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Research Paper

To draw or to cross the line? The landscape architect as boundary spanner in Dutch river management

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ABSTRACT

In many Western countries, flood policy is transitioning from a focus on technical flood defence measures towards more holistic and integrated flood risk management approaches. In this article, we explore the boundary spanning role of landscape architects in integrated flood risk management projects. The central research question is: what are the boundary spanning activities and roles that landscape architects perform and which factors are conditional to these activities? We have studied the boundary spanning behaviour of landscape architects in the Dutch 'Room for the River' programme. This programme had a dual objective of improving simultaneously the water safety and the spatial quality of the Dutch riverine areas. We conducted a comparative, in-depth case study of three 'Room for the River' projects, and investigated conditions that stimulated or frustrated the work of landscape architects in establishing safe solutions with spatial quality. We found that the landscape architects involved in these projects played various boundary spanning roles. We conclude that, depending on the conditional factors, their roles ranged from more traditional content-oriented domain expert/scout to the more innovative organisational expert/task coordinator. For successful boundary spanning, although cognitive capacities (e.g., knowledge about landscape) are important, landscape architects also need to have the appropriate social capacities (e.g., social-emotional competences, networking skills). That is, the work of the landscape architects essentially includes drawing lines that sketch the contours of future landscapes; but to do so, they must also cross the lines between the various actors, organizations, and disciplines involved.

1. Introduction

Traditionally, flood risk management is enacted through the construction of dams, dikes, and other civil engineering works, which enforce a strong boundary between land and water (Van Ruiten & Hartmann, 2016). In response to flood events and increased risks associated with this traditional approach, however, flood risk management is transitioning towards a more holistic and integrated flood risk management approach, which focuses on solutions that integrate spatial planning and flood risk measures (Merz et al., 2010). As a result, both the physical boundary between land and water as well as the boundaries between different disciplines, policy objectives, and values (such as water safety, spatial quality, and economic development) are blurring (Warner et al., 2012; Tempels & Hartmann, 2014). Consequently, collaboration across institutional and disciplinary boundaries has become more important (Neuvel & Van der Knaap, 2010; Huntjens et al., 2012).

Cross-boundary collaboration in integrated flood risk management requires meaningful social engagement and participation in decision-making processes of stakeholders from different sectors (e.g., Hall et al., 2003; Ahern, 2011; Seabrook et al., 2011). This is reinforced by the 'argumentative turn' in planning (see e.g. Fischer & Forester, 1993; Fischer & Gottweis, 2012; Innes & Booher, 2010), which pertains to the idea that planning in practice revolves around processes of sense making between contested interpretations, values, and preferences in which communicative practice and language hold central positions: 'the language of policy and planning…not only depicts but also constructs the issues at hand' (Fischer & Forester, 1993, p. 1). Landscape architects

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are increasingly called upon to play a major role in these interdisciplinary collaboration processes and connect various languages (Westerink et al., 2013; Von Haaren et al., 2014; Kempenaar et al., 2016).

The work of landscape architects can involve both content-related and process-related contributions. These contributions include, for example, creating a framework for spatial development, developing and evaluating alternative views and solutions by making high-quality designs, building support and engagement, enabling joint conceptualisation and visioning, and improving collaboration and networking. As Nassauer (2012, p. 224) argues, landscape architects have the skills and knowledge to employ the 'imaginative potential of design to invent alternative future landscapes', which are made visible in drawings and maps, and which include both a physical and a social perspective on the landscape. Designing, therefore, has the potential to initiate discussions about these alternative futures, to make hidden or invisible ecological processes visible, to raise consciousness, and to reconcile people with a 'new vision of the landscape' (Von Haaren et al., 2014, p. 167). The role of landscape architects has gradually broadened. While they continue to be designers of landscape interventions, they increasingly also act as process managers in participatory design workshops on various scales, using design as a tool for synthesising diverse spatial functions and interests in interaction with decision-makers and other stakeholders (Sanders & Stappers, 2008; Van den Brink & Bruns, 2014; Kempenaar & Van den Brink, 2018).

These contributions are highly relevant in relation to cross-boundary collaboration in integrated flood risk management. However, little is known about in particular the boundary spanning role of the landscape architect and the actual performance of designing in such a planning approach. This article feeds into this lacuna. In this article, we present the results of our study into cross-boundary collaboration in Dutch river management. Our conceptual framework is built on literature on boundary spanning and boundary spanners. Boundary spanners are generally defined as individuals 'who are especially sensitive to and skilled in bridging interests, professions, and organizations' (Webb, 1991, p. 231). Boundary spanners connect different actors and their interests, build trust between those actors, and help to improve coordination between decision-making and implementation (cf. Van Meerkerk & Edelenbos, 2018a). The work of boundary spanners, however, requires not only personal skills and competences (e.g., networking skills and experience), but also conditional factors, such as management support and a formalised role definition that can impact these activities and roles. Against this background, our research question is: what are the boundary spanning activities and roles that landscape architects perform, and which factors are conditional to these activities?

We approached this question with a focus on the Dutch 'Room for the River' programme. This programme is generally considered a leading example of integrated flood risk management in practice (Zevenbergen et al., 2013), and exemplary for the 'spatial turn' within flood risk management (Van Ruiten & Hartmann, 2016); that is, for the paradigm shift from fighting the water with dikes and dams to living with the water and creating more space for the main rivers. It is also internationally well-known for its dual objective of accommodating higher flood levels while at the same time improving the spatial quality of the riverine areas (Rijke et al., 2012; Klijn et al., 2013). We studied the work and behaviour of landscape architects during the planning and design phase of three different Room for the River projects.

The structure of this article is as follows. In Section 2, we review literature on boundary spanning work. We discuss key activities, types of roles for boundary spanners, and categories of conditions that are conducive to boundary spanning behaviour. In Section 3, we explain the research methods and introduce the Room for the River programme and the three studied projects within it. In Section 4, we present the results of our analysis and compare the three cases with regards to the boundary spanning activities of the landscape architects and the conditions that influenced their boundary spanning behaviour. Section 5 comprises the conclusions and discussion.

2. Boundary spanning work: activities, roles, and conditions

2.1. Key activities of boundary spanners

Boundary spanners undertake the cross-boundary work that is needed to develop coordination and collaboration across organisational, sectoral, and disciplinary boundaries (Van Meerkerk & Edelenbos, 2018b). In their boundary spanning work, these persons are engaged in three activities: *selecting* relevant information on both sides of the boundary, *translating* (i.e., interpreting and communicating) this information across the boundaries, and *connecting* different actors at both sides of the boundary (i.e., networking) (Leifer & Delbecq, 1978; Tushman & Scanlan, 1981; Van Meerkerk & Edelenbos, 2014). These activities are interrelated. Translating activities imply selecting activities, and connecting activities in turn imply both selecting and translating activities. The connecting activities that boundary spanners perform are crucial to pick the fruits of selecting and translating.

2.2. Types of roles for boundary spanners

Boundary spanning activities are performed in various ways, resulting in different role types. A well-known typology is that of Ancona and Caldwell (1992), who developed four role types. The *ambassador* serves both protective and persuasive goals, and is aimed at persuading external actors and providing access to power structures. Key activities include moulding, lobbying for resources, but also protecting the team or project group from disturbing interference. The *scout* scans the environment and collects information and ideas about competing actors (within the organisation or from the environment). Scouting activities are aimed at the information structure; they add information to the expertise of the team. The *task coordinator* provides access to the workflow structure. Coordination, negotiation, and feedback activities allow a tighter horizontal coupling with other organisational units, often filling the gaps left by formal structures and/or -systems. The role of the *guard* is avoiding the unintended release of information. Compared to the other three roles, guard activities are not aimed at the environment, but are rather internally-oriented (i.e., keeping things hidden from the environment until the right moment).

