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The reflective futures practitioner: Balancing salience, credibility and legitimacy in generating foresight knowledge with stakeholders

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ABSTRACT

This paper explores how foresight researchers involved in environmental, nature and planning issues attempt to balance salience, credibility and legitimacy while generating knowledge in interaction with policy-makers and other social actors. Engaging stakeholders in foresight processes can increase the robustness of foresight knowledge, broaden the spectrum of issues addressed, and create 'ownership' of the process. While in foresight practices stakeholder participation becomes more and more popular to resort to as enabling factor for generating salient, legitimate and credible foresight knowledge, participation can also compromise these qualities. We analysed two foresight projects conducted at the PBL Netherlands Environmental Assessment Agency, one that developed future visions for Dutch nature policy and another that focused on future pathways for Dutch urban sustainable development policy. We illustrate that the dynamics of the research setting – changes in the socio-political context and the internal dynamics of the participatory efforts – complicated the balancing process. We conclude that one of the main challenges for futures practitioners is, therefore, to work within the dynamics of the research setting, and to position themselves strategically in this setting; by acting as 'reflective futures practitioners'.

1. Introduction

In the last decades the use of foresight in policy contexts has increased, and so have attempts to understand how effective foresight knowledge can be generated in science-policy settings. While 'foresight' is a concept that covers a wide array of prospective practices (Öner, 2010), we focus on policy-oriented foresight practices. Policy-oriented foresight aims to raise awareness among policy-makers, politicians and the general public about alternative perspectives on future needs and the

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implications hereof for present-day actions (van Asselt, van 't Klooster, van Notten, & Smits, 2010), accordingly triggering a process of broadening up the framing of existing policy discourses (Stirling, 2006).

Despite an ever increasing body of literature reflecting on and suggesting ways to conduct policy-oriented foresight (see e.g. Fobé & Brans, 2013; van 't Klooster, 2007; van Asselt, van 't Klooster, et al., 2010; van de Kerkhof & Wieczorek, 2005; van der Steen & van Twist, 2012; Van der Steen & van Twist, 2013), challenges are experienced in practice by those involved in foresight studies. Foresight researchers seem to lack sensitivity to particular concerns of politicians and policy-makers (Rijkens-Klomp, 2012; van der Steen & van Twist, 2012; Van der Steen & van Twist, 2013), to struggle with the positioning of present-day policy framings in their studies (van Asselt, van 't Klooster, et al., 2010), to have difficulties in ensuring a diversity of perspectives for building rich narratives of the future (Chilvers, 2008; Stirling, 2006), and to experience problems in reconciling different and sometimes conflicting ideas and knowledge claims for creating plausible and practical scenarios (Andreescu, Gheorghiu, Zulean, & Curaj, 2013; van 't Klooster, 2007). Accordingly, futures practitioners often fail to generate effective foresight knowledge for policy.

Effectiveness is considered here as an emerging property based on three qualities that participants and users attribute to scientific assessment processes (to which we count generating foresight knowledge): salience, legitimacy and credibility (Cash et al., 2002; Eckley, 2002; Farrell & Jäger, 2005; Farrell, VanDeveer, & Jäger, 2001). Salience refers to the extent to which the particular concerns of users are addressed; legitimacy refers to the trustworthiness of the process – respectful of diverse views and concerns – in the eyes of various audiences; credibility refers to the trust audiences put in the scientific and technical quality of the study at hand (Cash et al., 2002; Farrell & Jäger, 2005). These qualities enable one to reflect upon the outcome of assessment processes: has the assessment produced effective knowledge that is perceived of as credible, legitimate and salient among different audiences simultaneously (Cash et al., 2002, 2003)? Perceptions of salience, credibility and legitimacy originate and evolve during the process as a function of the interaction between assessment characteristics, for example, the initiation and goal of the assessment, the organisation of science-policy interaction, how uncertainty is being managed, how the scope of the problem under consideration is framed, the spatial scale of the assessment and the capacities of the participating actors (Eckley, 2002; Mitchell, Farrell, & VanDeveer, 1998; Tuinstra, Hordijk, & Kroeze, 2006). In this paper we focus on one particular element in the assessment design of policy-oriented foresight practices: the interaction across participating actors. We explore how foresight researchers interact with stakeholders. Stakeholders, in our definition are users (i.e. policy-makers) and other social actors who are relevant to and knowledgeable on the issue that is at stake.

