

LANDSCAPE DESIGN DIALOGUE : BRIDGING THE GAP BETWEEN KNOWLEDGE AND ACTION

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Spatial planners and landscape architects do not excel in theory development. The authors, being a practicing landscape architect-planner and a planning scholar, explore new roads to a middle range theory of landscape design and planning. Building on theories-in-use in regional planning practice they develop an empirically grounded methodology for planning and design. The process of theory building is part of a process of methodical reflection on best and worst practices. It focuses on an analysis of planning and design efforts in the period 1970 – 2005 which have gradually transformed the landscape of the Rhine-Meuse Flood Plain in the Netherlands. Design is interpreted with the help of the Aristotelian knowledge concepts 'episteme', 'techne' and 'phronesis'. Design as intellectual effort is defined as learning and argumentation. It is an iterative process of creative imagination and reflective judgement. In this process art, science and practical wisdom merge. Various types of knowledge have to be obtained from the professional knowledge stock and from a wide range of people, who individually own pieces of information. These pieces have to be put together in a process of knowledge producing conversation. This is a necessary condition for the construction of bridges between the worlds of knowledge and action in regional design. Here we have coined the term landscape design dialogue.

1 Introduction

Landscape planning and design are practice-oriented disciplines which have recently taken up positions in academia in most countries of the world. The intellectual legacy of a long-time professional history is a mixed blessing. No doubt the landscape legacy as exemplified in parks, gardens, green corridors, landscaped cities and continental nature systems offers good reasons for professional pride. (Vroom, 2006) But the downside of the practical inclination is a lack of generic explanatory theory of planning and design and an extremely fragmented body of knowledge founded purely on best practices. (Balducci & Bertolini, 2007a; 2007b) As a consequence state of the art knowledge is extremely sensitive to new trends in society and thus vulnerable for arrows of criticism launched by scholars well versed in the customs of natural science. So we need not be surprised if the position of landscape architecture and planning comes under critical scrutiny in our universities on a more regular basis than well established disciplines such as geography, landscape ecology or soil sciences.

The authors of this paper hold that the academic disciplines backing professional landscape architecture and land use planning are to be re-invented and upgraded. (de Jonge, 2009; van der Valk, 2009) This paper provides building blocks for an empirically grounded middle range theory of landscape design and planning. It is not a full blown coherent set of testable hypotheses and covering laws. Like so many contemporary philosophers of science and theorists we hold the classical positivist model of conjectures and refutations only marginally relevant in the critical construction of design and

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planning theory. We feel that Karl Popper is on our side while drawing inspiration from situational analysis, being one answer of the humanities to the challenges of critical rationalists. (Popper, 1984; Faludi, 1986) Now we will not dwell long upon the philosophical foundations of planning theory and design theory but turn to notions which have developed in practice under labels such as 'research by design' and 'explorative design' focusing in on strategic design on a regional geographical scale. (Breen, 2002; Elmore, 1979; Klaassen, 2004; Schön, 1983)

Drawing on experience in regional planning practice in the Netherlands and international planning and design literature, the authors sketch out the contours of a practice-theory. It cannot fully explain idiosyncrasies of professional regional design practice. Nevertheless we feel confident that it offers valuable tools for methodical reflection and guidelines for action. Also it can provide notions for reflective practitioners which are open for testing, logical scrutiny and comparison with competing models. (Argyris & Schön, 1996; Balducci, 2007b; Creswell, 2003; Eckstein, 1975; Flyvbjerg, 2006)

Notions elaborated in this paper take into consideration significant changes in professional activities which arise from a transition out of industrial society into the knowledge society. This change co-evolves with the transformation of a top down organisation of society into networks functioning bottom-up. The professional response has been the emergence of a strategic design approach, being a companion to a long time established operational orientation in landscape architecture and planning. Planners and architects cannot now and probably have never been able to work in splendid isolation. To day, they cooperate with other experts, researchers, politicians, stakeholders and clients. Co-design is standard practice. Expert knowledge and experiential knowledge are blended in multi- inter- and trans-disciplinary cocktails. (Iverson Nassauer & Opdam, 2008; Yanow, 2003) What is lacking so far in emerging practices, is an upgrading of principles distilled from best practices at the meta-level of a reflective discipline. Reflection *in* practice needs to be complemented by reflection *on* practice.

