



**Landscape Legacy**  
Landscape Architecture and Planning Between Art and Science  
May 12-14, 2010, Maastricht, the Netherlands



## **BIPOLARITY AND AMBIVALENCE IN LANDSCAPE ARCHITECTURE**

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*“Despite its aspirations for truth, science is not organized around it. Its approach is not necessarily the path to reality but necessarily the path to utility. The utility of concept lies in its verification.... Research can be broadly defined into two orientations: the development of concepts and the verification of concepts, and the unity of science lies in their fusion” (Siu, p.23-4).*

Our discipline of landscape architecture contains bipolarity, not only in terms of landscape and architecture but also because the idea of landscape is both aesthetic and scientific. Furthermore, within landscape architecture there is a gap between design (as implied by architecture) and planning (implying land-use plan and policy orientation) on one hand, and a similar gap between design (associated with artistic activity, concerned with aesthetics as well as science) and research (considered as scientific activity). Landscape architects often retain as much ambivalence between design and planning, as they do between design and research.

Due to the increasing public concerns over landscape and awareness of the value of a landscape approach to design by other environmental designers and engineers, landscape architecture is considered to have arrived at an historical moment – where it can show leadership in solving contemporary environmental issues. However, is this discipline ready to take such a leadership role upon itself? For it to take this leadership role it has to solidify its core knowledge structure and refine its credible operational mode. This requires a creative integration of the bipolarity, and to offer landscape as the source of its design methods and aesthetics. But, how? The integration must start with a differentiated integration between design and planning, and between design and research.

### **1 SOURCE OF BIPOLARITY**

I studied landscape architecture at the University of Pennsylvania. The department was then called Landscape Architecture and Regional Planning in the Graduate School of Fine Arts. (Now I understand that the school is called the Graduate School of Design. I assume that true fine art departments such as Painting and Sculpture studies do not exist). In this school then, there was also a department of City and Regional Planning. The situation reflects the fact that city and landscape are treated as different domains, and there were two kinds of regional planning, one with an ecological-oriented approach to physical regions and resource planning, the other with socio-economic and political approaches to regional planning. Even today it is a general trend in North America that landscape architecture is positioned within design and architectural schools at urban universities, and within agricultural schools at rural universities. It is at the urban schools that landscape architecture is profiled as a professional program, and at rural universities landscape architecture is featured as a scientific discipline, if not still associated with horticultural and garden design programs.

In Europe the polarity between art and science has long been established, from the end of the 18<sup>th</sup> Century in France, when the École des Beaux Arts was separated from the École Polytechnique (Siu, p14). Our landscape architecture chair at Wageningen is positioned within the environmental science department, thus expected to be an academic and scientific program. Professional programs in the Netherlands, and even in other European countries like Germany, are not treated as professional schools equal to medicine, law and business, but like polytechnic schools of a lower tier

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comparable to the polytechnic university system in California. Landscape architecture at European universities is dealt with more like the programs at the University of Michigan, Cornell, and UC at Davis, in terms of its institutional context with an agricultural background. Yet given Dutch tradition, visual art, and its urbanized context, it has also become strong in design and urban content. Landscape architecture is taught in a program called Landscape Architecture and Planning, made of three chairs, landscape architecture, land-use planning, and social-spatial analysis. Its research activity is couched within landscape sciences, with a majority of landscape ecologists and geographers of various types. It is in this historical and institutional context that I would like to reflect on the issues of the bipolarity and ambivalence between art and science, design and research, and design and planning.

## **2 CRITICISM OF ARCHITECTS AND DESIGNERS**

Criticism of architects and designers by scientists and planners is not new, but is in fact almost half a century old. These criticisms, however, were of the environmental and architectural determinism, formalism, mechanistic aesthetics, and designers' ego, insensitivity to context, people and culture. These criticisms were directed at, and grounded in, evident and pervasive problems of post-war housing and urban renewal, primarily against the formalistic approach to housing and architectural approach to cities, and modern architecture's insensitivity to culture and ecology.