Participation in policy-oriented foresight is essential in order to enrich the policy process with new perspectives, knowledge and values on future needs and present-day actions. For example, stakeholders bring in diverse opinions and views on how the future (should) look(s) like and different ideas about respective solutions and actions needed in the short term (Funtowicz & Ravetz, 1993; Stirling, 2011; van der Sluijs, van Est, & Riphagen, 2010). Including and integrating their knowledge is a way to address uncertainties inherent in studying the future, which accordingly increases the credibility of foresight knowledge (Salter, Robinson, & Wiek, 2010). Moreover, futures practitioners deliberately seek to bring together a plurality of views, concerns and insights from science, policy and practices in generating foresight knowledge with stakeholders to increase both the salience (e.g. more relevant issue are addressed; Van der Steen & van Twist, 2013) and legitimacy (e.g. by expanding the inclusiveness of diverging values, beliefs and interests (Stirling, 2006)) of the knowledge that is produced in foresight processes.

Engaging with stakeholders can also create problems for futures practitioners, such as a bias to focusing on short-term policy needs (which will impact salience), a lack of scientific underpinning of stakeholder ideas (which has consequences for credibility), issues related to the composition of the stakeholder group (which has impact on legitimacy) (Andreescu et al., 2013; Borch & Mérida, 2013; Van der Steen & van Twist, 2013). The challenge for futures practitioners is therefore to ensure that stakeholder participation benefits the salience, credibility and legitimacy of foresight knowledge while it does not compromise one of these qualities in an unacceptable manner. Salience, credibility and legitimacy are also partly dependent on each other and trade-offs and synergies among them exist (Cash et al., 2003). Earlier work has demonstrated that the appropriate balance has been found to vary according to the user characteristics and the social and political context within which the assessment is conducted (Eckley, 2002; Farrell & Jäger, 2005; Tuinstra et al., 2006), e.g. the position of the issue at the policy agenda and the characteristics of the issue domain itself (Mitchell, Clark, Cash, & Dickson, 2006), policy-makers and other actors' values, belief systems or cultures (Turnhout, Hisschemöller, & Eijsackers, 2008) and the openness of users to different sources of advice (Eckley, Clark, Farrell, Jäger, & Stanners, 2001). The balancing act is therefore highly dynamic, and may vary in relation to the different actors involved, changing contexts and the actions taken to deal with trade-offs (Sarkki et al., 2014).

The balancing act in ensuring legitimacy, credibility and salience while involving stakeholders in foresight practices is at the centre of our paper. In this paper we point out that finding the appropriate balance is difficult because the qualities are interpreted differently by different actors as their perceptions essentially reflect particular understandings of reality. The way futures practitioners choose to know and represent these realities shapes their perceptions in return (Jasanoff, 2004). For example, a dominant perception of foresight researchers is that too close contact with stakeholders is a threat to their independent position (Hage, Leroy, & Petersen, 2010). This perception originates in cultural and historical formations of science-based advisory systems (Jasanoff, 2005) that also characterise policy-oriented foresight settings (van Asselt, van 't Klooster, et al., 2010). In turn, stakeholder participation enables researchers to reflect upon the realities they encounter among the 'plurality of perspectives', which may accordingly modify dominant quality perceptions in critical ways.

We explore how stakeholder participation impacts on the salience, credibility and legitimacy attributed to foresight knowledge. We particularly focus on the quality perceptions that exist among the foresight researchers and their peers. We use two in-depth case studies of foresight projects conducted at the PBL Netherlands Environmental Assessment Agency (*Planbureau voor de Leefomgeving* – PBL). The PBL is not necessarily presented as an *example par excellence*, but rather as the *locus* for learning more about the interaction of foresight researchers with stakeholders in policy-oriented foresight. The cases offer insight into the daily work of foresight researchers involved in environmental, nature and planning issues.