The paper starts with a sketch of a rich case of an extremely successful process of strategic landscape design and planning in the Netherlands. The case is selected because it offers major opportunities for methodical reflection and theory building. The empirical data and considerations with respect to applied research methods are presented more elaborately in a PhD thesis which has been published. (de Jonge, 2009) A second grounding study pertaining to a rich case which brings to light a complete failure, is not used explicitly in this paper for reasons of brevity and clarity. Data used for the reconstruction of the case were collected by way of triangulation. First, historical documents were studied. Second, written comments and secondary analyses by other experts were added. Finally the researcher has conducted open interviews with participants and asked their response to provisional conclusions. Research questions were inspired by the researcher's and the tutor's pre-conceived questions founded upon practice questions and preliminary theoretical conjectures in contemporary professional and scholarly writings. Leading questions in the case study were:

1. What are the causes of success of the innovative Stork Plan (1986) with respect to its performance in National spatial and landscape policy, and its implementation in practice?
2. On what design methodological principles is the Stork Plan founded?
3. What are the decisive links between knowledge and action in this case?
4. Which arguments can be taken up from this case for the construction of a generic contemporary methodology of regional landscape design and planning?

2 Planning and designing the Rhine-Meuse Floodplain

The analysis in the case-study focuses on a remarkable episode around 1986, when The Stork Plan (*Plan Ooievaar*) won a design competition for regional design. The name mirrors the aspirations of the authors of the plan to bring back the stork in the landscape. Looking backward the plan has had a major influence on Dutch spatial policy. It has resulted in a significant transformation of the fluvial landscape in the central belt of the Netherlands. (de Jonge & van der Windt, 2007) The analysis of this case has been an object of PhD research conducted by the first author in search for 'transformative concepts' in Dutch regional planning and important shifts in spatial concepts. (van der Valk, 2002; Needham, 2007) As it takes time to realise substantial change on a regional scale, the research covered a period of 35 years (1970–2005).

The regional planning task in the design competition (1985/86) was to develop a landscape strategy for the Dutch Rhine-Meuse floodplain. Of the 34 entries the 'Stork Plan' (in Dutch: *Plan Ooievaar*) was awarded the first prize.

2.1 Essentials of the Stork Plan

A major debate at that time was the relationship between agriculture and natural/landscape values. The ecological and historic geographical values of the agricultural landscape had decreased severely due to the modernisation of farming practice. The dominant policy was based on the idea of

compromise: in regions with high 'landscape values' (often interpreted as biodiversity and cultural history) farmers could be financially compensated for their contribution to nature conservation and landscape management. In other areas agricultural uses could develop within certain limits imposed in the interest of protection and management of major landscape features and green structures. The leading policy at the time was aimed at combining agricultural and valuable natural landscape features if possible and to separate them if and in places where it was deemed necessary.

The authors of the Stork Plan had a different vision: in the long term the strategy of compromise would not be sustainable. Agriculture follows economic rules of expansion and continuous change; it is a 'high dynamic land use' and needs flexibility. In contrast, natural habitats, water management and historic landscapes require stability, they are (the result of) relatively 'low dynamic land uses'. The Stork strategy was to facilitate a 'two-speed landscape' in which robust, stable areas and dynamic areas could coexist and develop at their own speed. This was later called the 'casco principle'.



Figure 1 Schematic representation of the Rhine-Meuse Floodplain showing the contours of the casco-concept.

A basic strategy in the Stork Plan was not to compromise, but to optimise the conditions for ecological processes as well as agricultural development. The plan proposes a new main structure for the area as a *regional design concept*:

- The river forelands (the area between the main river dikes and the river), until then still used as grazing land, would become a dynamic nature reserve, especially along the river Waal (being the largest and most dynamic).
- The conditions for agricultural uses would be improved in the reclaimed backswamp areas, the lower-lying 'basins' in the rest of the floodplain.
- The alluvial ridges or natural levees would keep their mixed use character with villages, horticulture and fruit growing.