Unfortunately, I find these old criticism are still expressed by planners and scientists, thus criticizing architects and designers of the past, rather than those of today. Architects and designers have perception problems. The kind of criticism that I hear in the Netherlands are: "architects have only vision and dreams, but have no idea about how to realize them", "landscape designers don't know what they are doing; anybody can design", "design is just a sketch, planners use these sketches, conduct the research and make the plan, thus, design comes before planning" "designers and architects are still operating with the black box" (2009-2010 CELA Call for Papers). For me to hear such comments from university scientists and planners, in the Netherlands, of all countries, makes me realize that either these people are ignorant of architecture with designers still suffering from the mistakes and errors of Modernist and architectural approaches, or else suffers the political problems of each discipline trying to expand its territory and compete for attention, market and resources. Perhaps the boundary of domain and discipline is in flux, as it always has been.

## **3 NATURE AND HISTORY OF DISCIPLINES AS THE SOURCE OF BIPOLARITY**

We can think of the bipolarity as arising from the following sources:

1. Landscape as artistic and scientific domains, referring to culture and nature.
2. Landscape architecture combining an architectural approach and landscape approach, creative and conservative intervention.
3. Sliding scales in landscape (garden, site, city, and region).
4. Cultural groundedness of the landscape and nature, i.e., man-nature and subject-object dualism and holism.

Landscape as a scientific concept is attributed to German geographer, Humboldt, who had proposed it to be used as a unit of geographic study in the 19<sup>th</sup> Century. However the landscape as scenery and painting precedes this, being first used in Renaissance Italy as well as in Dutch paintings of the 16<sup>th</sup> Century.

Landscape architecture is also bipolar in its institutional affiliation, either architecture and design school or with agriculture and science school. Architecture is constructed, but landscape is to be cultivated, transformed and managed. Architecture has its root in the linear, goal-directed, colonizing, and distinction-seeking; landscape has its root in the cycle of seasons, responsive, self-organizing, and integration-seeking. These disciplinary cultures which themselves are reflective of positivistic or negativistic culture and human dispositions, are present in the landscape architecture community.

Landscape architects operating at garden- and site-scale with close connections to architects are very different from landscape architects operating at town- and country-scale, or regional-scale. The former are garden architects and the latter, landscape architects, at least that is how they are differentiated in the Netherlands. The person who is good at the small-scale is not necessarily good at the large-scale. Scale matters. Smaller-scale landscape design is more operative, closed design,

leading to a final end, construction. The larger-scale design requires strategic, open design leading to transformation and elaboration through time and phases. The landscape architect of smaller scales is more like a performer and/or conductor, the landscape architect of the larger-scale is more like a composer, whose notation is open to further development. Furthermore, the garden is for private domain, closed in. Landscape, by definition, is for public domain, open to community and travelers.

The practice of landscape is also culturally grounded. Within Europe there is a distinct difference between 'Landschap' and 'Paysage'. The former is referring to physical territory and stewardship, the latter more to scenery and poetics (Lassus, 1994; Lorzing, 2001). Furthermore, the concept of landscape and nature shows distinct differences between the West and the East. In the former, landscape is an objective, disengaged scenery and an instrument to be used for human good; in the latter, they are inhabited fields, integrating, and the Way. There are even differences between Europe and North America in the view of landscape and ecology. In Western Europe, landscape is transformed nature, and ecology is of nature as objective reality. In North America, landscape refers to both cultivated land as well as wilderness, and ecology is understood more holistically.

All of these perceptions contribute to the bipolarity we are experiencing, yet we know that landscapes can be careless of the art and science division, indifferent to design, planning and management division. Even though dualism has been a founding characteristic of classical culture and Christian cosmology, and such dualism has led to the dominance of scientific method over artistic method, theory over practice, abstraction over concreteness, in academic institutions and Western society, the nature of landscape and the kinds of global problems we are experiencing challenge such dualism. Bipolarity is not good for an individual's emotional stability, so it is not good for society. Social and cultural bipolarity led to material wealth at the expense of spiritual wealth, ecological sustainability without cultural and aesthetic engagement.