Ancona and Caldwell's typology has been used in different disciplines, including the public sector (e.g., Williams 2002, 2012), the health sector (e.g., Lindsay & Dutton, 2012), the business sector (e.g., Johnson & Duxbury, 2010), and the emergency management sector (e.g., Curnin & Owen, 2014). Taking into account the present research context, especially the insights from research in the public and emergency management sectors contain relevant clues for further developing the typology.

Different from Ancona and Caldwell (1992), Williams (2002) also emphasised personal skills and competences regarding cross-boundary communication, interpretation, and especially translation. According to Williams (2002), boundary spanners have to be knowledgeable about the various professional languages and routines of the different organisations; hence, he distinguishes the role of *interpreter/communicator*. Williams (2002) also emphasised the entrepreneurial aspects of boundary spanners. *Entrepreneurs* try to exploit windows of opportunity, link different issues, agendas, and policies across boundaries, and devise innovative arrangements to build coalitions and connect actors across boundaries.

The role types distinguished by Ancona and Caldwell (1992) and Williams (2002) can be arranged according to their focus on each of the key activities previously distinguished, i.e., selecting, translating, and connecting. Our integration is visualised in Fig. 1. The guard and scout role types primarily focus on selecting, as they aim to find necessary actors and meaningful information to work with in their own

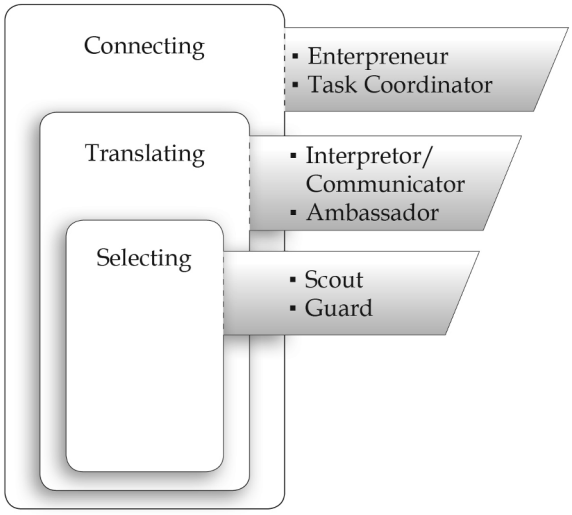

Fig. 1. Key activities and related role types for boundary spanners (based on Leifer & Delbecq, 1978; Tushman & Scanlan, 1981; Ancona & Caldwell, 1992; Williams, 2002).

organization. The ambassador and interpreter/communicator role types primarily focus on translating, as the boundary spanner interprets input from the environment to the organization and vice versa. Finally, the task coordinator and entrepreneur role types primarily focus on connecting, as they aim to identify actors and information that are considered relevant for innovation and organizational performance.

The work of Curnin and Owen (2014) provides a relevant addition, because they focused on the knowledge of boundary spanners, for which they distinguished two roles. The first is the role of the *organisational expert* who has expertise on the broad subject matter regarding the own organisational activities, capabilities, and strategic objectives, as well as those of external organisations. The second role is the *domain expert* who is particularly knowledgeable about the domain (content). This allows her or him to understand what external organisations can contribute to specific issues. This distinction implies that an entrepreneur, a task coordinator, and so on, can also be categorised as either an organisational expert or a domain expert. Obviously, organisational expertise stresses in particular the social capacities that are required, whereas domain expertise primarily refers to cognitive capacities.

As a domain expert, landscape architects have to understand the physical structure of landscapes, be knowledgeable about the craft of designing, and provide 'site-planning, design and management advice to improve the landscape for human benefit' (Murphy, 2005, p.2). Landscapes, as discussed here, come into being in the interplay between physical structures and the perception by people of those structures. A landscape is both about the 'phenomenon itself and our perception of it' (Wylie 2007). It is the physical landscape that is designed, yet afterwards the landscape as perceived is performed, made and remade, and evaluated. This idea is sometimes challenging for landscape architects (Roe, 2017). It fits with aesthetic creation theory as put forward by Zangwill (2007). Applying this theory to landscape architecture, the perceived landscape and its quality depend on the physical properties of the landscape, but in a non-straightforward manner, because it is filtered through the preconceptions of the perceiver; there is, as it is called, 'dependence without laws' (Zangwill, 2007, 38; Van Etteger et al., 2016).

In addition to cognitive capacities related to the working of and opportunities in the physical landscape, the organisation of the development of design and management advice requires social capacities. This, in turn, requires knowledge about inter- and transdisciplinary collaboration and stakeholder participation (see e.g., Selman, 2004; Benedict & McMahon, 2006; Thering & Chanse, 2011). These latter cognitive capacities are particularly related to the organisational expert role type. Therefore, for a landscape architect to be an organisational expert, domain expertise would also be required. The gradually broadened role of landscape architects, that was previously mentioned, would not only require new cognitive capacities, such as knowledge about a variety of spatial functions and social needs, but also new social capacities to engage in a broad range of activities. It would mean that, next to the more traditional selecting (collecting information or the choice for a specific design) and translating activities (interpreting the selected information from a particular perspective), connecting activities (develop a vision for the future in close collaboration with decision-makers and other stakeholders) are now crucial for the boundary spanning work of the landscape architect.

2.3. Conditional factors for boundary spanning behaviour

Boundary spanning behaviour is dependent on conditional factors. A recent review of organisational psychology and business administration literature identified four categories of conditions that may influence boundary spanning behaviour (Van Meerkerk & Edelenbos, 2018b).

First, *environmental characteristics* include environmental uncertainty, dependency, dynamics, and inter-organisational relationships. A high level of environmental uncertainty, for instance, may increase boundary spanning activities. Furthermore, when organisations face high levels of interdependency with actors across their boundary, more boundary spanning activities will (need to) be conducted. Inter-organisational dynamics and relational capital are important factors as well (e.g., Callister & Wall, 2001). The assumption is that relational capital and trustful relationships (e.g., positive encounters) positively impact the quality of boundary spanning activities.

Second, *organisational support and feedback* includes management feedback, empowerment, and organisational/co-workers' support. Because boundary spanning can be a stressful activity, organisational or top-management support can provide confidence and psychological assurance, and thus have a positive impact on boundary spanning behaviour (e.g., Qiu, 2012). A specific form of organisational support is empowerment, where managers give employees the discretion to make day-to-day decisions about job-related activities. This increases the boundary spanners' room to manoeuvre (Chebat & Kollias, 2000).

Third, *role definition and role stressors* concern the composition or definition of the boundary spanner's function and role. Examples of role stressors are role conflict, role ambiguity, and role overload (Singh, 1998). Role conflict refers to the perceived incompatibility between role expectations and demands. Role ambiguity occurs when there is uncertainty about the expectations about different roles. Role overload arises when role demands exceed the boundary spanner's abilities. Role autonomy, i.e., the degree of freedom an actor has in balancing the diverse expectations from her or his role set by devising appropriate actions and behaviours, is identified in the literature to moderate the effects of the role stressors (Perrone et al., 2003).

Finally, *individual determinants* include cognitive capacities (e.g., information processing capability), social-emotional competences, motivation, and experience (e.g., Au & Fukuda, 2002; Dollinger, 1984). Information processing capability is important for boundary spanners in scanning and processing environmental information. Social-emotional competences include communicating and listening skills, empathy, and conflict management. Lastly, also past experience can enhance boundary spanning capacities.