2.2 Key dilemma and basic concept

An important design-methodological aspect that the Stork team applied is the principle of varying the context, level of abstraction and scale. The team³, initially only landscape architects working at the National Forest Service, had rich experience with the conflicting character of agricultural and landscape-ecological development processes, not only in the river area, but also in the sandy soil areas. In the Landscape Development division of the National Forest Service they had set up a research programme in cooperation with the Department of Landscape Architecture at Wageningen University in 1985. In this programme the impacts on the landscape structure and ecology of three land consolidation plans in different sandy soil regions in the Netherlands were analysed. This critical examination of the dominant style of rural land development planning confirmed their hypothesis that these plans lacked the flexibility needed to adapt to fast changing (economic) driving forces. It also

³ The team consisted of D. de Bruin (river expert), D. Hamhuis, L. van Nieuwenhuijze, W. Overmars, D. Sijmons (all landscape architects/planners at that time working at the Landscape Development division of the National Forest Service (Staatsbosbeheer)) and F. Vera (biologist).

showed that the proposed measures for the improvement of ecology and landscape quality were inadequately founded (Kerkstra & Vrijlandt, 1988). This was considered the key dilemma in planning policy for the rural areas in general. Based on their practical experience and these research results, the critics formulated a rather new general principle, a 'proto-concept', labelled the *two-speed landscape*. This was to be tested in different contexts (landscape types).

As the concept of the two-speed landscape was not politically sanctioned, the landscape architects in the National Forest Service (part of the agriculture ministry) were not allowed to explore their ideas further in practice. So the regional design competition, as a 'free laboratory', presented a good opportunity to test and specify the concept in the river landscape. By varying context, level of abstraction and scale, the landscape architects were able to acquire knowledge about the value of the design concept. The concept also enabled them to focus on the essential issues instead of giving equal attention to the whole area, which is not very efficient in regional planning. In the Rhine-Meuse floodplain the functioning of the river systems in terms of ecology morphology and hydrology as well as transportation on water, safety and outdoor recreation were designated new fields for exploration. The interdisciplinary cooperation with a river expert (de Bruin) and a biologist (Vera) certainly contributed to the quality of the plan. These contributors were representatives of professional groups that had also been working on new dynamic, process- and system-oriented concepts in the domain of water management and landscape ecology. De Bruin and Vera, for example, convinced the landscape architects to focus on the river Waal instead of the river Nederrijn with respect to dynamic natural processes. Connecting the professional domains of landscape, river management and ecology proved to be very successful.

2.3 Methodical reflection: step one

The Stork episode illustrates several characteristics and principles which are open for methodical reflection. These are listed here.

Ambition to go beyond compromise.

Two initiatives have shown a clear ambition to generate new concepts for the Rhine-Meuse floodplain. First, the initiators of the design competition (a private initiative), who welcomed innovative regional designs to inspire national planning policy. Their motive was the absence of good ideas in the conventional planning institutions. This invitation successfully matched the ambition of the winning Stork team, which was convinced that the prevailing strategy of compromise was not sustainable and did not generate vital and attractive landscapes.

Conditions for learning and creativity.

Landscape architects at the National Forest Service had organised systematic reflection on their practice in monthly meetings with other professionals and in a cooperative research programme with Wageningen University. The basic ideas for the concept of the 'two-speed landscape' had already been born. The regime within the agriculture ministry, however, prevented further exploration of the casco concept in everyday practice. The design competition was an opportunity to create 'free space' to elaborate the proto-concept for the Rhine-Meuse floodplain. A design competition is an occasion par excellence to exploit the benefits of free thought; there is no obligation to participate, only personal drive.

Participants: experts with diverse knowledge and skills.

