

Facing Management Choices

An Analysis of managerial choices in 18 complex environmental Public Private Partnership projects

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Abstract

This article looks at how managers in large infrastructure projects in The Netherlands deal with difficult choices, which are labelled as dilemmas in this article, in their managerial activities. It presents the results of a survey of 32 managers in 18 complex decision-making projects in which public-private partnerships (PPPs) play an important role. The managers were presented with a number of choices and asked to rate the amount of attention they paid to each of the choices. The article focuses on four (groups of) dilemmas managers face in the inter-organizational context of these processes: (1) interaction with parties, (2) strategic orientation, (3) management style and (4) process dynamics.

After a brief elaboration of the role of (network) managers in complex PPP projects and the nature of the dilemmas they face, the four groups of dilemmas are explored by looking at how managers scored on the dilemmas within each group. Conclusions are drawn about managers' perceptions of these dilemmas and the differences between projects. The different choices of dilemmas are then compared with the differences between the scores of the outputs of the projects as perceived by the managers. Finally, general conclusions are made about the dilemmas chosen by managers and the consequences of these choices.

Points for practioners:

Pay attention to commitment, goals searching, communication and vertical relations if you want good outcomes in complex environmental projects

Do managers of complex spatial and environmental projects in general choose to open up the decision-making process for stakeholders to enhance support and use the knowledge of stakeholders or do they choose for a more closed decision-making process that reduces the number of actors and might speed up the decision-making process? In general one can see many of these managerial choices between a more project oriented style, that focuses on control, specifying goals, keeping the budget etc, and a more process oriented style that focuses on activating actors, creating support, or exploring possible content.

If we look at the 32 managerial strategies that were researched, there are a few strategies that are positively and strongly correlated to positive perceived outcomes of projects: commitment, goals searching, vertical relationships and communication.

1. Introduction: Management dilemmas in PPP projects

Public private partnerships (PPP) can be found in many countries all over the world and the popularity of this form of co-operation continues to rise. Just as in other countries (see Osborne, 2000; Sullivan/Skelcher, 2002), PPPs have received a substantial amount of attention in the Netherlands. For the most part these projects are in the field of urban reconstruction and renewal or are infrastructure projects (Ecorys, 2002; Kenniscentrum 2002; Klijn et al 2006). This gives them a special character since most of these environmental or spatial projects tend to be rather complicated (Klijn, 2003; Healy, 2003; Innes and Booher, 2004; Klijn, et al 2006):

- They are characterized by multi-level governance because several levels of public actors and decisions are involved, including at the local, regional and central levels;
 - there are many actors involved, including public, private and societal actors, who all want to influence the decision-making process;
 - they involve a variety of values (economic, transport, environmental, liveability) represented by different actors (sector ministries, environmental groups, citizen groups, economic stakeholders) that have to be reconciled;
 - they have an ambiguous character in the sense that the actors involved all have a different understanding of the main problems but also in the sense that ideas about the problems and solutions change over time;
- Different projects in the same area can be connected in several ways, thus further complicating the decision-making process.

Public Private Partnerships: forms and definitions

Public private partnerships are based on the idea that extra value can be obtained by combining knowledge and co-production (Savas, 2000; Osborne, 2000; Hodge and Greve, 2005). Various definitions of PPPs can be found in the literature. This article utilises the following definition of a PPP: *a cooperation between public and private actors in which actors develop mutual products and/or services and in which risk, costs and benefits are shared* (compare Klijn & Teisman, 2003). Various forms of PPPs can be found in the literature as well as in the real world. In most publications, a distinction is made between PPP concessions or contracts and the PPP as an organisational cooperation project or partnership (Teisman, 1998; Osborne, 2000; Kenniscentrum, 2002; Hodge/Greve, 2005).

- In a *PPP concession* the design, building, financing and commercial operation of an infrastructure project (such as a road or a building like a school) are integrated into a contract. The added value lies in the lower cost of coordination between the various components (often expressed as efficiency or value for money gains). Even though these efficiencies are necessary for a PPP concession, they are insufficient to attract private or public sector interest. Their point of interest arises from the opportunity to create substantive added value. For example, the Private Finance Initiative (PFI) tendering system used in the UK for the design, build, finance and operation of road construction bundles is contracted out to private consortia for a period of 30 years. The consortium is able to use more sustainable (expensive) building materials to save on future maintenance costs (Haynes/Roden, 1999). The payment system rewards the 'availability' of roads (NAO, 2001; NAO 2003) rather than second-guessing the cost of constructing them. The opportunity for long-term involvement in a project provides the potential for devising new solutions to problems and protects against a risk aversion to untested approaches.

- In a PPP as *organisational cooperation project*, separate activities are integrated to create added value. In this case, the PPP is a *partnership*. This type of cooperation is usually found in urban reconstruction and regeneration projects, where measures to strengthen transport are combined with measures aimed at improving the living environment and/or housing as well as measures aimed at strengthening the economy. With this method of cooperation, added value is generated by combining substantive activities and projects which then reinforce one another. This also makes it possible to achieve a financial trade-off between profitable and less profitable but socially interesting components.

In these two forms of PPPs, the method of co-production is regulated in different ways. In the contract form, there is limited co-production between public and private actors. This primarily consists of interaction at the beginning of a PPP project regarding the basic principles of the project that will be contracted out. This mode of cooperation is a variation of the traditional method of contract allocation. Here, attempts are made to increase added value for both the public and private parties through new forms of the contract relationship. Ideas about new contract forms have cropped up in a large number of countries but have been worked out in particular detail in the UK's PFI projects, with a variety of isomorphic processes leading to their adoption elsewhere (DiMaggio and Powell 1983). For instance, the ideas of the Dutch expertise centre for PPP, a prominent PPP think tank that existed from 1998 to 2005 as a part of the Ministry of Finance, have been largely adopted from the English PFI model (Klijn et al, 2007). The preconditions for success with this type of approach to co-production are that the public party should be able to specify the problem (though not the solution, which would be the case in a traditional contractual arrangement) and that clear rules for the tendering process exist (Klijn, 2002). The organizational cooperation constructions, or partnerships, model of PPP involves a far more intensive interaction because the various project components that are often the domain of diverse private and public actors have to be coordinated. Moreover, it is more difficult to clearly delineate in advance the content and ambitions of the cooperation.

In observing the Dutch situation, a clear distinction has to be made between the policy debate and the actual projects (see Klijn/Teisman, 2003; Klijn and van Twist, 2007). On the policy level the discussion is mostly dominated by the contractual form of PPP. The afore-mentioned knowledge centre PPP, which dominated the discussion, stressed the value of new DFBM contracts and the fact that clear political goals and a new type of administration are required to manage these contracts. Thus, although there is a generally favourable attitude in the Netherlands towards PPPs, with several projects (almost all in the sphere of infrastructure and housing) having been labelled as key examples of PPP in the last few decades, the government rhetoric has been to try and stimulate the contractual form of PPP. However, there are only a limited number (certainly not more than 10) of contractual forms that resemble the UK PFI projects, although this number is growing slowly (see Klijn/Van Twist, 2007). Most of the PPP projects in the Netherlands are loosely coupled forms of partnership. It is in these forms that complex decision-making processes, which are the objects of our research, can be found. Eighteen of the well known complex PPP projects in the Netherlands have been selected as the focus of this article on research on managerial behaviour.

Management of PPP: the need for active managerial strategies

Most PPPs, and certainly the ones in this study, are fairly complex and therefore require substantial managerial efforts in order to succeed. This is no easy task. A large number of strategies have been utilised to guide and steer complex policy processes in general and PPPs in particular (see Gage/Mandel, 1990; Kickert et al, 1979; Osborne, 2000; Agranoff/McGuire, 2001; Meier/O' Toole, 2001). While research has made it clear that the managerial activities in a PPP are crucial for its functioning and success (Osborne, 2000; Klijn/Teisman 2003; Hodge/Greve, 2005), it is less clear which managerial choices are the right ones that will result in good outcomes.

Managers of PPPs also are often required to make difficult managerial choices that can be seen and experienced as dilemmas. For instance, should they be generous in the inclusion of actors or should they deny access to certain actors? Should they strive for decisiveness and a speedy process or should they take their time to garner support from the actors involved? Should they be resolute about the content of the project and the course it is to take, or should they demonstrate flexibility and allow content to depend upon external circumstances? In short, there are many difficult choices and options to consider for managers who are responsible for complex PPPs.

