Semiotics in landscape design

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THIS PAPER CLAIMS that concepts of language can help us create better and more relevant landscape design. It is based on research undertaken by Karsten Jørgensen (1989), and subsequent studies carried out at the department of Land Use and Landscape Planning at the Agricultural University in Norway.

The 'signs' that constitute the design language are categorised using the analytical vocabulary of landscape design; for example, elements, materials, effects and shapes. Studies of these signs are based on elements of semiotics and cognitive science, especially the *Umwelt-theories* developed by Jakob von Uexküll (Hoffmeyer 1994). We are constantly exposed to numerous signs of different kinds. Everywhere in society we see signs around us; for example, traffic signs, advertising signs and logos. It is therefore relevant to introduce the term 'semiosphere' in order to focus on the significance of semiosis at all levels of activity in the world, from cellular activities, to complex systems of development such as those found in a population.

This study focuses on the semantic aspects of landscape architecture. In explaining the meaning of a statement, it is useful to have a set of rules or 'codes' to correlate a specific expression with a specific interpretation. These codes may be based on conventions, or on similarity between or stylisation of objects, such as natural or cultural landscapes. In any case, they are based on the interpreter's language and 'mind-structure'. At a general level, it is only possible to study sign content. To analyse meaning in landscape design you have to look at the context; for example, the overall composition of a garden or park and the situation, which includes the interpreter's cultural background, their experiences and so on. In other words, you have to analyse a specific case to be able to speak reasonably about meaning in landscape (de)signs.

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CONTEMPORARY APPROACHES TO MEANING in landscape design often seem unsatisfactory and confusing. I believe this is because of a lack of theoretical foundation within the discipline, as well as a lack of discussion about the idea of landscape and its meaning. The ideas of landscape and its meaning, as well as related matters such as nature and culture, are often taken for granted, and thus hardly discussed at all. Unlike other disciplines that are concerned with landscape, such as geography, art history, anthropology and landscape ecology, landscape architecture is directly engaged in the design of *actual* landscapes. This gives the discipline a unique possibility to develop an understanding of landscape as it relates to design.[1]

Understanding landscape

This paper advocates looking at meaning in landscape design from a semiotic point of view, and it is based on a hermeneutic approach to the understanding of landscape. It promotes the view that the meaning of landscape does not reside in the landscape itself, nor in the observer, but arises through mediation between the observer and the landscape. The dualistic concept of landscape—landscape as a 'visual ideology', a way of seeing the world—as well as landscape as an arena for daily life, is another basic assumption of the present study.

Research by the biologist Jakob von Üexküll (1982)[2] has shown that there is no way around our own horizons, our world of appearances, to a reality behind

them, because the world is intersubjectively constructed: our 'Umwelt', is our world. He has also shown how all things outside a specific subject are full of purpose to that subject, even if the same thing may have totally different meanings at different times. Thus, although reflection on our ideas about landscape and its meaning may not initially guide us in the development of design skills or methods, it is nevertheless an important part of the discipline. We need to be aware of our outlook which is determining the potentiality and limitations of landscape design, so that we are able to see other visions of landscape. On the basis of these visions we may develop new design skills and methods to realise these landscapes. This is clearly illustrated in the debate on the 'survey-analysis-design-method',[3] in which the idea that landscape is composed of natural phenomena ready to be surveyed and analysed like physical facts, is accused of resulting in design methods that give little room for imagination and creativity. To many students landscape analyses tend to become a disturbing factor that obstruct more direct, personal experience and understanding of the subject. In many cases the analyses are performed only as a duty and, subsequently, the students will make a plan or a project without using them at all, or, worse still, they will produce a poor project on the basis of a poor analysis!

The problem with these scientific methods is not only with the filters they create through which the world is then viewed—this is rather their strength—but with the fact that the strength of each method is also its weakness. Scientific methods clarify by means of simplification, but experiencing landscape is a complex affair, and the survey-analysis-design concept tends to leave out the most interesting aspects of the landscape. The main problem with the scientific approach is that it is based on a misconception of landscape, inherited from the Lockean view (Berleant 1992), that nature is something apart from humans—the 'nature-culture dichotomy'. Originally the two views were not polar opposites but, rather, both related to the idea of 'growth' or 'change'. The word 'nature', from the Latin 'nascere', referred primarily to a cosmological principle of birth, development or change. The classical meaning of 'culture', on the other hand, was a worship of the 'nature-principle'. The shifting attitudes towards nature through history also reflects humanity's changing attitude towards itself.