The members of the Stork team were experienced professionals in the domains of landscape, river management and ecology and were able to integrate their theoretical and experiential knowledge into a promising concept. Drawings and metaphors were important communicative tools in the conception of the plan as well as in the external communication. The 'multilingual skills' of the Stork team contributed to the recognition of the quality of the concept among practitioners as well as researchers and politicians.

Creating new insights through a design approach.

The 'casco concept' was the result of a systematic reflection on the dynamic forces that rapidly transformed the agricultural landscape and on the practice of drawing up landscape plans that accompanied land use development plans. In this practice the key dilemma of the 'two-speed landscape' was articulated. A research programme regarding the landscape of the sandy soil areas underpinned the problem perspective; the solution perspective, however, did not fit the dominant policy discourse and could therefore not be applied in regular practice. In the laboratory situation of the design competition the elaboration for the Rhine-Meuse floodplain turned out to be a lucky hit. The conflicting demands between agriculture, clay extraction, river management and nature were obvious and the solution strategy of the Stork Plan appealed to a new audience, which adopted the new insights.

Seizing opportunities.

The professionals that were involved in the development of the Stork concept had no political power to take formal decisions, but they had a personal drive to disseminate and propagate their insights. They had a good intuition for grasping the right moment for action and used their personal and professional networks to spread their ideas. In doing so they functioned as communicative bridges between actors and discourses, in which insights were created and sharpened, and executive power was mobilised. Through these bridges the concept became a breeding ground for implementation. The Stork Plan, as a regional plan, was considered a flexible source of ideas, every one of which had to prove its value in practice. The design concept was open-ended and meaningful for the vast majority of actors involved in dialogue. This somewhat paradoxical quality proved to be particularly valuable in the process of deliberation between politicians, stakeholder groups and experts.

2.4 Bodies of (tacit) knowledge

The Stork case illustrates a process of conceptual change concerning landscape development on a regional level of scale branching out to the national tier of government. It took about fifteen years to get from the stage of preliminary ideas to systematic implementation. The process can be characterised as a practical, experience-based approach, integrating theoretical insights from various academic domains. It is an exemplar of inter-disciplinary and trans-disciplinary work.⁴

Expertise is obtained on a personal level but also on a meta-level. The concept of the two-speed landscape originated from a group of 'reflective practitioners' who shared their empirical knowledge. At that time a similar body of knowledge emerged in the domain of water management around the concept of 'integral water management'. Connections between networks of academics, empirical researchers and practitioners, and opportunities to meet regularly, played a major role in fostering the development of new integrative concepts.

The Stork Plan case brings to the fore the question how to interpret the performance of shared notions about spatial organisation and the application of specific technology. What are the conditions for success? All signals point at some kind of a shared 'body of knowledge'. This metaphor seems especially appropriate because it deals with embodied (tacit) knowledge that is shared through personal interaction. It must be nourished continuously, adding and digesting new knowledge to keep the body in a vital condition. Such a vital body of knowledge enables a flexible, state-of-the-art response to emerging issues. More recently such learning networks are often called 'communities of practice' (Wenger, 1997). Facilitating and cultivating such bodies of knowledge, without immediate instrumental targets, is an important breeding ground for feasible spatial concepts. It can be regarded an important condition for strengthening the knowledge-action nexus. (Friedmann, 1987)

3 Design is forethought in making

3.1 Conceiving a coherent frame of concepts: methodical reflection step two

The Stork Plan offers clues to the articulation of regional design as a distinctive mental activity and professional skill. It marks a starting point for the construction of a procedural theory of design interpreted as the solution of wicked problems with the help of scientific knowledge, state-of-the-art technology and experiential situational-specific insights. Here we draw inspiration from the works of authors who go against the grain of mainstream positivistic and modernist approaches in planning and design. Important sources include Horst Rittel, Melvin Webber, Chris Argyris, Donald Schön, Nigel Cross and Brian Lawson. (de Jonge, 2009, 28; Rittel & Webber, 1984; Argyris & Schön, 1996; Cross, 1982; Lawson, 2006) These scholars all share a fascination with designing in comparison with

⁴ Interdisciplinary research entails cooperation between various unrelated academic disciplines with the purpose of transcending borders to create new scientific knowledge, unifying concepts, and realizing common research goals. By unrelated I mean that the disciplines differ in their methods and epistemological assumptions, such as the differences between quantitative and qualitative research methods or between analytical and interpretive approaches.