Our work is particularly relevant for scholars and practitioners who are interested in understanding how foresight is conducted at the science-policy interface. Similar relevant work assesses the collaborative efforts of researchers and stakeholders, displaying path dependency in terms of perceived credibility, legitimacy and salience for different stakeholders through time (Schut, van Paassen, & Leeuwis, 2013) and a lack of shared understanding within interdisciplinary research teams on criteria for the assessment of collaborative efforts (Podesta, Natenzon, Hidalgo, & Toranzo, 2013). Our research on the balancing act in policy-oriented foresight points aims to generate further insight into the intricacies of participatory efforts and is accordingly relevant to a number of related practices, such as collaborative policymaking (Innes & Booher, 2010; Vasileiadou & Tuinstra, 2012), participatory knowledge production (Jasanoff, 2003; Maasen & Weingart, 2005), participatory risk management (Garcia Homa, Moles Plaza, Fabregues Feijoo, & Palmen, 2009), participatory technology development (Mettler & Baumgartner, 1998) and open risk assessment (Pohjola & Tuomisto, 2011).

2. The effectiveness of participatory foresight under debate

For the purpose of this paper we interpret participatory foresight as stakeholder participation in one or several steps of a policy-oriented foresight process: in the development of narratives of the future; in assessment activities to identify impacts, trade-offs and synergies; and in the formulation of suggestions for short-term policy action. Furthermore, we consider as stakeholders all social actors who are relevant to and knowledgeable on the topic at hand. However, for empirical reasons we discern between the 'clients' or users of the foresight activity (policy-makers on environment, nature and planning issues) and other stakeholders. The futures practitioners involved are not considered as stakeholders. In making these distinctions we follow the actors in our cases, who made these distinctions as well.

In the following we discuss the added value of stakeholder participation as well as the problems it may raise with regard to salience, legitimacy and credibility, as discussed in foresight literature.[1]

Empirical studies evaluating the policy impact of foresight practices problematise the limited salience of foresight knowledge for policy-makers (Fobé & Brans, 2013; Habegger, 2010; Kaljonen, Varjopuro, Giełczewski, & Iital, 2012; Rijkens-Klomp, 2012; van Asselt, van 't Klooster, et al., 2010; van der Steen & van Twist, 2012; Van der Steen & van Twist, 2013). Policy-makers perceive foresight knowledge to be of limited use in their daily practices due to a lack of connectivity to the political or organisational logics of policy-making (Rijkens-Klomp, 2012; van der Steen & van Twist, 2012; Van der Steen & van Twist, 2013). Connecting the long-term planning horizon of foresight with present-day concerns in policy and society often remains a hard thing to do. In this respect, valuable attempts have been made to develop criteria or principles for improving the link between foresight and policy (Fobé & Brans, 2013; Habegger, 2010; Rijkens-Klomp, 2012; van der Steen & van Twist, 2012; Van der Steen & van Twist, 2013): for example, appropriate timing and conveying actionable messages are suggested. When futures practitioners become more responsive to cues in the political and bureaucratic domain, it becomes meaningful and valuable for a policy-maker or a politician to use that knowledge (van der Steen & van Twist, 2012). Engaging users and other stakeholders in foresight processes allows insight into socio-political dynamics, which may accordingly facilitate connectivity to the logics of daily practices. However, stakeholder participation may also create problems for the salience of foresight knowledge. Since stakeholders hold particular values, perspectives and interests that are associated with their daily practices, they prefer particular courses of actions over others (Stirling, 2008). When present-day concerns and needs tend to dominate the foresight study, the study may hardly challenge us to think about how the world might be different. Under the heading of 'futuristic difference' (van Asselt, van 't Klooster, et al., 2010), discontinuity, non-linearity and change are advocated as the essential values of policy-oriented foresight. "According to futuristic difference, scenarios should be radically different and should significantly deviate from the past" (van Asselt, van 't Klooster, et al., 2010, p. 113). Developing visionary futures asks for a somewhat distant position to the past and present. It requires a great deal of imagination to trigger the exploration of future possibilities (Dammers, 2000). Particular research designs involving participatory backcasting explicitly aim to facilitate this (Dreborg, 1996; Robinson, 2003).

