- Many documents claim to be objective, while they are certainly not;
- Techniques used in policy documents seem to be outdated;
- We have the acknowledge that how we value the landscape now is different from how it was and will be;
- Many policy strategies are expert driven;
- Perception of landscapes is about value;
- There is an evident gap between academic perception research and applied policy strategies.

5.1 Key points

There are some key points that we can derive from this report and need to be emphasized a bit further. First, a lot of policy documents claim that their research is objective, or is as much objective as possible. However, as is apparent from this report, perception is influenced by experience, feeling and opinion, meaning that experience itself is inherently subjective. Being objective in executing landscape experience is a challenge, because the experience of the researcher will be different from the respondent's experience, increasing the chance to bias the research. Therefore it should be recognized in policy strategies that including public perception will have to deal with some form of subjectivity. I do not say that subjectivity is a negative thing: on the contrary, acknowledging the subjectivity of public landscape experience will increase the credibility of these policy documents. What is an issue now is that documents such as the LCA state that they are objective, though they are certainly not. Therefore I would like to recommend that these policy strategies acknowledge that involving landscape experience is subjective, without the restraint and fear to admit it. What we do have to think about is trying to develop a method which is reliable, valid and representative.

Another issue is that techniques such as the LCA and the Designation strategy seem to lag behind new developed theories. Assumptions such as that landscape quality is inherent in the landscape are outdated, as most academics would agree nowadays that landscape quality is in the eyes of the beholder. However, existing policy strategies still rely on the first and older supposition. This might be caused by the overall focus of policy documents on landscape architectural theories,

ignoring other disciplines such as psychology, cultural/social/historical geography, archaeology etc. Part of this paradigm is that methods focus on the visual world of the landscape, instead of using the knowledge that a landscape is perceived through all senses. An obvious example is the 'Guidelines for Landscape and Visual Impact Assessment' (2002) by the landscape institute and the institute of environmental management and assessment. This document is not referred to in this report but is highly interlinked with the LCA. Purely the fact that this document focusses on the visual impact is in essence wrong, as it does not acknowledge that impacts are perceived by more than just the visual sense. The same focus is seen in the LCA, were experts are asked to find a 'representative view of the landscape'. Also the assessment itself is very visual oriented. To sum up, I advise current policy to have a better look at the existing theories now, instead of relying on older, out of date methods and theories.

A general assumption that is being made by varied policy documents, planning policies and planning strategies, is that future generations will like the same landscapes as we do. Especially dealing with landscape experience research, we have to keep in mind that people who value the landscape in a certain way now, will value it very differently in within a certain time scale (this can be within 100 years, but also within 20 years). Predicting what people will value through time is almost impossible. Only when we can derive general preferences out of existing theories, through time, we might get an idea of how the landscape will be perceived in the future. This is where a task is apparent for expert and planning policies. When you ask the public what they like, they will answer what they like now. The expert then needs to decide whether landscapes that might not be valued now, can be valued in the future. Therefore I would like to stress the importance of interlinking expert knowledge with public experience. Relying only on public experience and what they value, might neglect landscapes which are of future importance. Looking at current policies, it is not always stated or even noticed that future generations might not like the same landscapes as we do. That is why I would like to state that current policy should acknowledge the importance of this given, and keep in mind that the decisions we make now based on public perception have to be put into prospective and historic context.

Another noticeable aspect of general landscape experience research in policy reports, is that all methods about valuation, qualification, perception and experience, are expert driven. Research has shown that public or lay people's perception is different from experts. Therefore they also value certain things in the landscape in another way. Some things cannot be assessed by an expert in a valid and representative way, as it is highly dependent on personal preference. Therefore the single use of an expert assessment method is highly contested in landscape experience research. This means that surveys from the physical landscape simply do not suffice in order to get an idea of landscape experience. As mentioned before, a combination has to be found between expert assessment and public assessment.

Spatial planning is all about making decisions: were to build and not to build, what to manage and what not to manage. In order to make these decisions, something has to be valued more than the other. This can be for economic, politic and social reasons, but in the end we are always changing and developing the landscape. Therefore we cannot ignore that the landscape has to be valued, qualified or characterized in a way. Even though characterization might be in essence different from valuation, both approaches are still a matter of interpretation and perception. You could argue that every piece of landscape is valuable or important for a person. However, it is possible to draw generalities from what most people value in the landscape. Whether policy strategies focus on

landscape qualities, character or value, it depends on the aim of the assessment. What we do have to keep in mind is that the difference between these terminologies is actually not that obvious as stated in for example the LCA.