3. Methods

3.1. Case study: the Room for the River programme

The aim of the 'Room for the River' programme was to provide more

space for the major rivers in the Netherlands, so as to improve the flood security of the approx. four million inhabitants of the riverine areas. The second objective was to improve the spatial quality of the river landscapes. This €2.3 billion programme started in 2006 and was finalised in 2018. In over 30 project locations, civil engineers and landscape architects worked together to devise and implement measures that would meet the dual objective of the programme (Sijmons et al., 2017).

At the national level the programme was coordinated by the Room for the River programme office, which was part of the policy-implementing agency for water management (in Dutch: *Rijkswaterstaat*). However, project responsibility was decentralised as much as possible. Almost all individual projects were planned and designed under the authority of various local and regional governments, such as municipalities, provinces, and regional water boards. In a few cases, Rijkswaterstaat was assigned to take the lead. An external, multidisciplinary 'Q-team' (Quality Team) had an advisory role and was tasked with producing 'independent recommendation[s] on enhancing spatial quality [and was] commissioned to coach the planners and designers, to peer review the designs and plans, and to report to the minister about the spatial quality achieved' (Klijn et al., 2013, p. 289). The Q-team, together with representatives of the programme office, visited the individual projects (usually several times) and advised the project teams on how to best meet the spatial quality objective.

Programme documents did not contain an unambiguous description of the term spatial quality, which is understandable because quality is a contextual and highly subjective term. However, as Thompson (1999) has shown, the evaluation of the quality of designed landscapes is generally based on three concepts or points of view: ecology, community, and delight. In other words: designed landscapes must be ecologically sustainable, they must have meaning for the users of these landscapes – and through that, in a broader sense, for society as a whole – and provide them with delightful experiences. Our understanding of spatial quality is in line with the definition by Thompson (1999). We have used his definition as a reference point in our study of the boundary spanning behaviour of landscape architects in the Room for the River projects. In an adjusted form, this definition has also been adopted by the Q-team (Klijn et al., 2013). It means that, in our view, spatial quality is a generic term for the quality of a spatial object, such as a building or a landscape. The dimensions of functional sustainability, meaning-making, and beauty are in principle similar for each of these objects, but their content is object-dependent and as such the subject of participatory planning and design processes. In this respect, it should be noted that each design that was made was a creative response to a complex problem, and that these designs were the result of an intensive collaboration between many stakeholders. Consequently, the playing field of the landscape architects was complex. On the one hand, they had to collaborate within the local project team and with other involved stakeholders; on the other hand, they had to collaborate with the programme office and the Q-team.

3.2. Case selection

The programme defined three types of river management measures to increase the discharge capacity of the main rivers: spatial measures on the river side of the dike (e.g., excavating old river branches), spatial measures on the landward side of the dike (e.g., replacing dikes or the construction of a new river branch), and technical measures (e.g., strengthening existing dikes or the removal of obstacles). From a boundary spanning perspective, we explored the work of landscape architects during the planning and design phase of three Room for the River projects (see Fig. 2), each representing a different type of river management measure. We selected the three cases based on the results of a systematic comparative analysis of 23 projects in the Room for the River programme (see Busscher et al., 2017, 2019).

First, we studied the project 'Dike Strengthening Amer Donge',

Fig. 2. Location of the three cases in the Netherlands.

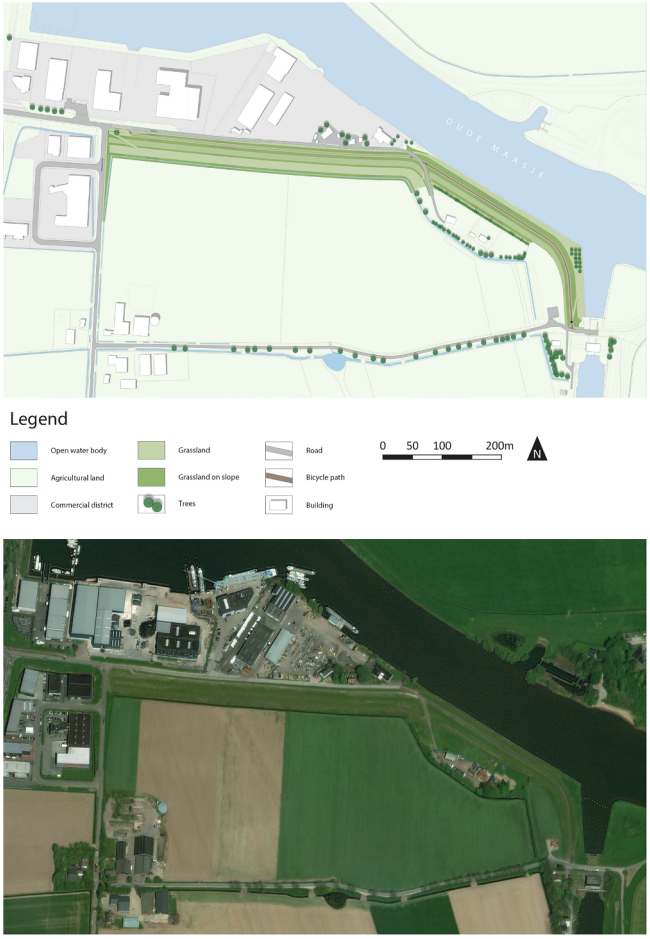

Fig. 3. The case Amer Donge. Top image: the plan by landscape architect Robbert de Koning (source: Robbert de Koning). Bottom image: aerial photograph of the situation ex post (source: Google Earth).