Moreover, prevailing preferences may create problems for the legitimacy of foresight knowledge. Preferences in existing policy discourses can dominate the definition and scope of a foresight study (Berkhout et al., 2014; van Asselt, van 't Klooster, et al., 2010). This often goes unnoticed. When stakeholders and researchers 'hide' political preferences or when they do not allow room for alternative problem interpretations, this makes foresight vulnerable in the sense of perceived legitimacy. While normative framings are unavoidable (van den Hove, 2007), researchers should learn to explicitly acknowledge the political choices implicit in the policy discourses they both work within and help to establish (Wesselink, Buchanan,

[1] A discussion of the various forms of and conditions (e.g. who may participate?) for effective stakeholder participation is out of the scope of this paper. Insightful studies on this topic are for example available in the field of environmental policy (Cuppen, 2012), health (Deverka et al., 2012), education (Brandon & Fukunaga, 2014) and design (Manzinia & Rizzoa, 2011).

Table 1
Potential impacts of stakeholder participation on the salience, legitimacy and credibility of foresight knowledge (based on a summary of literature findings, not exhaustive).

Salience		Legitimacy		Credibility	
+	–	+	–	+	–
Facilitating connectivity to the logics of daily practices	Limiting futuristic difference of foresight knowledge when distance to present is not pursued	Improving diversity in views and concerns whereby all those interested and affected should have the feeling that their vision is taken into account	Political preferences may (implicitly) dominate the definition and scope of the study	Contributing to the social robustness of foresight knowledge	Deterministic tendency in foresight practices anchors future claims in historical knowledge

Georgiadou, & Turnhout, 2013). The challenge for foresight researchers is to frame the content of their work in a policy relevant manner, while maintaining an open view towards alternative framings of problems and solutions, in order to ensure legitimacy. Stakeholder participation can ensure diversity in views and concerns whereby all those interested and affected by a decision or action should have the feeling that their perspectives are taken into account. Transparency is important here as well. While this does not mean that direct participation by all affected is needed (or possible), multi-perspective dialogues can facilitate transparency (Borch & Mérida, 2013). Fruitful dialogues strike a balance between stakeholders with alternative viewpoints and ideas (heterogeneity) and stakeholders who share similar ideas and who are involved in the same network (homogeneity) (van de Kerkhof & Wieczorek, 2005). However, while participation in itself increases the legitimacy of the exercise to the participants, it might decrease legitimacy to others who e.g. do not trust certain participating groups (Treffny & Beilin, 2011).

Stakeholder participation facilitates, but may also jeopardise, the credibility of foresight knowledge. Including local knowledge improves the social robustness of the foresight exercise, as it enables foresight researchers to recognise, articulate and accommodate diverse insights and perspectives about the future. Subsequent iterations of narrative development, impact assessment calculations, design activities and the formulation of policy actions help to assure trust in the consistency of the process and generate acceptance of foresight knowledge. Transparent reporting of assumptions and judgments about foundational assumptions, parameters and choices in each iteration step may additionally improve trust in the scientific quality of the process (Kloprogge, van der Sluijs, &, Petersen, 2011; van der Sluijs, Petersen, Janssen, Risbey, & Ravetz, 2008). Iteration may simultaneously complicate scientific quality control for futures practitioners, since they have to couple an understanding of the social origins, linkages, and implications of the narratives of the future with technically sophisticated elements of the assessment methods, such as integrated models (Garb, Pulver, & VanDeveer, 2008). Conform a historic deterministic tendency that dominates foresight practices, researchers are inclined to stress the available knowledge about relevant causal mechanisms, accordingly anchoring future claims from stakeholders in historical knowledge. Past, present and future are envisioned as a continuum to ensure that scientific claims of plausibility are met. As such, this deterministic tendency compromises the 'futuristic difference' ideal of policy-oriented foresight. The challenge for futures practitioners is to use knowledge about the past and present in support of the exploration of possible futures instead (van Asselt, van 't Klooster, et al., 2010).

Therefore, while interaction with clients and other stakeholders is essential to generate salient, legitimate and credible foresight knowledge, interaction with stakeholders also confronts futures practitioners with a sea of meanings, aspirations and convictions. It is a very real challenge for practitioners, as well as foresight theorists, to make sure that involving stakeholders benefits the effectiveness of foresight knowledge while it does not comprise one of the qualities in an unacceptable manner. Table 1 summarises the potential benefits and drawbacks we identified in literature about stakeholder participation in foresight research.