Elaborating managerial strategies in PPP projects

This article aims to shed light on managerial choices in complex PPP projects and the dilemmas that managers face in utilising strategies. The research question is: “*What choices do managers make to manage complex PPP projects? Which choices seem to have the character of a dilemma and how are these managerial choices related to the (perceived) outcomes of these projects?*” To answer these questions, data was collected using the results of a questionnaire administered to 32 managers of 18 large PPP projects in the Netherlands. The respondents were asked which strategies they considered to be important. The strategies were presented in pairs, but each ‘pole’ of the pair was measured separately so that the impact of each strategy could be assessed on its own while we could also assess whether the choice had the character of a dilemma. A more in depth explanation of the research is presented in Section 3. The role of the network manager in complex spatial PPP projects is discussed in Section 2 where the concept of a dilemma is elaborated on as well. Section 4 contains an analysis of which managerial choices managers think are important. Section 5 broaches the question of which pairs of choices managers consider to be dilemmas. In Section 6, the relationship between management choices and managers’ perceived outcomes is discussed.

2. Network Management, Strategic Choices and Dilemmas

Public private partnership projects are fairly complex and this is certainly the case for the projects studied in this paper. Decision-making in PPP projects takes place within networks of actors (Klijn/Teisman, 2003; Osborne, 2000). Due to the complexity of these networks, achieving mutually agreeable results is not easy. Given the problem of collective action, network interactions lack a ‘self executing’ character (Olson, 1965). Since cooperation and the coordination of goals and interests do not occur of their own accord, it is necessary to deliberately steer and manage interactions within networks. In the literature on governance and networks, these managerial strategies are generally referred to as network management (Kickert, et al, 1997; Mandell, 2001; Agranoff/McGuire, 2001; Meier/O' Toole 2001) However, there is

some scope for self steering within processes of interaction. Network management does not imply that everything has to be strictly controlled and organized (Klijn/Edelenbos, 2006).

The need for network management

The role of the network manager differs from the traditional image of a manager. Because of the absence of a clear organizational context, fewer (or completely non-existent) hierarchies and greater differences in perceptions of problems, solutions and division of costs, the role of the network manager is more one of facilitating interactions, connecting actors and arenas and furthering the content (see Koppenjan and Klijn, 2004).

Various management strategies have been identified in the literature (Agranoff/McGuire, 2001; Meier and O'Toole, 2001). The available strategies can be categorized as strategies of process management (Gage and Mandell (eds.), 1990; Koppenjan and Klijn, 2004). Process management involves facilitating the interactions between actors in policy games. This includes steering strategies aimed at bringing different actors' perceptions together, coordinating interactions and other activities. A crucial factor is that while these strategies are indirect in the sense that they try to facilitate interactions, they consider the structure of the network and the rules as given. There are also direct strategies aimed at actors and interactions. Managers are assumed to be confronted with choices time and again when choosing strategies. For example, do they select strategies to enhance the involvement of parties or do they select strategies that enhance control over the project? It is also assumed that at least some of these choices have the nature of a dilemma. In order to elaborate on this point, we must first understand what is meant by a dilemma.

Dilemmas: What are they really?

A dilemma is often described as a state in which a choice must be made between two alternatives, both of which have major problems. However, a dilemma does not by definition have to be limited to the difficult problem of choosing between two evils (Hampton-Turner, 1990). It does not only concern the situation of the man who faces an abyss and hears the wolves howling behind him. A dilemma can also involve weighing between good and good: the classic matter of the mule that has to choose between two bales of hay.

Whether it concerns a choice between two evil and two good -- even attractive -- alternatives, a dilemma is a thorny issue. This is clear from the clarification Hampden-Turner provides in his definition (1990:9): "Di'lemma is from Greek meaning 'two propositions'. These seemingly 'opposed' propositions are converging upon us simultaneously. If we give exclusive attention to either one of the pair, the other is likely to impale us." A good example is the choice between whether to involve many stakeholders in complex processes or to limit the number of stakeholders, a choice that is often discussed in the literature on complex processes (Young, 2000). Involving many stakeholders can increase the support and quality of the content, because more information becomes available and stakeholders do not use their possible veto powers, but can also come at the expense of the speed of decision-making. Limiting the number of stakeholders, on the other hand, can speed up decision-making but may come at the cost of support and the quality of content. It is often presented in the literature as a choice that cannot combine both values (speed and support) (De Bruijn et al, 1998).

On the surface, a dilemma appears to us in the form of a complex problem, an ambiguous situation that is difficult to solve. At a deeper level, it concerns a difficult choice between two (or more) alternatives that are irreconcilable. A dilemma basically involves a clash of values.

A dilemma can thus be viewed as a special form of choice in which a complex issue manifests itself, that is, in a form where the complexity of the issue emerges from a conflict between values. The concept of dilemma is applicable to complex problem situations if and to the extent that it involves a choice between different, conflicting values that are difficult or not at all reconcilable. In the end, a dilemma essentially involves conflicting values, or ‘competing values’ (see Quinn et al., 1996).

Management Choices: the distinction between project and process management

What kinds of choices are managers in complex PPP projects likely to encounter? The literature on internal management does not provide much information about this since the management of these projects is very different from internal management processes (see Mandel, 1990; Kickert et al., 1997; Koppenjan/Klijn, 2004). Thus, a different kind of literature has to be researched in order to base possible managerial choices on. An interesting source for constructing managerial strategies and choices is the literature on process/network and project management on complex decision-making (Mandell, 2001; Meier & O’Toole, 2001; De Bruijn et al., 1998; Meredith & Mantel, 2000; Mantel, 2005)

Project management is very focused on controlling the phases according to five features: the quality of the content, costs, time, organization and information (Meredith, 2000; Meredith and Mantel, 2005). When each phase is passed through, this is signified by a basis document which identifies the results from the previous phase, as well as the demands and approach for the subsequent phase. The result of each phase is assessed according to the basis document. Project management is primarily concerned with controlling the project internally and is less concerned with a continual interaction with the external environment. Here, it is taken for granted that problems and solutions (within certain limits) are rather stable. This makes it possible to use project management techniques such as clear goals, a timeline, clear conditions and an end product that is defined ad hoc.

In comparison to this idea of project management, the idea of process/network management can also be found in the literature on large projects. This perspective stresses the dynamics of decision-making and interdependency on other actors. Process management focuses more on strategies to involve other actors, create variety in content to enhance the attractiveness of proposals and ways to connect interactions between actors (Gage/Mandell, 1990; Kickert et al., 1997; De Bruijn et al., 1998; Agranoff/McGuire, 2001; 2003).

These two, sometimes fairly different approaches can be considered when writing about complex projects and tensions can often be observed in the literature between possible strategies belonging to the two approaches. The problem then becomes that these projects require clear goals to proceed but they also need the flexibility of incorporating stakeholders’ interests along the way. There is therefore a tension between goal realization that calls for setting clear goals and goal searching which calls for rough goals that can be worked out later on (De Bruijn et al., 1998; Klijn et al., 2006). This choice can be construed as a managerial problem to be solved but it can also be seen as a managerial choice which can take the form of a dilemma (for example, goal realization versus goal searching).

In comparing the project management approach with the process management approach, many such managerial choices can be found which appear to be difficult to be reconciled. In this paper, a number of managerial strategies were isolated from a wide range of literature on project and process management to construct a number of managerial choices. These choices thus generally

reflect the tension between a more project-oriented managerial choice and a more process-oriented one. Managers may even be seen to consistently make one particular choice from our available range of constructed choices and thus tend to emphasis project management more than process management. In general, authors tend to identify public managers with process management because they tend to favour the involvement of stakeholders and private managers with project management since they prefer decisiveness, speed and efficiency. If this is correct, (some) differences in the strategic choices of public and private managers will be seen. Since the backgrounds of the managers interviewed were tracked, some reflections can be made on this issue.