After all the difficulties explained within landscape experience research, an evident gap between academic research and applied theory research is apparent. It seems that there is a lack of implementation of academic research into actual applied policy strategies. As is displayed in this report, many applied frameworks lack theoretical and methodological foundation. The reason for this is unclear, we can only guess that there might be an accessibility barrier between academic documents to policy makers, and a lack of interest in scientific research on applied policy. I do not have the answer to this problem, the only thing I would like to mention is that there is a clear gap and that policy makers should be aware of this. Therefore we need to integrate both and acknowledge each other's importance. This gap is clearly visible in the terminology used in policy documents. Many terms like beauty, aesthetics, sense of place and perception are used without questioning and without explaining what these words actually mean.

5.2 AONB High Weald

So, what does this all mean for the AONB High Weald? First of all the recommendations and critiques mentioned above are of use for the overall approach towards landscape perception and experience. This report attempts to provide a better understanding of people's experience of the landscape, whether this is applicable for a designated area such as the AONB High Weald, or for national applied policy strategies such as the Landscape Character Assessment. By creating a better understanding in landscape experience, further policies about landscape perception can be well underwritten using this report, and can be used to form a basic understanding of how to implement public perception into policy strategies. Moreover the objectives of the Management Plan of the High Weald Area of Outstanding Natural Beauty states as an aim: 'to acknowledge and increase people's understanding of our shared cultural values and aspirations for the High Weald', with the rationale: 'to ensure that people's perceptions and social and cultural aspirations for the landscape are recognized and taken into account of in AONB management'. The role this report can play in reaching this objective is offering an up to date insight in theoretical and methodological backgrounds in landscape experience research. Furthermore it provides a critical evaluation of national policy strategies which directly and indirectly apply to the AONB High Weald. It tries to contest these strategies by raising critical questions and illustrate alternatives.

In order to meet the objectives of the management plan, further research is necessary to truly understand people's experience of the High Weald itself. This report mostly aims at providing a base for experiential research, so can be used as a starting point for further research. Some ideas are proposed to get a full understanding of people's perception of the High Weald. Yet, explained theories can be used to predict people's general values of the High Weald without executing an excessive survey method. I would however advise the AONB High Weald to carry out a qualitative survey in order to really get an insight in people's perception of the High Weald. Additionally an historic landscape perception research of the High Weald can be executed. In this research an historical analysis can be performed using existing literature, poems, artistic representations, but also other sorts data such as the national archive. The key focus should be on finding representative material for that time age, rather than for example only use estate archives biased by wealthy

people. Next to this historical analysis, the altered framework for designation of AONB and National parks needs a critical assessment in order to improve it. Indicators might need further specification, even though the basic framework has improved considering validity and funding.

Continuously, research is being performed on landscape perception or landscape experience. What has not yet been found is a method that can be used for multiple landscapes, is multidisciplinary and people instead of expert driven. The reason for this might be found in the observable gap between academic methods and policy methods. Both do not seem to correspond, which is endeavoured to visualize in this report. Many traditional academic perception research focusses too much on finding similarities between landscape perception and what constructs can represent these similarities (people prefer landscapes with maintenance, coherence etc. (Kaplan & Kaplan 1989, Tveit et.al. 2006)). They have no or little concern about the practicality of these constructs and how to implement them into landscape policy. On the other hand, policy methods focus too much on practicality, losing sight of the initial importance of understanding people's landscape perception.

More research is needed in order to combine all existing academic and policy methods into a new and coherent technique which is applicable on a political and manageable level. In the UK government, a struggle is apparent to implement people's perception in practice, even though they address and acknowledging the importance of integrating human landscape perception into planning and landscape management policies. In this report the problems and difficulties in landscape perception research are pointed out, a start for eventually trying to solve these problems and difficulties. It is sure that we need a more coherent, practical and generally appreciated framework/method for landscape perception. This report should therefore be seen, not to discourage the usage of public experience in policy strategies but as a challenge to eventually strengthen our policy strategies into public support base policies.

Glossary

Before defining these terms it is good to understand that there is no right or wrong in describing concepts. Many terminologies have changed over time, and as landscape changes all the time, language does too. Also varied disciplines use different definitions of similar words, which embodies the fact that no word has only one meaning. Here the terms used in this report are described.