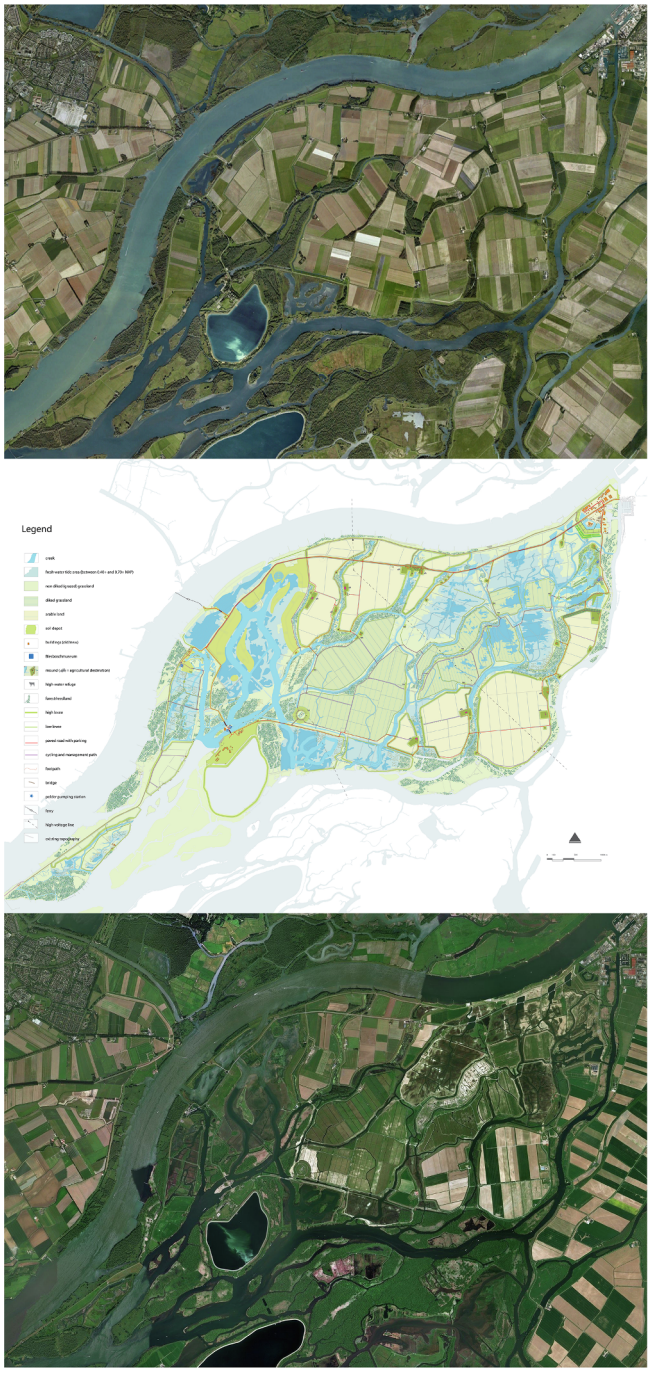

Fig. 4. The case Noordwaard. Top image: aerial photograph of the situation ex ante (source: Google Maps). Middle image: the plan by landscape architect Robbert de Koning (source: Robbert de Koning). Bottom image: aerial photograph of the situation ex post (source: Google Maps). When the water level in the river exceeds a certain height the water will flow from northeast to southwest through the plan area. Initially, the water will flow through the creeks, but increasing water levels will flood the diked grasslands at the centre of the area.

which involved a relatively small technical river management measure (see Fig. 3). Over a length of almost 1 km, the dike along the Bergsche Maas river has been strengthened. Second, we studied the project 'Depoldering Noordwaard', which involved a far-reaching spatial measure on the landward side of the dike (see Fig. 4). In this project, the long-term safety standard for the Merwede river was met by depoldering an agricultural area of 4450 ha. Consequently, the flood channel that was created through the Noordwaard polder transformed this polder from being an agricultural area protected by dikes into a new natural area open to high water. Third, we studied the project 'Room for the River Deventer', which involved several spatial measures on the river side of the dike (see Fig. 5). In this project, the floodplain area near the city of Deventer has been widened over a length of almost 10 km. Next to lowering floodplains, new channels have been constructed to give the IJssel river more space in periods of high water. Fig. 6 compares the three cases in terms of their respective size.

3.3. Data collection and data analysis

For the present study, we analysed the three cases in-depth. We collected and consulted archival data and key policy documents, and conducted interviews. For each case, the studied documents included, e.g., the administrative agreement, various drafts of the developed plans, and the spatial quality assessments of the Q-team. From studying these documents we learned much about the procedural aspects of the projects and their context. However, as we focused on the boundary spanning *work* of landscape architects, the main data of the research project consisted of 15 face-to-face interviews, conducted in June-July 2017 and in June 2018 (Busscher et al., 2017, 2019). Interviews were held not only with the landscape architects in the three projects, but also, among others, with the involved local project managers and river branch managers of the Room for the River programme office. Interviews took an average of 60–100 min. The interviews were semi-structured and specifically addressed the role of the landscape architect in the three cases. The recordings were transcribed verbatim.

The data were analysed in a three-step approach. In a first step, the data were qualitatively coded using ATLAS.ti (see Friese, 2014). The coding scheme was derived from the literature, and consisted of codes related to the three key activities of boundary spanners (i.e., selecting, translating, and connecting), and codes representing the four conditional factors to boundary spanning work (i.e., environment, individual determinants, organisational support, and role definition). In a second step, in multiple iterations, the researchers together in a collaborative effort synthesized the coded data into the key activities and (sub) conditions – and formulated accompanying descriptions – that are presented in the tables in the next section. On the basis of this synthesis, it was also possible to derive and identify the roles that the landscape architects had in the three projects. In a third and final step, the cases were compared to highlight differences and similarities. For the synthesis and comparison, we used the framework summarized in Fig. 7 (where, for convenience, we already included the cases; elaboration is provided in Section 4).

4. Results

4.1. Activities

Table 1 provides an overview of the key activities of the landscape architects involved in the three projects. In Amer Donge, the landscape architect selected relevant information to propose landscape design opportunities for spatial quality in relation to the technical design for dike strengthening (selecting). However, these activities had little effect. As the project manager from the regional water board, who prioritized functional aspects over spatial quality issues, explained: 'The landscape architect provided the example of a dike with trees on it.' The landscape architect was only involved in the final stage of the project, after criticism of the Q-team that the draft plan might not meet the spatial quality objective of the Room for the River programme. The proposed opportunity to plant the trees was not translated into the plan for the dike strengthening. The landscape architect therefore served as a kind of backstop. In the words of the project manager: 'We thus used him as a sort of second opinion, something like: "We have a technical design here, we have to realise these objectives. According to you, how

Fig. 5. The case Deventer. Top image: the plan by landscape architect Jeroen de Jong (source: Jeroen de Jong). Bottom image: aerial photograph of the situation ex post (source: https://www.pdok.nl, retrieved 11 February 2019).

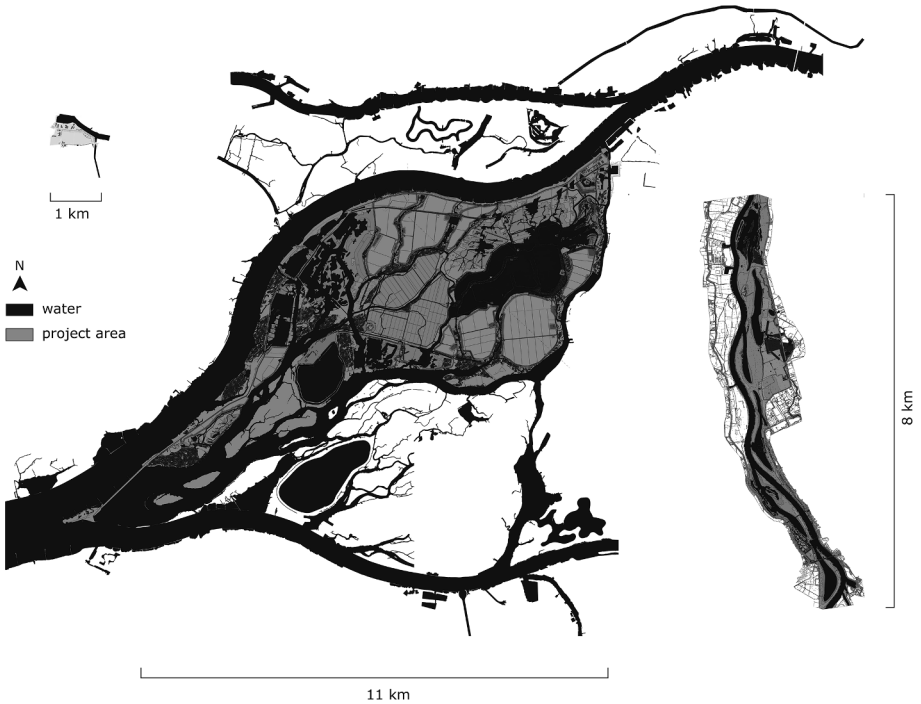

Fig. 6. The three cases compared as to their respective size. In black: water, and in grey: the various land uses. Adapted from the original plan drawings by landscape architects Robbert de Koning (Amer Donge and Noordwaard) and Jeroen de Jong (Deventer). From left to right: Amer Donge, Noordwaard and Deventer.