The constructed choices

In the period before the research project, a preliminary set of choices were tested among a varied population of managers, civil servants and experts (see Klijn et al, 2006).^a Based on this preliminary investigation and the literature on project and process management, 16 managerial choices were constructed that fit into four interesting categories that were selected from the literature. These are:

1. *Interaction with parties*: this category concentrates on how parties are involved in the preparation and execution of spatial structuring projects. Questions that arise here include: on what basis are parties involved in a spatial structuring project? What is the relationship between the project and the environment with stakeholders?
2. *Strategic orientation*: this category concerns the strategy of the project leadership with regard to issues such as communication, executing research, closing contracts, etc. Questions that arise here include: how are agreements between the project leadership and stakeholders drawn up? What style of communication has been established between the project and the environment? How are unclear issues investigated?
3. *Style of management*: this category draws attention to how the project/process manager approaches the issue. Elements that play a role here include the degree of flexibility in the way the process manager operates and the degree to which the process manager is oriented on creating fruitful relationships with other actors (both members of the project organization as outsiders).
4. *Process dynamics*: this category concentrates on how managers within spatial projects deal with the whimsicalities of the process of cooperation. This includes issues such as: steering for process or for content, working towards a certain outcome or an open view with regard to the outcome of cooperation and committing early to certain proscribed values in dealing with issues versus holding on to a certain degree of freedom.

Within each category four managerial choices were identified. These choices are presented in Table 1

Table 1. Management choices

Category	Choices	Explanation
1. Interaction with parties	Involvement - manageability	To involve stakeholders or not and focus on control in terms of time and money.

	Representation - variety	Selecting actors based on their representation versus selecting actors on the basis of ensuring maximum variety and information.
	Horizontal relations - vertical relations	Emphasis on the hierarchical relationships between actors and project managers or on the horizontal relationships.
	Openness – closed-ness	Wide access to other actors or restricted access.
2. Strategic orientation	Support - decisiveness	Attention paid to garnering support from other actors or to achieving results quickly.
	Communication - conflict	Conflicts of interest are to be fought out or avoided and bridged by communication.
	Joint fact-finding – a stand-alone process	Information collected in a joint fact-finding process or each actor collects his own information.
	Trust - contracts	Interactions aimed at achieving solid agreements in contracts or based more on mutual trust.
3. Style of management	Results - interaction	Actions are mainly aimed at achieving results or at achieving good relations.
	Internal - external	The orientation is more internal (the project organization itself) or external (other actors involved).
	Reactive - proactive	The manager is more likely to react to other initiatives or takes initiative himself.
	Flexible - determined	The project manager has clear goals or adapts to new circumstances.
4. Process dynamics	Content - process	Project interactions are more focused on content (initiating and seeing to quality) or process (types of interactions, roles, etc).
	Goal realization - goal searching	Interaction is aimed at achieving detailed goals or has more rough goals that can be worked out later to combine actors' goals.
	Designing - developing	Solutions are achieved through conscious design or through interactions with stakeholders in the process.
	Commitment - discretion	Actors are bound to the project or allowed freedom to manoeuvre.

Each of the above poles can be seen as a strategic choice that managers have to make in the implementation of a project. Thus, if their score on involvement is high, this means they pay much attention to this aspect in their strategy. The research was aimed at answering several questions:

- Which choices do managers pay the most attention to?
- Do managers experience dilemmas in these choices?
- How is the attention to managerial choices related to perceived outcomes (that is, which choices correlate with a high satisfaction of outcomes)?

These are questions that have not been addressed much in Public Administration research until now. The literature on dilemmas is generally not really empirical and information on the relationship between managerial choices in complex decision-making processes and outcomes is certainly scarce (for an exception see Meier/O'Toole, 2001).

3. Methodological issues and research methods

Case selections and measuring dilemmas

As indicated above, the aim of this research is to identify the choices that managers make in coping with the complexities of PPP projects and see if these choices appear to be dilemmas for them. The research also aims to relate managers' choices to their perceptions of the outcomes. A total of 18 projects were selected from the well known lists of Dutch PPP projects. This is a reasonable sample of the total projects of this type in the Netherlands although the exact percentage of all infrastructural PPP projects is not known since there is no official list of such projects. However, an optimistic guess is that there are about 60 of these large PPP projects in the Netherlands (see Ecorys, 2002; Kenniscentrum 2002 which come to slightly over 50 projects in the Netherlands in 2002), which makes a selection of 18 seem reasonable. Variation was achieved by selecting different type of projects (see below). The limited number of large PPP projects means that the total sample of managers active in large infrastructure projects is fairly limited as well. In the end, material was collected from 32 managers of these 18 infrastructure public-private cooperative projects. Selection was based on four criteria:

- development of environmental space was the central issue;
- projects were characterized by a variety of actors and interests;
- projects were characterized by a combination of environmental functions and the need for innovative environmental solutions;
- Public private cooperation was an important feature of the project.

The 18 selected projects can be categorized as road projects, area development projects and combination projects. These are presented in Table 2 below:

Table 2: The 18 selected cases categorized by project type

Road project	Area development	Combination
A4 Zuid	Hart van de Heuvelrug	Den Haag Central
A 59	Arnhem Rijnboog	A2 passage
N201	Delft Zuidpoort	Arnhem Central

	Maastricht Belvédère	Delft railway zone
	Groningen Meerstad	Amsterdam Zuidas
	Roerdelta	Sijtwende
	Wieringerrandmeer	Utrecht station area
		W4 project

Thus, the selections made were really of complex decision-making processes, as the assumption was that the difficulty of managerial choices and the possibilities of dilemmas in these choices were more likely to be present in these processes.

The various poles of the choices were measured by statements that were presented to the managers. Each pole was measured by three statements. A list of four themes, each with four dilemmas (with each dilemma consisting of two poles) resulted in a questionnaire with $4 \times 4 \times 2 \times 3 = 96$ statements (see Appendix 1 for some examples of the items). Additional items on outcomes (on both content and process) were added to these statements. Respondents could choose a score of most certainly to most certainly not (on a 5 point scale). The score for each pole of the choice was measured separately. This allowed us to look at the relationship between the two poles (e.g. openness versus closure) but also provided an opportunity to look at the relationship of each pole (as an indication of a strategic choice made by a manager) with the perceived outcomes.

Fieldwork and methods

The fieldwork was conducted between April and December 2004. The 18 selected projects were first studied in a general way attempts were made to identify two persons involved in the management of each project. When doubts arose about the identity of the manager(s), experts or participants in the project were asked to identify them.

Next, face-to-face interviews were conducted with the identified managers. These interviews involved completing a (large) questionnaire (see Appendix 1 for some examples of the items). This was extensive work, but it ensured that the questionnaire was indeed filled out by the right person, a crucial point since the research was focused on the choices made by managers in complex projects. In some cases, the manager interviewed did not want to fill out the questionnaire. For this and other reasons (such as cancelled appointments), we were unable to secure the two forms for every project and although 37 interviews were conducted, only 32 questionnaires were filled out. Although the number of respondents was not high, each respondent was the exactly appropriate person and together, the respondents represented a significant number of all the possible respondents.

The material was analyzed in various ways. Besides simple scores for each question and an aggregate for each pole of a choice, the correlations between the various poles of each choice were analyzed^b as well as the correlations between the poles and the aggregate scores of the perceived outcomes of the PPP. An overview of all the correlations between the poles of the

various choices which also included the aggregated scores of the perceived outcomes can be found in Appendix 2. The correlations were also used to determine if a choice was a dilemma or not (see further discussion below). In addition, they provided a first impression of the answer to the question of which choices (poles) related strongly to (high) perceptions of outcomes. To analyze the weighted effect of each choice (pole) on the perceived scores of outcomes, a step-wise regression analysis was done. This method of analysis involves presuming a causal link between a dependent variable, in this case the weighted scores for perceived outcomes on content and process, and an independent variable. In this case the poles of the choices, while the weight (standardized Beta) determined the direction and scope of the linear relation. Regression analysis allowed us to predict the value of the independent variables (in this case the poles of the various dilemmas) and an impression of the best predictors of perceived outcomes could therefore be obtained. The regression figures of each of the poles with process and/or content outcomes are presented in Appendix 3.

When is it a dilemma?

As discussed earlier, a dilemma arises when managers feel that they have to make a more or less forced choice between two options (poles). This can be detected by looking at the correlations of the scores of the poles. Poles can have a high or low and a positive or negative correlation. Only in the case of a high negative correlation do we speak of a dilemma. Table 3 summarizes the possibilities.

Table 3: Possible correlations between the poles of a dilemma

	High correlation	Low correlation
Positive correlation	No dilemma: More attention paid to one aspect of strategy goes together with more attention paid to another aspect. Managers do not choose between aspects but rather, combine them.	No dilemma: More attention paid to one aspect of strategy relates to a small increase in attention paid to another aspect. No trade-off is necessary.
Negative correlation	Dilemma: More attention paid to one aspect of manager strategies comes at the price of less attention paid to another aspect.	No dilemma: More attention paid to one strategic aspect goes together with a small decrease in attention paid to another aspect. Managers do not perceive a major choice problem.