Transdisciplinary research concerns close cooperation between scientists from various disciplines and non-academic participants to research a common societal goal and create new knowledge. This involves negotiated knowledge, such as jointly defining problems and developing strategy and actions.

Integral research is a combined form of interdisciplinary and transdisciplinary research. The aim of the integral researcher is to create new scientific knowledge. This knowledge results from the integration of disciplinary knowledge. (Tress & Tress & Fry, 2006)

scientific thinking. Rittel and Webber (1984) coined the notion of 'wicked problems' which seem to escape positivist scientific methods of puzzle solving. Schön (1983) explored the relationship between theory and practice noticing that practitioners who deal with variable situations cannot limit themselves to applying general rules as scientists do. Focusing attention at the process of learning in professional and educational practice he coined the theoretical concept of the reflective practitioner. Cross (1982) explored the limits of what he termed 'designerly ways of knowing'. Thorough empirical inquiry led him to the conclusion that design skills and knowledge are to be considered as distinct from scientific knowing. Lawson finally combines an educational background in architecture and psychology to integrate some of the above mentioned ideas and constructs theoretical notions of the design process and design knowledge through close observation of experiences and successful practitioners.

Design is perceived in this text as intellectual activity and professional skill, defined as 'forethought in making'. As 'making' is an integrative and synthetic activity, so is the mental activity of forethought that precedes it. Now our conjecture is that many of the afore cited authors are influenced by notions in epistemology which go back to the works of Aristotle. Following authors such as Joseph Dunne (1993) and Bent Flyvbjerg (2001) we direct attention to Aristotle's conception of the special kind of knowledge preceding making as an integrative and synthetic activity.

Aristotle in his Nicomachean Ethics describes the field in which integration takes place in terms of the three intellectual virtues of *techne*, *episteme* and *phronesis*, which correspond with the basic human capacities of *making*, *thinking* and *acting*. Aristotle explains that making (*poiesis*) is different from, but closely related to, thinking and learning, which underpin the theoretical sciences (*theoria*) and the moral virtues of judging and valuing that underpin action (*praxis*). (Aristotle, 1976; Dunne, 1993; Flyvbjerg, 2001) This triad is explained in Table 1.

Table 1 Three intellectual virtues and human capacities

Human capacity	Thinking (<i>Theoria</i>)	Making (<i>Poiesis</i>)	Acting (<i>Praxis</i>)
Intellectual virtue	Scientific scholarship (<i>Episteme</i>)	Skilfulness, craftsmanship (<i>Techne</i>)	Practical wisdom, prudence (<i>Phronesis</i>)
Rationality	Theoretical, analytical	Practical, productive	Practical, value focused
Type of knowledge	Person- and context- independent, universal	Personal, context- dependent	Personal, context- dependent
Relevant professional domain	Science	Arts, crafts, professional practice	Ethics and politics

Episteme in the works of Aristotle resembles our ideal modern scientific project opening windows to universal covering laws which point the way to causes and effects of particular phenomena. *Episteme* is scientific wisdom.

Phronesis is associated with a person possessing practical wisdom (*phronimos*). (Flyvbjerg, 2001, 57). This means that the person has knowledge of how to behave in each particular circumstance that can never be equated to knowledge based on general rules. Aristotle links this type of knowledge, to be translated with prudence, to the wisdom of great rulers and reputed politicians. It is not so much linked to questions of truth but to questions of right and wrong, i.e. ethics. It implies value-inclusive reasoning and relevance to *praxis*. According to Flyvbjerg the original concept has no analogous contemporary term.