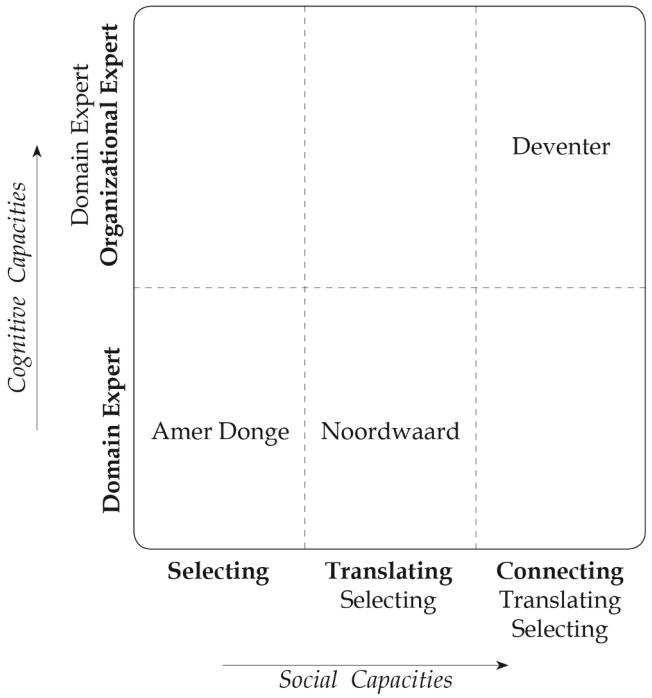

Fig. 7. Activities and roles of the landscape architect in the three cases.

should we do this?'"

In Noordwaard, the landscape architect's activities reached further. Next to selecting information, his work also included translating activities, i.e., interpreting and then communicating the selected information. Here, the landscape architect was involved from the start of the project, and played a key role in the interactive design process which was aimed at the development of a Master Plan for the Noordwaard polder. His timely involvement may have allowed it to be more prominent. A historical map of the Noordwaard in the beginning of the 20th century, showing a structure of creeks and various small polders, was selected as the most interesting basis for future design (selecting). On the basis of that historical map, the landscape architect prepared and facilitated design ateliers in which local residents, farmers, and interest group representatives were asked to 'just take a marker and draw along', as the communication assistant stated (translating). During 'kitchen-table-talks', the landscape architect collected information about individual preferences of residents and farmers, discussed optimisation of measures, and explained the underlying lines of reasoning and choices made by the project team. As he explained himself: 'You educate them, you teach these people a lot, about where ideas come from. So that helped.' He also sketched the contours and conditions, and spatially drew the Master Plan: 'I translated these into an integrated design.'

In Deventer, the landscape architect's activities were the most far-reaching. His activities incorporated selecting, translating, and connecting. Rather than selecting a specific historical situation as the basis for future design, the landscape architect started with an open mind, using a variety of historical references and existing spatial quality frameworks as sources of inspiration: 'We went to the residents and involved interest groups, explained our task and said to them: "Please think along with us"'. His main aim was 'to integrate shared values and visions into one coherent river-widening plan.' For example, during a three-day design workshop, on the first day he started with listening to all the stakeholder wishes and issues at stake in informal roundtables (selecting). On the second day, he translated these wishes and issues into a number of sketches that visualised policy options (translating). On the third day, he discussed these visualisations with the stakeholders (connecting).

Table 1
Key activities and roles of the landscape architects in the three cases.

Amer Donge		Noordwaard		Deventer		
Key activities	Description	Key activities	Description	Key activities	Description
Selecting	– Proposing spatial quality additions to existing design	Selecting and translating	– Preparing and facilitating interactive design workshops – Joining kitchen table talks – Sketching contours and conditions of the Master Plan	Selecting, translating, and connecting	– Integrating shared values and visions into one preferred alternative – Listen, sketch, and discuss during a three-day design workshop – Fine-tuning the implementation plan during feedback sessions
Roles	Description	Roles	Description	Roles	Description
Domain expert and scout	Based on his landscape and design knowledge and expertise, scanner of spatial quality opportunities	Domain expert and ambassador	Lobbyer for spatial quality, content-driven, highly motivated to deliver the best plan for the Noordwaard	Organisational expert and task coordinator	Good listener, understands and translates local needs, and fosters productive stakeholder collaboration

4.2. Roles

We found that, in all three cases, the landscape architect involved did not have one dominant role, but rather a combination of roles. These roles can be grouped according to the distinction made in Section 2.2 between cognitive and social capacities (see also Fig. 7). This is explained in Table 1. In Amer Donge, the key activity was selecting information. On the basis of his knowledge and expertise of the physical landscape and its perception, the landscape architect scanned the external project environment for spatial quality opportunities. Being used as 'a sort of second opinion' it can be argued that the landscape architect combined the roles of domain expert and scout.

In Noordwaard, the landscape architect also concentrated on selecting information, albeit in a different way. Rather than scanning the external project environment, he contributed to selecting and defining historical references for plan development. Driven by his intrinsic motivation to deliver the best plan for the Noordwaard and his landscape knowledge and expertise, the landscape architect functioned predominantly as a content-driven boundary spanner actively lobbying for a specific interpretation of spatial quality, thus primarily combining selecting and translating activities. As the project manager stated: 'He was adamant to achieve the best and most beautiful area. That was his focus and it was difficult to convince him otherwise. We really had to slow him down at times.' As a boundary spanner, the landscape architect in the Noordwaard project thus combined the roles of domain expert and ambassador. Apparently, it proved difficult to take a more process management-oriented role, which would also require social capacities, including strategic, political, and context-sensitive competences.

In Deventer, the boundary spanning work of the landscape architect primarily focused on translating and connecting activities, resulting in a combination of the roles of organisational expert and task coordinator. The project manager compared his role with that of the conductor of an orchestra: 'He [the landscape architect – authors] oversees the orchestra, content-wise, I mean. He understands how the music has to be played, he understands the needs of the audience and he listens very well. That is also what a conductor does.' The landscape architect was seen as the 'connecting factor', understanding and translating local needs and fostering productive stakeholder collaboration. Accordingly, the landscape architect predominantly functioned as a process-driven boundary spanner. Based on the acquired knowledge about the involved stakeholders' capabilities, needs, and strategic objectives, he coordinated and negotiated the coupling between the various governmental authorities and interest groups involved, thereby continuously managing expectations and addressing and explaining the process phases.

4.3. Conditional factors

The conditions under which the landscape architects in the three Room for the River projects worked, varied. This is shown in Table 2. In terms of environmental conditions, Amer Donge was a relatively simple project, involving 'only' the strengthening of an existing dike trajectory. Inter-organisational relationships were also limited. The regional water board was the project initiator and the dominant actor; there was hardly any stakeholder involvement. The project environment was hence stable. At first, the project team did not involve a landscape architect. Only after a negative assessment of the spatial quality objective by the Q-team, a landscape architect was invited to give a 'second opinion'. The regional water board did not have any experience with spatial quality as a separate objective, and it also lacked landscape and landscape design knowledge and expertise. As a river branch manager of the programme office explained: 'This was new for the regional water board involved, to build a dike with spatial quality.' Despite the intervention by the Q-team, the landscape architect in Amer Donge experienced a role conflict. Only when the formal decision-making

Table 2
Conditional factors to the boundary spanning behaviour of the landscape architects in the three cases (LA = landscape architect).