## **4 EMANCIPATION OF LANDSCAPE ARCHITECTURE**

### **4.1. Integration with landscape method and architectural method**

The recovery of landscape architecture from marginalization by architects and engineers in the 20<sup>th</sup> Century must now lead to the discovery of a landscape approach (Corner, 1999). Without its own theory and method Landscape architecture cannot claim to be a discipline. A landscape architecture dependent upon the theory and method of architecture, or landscape science, will become intellectually dependant and unable to gain respect from competing disciplines, let alone protect and nurture its core competencies.

Landscape architecture must balance the willfulness, colonizing, distinction-seeking tendency of architecture. The problem of Modernism was and is the problem of linear and historical culture. And Modern is a uniquely western concept, even being used during the Roman times, showing in turn a Western preoccupation with the new. Modern architecture was based on rationalization of design, industrialization of construction, and aesthetics celebrating the machine. In spite of its original claim for a scientific approach to design, thus throwing away tradition and the past, in the end it aestheticized science and function, rather than being scientific and function. Consequently, and ironically, it has neglected both aesthetic discourse and the science of architecture and design (Berleant and Carlson, 2007). Today's landscape architecture cannot repeat this mistake in the catching-up syndrome for architecture or for science.

Landscape is not architecture, not art, and not science. Landscape is landscape. Landscape is a source of its own art, science, aesthetic, and design. Theory of landscape architecture must combine a landscape-based method with that of an architecture-based method. It has to integrate scientific method and artistic method; the rational, logo-centric and empirical traditions of science and the Western world, with that of intuitive, aesthetic, practice- and discipline-directed tradition of art and Eastern culture.

### **4.2 Integration of design and research**

With the increase of scale and novelty of challenges comes the increase of complexity, uncertainty, and unpredictability. With an increase of stake-holders and democratic practice, the demand for transparency and accountability increase. We need not only design informed research, but research guided by design. Besides which, landscape changes, thus design must be adaptable and robust.

Our education of landscape design students needs to integrate theory into practice, and research into the design atelier, combining calculation with drawing, verification with imagination. This can mean less time for formal, technical and aesthetic elaboration and more time for seeking the problem within the problem, and designing the process of design as a form of inquiry along with formal decision as hypothesis. On the other hand, such combinations can make design tasks less labor intensive and more collective and cumulative. Just as science involves formulation of concept and verification, design too can combine the formulation of design concept and its verification. Science is not about the truth, but about verifiability. Here the scientific method of logo-centric grasp, concept-based thinking, needs to be combined with the artistic method of aesthetic grasp and sensing, rather than making sense. Ultimately there is science in the art and art in the science.

Knowing requires theorizing as well as practice. What do you mean, and how do you know, are the questions that need to be raised in the design process integrated with research. Designers in turn practice making the model not at the end of the process but through the process. In this process we find the works of Steinitz (2003), and Nassauer and Opdam (2008) as important demonstrations of how this can be integrated in education and design research activity. Designers can and do use their skills for research. That is designer's approach to research. Their ability to think with image, to communicate with visual media, and their fluidity of sketching and brain-storming can play in formulating not only concepts and hypotheses but also for framing probable, spatial problems to verify scientifically. Vision connects, concepts separate. Art integrates, science separates. It is no wonder that scientific development and technology has been so destructive in the 20th Century. It reminds me of Siu's quote of the Devil's words to Shaw: "*I tell you that in arts of life man invents nothing; but in the arts of death he outdoes nature itself.... Man measures his strength by his destructiveness*" (Siu, p.3).

#### **4.3 Integration of design and planning**

In the world of nested hierarchy and fractals, where landscape and nature exist, design at one scale can be planning of its subscale. Every design is at once a detail of something and sum of the other. The linear differentiation of design and planning does not work. Design and planning must work in iterative process. The success of a design hinges not only on the overall vision or master plan, but also on details and rules. In landscape architecture the precise division of design and planning becomes difficult. Planning can be open design and design can be called a closed plan. Besides, in landscape design, what happens here, now, can have an impact on what happens there, later. Thus, the boundary of problems cannot be fixed or closed. Problem-seeking in a shifting boundary is necessary, just as they are for solution verification.