4. Management choices: an overview

This research began with the idea that managers in complex infrastructure projects make choices with regard to management strategies and that some of these choices possess the character of a dilemma. The first step, of course, is to find out which management choices (the poles) managers

consider to be the most important. Thus, the choices managers made with regard to the various poles that had been identified were first analyzed, without determining whether these would be classified as managerial dilemmas.

Managers' attention to aspects of choices

Table 4 presents the importance that managers attribute to the available choice options as a percentage. The higher the percentage, the more important managers consider the choice to be. Thus, if managers attribute a score of 80% to an option (See Table 4), this means that they consider it to be fairly important, while a score of 47% (such as for designing) means that managers attribute only limited importance to this aspect of the choice. The scores are derived from the managers' scores on the items in the survey for each aspect or pole of the choice. The three items for each pole are computed, with the possible scores ranging from 3 (three times strongly disagree being a low score for that pole) to 15 points (3 time strongly agree being a high score on that pole). Thus, 80% means that managers score an average of a 4 (on a scale ranging from 1 to 5) on a pole for the items.

The scores are provided for all managers but also separately for public and private managers. Public managers are all employed by a public organization (municipality, county or other public organization). Private managers are employed by a private organization (mostly private firms or consultancy agencies).

Table 4: The importance managers attach to different poles (in %) of a managerial choice

Choices	<i>Managers</i>		
	All managers	Public managers	Private managers
<i>Interaction with parties</i>			
1. Involvement – Manageability	80-63	82-64	76-61
2. Variety – Representation	65-69	66-66	63-75
3. Horizontal – Vertical	72-56	73-52	67-63
4. Openness – Closed-ness	46-51	50-47	38-57
<i>Strategic orientation</i>			
5. Support – Decisiveness	68-58	70-58	64-58
6. Communication - Conflict	72-61	74-64	70-55
7. Joint fact-finding - Stand-alone process	69-69	70-65	68-74
8. Trust – Contracts	50-49	49-50	53-48

<i>Style of Management</i>			
9. Results – Interaction	63-59	62-61	65-56
10. Internal – External	68-67	69-67	68-67
11. Reactive – Proactive	64-62	64-62	64-62
12. Flexible – Determined	71-57	76-56	61-58
<i>Process dynamics</i>			
13. Content – Process	61-68	61-66	61-72
14. Goal Realization – Goal searching	54-68	51-65	59-73
15. Designing – Developing	47-56	46-57	48-55
16. Commitment – Discretion	73-51	73-52	74-48

Note: the percentage scores of 32 managers (22 public, 10 private) are derived scores (maximum of 15 points [=a 5 on each item] for each pole and a minimum of 3 points. The scores can vary from 20% (3 points) to 100% (15 points), so 80% is an average of a 4 on a 5-point scale.

On the basis of Table 4, it can be concluded that there are choices and poles or aspects of those choices that receive more attention and others that receive less attention from the managers involved in the complex decision-making processes studied.

- *Involvement versus manageability*. Both poles of this choice have relatively high scores but the involvement score comes out tops at 80% (manageability is significantly lower at 63%). Public managers score slightly higher on involvement than private managers.

- *Horizontal versus vertical*. There is relatively more attention paid to horizontal strategies in projects (72%) than vertical ones. This is not surprising given the complexity of the spatial projects studied. Managers pay more attention to aspects such as mutual decision-making and horizontal communication that fit into a horizontal view of the project. It is striking that private managers focus more on vertical organization strategies than public managers (63% versus 52%).

- *Communication versus conflict*. For this choice, substantial attention is paid to strategies that focus on communication (overall score of 72%) for both public and private managers, as well as for individual managers' scores and project scores. Private managers appear to choose conflicting strategies less than public managers (55% versus 64%).

- *Flexible versus determined*. Strategies focused on flexibility receive substantial attention from managers (71%). Public managers seem to pay more attention to this than private managers (76% versus 61%).

- *Commitment versus discretion*. There is relatively more attention paid to strategies aimed at establishing commitment (73%) as compared to those aimed at discretion that enhance the

amount of room to manoeuvre (51%). There is very little difference between public and private managers in this choice.

There are also a number of choices that receive relatively little attention. These include:

- *Openness versus closed-ness*. Strategies focused on openness and closed-ness both received relatively little attention from managers (46% and 51%). What is striking here is that private managers find openness less important than public managers (38% versus 50%). The reverse is also true: public managers have less appreciation for closed-ness than private managers (47% versus 57%).

- *Contracts versus trust*. Here, too, there is a low score of around 50% for both types of strategies and there are no major differences between public and private managers.

- *Goal realization versus goal searching*. Goal realization receives less attention than goal searching (54% versus 68%). Private managers tend to focus slightly more on goal realisation than public managers (59% versus 51%).

Public and private managers: differences in management choices

Table 4 reveals some interesting differences in management choices between public and private managers. Public managers tend to pay a bit more attention to involvement, flexibility and variety than private managers, who tend to focus on representation, vertical relationships, closed-ness and determination. Private managers also appear to emphasize goal realization and goal searching while public managers place more emphasis on variety. The most important differences between public and private managers are summarized in Table 5. Tables 4 and 5 show that on the one hand, most managers seem to make the same choices, which leads to the conclusion that these complex processes evoke some similar managerial strategies. On the other hand, some differences can be observed and the standard image of public actors focusing more on stakeholder involvement and openness and private actors focusing on efficiency and speed is more or less confirmed (see Klijn/Teisman, 2003). However, the differences are not always that stark.

Table 5: Differences between public and private managers in their management choices

	Public managers (N = 22)	Private managers (N = 10)
Interaction with parties	Pay more attention to openness and a bit more to aspects of involvement as well as variety.	Pay more attention to closed-ness, representation and vertical relationships.
Strategic orientation	Focus on strategies of conflict and slightly more on support, paying less attention to strategies aimed at collecting knowledge through a stand-alone process.	Use conflict strategies less and emphasize research as a stand-alone process.
Style of project leadership	More attention paid to strategies focused on flexibility and a bit more on interaction.	Use fewer strategies aimed at flexibility.

Process dynamics	Focus a bit less on strategies aimed at goal achievement and goal searching.	Focus a bit more on strategies of goal achievement and goal searching.
General	<p>More focus on openness, variety and involvement.</p> <p>Less reluctant on conflict strategies and more attention paid to flexibility and less to goal achievement and goal searching.</p> <p>Conclusion: This type of manager is focused on <i>openness and flexibility but also on the consent of other actors in the process.</i></p>	<p>More inclined to keep processes closed, tend to use conflict strategies less and emphasize goal achievement more.</p> <p>Conclusion: This type of manager is focused on <i>speed, individual knowledge gathering and goal achievement.</i></p>

5. Choices made by managers: dilemmas or not?

One of the key questions in this research paper is whether managers experience a choice as a dilemma. In order to assess this, strong negative correlations between the aspects of choices made by managers must be observed. As mentioned in the previous sections, there are 32 aspects organized into 16 pairs, which had earlier been thought to form dilemmas.

A closer look at the dilemmas

In observing the 16 pairs and their correlations (See Appendix 2), it can be seen that only three pairs of aspects are negative correlated (significant on $P < 0.1$). The pairs of involvement and manageability and of goal realization and goal searching are positively correlated. This means that both aspects have high scores. Clearly, then, managers do not experience these two types of choices as opposites or even as dilemmas. The poles in these aspects of management choices can be reconciled with each other.

This is not the case, however, with the pairs of support and action, research as joint fact-finding and research as stand-alone process and designing versus developing. These three pairs are all negative correlated so that a high score on one aspect occurs in tandem with a low score on the other. Here is where the real dilemmas for the managers can be found. Table 6 provides an overview based on the correlations found in Appendix 2:

Table 6. Managerial choices: dilemmas or not?