Aesthetics
Something is aesthetic 'if anything shows a sense of beauty' (Dutch dictionary, 2013) or 'relating to the enjoyment or study of beauty' (Cambridge dictionary, 2013). Many meanings are about the beauty of art. However, this is not an applicable definition for landscape aesthetics, as landscape cannot be seen as art. During the Romantic period this was the meaning of landscape, but this is not acknowledged anymore. It is clear that aesthetics is about beauty, so, what is beauty?

Beauty
A research by the Commission for Architecture and the Build Environment showed that 'beauty is regarded as a positive experience strongly related to bringing about happiness and wellbeing in individuals lives (CABE, 2010)'. People relate more to emotional experiences of beauty than visual experiences of beauty. CABE (2010) identifies four difficulties when considering beauty:
- beauty is personal;
- beauty is subjective;
- beauty is indefinable;
- beauty is cosmeticized.

Also Jacobs (2006) acknowledges that beauty is an experiential value. That beauty is more than just the visual image is very well explained by a respondent of the CABE research: 'If someone's got bad manners, it doesn't matter how pretty they might be, you'd find it hard to say they were beautiful'. Summing this up, I would define beauty as: 'A positive emotional experience related to a feeling of happiness and wellbeing'.

Characteristics
'Elements, or combinations of elements, which make a particular contribution to distinctive character' (Swanwick, 2002). Or 'a feature or quality belonging typically to a person, place, or thing and serving to identify them' (Oxford dictionary, 2013a).

Consciousness
Experience is the content of consciousness, unconscious mental processes are not experienced (Jacobs, 2006). 'Consciousness refers to those states of sentience and awareness that typically begin when we awake from a dreamless sleep and continue until we go to sleep again, or fall into coma or die or otherwise become unconscious. It switches on and off. (Searle, 1997)

Emotion
Kleinginna and Kleinginna (1981) in Jacobs (2006) define emotion as:

A complex set of interactions among subjective and objective factors, mediated by neural/hormonal systems, which can give rise to affective experiences such as feelings of arousal, pleasure/ displeasure; generate cognitive processes such as emotionally relevant perceptual effects, appraisals, labelling processes; activate widespread physiological adjustments to the arousing conditions; and lead to behaviour that is often, but not always, expressive, goal-directed and adaptive.
Studies about emotion focus on four different dimensions: emotional stimuli, emotional bodily reaction, emotional experience and interactions between emotion and cognition (Jacobs, 2006).

Experience
Experience is a qualitative aspect of consciousness, and is probably described most correctly as feeling. Experience is also often called the content of consciousness (Jacobs, 2006).

Landscape
A "landscape" means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors (European Landscape Convention, 2000)

Perception
Perception is the process of experiencing organized and interpreted information extracted from sensations. According to Bell (1996) perception refers to “the activity carried out by the brain by which we interpret what the senses receive. It is not merely a factual reporting, but tends to be referenced to associations and expectations already in the mind of the beholder”.

Preference
In the evolutionary approach in landscape experience research, preferences are seen as emotional reactions. We are capable of preferring landscapes because we are capable of having emotional states related to landscapes. Emotions can be either positive (e.g. happiness) or negative (e.g. fear). The preference for an object or situation is the net result of all positive and negative emotions invoked by the object or situation. Preferences have a qualitative feel (there is something it feels like to prefer something) and are about something (if we prefer, we always prefer something) (Jacobs, 2006).

Quality
The Oxford dictionary (2013b) gives two definitions of quality:

1. The standard of something as measured against other things of a similar kind; the degree of excellence of something;
2. A distinctive attribute or characteristic possessed by someone or something.

To prevent confusion, the first definition seems most applicable in landscape quality studies. The second definition is similar to the meaning of ‘characteristics’.

Sense of place
A sense of place as such does not exist, only someone’s sense of place exists (Jacobs, 2006; Selman, 2012). Taking this into consideration, the consensus amongst writers occurs that a sense of place is a combination of both the physical-environmental and personal-social interaction in the place (Bradley et. al., 2009). Emotional components and a sense of self are important aspects of the sense of place.

Thus, sense of place can be considered as an individual factor that influences landscape experience. (Jacobs, 2006)

Value

According to the Oxford dictionary (2013c) value is: 'the regard that something is held to deserve; the importance, worth, or usefulness of something'.

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