Conditional factors	Amer Donge		Noordwaard		Deventer	
	Sub-conditions	Description	Sub-conditions	Description	Sub-conditions	Description
Environmental characteristics	– Environmental certainty – Limited inter-organisational relationships	– Stable project environment – One dominant actor: the regional water board – Hardly any stakeholder involvement	– Environmental uncertainty – Dynamics – Dependency	– Complex spatial measure on the land-side of the dike – High level of interdependency between actors	– Low level of environmental uncertainty – Dependency – Inter-organisational relationships	– High level of interdependency between actors – Productive collaboration between involved organisations
Organisational support and feedback	– Empowerment	– Q-team asks for involvement of LA	– Negative management feedback – Lack of empowerment	– Lead project, developed prior to the programme – Strict conditions were enforced regarding time, budget, and scope	– Positive management feedback – Empowerment	– Support and feedback from the programme office and the Q-team from the start of the project – The programme office was actively invited and involved by the project team
Role definition and role stressors	– Role conflict	– LA was hired, but not part of the project team – LA was tasked with evaluating the spatial quality of the project – Project team and LA had different expectations about the input and deliverables of the LA	– Role ambiguity	– LA was hired as right-hand man of the process managers, and thus integral part of the project team – LA was allowed much freedom of design – LA lacked final decision-making authority	– Clear role definition	– LA was hired and integral part of the project team – From the start of the project, the connecting role of the LA was explicated
Individual determinants	– Experience – Cognitive capacities	– High cognitive capacity – Strong expertise in landscape and landscape design	– Experience – Cognitive capacities – Motivation	– High cognitive capacity – Strong expertise in landscape and landscape design – Strong motivation: sets his standards high	– Social-emotional competences	– Good listening skills – Knowledgeable about, and open to, different languages and interests

process was almost finished, he was hired. As a result, he was not part of the project team, and, moreover, he and the other members of the project team had different ideas and expectations. As the landscape architect himself explained:

> It was the idea of the Q-team to involve me. To make sure that this dike would be more than just a dike as it is now…I tried to shake things up, and show them what more could be possible than just the standard way of dike strengthening…But this didn't work as well as I wanted.

The project manager confirmed the lack of chemistry between project team and landscape architect: 'He came up with ideas that just were not feasible.' As a consequence, the landscape architect had to fall back on his traditional, predominantly content-oriented role, 'furnishing' the already existing plan with some spatial quality touches.

By contrast, Noordwaard was a very complex project. The partial depoldering of this agricultural area crossed various administrative boundaries, involved many stakeholders, and required the construction of hydraulic masterpieces. As a lead project, the plan development started before the Room for the River programme organisation was in place. Initially, the project team was therefore given room to manoeuvre; it went to work enthusiastically to develop plan alternatives. However, later on the programme office felt that the project team operated too autonomously, and was critical about the expectations that had been raised during, e.g., the kitchen-table-talks. It therefore enforced strict safety, planning, and financial conditions, and asked the Q-team to intervene and help developing a more balanced and feasible design. The landscape architect, who was the same person as in Amer Donge, in this project thus had to operate in a highly turbulent and complex environment. At the start of the project, he said he was hired to develop, as a fully-fledged project team member, 'the best possible plan for the area', but as soon as the programme office became more restrictive, his freedom to design what he considered to be the best possible plan gradually diminished, which resulted in role ambiguity. As he himself explained:

> I wish my mandate had been a little bigger at some points. As a landscape architect, you are positioned between technical requirements and project and process managers, who together make final decisions. I was the advisor of one of these managers on the topic of spatial quality. So you do not have a very strong position.

The role definition of the landscape architect thus depended on his collaboration with the project and process managers in a project team that was at odds with the programme office. Falling back on his intrinsic motivation and strong expertise in landscape and landscape design, he enacted his traditional role and mainly employed the imaginative potential of design to invent an alternative future physical landscape for the Noordwaard polder (cf. Nassauer, 2012).

In Deventer, there was a relatively low level of environmental uncertainty and limited inter-organisational relationships. The project environment was less turbulent than in Noordwaard, but not as stable as in Amer Donge. From the beginning, spatial quality was treated as an equally important objective as flood safety. In line with this, the project manager from the municipality of Deventer actively thought about how a landscape architect could contribute best to the development of a spatial plan for the area:

> You need a landscape architect who is able to listen and to act as a team player. A landscape architect who, for example, sees residents and the environment as disturbing factors, would not have been the right person for this position. So, in the end we were happy to find a landscape architect who picked this up very well, and we have built our team around him.

The landscape architect was given room to manoeuvre. He was a fully-fledged member of the project team, just as in Noordwaard. However, in contrast to Noordwaard, from the start of the project the connecting role of the landscape architect was emphasised and explicated, both internally and externally, which resulted in a clear role definition. This role definition was accepted by the other parties. In addition, the project team actively invited and involved the programme office and the Q-team in the design workshops. As a result, it received positive feedback and organisational support. In this context, the landscape architect was specifically asked to act as a 'conductor of an orchestra', and to connect different 'languages and interests.' In this way, he was able to 'upgrade' his traditional content-oriented role into a more process-oriented boundary spanning role.

5. Discussion

Traditionally, flood risk management is focused on rather technical flood defence measures. Recently, however, a transition has started towards a more holistic and integrated approach, focusing on solutions that integrate spatial planning and flood risk measures. Consequently, collaboration across disciplinary and institutional boundaries has become more important. We studied if and how landscape architects contribute to spanning these boundaries, inquiring into the question: what are the boundary spanning activities and roles that landscape architects perform and which factors are conditional to these activities? To answer this question, we analysed the boundary spanning work of the landscape architects involved in the planning and design phase of three flood risk management projects – Amer Donge, Noordwaard, and Deventer – that were part of the Dutch 'Room for the River' programme.

To the best of our knowledge, studying the work of landscape architects from a boundary spanning perspective is novel to the landscape architecture discipline. As such, our study is an example of interdisciplinary research that produces new knowledge about how to understand the work of landscape architects in complex spatial projects, including flood risk management projects. This knowledge may support landscape architects in responding to calls to play a major role in interdisciplinary collaboration projects and broaden their contribution from mainly content-oriented to more process-oriented, i.e., from drawing the line to also crossing the line (see e.g., Von Haaren et al., 2014; Kempenaar et al., 2016; Kempenaar & Van den Brink, 2018).

Methodologically, the distinction between activities, roles, and conditional factors proved to be a useful and contingent framework. Our distinction between cognitive and social capacities, resulting in different sets of role types, also proved to be relevant. Evidence-based landscape architecture, indeed, as proposed by Brown and Corry (2011), should not just be based on evidence about the physical world, but also requires social skills to translate such evidence into acceptable, socio-ecologically sensitive proposals for change. Cheng et al. (2017), for example, call for 'an integration of climate science and hydrological assessment in local transdisciplinary planning processes to better inform and facilitate decision-making' (p.25) and help planners and designers 'to assess the sensitivity of their communities and investigate a range of possible futures and strategies in coping with climate change' (p.35).

Obviously, social skills are needed to span boundaries and make such integration successful. This is also argued by Pinto-Correia and Kristensen (2013), who propose a model in which landscape change is conceptualized as the interaction – through time and at multiple scales – between natural and structural drivers on the one hand, and socio-economic and cultural drivers on the other. Whereas they refer indirectly to boundary spanning in so far as they observe 'many grey zones' between disciplines which 'should be dismantled and clarified' (p.255), we explicated what should be done to actually make this possible. In this respect, language plays a role as well, in particular visual language. Place concepts, for example, can be used to exercise power, to mobilize resources and to frame meaning over the use of areas (Westerink et al., 2013). Landscape design representations, such as maps, sketches, photomontages, and artist impressions, play an important role in this meaning-making process; they are used to facilitate

communication and knowledge exchange during participatory planning and design processes. The visual discourse between the producers of these representations (which can be understood as discursive materializations of knowledge and power) and their audience contains three interdependent components: the arrangement of the participatory process, the interactivity of the media that are used, and the visual rhetoric embedded within the composition and style of the image. A conscious use of these discursive components by planners and designers could help prevent miscommunication, manage participant expectations, and increase the validity of participatory design process outcomes (Raaphorst, 2018).