Choices	Correlation between the poles (significant at $P < 0.1$)	Character
1. Involvement versus manageability	Yes, positively related.	No dilemma, managers focus on both managerial strategies at the same time.
2. Variety versus representation	No	No dilemma

3. Horizontal versus vertical relationships	No	No dilemma
4. Openness versus closed-ness	No	No dilemma
5. Support versus action	Yes, negative correlated	Dilemma
6. Communication versus conflict	No	No dilemma
7. Research as joint fact-finding versus research as a stand-alone process	Yes, negative correlation	Dilemma
8. Trust in interaction versus contracts and clear agreements	No	No dilemma
9. Result oriented versus relationship oriented	No	No dilemma
10. Internal orientation versus external orientation	No	No dilemma
11. Reactive versus proactive	No	No dilemma
12. Flexible versus determined	No	No dilemma
13. Steering for substance versus steering for process	No	No dilemma
14. Goal realization versus goal searching	Yes, positively correlated	No dilemma managers focus on both managerial strategies at the same time
15. Designing versus developing	Yes, negative correlation	Dilemma
16. Commitment versus discretion	No	No dilemma

Reflection on dilemmas: avoiding choices?

The above outcomes show that managers have considerably fewer problems in making choices than at least some of the literature around project and process management suggests. This does not mean that managers consider the choices to be unimportant. It was earlier observed that there are, in fact, several strategic choices that managers considered to be important. The conclusion is more that managers seem to reconcile or avoid choices in management strategies. They either see no really dilemma and connected forced choices, or as in two other cases, try to find a way to reconcile both strategic choices.

This may be a kind of survival strategy, where one pole of a dilemma is chosen at one time and the other at another time. Alternatively, the managers may have found effective ways to reconcile the managerial choices. Further research is required in order to be able to provide evidence for these theories, but given our knowledge of these types of projects and the complexity of the decision-making processes (see for instance De Bruijn et al, 2004; Klijn, 2007; Van Gils/Klijn 2007 for several of the cases), we believe that both theories represent some part of the truth.

6. Do management choices matter: perceived outcomes of managers

In the questionnaire, managers were asked to provide judgement on the outcomes of PPP projects. A distinction was made between process and substantive outcomes. Several indicators were used to measure these two types of outcomes (See table 7 below). The respondents were asked to score the indicators between 1 (low satisfaction) and 5 (high satisfaction).

Judgement on the outcomes

The average results from the managers of the indicators and their overall scores for content and process are presented in Table 7 below.

Table 7: Perceived judgments of managers on outcome indicators

Outcome Indicator	Average judgment N=32
<i>Content indicators</i>	
1. Parties have elaborated on innovative aspects or added new substantive aspects: in subsequent substantive plans and intentions, innovation is visible in the desired product or in the manner of organising.	4,38
2. Parties who are affected by decisions find that they have had input in the proposals.	4,00
3. Parties find that different (spatial) functions are connected with one another (e.g. housing/ working/ recreation/et cetera).	4,44
4. Parties believe that the solutions they worked at collaboratively really addressed the problems.	4,16
5. Parties find that the substantive proposals suffice for future developments.	3,81
6. Parties believe that versions of the project (proposals/plans), including the costs of drawing the proposals, provide more benefits than the cost.	3,69

<i>Content average score</i>	4,08
<i>PROCESS INDICATORS</i>	
1. Parties are content about the manner in which they have been involved in elaborating the project management.	3,66
2. Parties believe that the project leadership has adequately managed conflict between those involved.	3,72
3. During the process, parties have not experienced major stagnations in interaction as frustrating.	2,94
4. Parties have interacted with various other parties.	4,22
5. Parties have frequently interacted with one another.	4,53
Process: average score	3,81

It can be seen that managers are relatively satisfied with both outcomes for the content and process of PPP projects. Managers score significantly higher on content than on process ($P < 0.05$) and there is no significant difference between public and private managers when their judgments are compared.

Especially high scores can be found for innovative aspects (content indicator 1) and the judgment on the way different (spatial) functions are combined with each other in the project (content indicator 3). On the process indicators, high scores are found for the judgment about variety and frequency of interactions (indicators 4 and 5) while a relative low score is found for the judgment on major stagnations as frustrating. It can therefore be concluded that the stagnations and deadlocks in the processes of these projects, which usually take a long period of time, are clearly the most negative to managers.

Correlating managerial aspects with outcomes

One key question is how management choices are related to outcomes. The various managerial choices have been correlated with the perceived outcome measurements that were presented above (see Appendix 2). Content and process have been found to be strongly correlated to each other (correlation 0.69). This is not surprisingly because it is expected that if the process receives an overall good score, this should be somehow reflected in the outcomes in most of the cases. This of course means that strategies that are good for process outcomes are also indirectly good for content outcomes.

Table 8: Correlations ($P < 0.1$) between management choices and substantive and process outcomes

	Positive correlations	Negative correlations
Content	Vertical relationships, reactive	
Process	Horizontal relationships, research as joint fact-finding, relationship oriented, flexible, goal searching, content	Discretion
Content and process	Manageability, communication, result oriented, commitment	

Table 8 (based on the correlations in Appendix 2) shows some differences between the correlations of the management choices with indicators for content and process. There are some choices that correlate with both process and content outcomes. An emphasis on manageability, communication, being result oriented and commitments of managerial strategies have a positive impact on both content and process. The perceived outcomes for content are positively correlated to vertical relationships and a reactive style of project management. Process outcomes, however, are improved by focusing on horizontal relationships. Other managerial aspects that have a positive correlation with process outcomes are also strongly connected to what is emphasized in the literature on process management: research as joint fact-finding, being relationship oriented and goal searching.

Which strategy to choose: the relative importance of managerial choices

However useful these correlations are, they do not tell us which strategies are the most important. Because of the interrelations between various poles, some may be more important than others. Conducting a step-wise regression analysis is one way to figure out the relative importance of the poles in achieving outcomes.

The results of the step-wise regression analysis (see Appendix 3) show that five strategies are the most strongly related to the perceived content score: commitment, vertical relationships, discretion, communication and being relationship oriented. These five variables explain 80% of the variation of the variable content, where the last variable, being relationship oriented, clearly contributes the least to the explanation^c. Discretion has a negative influence on the perceived content outcomes. It may thus be concluded that if a manager wants to promote better content outcomes, he would have to focus on strategies such as commitment but also on vertical relationships, communication and being relationship oriented, while avoiding strategies that promote discretion.

Looking at the process outcomes, it is the manager's strategic choices (poles) of commitment, goal searching, representation and contracts which add the most to the explanation^d. The first two strategic choices have the most impact and are positively related to process outcomes. The last two strategic choices have less impact and are both negatively related to process outcomes. Thus, managers who want good results in their perceptions should focus on commitment as an important managerial strategy because it supports both content and process outcomes. Discretion, representation and contracts are clearly not strategic choices to be pursued intensively.

8. Conclusions: management dilemmas and outcomes

This article has presented the findings of a research project on the strategies of managers in complex infrastructure PPP projects and the relationship of these strategies to the managers' perceived outcomes of these processes. A large set of managerial choices was constructed based on the literature on process and project management, such as the choice between opening up the process to other actors (and garnering support in doing so) or closing the process (and increasing the speed and reducing the complexity of the decision-making process). The poles of the choices more or less represent alternative strategic choices made by managers in the project. Each pole was measured separately using three statements.

Managers were expected to have difficulties in choosing between the two poles of the various choices because it is difficult to uphold both at the same time. If managers were unable to choose both strategies, these (pairs of) choices were termed as dilemmas. Dilemmas are defined as situations in which managers can only perform aspects of strategies (and satisfy the need for those strategies) by giving less weight to another aspect of managerial strategy.

It turned out that only three of the 16 pairs researched were really dilemmas in the sense that they were negatively correlated. These included the dilemma pairs of action-oriented and support, research as joint fact-finding and research as a stand-alone process and designing and developing. In these pairs, managers clearly experience a situation where paying more attention to one aspect can only be achieved by paying less attention to the other. Two pairs are positively correlated (goal realising and goal searching and involvement and manageability), which means that managers succeed in paying attention to both aspects of managerial strategies at the same time.

In observing the relationship between the various aspects of managerial strategy with indicators for outcomes (as perceived by managers), positive correlations exist for several managerial choices with both content indicators and process indicators. The biggest impact on outcome (in terms of both content and process) seems to be commitment. Other strategies that managers could focus on given the correlations found include communication and being relationship oriented. Strategies not to pursue because they are negatively correlated to perceived outcomes include discretion, contract and representation.