Techne is the main kind of knowledge for planning and design. A closer study of Aristotle uncovers a concept richer than the widely accepted concept of *techne* (Dunne, 1993). The usual interpretation of *techne* is very close to theory and the universal. This instrumental approach is relevant under circumstances that are more or less predictable. Complementary to this '*epistemic techne*' is a '*phronetic techne*', which is relevant in cases of uncertainty when desired outcomes must be brought about in a shifting interplay of forces through strategy and a talent for improvisation. That is exactly the appearance strategic design takes in the context of regional landscape planning. Characteristic of this kind of *techne* is a close relationship with the opportune (*kairos*) and chance. Whereas an instrumental approach goes with linear time or clock time (*chronos*), a strategic approach goes with a different concept of time, *kairos*-time, which is the 'time of the right moment'. We cannot draw a clear demarcation between the epistemic and phronetic mode of *techne*. The balance between the 'phronetic' and the 'epistemic' approach depends on the character of the task at hand. The more stable and predictable an object of *techne* is, the less variety one finds in particular cases and the more one can rely on general rules. In contexts of greater uncertainty, instability and

uncontrollability, general rules are only of limited use and one needs to rely primarily on personal experience to judge the particular situation.

Creative imagination and reflective judgement can be considered the heart of any design process and they have a reciprocal relationship. Creativity implies reflective judgement on appreciation, fitness and usefulness. Judgement of particular situations requires imagination to link the particular to the universal. The design process involves integrating different kinds of knowledge from the domains of *techne* and *phronesis* (mainly tacit, embodied knowledge) and *episteme* (explicit or codified knowledge). After all, a design has to perform in a practical way; it cannot deny general epistemic principles and, above all, it needs approval and support in *praxis*. In general, the further a design process progresses, the more we can test the design proposal against explicit criteria; we gradually shift from a *phronetic* to an *epistemic techne*. Designing can be considered as an integrative, intrapersonal and interpersonal conversation in which the intellectual virtues *techne*, *episteme* and *phronesis* meet. Designing presupposes tuning in to both the practice of acting 'wisely' in the public domain and of thinking analytically and objectively in the theoretical domain, or, in everyday language: in the design process the skill of the artisan meets the logic of the scientist and the practical wisdom of the leader. The argument is elaborated further and deeper in Jannemarie de Jonge's published PhD-dissertation (2009). At this point we face the challenge of showing the relevance of the abstract notions for landscape architecture and planning.

3.2 Landscape as object of design

Landscape is defined here as the interface where nature and culture, and object and subject, meet. According to Jacobs (2006), three dimensions of the landscape concept can be identified: i.e. matterscape, powerscape and mindscape. Each represents a different mode of reality and reflects a different validity claim. This is summarised below.

Table 2: Matterscape, powerscape and mindscape (after Jacobs, 2006)

Landscape phenomenon	Matterscape	Powerscape	Mindscape
Mode of reality	Physical reality	Social reality	Inner reality
Corresponding with...	Objective state of affairs	Inter-subjective norms	Conscious mind of the subject
Validity claim	'True'	'Just'	'Truthful'

Epistemic knowledge about landscape deals mainly with the objective facts of matterscape. Practical wisdom, or *phronesis*, about the landscape deals with powerscape and decision making. Decisions and following actions must take into account the different values people place on the landscape. The designer's productive skills (*techne*) of creative imagination and reflective judgement enable an integrative process in the mind, integrating *episteme* and *phronesis*, from which a solution gradually emerges that best fits people's specific needs in a situation. Landscape as public domain, in which knowledge and power are distributed between many actors, demands a co-design approach. In this situation the phenomenon of powerscape is much more complex than in individual or centrally directed design processes. The integrative conversation, in which different intellectual virtues and corresponding landscape phenomena meet, is considered to be a major challenge for landscape planning and design in the network society.