Landscape architects need to sharpen their socio-political sensitivity to shape their role as boundary spanner in integrated flood risk management projects, i.e., tailoring their role to the specific circumstances. Dependent on the situation and/or project, different roles can be enacted and, we emphasise, this enactment is a deliberate choice. In this respect, a clear role definition is paramount. In fact, as the Deventer case showed, it aids the landscape architect in successfully conducting connecting activities. Both in Amer Donge and Noordwaard, the role of the landscape architect was less clear, leaving room for ambiguity and conflict. We note, however, that a clear role definition is not self-evident and must be actively negotiated, for which landscape architects need to be self-confident, have a keen eye to who pulls the strings, and trust their social-emotional competences, such as communicating and listening skills.

Moreover, our research makes clear that landscape architects should be aware that their role definition is influenced by environmental characteristics. For example, the type of river management project determines the project environment (e.g., low or high environmental uncertainty, intensive or limited inter-organisational relationships) and, as a consequence, conditions the work of the involved landscape architect. This, however, should not absolve project and process managers from their task to contribute as much as possible to creating clear role definitions that get the best out the involved landscape architects, and to finding ways to handle environmental uncertainty and institutional turbulence.

Our research contributes to the landscape architecture discipline by highlighting and exploring the role of landscape architects as boundary spanners. Obviously, additional research is needed to further validate our findings and, for example, to further examine the relationship between cognitive and social capacities. In this respect, this research could be extended to also include the implementation phase of the various flood risk management projects. A key question, then, is how to translate landscape design and spatial quality requirements into implementation contracts, and which boundary spanning role landscape architects (may) have in these processes. Such research may also be extended to other national and international flood risk management programmes, and to other inter- and transdisciplinary projects, such as renewable energy projects and climate change adaptation projects.

Combining literature on the roles of boundary spanners, our research also contributes to the boundary spanning literature. Often, that literature stresses exclusively social capacities (Williams, 2002) or cognitive capacities and roles (Tushman & Scanlan, 1981; Curnin & Owen, 2014). We argue, however, that boundary spanners must combine both (see also Van Meerkerk & Edelenbos, 2018b). Our research shows that landscape architects as boundary spanners perform various roles in specific cases. Moreover, our research responds to the call for more insight into the types of individual, organizational, and environmental conditions that influence the work of the boundary spanners (O'Flynn et al., 2014). Although additional cases may be required to disentangle, through comparison, the exact configurations of conditions that influence boundary spanning work (see e.g. Gerrits & Verweij, 2018), our approach in this article already provides a more systematic understanding than research so far.

6. Conclusion

Depending on specific conditional factors, landscape architects conduct different key activities, resulting in roles ranging from the more traditional content-oriented domain expert/scout (in Amer Donge) to the more innovative organisational expert/task coordinator (in Deventer). We conclude, however, that overall the landscape architects involved in the three flood risk management projects were still hindered by a traditional, content-oriented, and sectoral design image of their discipline. It turned out to be a challenging task to play a more process-oriented boundary spanning role and to imaginatively bring together diverse opinions, values, and interests in new alternative landscape designs.

Crucial conditional factors are a dynamic project environment, organisational support and positive feedback, a clear role definition, and social-emotional skills and competences. A tentative conclusion of our research is that, within river management projects with a high level of interdependency but with a low level of environmental uncertainty, landscape architects thrive best. In general, these projects often also have a clear spatial quality objective.

The three cases also showed the importance of timing – that is, the moment that a landscape architect is involved in the planning process. To achieve the best result, a landscape architect should be involved from the beginning, and, ideally, be a fully-fledged member of the project team. For a clear and also accepted role definition, the landscape architect is, then, highly dependent on the extent to which the involved process or project manager has thought through the role that the landscape architect should play, taking into account the imaginative potential of design and designing, and formalises this at the start of the project. This fits with the experiences of practising landscape architects that have been involved in the preparation and implementation of Room for the River projects. They also stress the importance of the way process- and project managers enable the landscape architect to fulfil his or her boundary spanning roles. This means, for example, offering ample room to manoeuvre to contribute to the project from their specific integrating design expertise.

Our research revealed that landscape architects can be considered boundary spanners and as such can have a pivotal role in combining multiple spatial objectives, crossing disciplinary boundaries, and bringing together varying interests and values. To do so, they need to engage in selecting, translating, and connecting activities. For cross-boundary collaboration to be successful, besides cognitive capacities (e.g., knowledge about the physical landscape and its perception), social capacities are also required (e.g., social-emotional competences, networking, and connecting skills). Therefore, it is important that these capacities are recognised, applied and, if necessary, developed and/or educated – thus become a part of the landscape architecture repertoire.

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Appendix A. Supplementary material

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References

Ahern, J. (2011). From fail-safe to safe-to-fail: Sustainability and resilience in the new urban world. *Landscape and Urban Planning, 100*, 341–343.

Ancona, D. G., & Caldwell, D. F. (1992). Bridging the boundary: External activity and performance in organizational teams. *Administrative Science Quarterly, 37*, 634–665.

Au, K. Y., & Fukuda, J. (2002). Boundary spanning behaviors of expatriates. *Journal of World Business, 37*(4), 285–296.

Benedict, M. A., & McMahon, E. T. (2006). *Green infrastructure: Linking landscapes and communities.* Washington, DC: Island Press.

Brown, R. D., & Corry, R. C. (2011). Evidence-based landscape architecture: The maturing of a profession. *Landscape and Urban Planning, 100*, 327–329.

Busscher, T., Verweij, S., Van den Brink, M., Edelenbos, J., Bouwman, R., & Van den Broek, J. (2017). *Het organiseren van ruimtelijke kwaliteit: Inzichten uit Ruimte voor de Rivier.* Groningen: Rijksuniversiteit Groningen.

Busscher, T., Van den Brink, M., & Verweij, S. (2019). Strategies for integrating water management and spatial planning: Organising for spatial quality in the Dutch "Room for the River" program. *Journal of Flood Risk Management, 12*(1), e12448.

Callister, R. R., & Wall, J. A., Jr (2001). Conflict across organizational boundaries: Managed care organizations versus health care providers. *Journal of Applied Psychology, 86*(4), 754.

Chebat, J. C., & Kollias, P. (2000). The impact of empowerment on customer contact employees' roles in service organizations. *Journal of Service Research, 3*(1), 66–81.

Cheng, C., Yang, Y. C. E., Ryan, R., Yu, Q., & Brabec, E. (2017). Assessing climate change-induced flooding mitigation for adaptation in Boston's Charles River watershed, USA. *Landscape and Urban Planning, 167*, 25–36.

Curnin, S., & Owen, C. (2014). Spanning organizational boundaries in emergency management. *International Journal of Public Administration, 37*(5), 259–270.

Dollinger, M. J. (1984). Environmental boundary spanning and information processing effects on organizational performance. *Academy of Management Journal, 27*(2), 351–368.

Fischer, F., & Forester, F. (Eds.). (1993). *The argumentative turn in policy analysis and planning.* Duke University Press.

Fischer, F., Gottweis, H., & (Eds.). (2012). *The argumentative turn revisited: Public policy as communicative practice.* Duke University Press.

Friese, S. (2014). *Qualitative data analysis with ATLAS.ti.* London: Sage.

Gerrits, L., & Verweij, S. (2018). *The evaluation of complex infrastructure projects: A guide to qualitative comparative analysis.* Edward Elgar Publishing.