A further look at the results

The idea of the research project initially seemed so logical: managers have to choose because they cannot uphold two different strategies at the same time. However, perhaps not enough justice was done with this assumption to the complexity and ambiguity of complex spatial PPP projects. It is perfectly rational for managers not to have to make choices because in this way, different actors can remain in the process and decisions are delayed (see Hartley, 2000). Such a choice also enhances flexibility and allows the manager to adapt to changing circumstances. Thus, not making choices, delaying choices for as long as possible or alternating between choices can be logical and sensible to managers in these contexts.

However, it is probably not just a matter of evading choices. The research also indicates that managers seldom have the attention span for a problem for a long time. Managers lead hectic lives and are constantly inundated with a wide variety of problems and smaller or larger jobs (see Mintzberg and Quin, 1996, Noordegraaf 2000). In such a context, they may not experience dilemmas but rather, act strongly according to the logic of the situation. A meeting that may have

been meant to be used to control the project may then be used to attach partners to the project again. In this way, dilemmas and choices are connected and do not appear to be conflicting.

Further research?

Therefore, managers do choose but they do so while acting. Managers who are tuned in to the situation probably make decisions in complex environmental projects. They may try to exclude one pressure group and invite another, they may utilize the media or try to stay away from the media as far as possible. It is clear that they choose their managerial strategy according to the logic of the situation and an action which is aimed at opening up the network may be forced by the circumstances to enhance stakeholders' commitment to the project. The style of managers resembles a hit and run strategy attuned to pressing situations more than a thoughtful choice between dilemmas. However, this is a theory that should be addressed through further research that focuses more on individual choices made by managers during a period of time. This requires a different kind of research: on that is more qualitative and utilizes participating observations. This would also make it possible to research the theory for a longer period of time, which would prove to be difficult if more quantitative research methods such as those used in this project were to be utilized.

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Appendix 1: Examples of items to measure dilemmas

(NB the first three items measure the first pole and the second three statements measure the second pole of the dilemma)

<i>Involvement versus manageability</i>		
1	Relevant public parties are involved through organised forms of consultation (platforms etc.).	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
2	Relevant private parties are involved through organised forms of consultation.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
3	Other relevant societal parties are involved through organised forms of consultation.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
4	As new subjects or themes are introduced, one always looks first whether it fits in planning and budgeting.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i>

		<i>0 strongly disagree</i>
5	When new parties announce themselves or wish to participate, we always determine whether cost management is jeopardised.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
6	Clear and measurable agreements have been made about the deployment of people and means in terms of time and money; methods are use to keep the project manageable: phasing, planning, milestones.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
<i>Variety versus representativeness</i>		
7	There is room for the input of people, parties and concepts of vary different natures (even artists, laypersons, outsiders).	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
8	To the greatest extent possible, the effort is made to make different opinions visible and included in decision making.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i>

		<i>0 disagree</i> <i>0 strongly disagree</i>
9	Assumptions and presuppositions are consciously put up for discussion	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
10	In the selection of people who participate in the process, we carefully consider who they represent.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
11	Those involved determine their point of view by what the parties they represent believe.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
12	Access into the process has been made easier for those individuals who clearly represent interest groups.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i>

		<i>0 strongly disagree</i>
<i>Horizontal relations versus vertical relations</i>		
13	The project organisation is flat and/or shaped as a matrix.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
14	Communication and administration occur in one's own organisational layer and between the layers.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
15	Project leadership consults with the implementers and involves them in the decision. Mutual decision making clearly exists.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
16	The project organisation has a hierarchical structure.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i>

		<i>0 strongly disagree</i>
17	Communication and administration occur between the different layers in a top-down fashion.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
18	Project leadership determines what the subordinate organisation does.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
<i>Openness versus closedness</i>		
19	No conditions are attached to joining in discussions, in thinking and in decision making about the direction of the project.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
20	In every new phase of the project, new parties are found and thus new connections are made.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i>

		<i>0 strongly disagree</i>
21	As far as parties have been selected, this has been carried out in open competition.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
22	Project management determines which parties enter the network around the project.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
23	It is almost impossible for new parties to participate in the project organisation.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>
24	Project management determines the selection of parties necessary for (parts of) the project through mutual consultation.	<i>0 strongly agree</i> <i>0 agree</i> <i>0 neutral</i> <i>0 disagree</i> <i>0 strongly disagree</i>

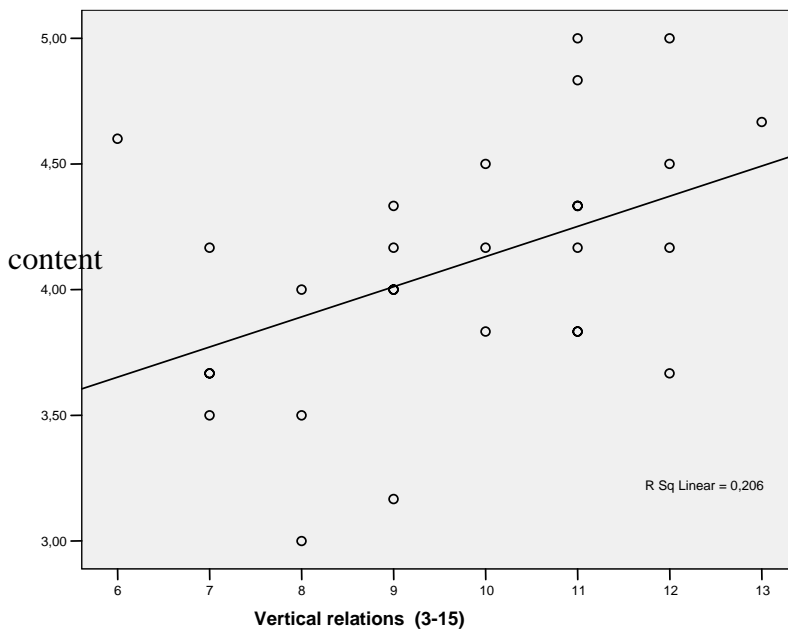
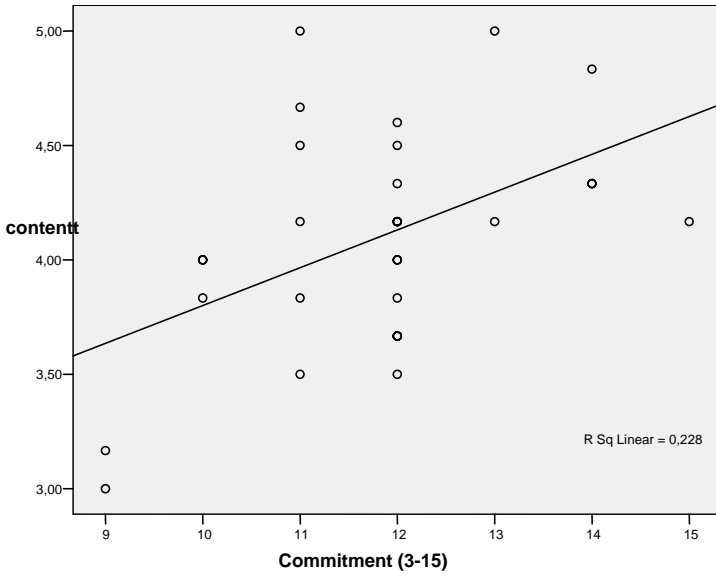
Appendix 2 Correlation matrix