This is a long and interesting history, too long to be more than briefly mentioned here, but very important for the history of landscape understanding. In mythical times the relationship between humanity and nature was characterised by an overall unity. Humanity could do nothing to nature without being influenced by it itself. In ancient Greece, nature was looked upon more as a model, an ideal, with two prevailing views: nature as an incomplete imitation of the ideal world (according to Plato) and nature as a living *spiritualised* entity (according to Aristotle) (Hegge 1992). The division between these views grew during the Middle Ages as a split between nature as a low and lowering place (*contempus mundi*) and nature as God's creation (*theologia naturalis*). In modern times the *contempus mundi* gave way to a titanic and thoughtless exploitation of natural resources as well as 'lower' civilisations. The environmental crisis of our time has grown out of this attitude towards nature, and this crisis is now forcing us, with almost divine power, to see that there is a strong inter-dependence between humanity and nature.

As an alternative to understanding landscape in terms of physical structures, I suggest what I have called a 'language-structure'. This is based on the idea that

how we perceive landscape in many ways reflects ourselves. Understanding landscape then becomes a 'way of worldmaking' (Goodman 1978), something which is built up 'as much from strata of memory as from layers of rock' (Schama 1995)[4].

Different ways of understanding the landscape can be viewed as different conceptual systems or symbolical frameworks. The question is not whether to free ourselves from our horizon of known concepts, but what kind of concept is more fruitful. Nelson Goodman (1978) says 'perception without conception is blind—totally inoperative'. This addresses the issue of content and form, discussed in many different fields, especially by art critics. Form without content may exist, but the opposite is unthinkable—content vanishes without form. And even if it is impossible to 'translate' landscape experience into words, it nevertheless has a 'language-structure'. We may not be able to single out specific landscape elements as 'words' and apply linguistic rules to the landscape, but we can still ascertain that semiosis is taking place between humanity and the environment. If we define words as general carriers of meaning, then there are 'words' in the landscape. The following argument is developed from this point of view: 'without words there is no world' (Goodman 1978).

It is broadly accepted that our concepts are based on former experiences. Nørretranders (1993) refers to recent research that suggests that our repertoire of concepts is developed on a survival-of-the-fittest principle; that is, the human mind initially has almost infinite possibilities for creating strange concepts and ideas, but only those that get feedback from the environment survive. These then form our horizon of understanding, which with effort can be broadened; however, this becomes more difficult as we grow older, and the unused connections in our mind grow weaker. When we grasp an idea or concept, we activate new connections in our mind, which open up further opportunities for cognition. A similar process takes place when a child develops its language. A baby's prattle contains phonemes from many different languages, and little by little it sorts out the sounds which get feedback. The language that grows out of this process is not something that has been imposed from the outside world, alien to the person; rather, it defines this person's mind-structure, the 'filter' through which they perceive the world. What we do not have concepts for, we do not experience, thus, we mainly see what we have seen before, or know from other types of experiences. Our perception is designed to fill in or add to what the senses receive, so that the world is congruous with our mind-structure. In this way the landscape we see reflects our individual, unique 'inner landscapes'.[5]

What we see in landscape is not only connected to our experience of the physical environment, but also other elements such as stories, myths, symbols and images. Everything is interwoven to create the comprehensive mind-structure that forms our cultural and spiritual heritage. So when we analyse a landscape we are in a certain way analysing ourselves. The changing landscapes therefore also reflect changes within us.

On the basis of this I suggest an understanding of landscape based primarily on our sense experiences with our *Umwelt*, in an attempt to reveal the language-structure of landscape in a way that can contribute both to 'reading' and designing landscapes. There have been several attempts to establish methods of 'reading the landscape'.[6] These, and many publications which talk about reading landscape, architecture and art etc, often refer to reading in a very broad sense of

the word, without considering linguistic or semiotic problems. I have found it useful to introduce elements of these theories into landscape studies, in order to establish a firmer theoretical foundation for the study of landscape as language.