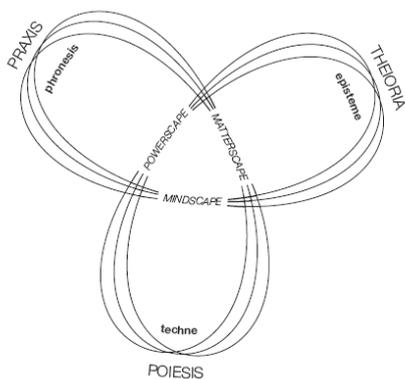


Figure 2 Co-design as integrative conversation

In large-scale landscape architecture the strategic mode of *phronetic techne* should dominate over the instrumental or operational mode of *epistemic techne*. A value-rational search into key dilemmas, through a research-like design process, and the formulation of central concepts that can resolve conflicting demands are considered to be key activities in design-driven planning. Mainstream planning and design practice, however, is very much preoccupied with efficiency and instrumental rationality. In the domain of landscape architecture this instrumental focus encounters serious problems. Cultural landscapes are not constructed all at once by one central actor, but are continuously transformed as the result of many simultaneous human interventions interacting with each other and with the physical landscape.

By putting a strategic design approach at the forefront, we need to search for a mode of conversation that allows participants to creatively explore the problem–solution space and integrate elements of *phronesis* and *episteme*. We need a mode of conversation that supports learning above ruling, creative transformation above reactive compromise, personal involvement above administrative bureaucracy, and strategically seizing opportunities above instrumentally executing blue prints. For such conversation the principles of landscape design dialogue (LDD) seem fit.

4. Design dialogue

4.1 What is LDD?

Landscape design dialogue is a methodology for regional planning and design. It is built upon findings and assumptions which, at first have been developed in a process of critical reflection in case-studies and, secondly, fit in with theoretical notions. (Cross, 1982; Rittel & Webber, 1984; Argyris & Schön, 1996; Lawson, 2006). This set of empirically grounded normative conjectures, propositions and guidelines is not a full fledged theory in the scientific meaning of the word. It is a coherent web of notions though, which is in need of testing, adaptation and improvement with respect to its empirical, logical and ethical foundations. (Faludi, 1986; Faludi & Waterhout, 2006; Davoudi, 2006; Creswell, 2003; Flyvbjerg, 2006; Gibbons Limoges & Nowotny, 1994)

Design dialogue is a multilingual conversation in which at least three languages are spoken: the verbal language of narrative and metaphor that goes with *phronesis*, facts and figures to express *episteme* and an imaginative graphical language of *techne*. In the language of design dialogue, drawings are an important, although not exclusive, integrative medium, representing the progress of collective thought that is realised by iterative design moves of creative imagination and reflective judgement. Other important characteristics of design dialogue are the existence of ‘free space’ as a condition for learning and creativity and the participation of experts with diverse knowledge and skills. Such dialogue needs to go beyond a polite conversation: dilemmas or conflicts should be articulated and used as creative resource for transformation. Dialogue is basically open-ended and serves as a preparation for decision making. But it is not a context for decision making itself. The prevailing notion of time for dialogue is *kairos*, the time of the favourable moment. In design dialogue, appealing design concepts can emerge and be approved of ‘when the time is ripe’. That can be the point for participants to switch from a learning, strategic mode to an operational, instrumental mode. Recognising these opportunities is part of reflective practice and part of expert performance.

De Jonge (2009, 168) identifies a list of basic characteristics of and guidelines for LDD.

Ambition to go beyond compromise.

Empirical research shows that in a political environment one tends to deny the complexity of design problems by following a negotiation strategy rather than a learning strategy (Hisschemöller & Hoppe, 1995; Hoppe, 1999; Halffman & Hoppe, 2005). Focussing on compromise often prevents innovative solutions to come about. The Greek *dialegein* originally meant ‘to welcome the difference’ (Dunne, 1993). A design dialogue is an adequate mode of conversation in cases where compromise may pose an obstacle to innovation.

Conditions for learning and creativity.

An essential condition for dialogue is the existence of ‘free space’ in which there are no obligations attached to interests, cognitive frameworks or time. One participates with an open mind; interests or domain-specific frameworks (‘paradigms’) are not absent, but temporarily set aside to allow learning about other perspectives. The free space of dialogue is not governed by *chronos*-time (‘clock time’, adequate for instrumental thinking), but by *kairos*-time, permitting slow or ‘timeless’ thinking as a companion to substantial learning and creativity.