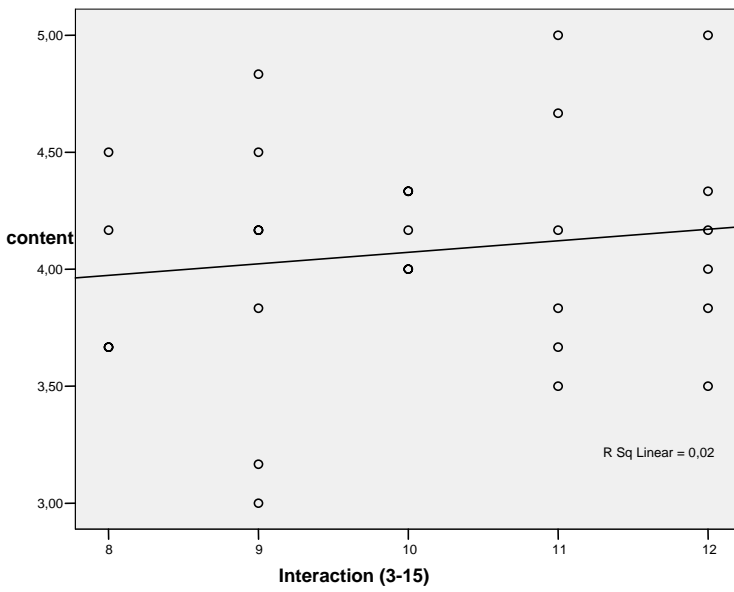
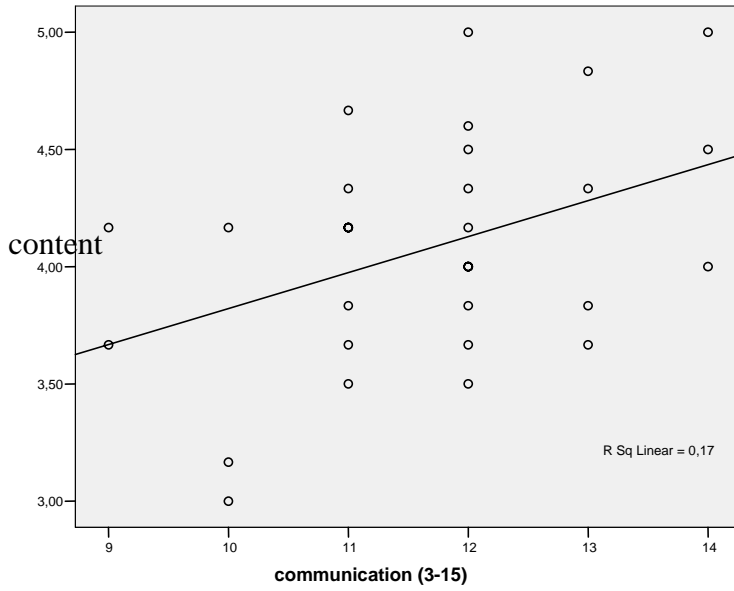
table 1 correlations

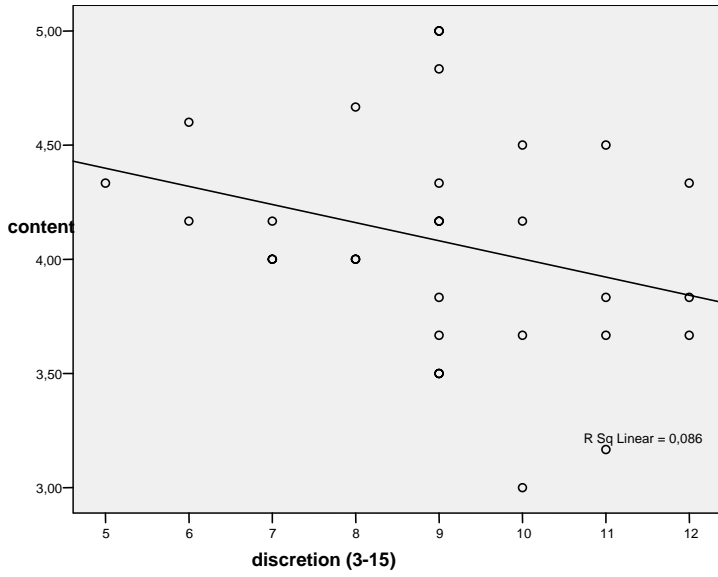
	Involvement	Manageability	Variety	Representativeness	Horizontal relations	Vertical relations	Openness	Closedness	support	action(oriented)	Communication	Conflict	Research as joint fact finding	Research as stand-alone process	Trust in interactions	Contracts and clear agreements	Result oriented	Relation oriented	Internal orientation	External orientation	Reactive	Pro-active	Flexible	Rigid	steering for substance	steering for process	goal realisation	goal seeking	designing	developing	Commitment	discretion	content	process			
involvement	1																																				
manageability	0.36	1.00																																			
variety	0.38	0.55	1.00																																		
representativeness	0.20	-0.27	-0.27	1.00																																	
horizontal relations	0.03	0.22	0.07	-0.15	1.00																																
vertical relations	0.09	0.15	0.19	0.44	-0.08	1.00																															
openness	0.13	0.23	0.40	-0.16	0.15	0.20	1.00																														
closedness	0.15	0.41	0.00	0.14	0.09	0.23	0.06	1.00																													
support	0.04	0.27	-0.09	0.14	0.04	-0.13	0.12	0.12	1.00																												
action(oriented)	-0.02	0.17	0.08	-0.15	-0.07	0.41	0.08	0.02	-0.35	1.00																											
communication	0.33	0.57	0.39	-0.20	0.12	0.03	0.30	0.06	0.49	-0.16	1.00																										
conflict	-0.09	-0.37	-0.16	0.15	0.08	-0.12	0.14	-0.28	0.31	0.00	-0.05	1.00																									
research as joint fact finding	-0.02	0.43	-0.04	-0.08	0.27	0.24	0.26	0.32	0.53	-0.05	0.33	0.01	1.00																								
research as stand alone process	0.09	-0.19	0.15	0.14	-0.12	0.47	-0.10	0.18	-0.49	0.26	-0.33	-0.15	-0.34	1.00																							
trust in interactions	0.33	0.23	0.09	0.17	0.03	0.05	0.01	0.42	-0.10	-0.14	0.07	-0.40	-0.35	0.22	1.00																						
contracts and clear agreements	0.19	-0.24	0.16	-0.19	0.09	-0.03	-0.27	-0.14	-0.32	0.05	-0.11	-0.02	-0.26	0.36	-0.30	1.00																					
result oriented	0.18	0.30	0.08	0.13	0.27	0.28	-0.05	0.54	0.05	0.29	0.33	0.04	-0.06	0.40	0.28	0.18	1.00																				
relation oriented	0.23	0.35	0.17	-0.31	0.41	-0.10	0.32	0.17	0.22	0.15	0.31	0.20	0.44	-0.07	-0.16	-0.13	0.25	1.00																			
internal orientation	0.19	-0.21	-0.11	0.21	0.20	0.08	-0.07	-0.47	0.07	-0.01	0.05	0.47	-0.18	-0.03	-0.07	0.06	0.03	0.04	1.00																		
external orientation	-0.04	0.05	0.03	0.24	0.41	0.08	-0.24	0.06	0.30	-0.14	0.10	0.35	0.16	-0.01	-0.24	0.26	0.27	-0.05	0.16	1.00																	
reactive	0.10	0.17	0.24	0.16	0.15	0.07	-0.13	-0.24	0.24	-0.37	0.40	0.01	-0.16	0.02	0.24	-0.10	0.16	-0.14	0.42	0.18	1.00																
proactive	0.00	0.27	0.15	0.03	0.40	0.29	0.04	0.35	-0.10	0.33	0.01	-0.33	-0.03	0.37	0.28	0.06	0.45	0.13	-0.36	0.40	-0.11	1.00															
flexible	0.32	0.36	0.34	-0.17	0.35	-0.16	0.26	-0.16	0.50	-0.08	0.65	0.24	0.21	-0.31	0.03	-0.02	0.19	0.31	0.22	0.44	0.21	0.25	1.00														
rigid	-0.04	-0.15	-0.29	0.30	0.07	-0.04	-0.05	-0.14	0.45	-0.29	0.23	0.30	0.00	-0.21	0.11	-0.27	0.13	-0.09	0.51	0.12	0.50	-0.10	0.25	1.00													
steering for substance	0.14	0.25	0.24	-0.12	-0.14	0.32	0.41	0.09	-0.04	0.22	0.21	0.14	0.13	0.13	0.01	-0.13	0.14	0.33	0.03	-0.36	-0.12	-0.23	0.02	-0.02	1.00												
steering for process	-0.17	-0.14	-0.21	0.01	0.01	-0.07	-0.13	-0.09	-0.12	0.18	-0.10	0.04	-0.14	0.13	0.00	0.22	0.24	-0.22	-0.02	0.08	0.07	0.06	-0.03	0.06	1.00												
goal realisation	0.24	0.08	0.00	0.15	0.16	0.00	-0.26	0.24	0.01	-0.13	-0.02	-0.02	-0.17	0.30	0.26	0.05	0.42	0.02	0.33	0.09	0.45	0.08	-0.26	0.06	0.06	1.00											
goal seeking	0.10	0.26	0.04	0.26	0.20	0.34	0.14	0.25	0.04	0.18	0.14	0.01	0.24	0.14	0.11	-0.26	0.28	0.11	0.01	0.18	0.16	0.20	-0.06	0.06	0.06	1.00											
designing	0.22	-0.41	-0.05	0.29	-0.22	-0.16	-0.18	-0.11	-0.11	-0.07	-0.25	0.11	-0.54	0.23	0.18	0.16	0.14	-0.08	0.23	-0.30	0.21	-0.17	-0.33	0.06	0.06	1.00											
developing	-0.13	-0.03	0.09	-0.02	0.47	0.13	0.22	0.07	-0.14	-0.01	-0.07	-0.04	0.03	0.23	0.13	0.07	0.08	0.13	-0.23	0.39	-0.07	0.51	0.14	-0.02	0.02	1.00											
Commitment	0.08	0.16	-0.08	0.09	0.36	0.19	-0.09	-0.22	0.10	0.12	0.24	-0.13	0.14	0.02	0.07	-0.07	0.14	0.23	0.21	0.28	0.18	0.34	0.43	0.06	0.06	1.00											
discretion	-0.14	-0.03	0.18	0.11	-0.21	0.18	0.20	-0.36	0.06	0.04	-0.03	0.19	-0.11	-0.31	-0.19	-0.08	-0.41	-0.47	0.09	0.18	-0.01	-0.02	0.26	0.06	0.06	1.00											
content	0.24	0.33	0.10	0.28	0.25	0.45	0.06	0.26	0.16	-0.04	0.41	-0.17	0.26	0.19	0.31	-0.20	0.35	0.14	0.15	0.30	0.38	0.30	0.27	0.06	0.06	1.00											
process	0.07	0.41	0.01	-0.10	0.55	0.17	0.22	0.28	0.16	0.03	0.46	-0.24	0.43	-0.14	0.17	-0.28	0.33	0.40	0.10	0.08	0.22	0.27	0.32	0.06	0.06	1.00											