Using elements and concepts from semiotics, it is possible to develop a theory or model of landscape that reflects the language-structure of the mind and landscape. The main issues in such a theory may be: what does the landscape express? What does the landscape want? What is the 'biography' of this landscape? Are there any clear forces, tendencies or potentials for development? What is the next stage in its biography? In all cultures we can experience humanity's basic need for symbolisation. I believe this is due to the way our minds, and therefore our surroundings, are organised and interpreted. At all levels, from basic perception to creation of the most abstract arguments, we handle information in a symbolic form. The many contexts, or the different worlds as Nelson Goodman puts it, where we make our analyses, may differ in many ways; but what they have in common is this organising principle or structure—the language-structure. The aim is to be able to read the landscape and understand the 'endless array of symbols with which God, through his creatures, speaks to us'[7]—not only of the ultimate questions, but of what the landscape may tell us about prospects and visions for the future.

Landscape semiotics

Semiotics is basically the study of signs. The origin of this study stems from the field of ancient Greek medicine, where knowledge was developed concerning the connection between certain symptoms and certain illnesses. In the twentieth century this field has become almost all-embracing: it is now a central aspect in many other scientific fields, including information theory, communication theory, ethology, biology and bio-chemistry. In design and architecture it is becoming more common to consider the environment as composed of signs; we live in a universe of signs. We may come across a scent which alerts us to the presence of a particular animal; we can tell from the dry fields what kind of weather we have had, and from the clouds what kind of weather we will have. In daily life we see signs all around us, traffic signs, advertising signs and logos etc. Every object is potentially charged with codes through casual connections, convention, superstition etc—everything is connected in a continuos network of meaning.

A sign is often defined as something perceptible that stands for, or represents something else—something imperceptible. An important feature of the sign is that it consists of an expression or a form on one side, and a meaning on the other. It is important to note that there is also a third feature: if something is to be regarded as a sign in the Peirceian sense of the word, there has to be an interpreter as well; that is, a person or system that connects the expression and the meaning. Signs only have a meaning—only exist—in communication. In recent research within biology and semiotics, the term *semiosphere* has been introduced in order to focus on the significance of semiosis at all levels of activity in the world, from cellular activities, to complex systems of development such as those found in a population.

There are many of different types of signs. An important distinction which is usually made, and which is of some interest in the present context, is that

between the signal and the indicator. Signals are consciously sent, whereas indicators are signs that have no conscious sender. An example of a signal would be a traffic light that tells you how to behave at a road crossing; an example of an indicator would be smoke, indicating a fire. In the landscape a signal might be a long straight avenue, leading up to a palace, and an indicator could be a shift in the vegetation, indicating that the land had been cultivated at an earlier time. Often, signals may also be read as indicators and indicators may also be read as signals. This depends on the interpreter and their experience, knowledge, beliefs, sensibilities and so on.

Indicators may be categorised into three groups, depending on the time-relation between the indicator and the indicated. In the first category the relation between indicator and indicated is both invisible and uncertain. An example would be an omen, such as the late or early flowering of vegetation indicating a hard winter to come. With the second category the indicator relates directly to the indicated, but the relationship may be both invisible and hard to understand. An example in this case might be stained leaves on a bush indicating disease. The final category often involves a direct and clear relationship between indicator and indicated, such as tracks, traces or marks showing that a certain event has taken place. In this case the indicated belongs to the past.

Signals are mainly of two kinds: symbols, which are signals that represent something by convention, and icons, that represent by depiction or imitation. An example of a symbol is the Norwegian flag, and an icon would be a photograph of it. Again, the distinction is very difficult to maintain, but it may have a crucial influence on the interpretation of a sign. An iconic sign, like a clump of trees in an English park landscape, has become a symbol of wealth.

All signs have several possible meanings—this is the *content* of the signs. When a sign is being interpreted, one of these possibilities is chosen, and the actual meaning is attached to the sign. This process is dependent on two components: the *context* and the *situation*. The *context* consist of all system-internal features that affect the interpretation, like other signs, or rules or a grammar for the use of signs in the system. The *situation* is made up of all the system-external features that affect the interpretation, like the cultural background of the interpreter, their experience and so on.