Participants: experts with diverse knowledge and skills.

Participants show a reflective, learning attitude and represent diverse (explicit and tacit) knowledge and interests that are thought to be relevant for the issue at stake. As practical wisdom or *phronesis* is an important source, experience counts. What is needed is a level of expertise in which the expert can

go beyond analytical rationality, express personal involvement and feel responsible for good results. The expert can then respond to situations intuitively, drawing directly on experience and recognising similarities between these experiences and new situations.

To conduct dialogue as a multilingual conversation, the participants should represent a broad diversity of skills and backgrounds. Three basic 'languages' are imaginative, graphical language, verbal, narrative language and the language of facts and figures, each with its own rationality. All three feed creative imagination and reflective judgement. In design dialogue, drawings and metaphors are important integrative media, representing the progress of collective thought.

Creating new insights through a design approach.

The course of conversation resembles the search process in designing: the problem–solution space is explored by alternatively adopting a solution and problem perspective. Regarding the problem perspective it is important to reflect upon real-life situations and concrete cases and to search for key dilemmas. By articulating and utilising conflicting demands constructively, they can be a source of creative transformation. The process of 'creative imagination and reflective judgement' is iterative, making design moves that represent various aspects, scales and levels of detail. At a certain point, a central concept or a set of concepts is created that are recognised by (at least some) participants as promising for further elaboration or action. However, dialogue is basically infinite since it deals with systems problems.

Seizing opportunities.

Dialogue is basically open-ended and not a context for taking formal decisions. As participants are involved and feel responsible, dialogue generally serves as a preparation for decision making in various contexts outside the actual dialogical space. The participants of design dialogue are therefore important communicative bridges between the fluid dialogical space and organisations or entities that have executive power and ambition. They need an open eye for seizing opportunities when the time is ripe, when a concept will be recognised as promising, when the favourable moment (*kairos*) has come.

Decision making in the connected entities (e.g. government bodies, NGOs, private enterprises or combinations (coalitions) is a kind of 'tentative decision making' on the concept. In other words, they decide to make an effort to take the concept one step further. This makes design dialogue a breeding ground for implementation, but not a guarantee for implementation. Some concepts will prove to be a dead end. For others it might take many iterations to frame a project in such a way that consensus can be reached among stakeholders and implementation becomes feasible.

5 Conclusions

This text explores new roads towards a middle range theory of landscape design and planning. The building blocks have been processed by way of methodical reflection on the outcomes of a pair of case studies. One case is sketched out in detail. It is the design and planning process accompanying the gradual transformation of the landscape of the Rhine-Meuse Flood Plain in the Netherlands. Building upon the foundations of theories-in-use in regional planning practice the authors have developed a hybrid theory, or, putting it more precise a design methodology encompassing empirical and normative ingredients. It is labelled Landscape Design Dialogue. The methodology focuses in on the knowledge-action nexus.

Design is interpreted with reference to the Aristotelian knowledge concepts 'episteme', 'techne' and 'phronesis'. Episteme refers to causal knowledge and the covering law model of knowledge production. Techne is the domain of applied knowledge and engineering. Design is predominantly situated in the domain of techne. But it cannot be isolated from 'phronesis' i.e. the domain of practical wisdom in politics and ethics. Neither can it be separated from scientific wisdom. The 'wicked problems' in design and planning cannot be solved with the help of ordinary epistemic knowledge. Design is a process of learning, conversation and argumentation with the help of imaginative devices. It is an iterative process of creative imagination and reflective judgement. In this process art, science and practical wisdom merge. Various types of knowledge involved have to be obtained from a wide range of people who individually own pieces of information and from the professional knowledge stock. These pieces have to be put together in a process of knowledge producing conversation. This is a necessary condition for construction of bridges between worlds of knowledge and action in regional design. Scholarly reflection on the meta-level of planning and design processes has revealed regularities that can be caught in a conceptual model. We propose to use that model for analysis of design practice, and to develop applications for design practice.

6 References

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