Appendix 3: Most important regression analysis

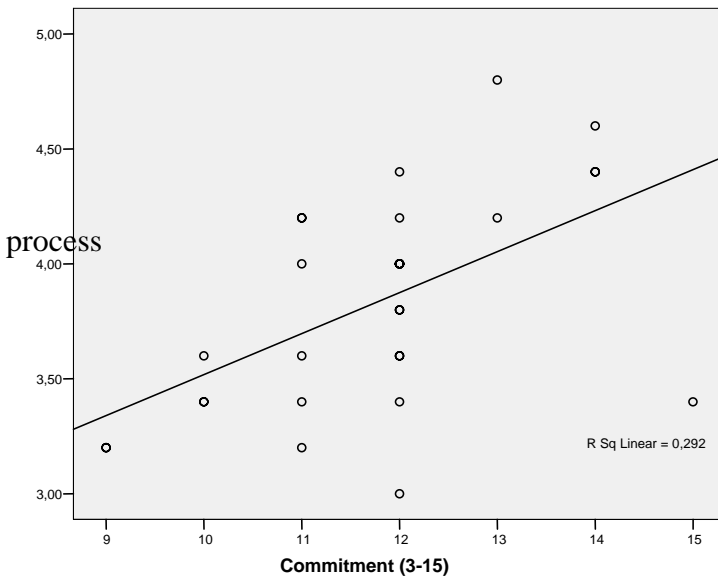
The most important choices (poles) are presented here for content and process outcomes that come out of the step-wise regression analysis. The regression analyses are presented with content or process as a dependent variable (an average of the item scores that range from 1 to 5) and one of the poles as the independent variable. The independent variable is constructed by summing the scores for the three items that make up the variable and can vary from 3 to 15.



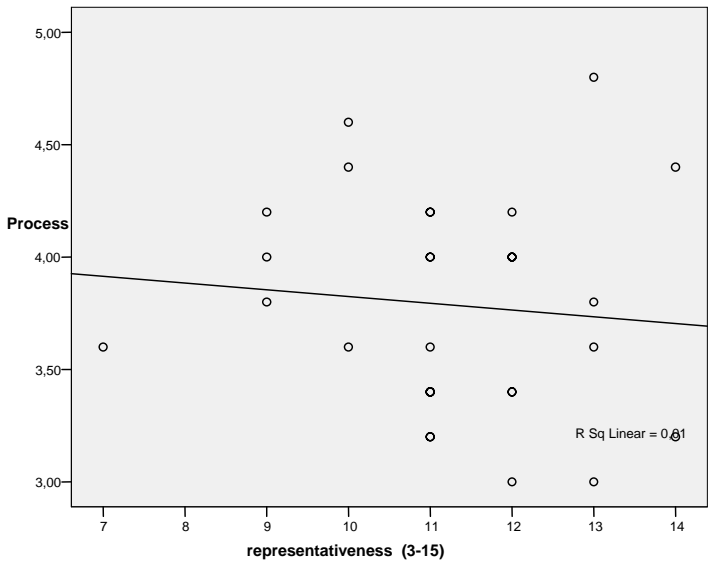
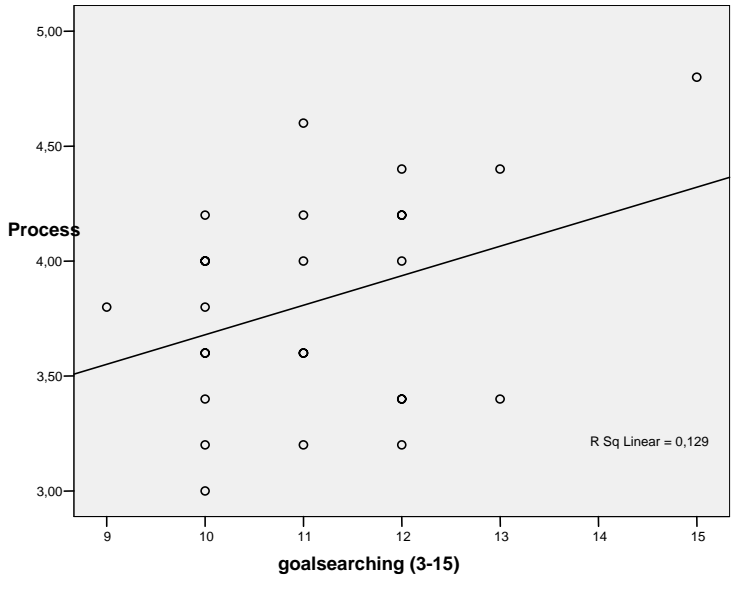


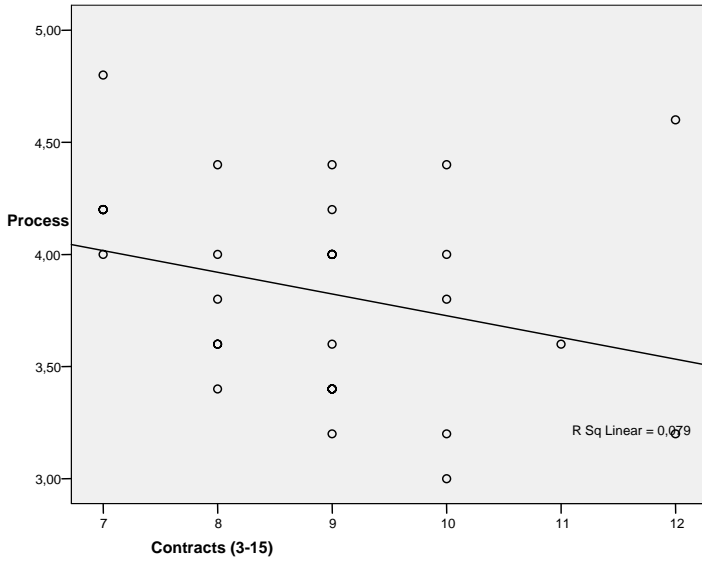


MOST IMPORTANT CHOICES FOR PROCESS OUTCOMES



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Endnotes

^a In that small research project, the respondents were forced to choose between the dilemmas, a method not used again in this project (see section on methods).

^b Each score of a pole was determined by a summed score of the three items that made up the pole.

^c The regression analysis shows the formula $\text{content} = 1,250 + 0,162 \text{ commitment} + 0,129 \text{ vertical relations} - 0,142 \text{ discretion} + 0,159 \text{ communication} - 0,085 \text{ being relationship oriented}$ (see Klijn et al, 2006).

^d The regression analysis show the following formula: $\text{process} = 1,65 + 0,220 \text{ commitment} + 0,129 \text{ goal searching} - 0,084 \text{ representation} - 0,104 \text{ contracts}$.