When meaning is communicated we can talk about a flow of information. Abraham Moles (1966) shows that there are significant differences between the two main categories of information he calls semantic and aesthetic information. Semantic information, what Moles usually refers to simply as information, is logical, translatable, prosaic messages. Through a number of experiments Moles shows how the two function differently in specific situations. Unlike semantic information, aesthetic information is impossible to translate, and it refers to a personal or group repertoire of knowledge. In landscape design, the aesthetic information will, of course, play a major role. Moles also shows how there are different levels of understanding, and how our consciousness constantly seeks the level that will give us the optimal information. Rapoport (1977) names the different levels of meanings associated with an object: concrete, use, value, and symbolical meaning. He also suggests that higher levels of meaning are more culturally determined than lower levels, so that as the value and symbolic end of the scale is approached, fewer people share meanings.

The conclusion at this point could be that everything can be viewed and understood at different cognitive levels. When we are looking at a landscape, for example, we are constantly seeking the information congruent with our own 'inner landscapes', information that affirms us, that tells us we are real.

A language is a system of signs, and with the aid of a design language one could carry out syntactic, semantic and pragmatic analyses of landscape architecture. The syntactic aspects would relate largely to what may be called readability; semantic studies would deal with the meaning or interpretation of statements in a particular area; and pragmatic analyses would explain how the design language of landscape architecture is applied.

This paper focuses on the *semantic* aspects of landscape architecture. In explaining the meaning of a statement, a set of rules or codes is needed to correlate a specific expression with a specific interpretation. These codes may be based on conventions; that is, when the sign or carrier of meaning is a symbol; however, if the sign is an icon, the code is based on similarity with, or stylisation of, other objects, such as natural or cultural landscapes. At a general level, it is only possible to study sign content. To analyse meaning in landscape design you have to look at the context; for example, the overall composition of a garden or park, and the situation. In other words, you have to analyse a specific case to be able to speak reasonably about meaning in landscape (de)signs. This means that it is impossible to make general rules about how landscapes or gardens *will* be interpreted, only about how they *are likely* to be interpreted.

When landscape architecture is seen from this perspective, designing an outdoor space becomes a semiotic action: the landscape architect produces 'statements' that will be responded to by future users of the area. In a semiotic context, therefore, landscape elements no longer merely constitute the 'means' or 'building material' of landscape architecture, rather, they form a 'repertoire' of expressions that may be used to make certain statements within an area. Thus, they form the basis for the design language of landscape architecture, being equivalent to words in a language, as well as corresponding to the sense experience of different landscapes.

The most important means of the landscape architect are the three natural elements: land form, water and vegetation. In addition, the location of buildings, outdoor furniture, the texture of the landscape, details and various forms of visual effects are also of significance.[8] The following is an inventory of these categories with their sign content and examples. Looking at the different categories it is easy to see that they vary as to their capacity to express certain kinds of messages. But where should one look for the key to finding the content of a sign? A common source is landscape painting of different kinds.[9] This has not been my main source for this study, as it tends to involve an extra level of interpretation, and thus a higher probablility of misinterpretation.

A more direct source is language metaphors and views on meaning in landscape. The following list, therefore, is based on a study of metaphors in the written and oral language; literature in the field of landscape architecture; and on an examination of my own experience of landscapes.[10]

Land form is sensed not only by vision, but also by our kinaesthetic senses: it offers resistance (or the opposite, when experienced as 'downhill'), it is 'heavy', stable and solid. It is therefore suitable for expressing meanings related to

strength, stability and solidity. It can be used as a symbol for 'the world', define a 'place in the world', and connect to 'notions greater than life'. (Examples: the Pyramids; the Ziggurat of Ur; Parc des Buttes Chaumont)

Water is sensed in many ways: it can be seen, heard and felt; it may be associated with the sea. Water expresses the unstable and emotional, immediacy (Cullen 1961), contemplation, eternity and longing. Through reflection it can represent the earth and the sky meeting, as at the Taj Mahal for example.