The perception that design comes first and planning is fixed later through research seems to come from the perception of design as just modeling, or as a sketch. We designers have a tendency to regard a design as closed and to be reluctant to allow any change. Architects' reluctance to allow any change to the 'completed' building and design reflect such a view. In landscape architecture we need to learn and teach open design, and design as designing, and forego our egos and authorship right to some extent. We need to learn the selfless attitude of the Unknown Craftsmen (Yanagi, 1972). The drive for recognition pushes both, the clients and designers toward iconic and distinctive design rather than ordinary and integrated design. We also need to nurture humble attitudes without seeking social distinction between designers and planners, between concept person and draftsman.

#### **4.4 Integration of construction and managing**

When a consumer buys a car he or she gets operational and maintenance manuals. Architects and landscape architects don't provide user manual after design and construction. In the past I have seen gardens and landscapes that we have designed ruined in the hands of ill-informed, poorly-skilled, and uncaring owners. I have observed much Modernist architecture causing problems for both maintenance-workers and users (for example: flat roofs causing leakage, uncleanable windows, and even unaffordable construction). Though these post-construction problems are rarely reported in the glossy magazines made for image-consumption, they undermine the designer's social credibility.

On the other hand, good landscape construction process involves design adjustment through construction on site, particularly for garden and site-scale landscape architecture. And most of them also require post-construction management and cultivation over time at the request of clients. This means that we can avoid the tendency to over-design, and the tendency to finalize the design for the landscape, as they do in architecture. There has to be a certain level of trust and respect by the designers for the contractors and the management team. Landscape is developed through time, its appreciation is enhanced when its design structures not only the space but also time, not only the

scenery but also human engagement. Human engagement occurs through self-motivated and caring involvement in management, and constructing the landscape through time.

The metaphor of landscape as home helps to realize the value of housekeeping and stewardship, so essential for the success of landscape. We need landscape architects as artist/architect/poet as much as landscape architects as gardeners/farmers. The challenge is how to design a landscape to invite such management engagement, and how to make it easy for people to get involved. One secret is to make the management task also a creative task with intrinsic reward, to make it a labor of love. The garden is metaphor for paradise, and gardening is one of the most popular leisure activities, at least in North America. Our task is to make the landscape a practical paradise, to offer landscape not just for restorative effect but also for creative effect. Management should be a conservative act containing creative experience.

## 5 CONCLUSION

Landscape architecture within a university setting is increasingly difficult for design staff for tenure review, and being staffed by people who do not have substantial experience in design. And many competent designers are unwilling to give up their professional careers for a full-time academic position. Programs which are led by such ambivalent landscape architects are not leaders in research and theory production. Professional designers tend to value the procedural issues and aesthetic concerns. Landscape researchers tend to focus on substantial issues. We need to clarify whether landscape architects can contribute more to research of the procedural issues, as Eclan suggests, and if such research on procedural issues can be done by persons who are experienced practitioners.

At issue is what kind of design we are talking about. Designers who are good at operational design are not necessarily good with strategic design, and good designers are not necessarily good scholars and academic leaders. Perhaps the bipolarity can be solved by specialization. Garden architecture from landscape architecture, design architects from construction architects, operational designers from strategic designers, artistic landscape architects from scientific or scholarly landscape architects. Or landscape architects can specialize by type of product as they do in golf course design, zoo design, or ecological design and so on.

For landscape architecture to take a leadership role in large-scale contemporary problems (such as toxic sites, urban regeneration, climate adaptive design, drainage basin-based integrated design, regional sustainability design, regional identity design, biodiversity directed greenway design or ecological network or blue network design) the integration of bipolarity and overcoming of ambivalence is necessary. One cannot be good at all these things. We have to establish a community of design and research practice. For that to succeed we need to establish clarity about landscape architecture, and demonstrate the logic and effectiveness of a landscape approach to design and design approach to research.

Ultimately, we have to operate on the conviction that, just as science can be a tool for art, design too can be a tool for research, and that there is science in art and there is art in science. Art and science are just words. Landscape transcends them, so must landscape architecture. In that transcendence, landscape can be a test of both scientific and artistic methods and landscape is called for as a paradigm of integrative and generative, adaptive and evolutionary design, planning and management of landscape in its fullest meanings and values.

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