Hall, J. W., Meadowcroft, I. C., Sayers, P. B., & Bramley, M. E. (2003). Integrated flood risk management in England and Wales. *Natural Hazards Review, 4*(3), 126–135.

Huntjens, P., Lebel, L., Pahl-Wostl, C., Camkin, J., Schulze, R., & Kranz, N. (2012). Institutional design propositions for the governance of adaptation to climate change in the water sector. *Global Environmental Change, 22*(1), 67–81.

Innes, J. E., & Booher, D. E. (2010). *Planning with complexity: An introduction to collaborative rationality for public policy.* London and New York: Routledge.

Johnson, K. L., & Duxbury, L. (2010). The view from the field: A case study of the expatriate boundary-spanning role. *Journal of World Business, 45*(1), 29–40.

Kempenaar, A., & Van den Brink, A. (2018). Regional designing: A strategic design approach in landscape architecture. *Design Studies, 54*, 80–95.

Kempenaar, A., Westerink, J., Van Lierop, M., Brinkhuijsen, M., & Van den Brink, A. (2016). "Design makes you understand"—Mapping the contributions of designing to regional planning and development. *Landscape and Urban Planning, 149*, 20–30.

Klijn, F., De Bruin, D., De Hoog, M. C., Jansen, S., & Sijmons, D. F. (2013). Design quality of Room-for-the-River measures in the Netherlands: Role and assessment of the quality team (Q-team). *International Journal of River Basin Management, 11*, 287–299.

Leifer, R., & Delbecq, A. (1978). Organizational/environmental interchange: A model of boundary spanning activity. *Academy of Management Review, 3*(1), 40–50.

Lindsay, C., & Dutton, M. (2012). Promoting healthy routes back to work? Boundary spanning health professionals and employability programmes in Great Britain. *Social Policy & Administration, 46*(5), 509–525.

Merz, B., Hall, J., Disse, M., & Schumann, A. (2010). Fluvial flood risk management in a changing world. *Natural Hazards and Earth System Sciences, 10*(3), 509–527.

Murphy, M. D. (2005). *Landscape architecture theory: An evolving body of thought.* Long Grove: Waveland Press.

Nassauer, J. I. (2012). Landscape as medium and method for synthesis in urban ecological design. *Landscape and Urban Planning, 106*(3), 221–229.

Neuvel, J. M. M., & Van der Knaap, W. (2010). A spatial planning perspective for measures concerning flood risk management. *International Journal of Water Resources Development, 26*(2), 283–296.

O'Flynn, J., Blackman, D., & Halligan, J. (Eds.). (2014). *Crossing Boundaries in Public Management and Policy: The international experience*. London and New York: Routledge.

Perrone, V., Zaheer, A., & McEvily, B. (2003). Free to be trusted? Organizational constraints on trust in boundary spanners. *Organization Science, 14*(4), 422–439.

Pinto-Correia, T., & Kristensen, L. (2013). Linking research to practice: The landscape as the basis for integrating social and ecological perspectives of the rural. *Landscape and Urban Planning, 120*, 248–256.

Qiu, T. (2012). Managing boundary-spanning marketing activities for supply-chain efficiency. *Journal of Marketing Management, 28*(9–10), 1114–1131.

Raaphorst, K. (2018). Knowing your audience: The contingency of landscape design interpretations. *Journal of Urban Design, 23*(5), 654–673.

Rijke, J., Van Herk, S., Zevenbergen, C., & Ashley, R. (2012). Room for the River: Delivering integrated river basin management in the Netherlands. *International Journal of River Basin Management, 10*, 369–382.

Roe, M. (2017). The challenge of publication. In A. Van den Brink, D. Bruns, H. Tobi, & S. Bell (Eds.). *Research in landscape architecture: Methods and methodology*. London and New York: Routledge.

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *Co-design, 4*(1), 5–18.

Seabrook, L., Mcalpine, C. A., & Bowen, M. A. (2011). Restore, repair or reinvent: Options for a sustainable landscape in a changing climate. *Landscape and Urban Planning, 100*, 407–410.

Selman, P. (2004). Community participation in the planning and management of cultural landscapes. *Journal of Environmental Planning and Management, 47*(3), 365–392.

Sijmons, D., Feddes, Y., Luiten, E., Feddes, F., & Nolden, M. (2017). *Room for the River: Safe and attractive landscapes.* Blauwdruk: Wageningen.

Singh, J. (1998). Striking a balance in boundary-spanning positions: An investigation of some unconventional influences of role stressors and job characteristics on job outcomes of salespeople. *The Journal of Marketing, 62*(3), 69–86.

Tempels, B., & Hartmann, T. (2014). A co-evolving frontier between land and water: Dilemmas of flexibility versus robustness in flood risk management. *Water International, 39*(6), 872–883.

Thering, S., & Chanse, V. (2011). The scholarship of transdisciplinary action research: Toward a new paradigm for the planning and design professions. *Landscape Journal, 30*(1), 6–18.

Thompson, I. H. (1999). *Ecology, community and delight: Sources of values in landscape architecture.* London: Routledge.

Tushman, M. L., & Scanlan, T. J. (1981). Characteristics and external orientations of boundary spanning individuals. *Academy of Management Journal, 24*(1), 83–98.

Van den Brink, A., & Bruns, D. (2014). Strategies for enhancing landscape architecture research. *Landscape Research, 39*(1), 7–20.

Van Etteger, R., Thompson, I. H., & Vicenzotti, V. (2016). Aesthetic creation theory and landscape architecture. *Journal of Landscape Architecture, 11*(1), 80–91.

Van Meerkerk, I., & Edelenbos, J. (2014). The effects of boundary spanners on trust and performance of urban governance networks: Findings from survey research on urban development projects in the Netherlands. *Policy Sciences, 47*(1), 3–24.

Van Meerkerk, I., & Edelenbos, J. (2018a). Facilitating conditions for boundary-spanning behaviour in governance networks. *Public Management Review, 20*(4), 503–524.

Van Meerkerk, I., & Edelenbos, J. (2018b). *Boundary spanners in public management and governance: An interdisciplinary assessment.* Cheltenham: Edward Elgar.

Van Ruiten, L., & Hartmann, T. (2016). The spatial turn and the scenario approach in flood risk management: Implementing the European Floods Directive in the Netherlands. *AIMS Environmental Science, 3*(4), 697–713.

Von Haaren, C., Warren-Kretzschmar, B., Milos, C., & Werthmann, C. (2014). Opportunities for design approaches in landscape planning. *Landscape and Urban Planning, 130*, 159–170.

Warner, J. F., Van Buuren, A., & Edelenbos, J. (Eds.). (2012). *Making Space for the River*. IWA Publishing.

Webb, A. (1991). Coordination: A problem in public sector management. *Policy & Politics, 19*(4), 229–242.

Westerink, J., Lagendijk, A., Dühr, S., van der Jagt, P., & Kempenaar, A. (2013). Contested spaces? The use of place concepts to communicate visions for peri-urban areas. *European Planning Studies, 21*(6), 780–800.

Williams, P. (2002). The competent boundary spanner. *Public Administration, 80*(1), 103–124.

Williams, P. (2012). *Collaboration in public policy and practice: Perspectives on boundary spanners.* Policy Press.

Wylie, J. (2007). *Landscape.* London: Routledge.

Zangwill, N. (2007). *Aesthetic Creation Theory.* Oxford: Oxford University Press.

Zevenbergen, C., Van Herk, S., Rijke, J., Kabat, P., Bloemen, P., Ashley, R., ... Veerbeek, W. (2013). Taming global flood disasters: Lessons learned from Dutch experience. *Natural Hazards, 65*, 1217–1225.