Vegetation: the plants are our relatives, we identify with them, and they tell us stories of how they feel. Thus, vegetation tells about a state of health like vitality, or human temperament; for example, prudence, melancholy or grief. Pendula-varieties of different trees are often used in cemeteries, and express subservience or humbleness. Vegetation is also strongly connected to the idea of home-boundness, as shown in *Die Liebe Zur Landschaft* (Wollsche-Bullman & Gröning 1987).

The location of buildings may express a message of welcome or exclusion, the marking of a territory, order, geometry, hierarchy, enclosure, influence, or domination. (Example: the Parthenon at the Acropolis in Athens)

Furniture and other objects such as benches, railings, sculpture and lighting serve to define or vary the character of a place. They may express wealth, tell a story, present an atmosphere or organise the surroundings. (Example: the sculpture park at Louisiana Museum of Modern Art, Copenhagen)

Land texture is described by the scale: rough—rustic and smooth. It gives opportunities to express wealth, purity, intellectuality, sanitariness, roughness or wildness. (Example: The 'Intellectual Sweep' by Capability Brown; and The Woodland Cemetery by Asplund and Lewerentz in Stockholm)

Visual effects often express expectation or puzzlement, invitations, mysteriousness, infinity and connection. (Example: the 'infinity' motif in the Versailles park by André le Notre).

An inventory could be further developed towards a model for semiotic interpretation of landscape elements and designs. In its present state this is just a simple picture of the repertoire of landscape architectural means, and their capacity for expressing certain kinds of meanings. So it should be viewed as a start, an invitation, one might say, to put landscape and meaning under discussion, and to develop a semiotic understanding of landscape as it relates to design. This would of course involve several aspects of semiotics not discussed here, such as the instability of meaning, misunderstandings and contradictory signs. A few mini case studies have been made at the Department of Landscape Planning in Norway, and there has also been an integration of this model at a simple level in design studios for students. The results from these studios are promising, and indicate that further research should be carried out in multidisciplinary teams, involving other design professions as well as scientists from related fields, such as social anthropology and geography.

Conclusion

In landscape analysis as well as in design, it seems to be a fruitful strategy to look at meaning from a semiotic point of view. Terms like 'the semiosphere' arising from the field of biosemiotics shows us that there is a development of the understanding of how we perceive the world that is of great relevance to the landscape architecture discipline. Everything we see around us in the landscape is

charged with meaning, and thus corresponds with our inner landscapes. This new awareness is a challenge to the analyst, the designer and the teacher of landscape architecture.

NOTES

[1] At the Department of Land Use and Landscape Planning at the Agricultural University of Norway, there are several PhD theses that have dealt with meaning in landscape architecture: Jørgensen (1989); Geelmuyden, (1989); Hong (1997) and at the Oslo School of Architecture, Pisters (1997).

[2] Early in this century Jakob von Üexküll (1864–1944) developed theoretical biology as a general framework for the study of the way animals behaviour towards their environment. His theories now form an important part of the foundation of biosemiotic studies.

[3] The debate has been going on almost since Ian McHargh (1969) introduced the 'scientific' landscape analysis as method in *Design with nature* as a reaction to this book. Recently there have been several contributions in *Landscape Design*: See Turner (1991, 1993); Stiles (1992) and Aspinall & Stuart-Murray (1993).

[4] Goodman (1978); Schama (1995). See also Kühlewind (1986).

[5] This is shown elegantly in DW Meinig's essay 'The beholding eye' (Meinig 1979). This points to the fact that people from varied backgrounds and interests in the landscape, like the farmer, the hunter, the archaeologist, or the nature conservationist, see different things when looking in the same direction at the same time.

[6] A significant and early contribution was Watts (1957, 1975). Another is Samuels (Meinig ed, 1979).

[7] From Umberto Eco's novel *The Name of the Rose* (1983), about master William, a learned man who has the ability to read the landscape like an open book.

[8] See for example Lynch (1962).

[9] See Clark (1976); Appleton (1975) and Cosgroves & Daniels (1988).

[10] Allwood, Frängsmyr & Svedin (ed) (1983); Francis (1987); Lowenthal (ed) (1986) and Simonds (1964).

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