3. Research design

We examined two foresight projects of the PBL Netherlands Environmental Assessment Agency (PBL) to explore how foresight researchers in practice attempt to balance salience, credibility and legitimacy while generating knowledge in interaction with policy-makers and other social actors. The cases are introduced in the next paragraph. The PBL is selected as the locus for in-depth case study research, since it is the Dutch scientific policy advisory body under government responsibility with a long-standing international tradition in foresight (van Asselt, Faas, van der Molen, & Veenman, 2010) and a respectable position in both science and policy worlds regarding assessments on environmental, spatial planning and nature issues (Halffman, 2009). Producing policy-relevant, independent and scientifically sound knowledge are mentioned as core values of the PBL (PBL, 2014). Hence, we can expect that balancing salience, legitimacy and credibility is crucial to the daily activities of PBL employees. The two foresight projects were selected as cases for in-depth study because stakeholder participation was a central activity in the projects and they could therefore be identified as participatory foresight studies. Moreover, both projects were innovative in their participatory aspirations to explore perspectives, knowledge and values on future needs and respective solutions and actions needed in the short term.

As part of the open assessment research programme of the PBL methodology department, the first (EK) and fourth author (AP) – both full time employees at the PBL during the duration of the projects – initiated this study to explore how participatory processes contribute to the core values of the advisory body. Our research perspective is informed by interpretive and naturalistic inquiry (Lincoln & Guba, 1985), making the varied and multiple meanings attributed by the participating foresight researchers and their peers, as well as the interaction across them and the participating stakeholders the basis for our study (Creswell, 2003). We collected data using participant observation, interviewing and document analysis. EK observed the process while participating as an embedded researcher in case 1, the Sustainable City project, where EK participated as a project team member with six other PBL researchers during the principal period of the project, from April 2008 to the project's evaluation in Autumn 2010. EK was responsible for the development and implementation of the project's sustainability appraisal framework. Through intense and active involvement in the project EK was able to observe the crucial issues in the process. Moreover, EK contributed to a team evaluation in July 2010. Every team member filled an evaluation form with open-ended questions to express his or her individual experiences of the process. Followed by group discussion to reflect upon these experiences and identify lessons learned. Additional lessons learned were formulated in review sessions in July 2010 with four internal peers who had been distantly involved and in October and November 2010 with four external peers who were identified as experts in (participatory) foresight. In case 2, the Nature Outlook project, EK conducted interviews as part of an internal project evaluation trajectory from April to October 2012. Together with another PBL researcher, EK evaluated the innovative features of the project: the stakeholder participation trajectory, the interactive communication strategy and the normative scenario development. The evaluators selected 22 interviewees on criteria of diversity and comprehensiveness, including seven members of the core project team, five members of the internal supervisory board and ten participating stakeholders, including governmental policy clients of the project's external supervisory board as well as local policy-makers and representatives from business, NGOs and public organisations who had participated in the stakeholder workshops. The evaluators conducted semi-structured interviews and the interview reports were sent back to participants for *member checking*, as standard practice for ensuring validity in qualitative analysis (Creswell, 2003). The interviewees were asked to carefully look whether the summaries reflected their views, feelings, and experiences. Moreover, to review the accuracy and completeness of the evaluators' interpretations, additional member checks were organised through discussions with the project team in August and September 2012. The evaluation resulted in a set of lessons learned and suggestions for future foresight studies. Document analysis of project plans, meeting notes and discussion memos enabled for additional insight into what had happened in the two projects.

EK's embeddedness enabled us to obtain an understanding of the dynamics of participatory foresight processes, while we ensured the intersubjectivity of our interpretations in dialogue among ourselves and with several project members of the two cases during the reconstruction of the foresight processes. Intersubjectivity is an important asset of interpretive research since people's actions and events are likely to be viewed differently as interpretations of the meaning and relations across can have different connotations depending on one's own point of reference (Burawoy, 1998). Our analysis of the participatory foresight projects within their socially and historically constructed context uncovered a maze of institutional assumptions, intuitions, actions, observations, experiences, surprises and reflections. For the purpose of reconstruction we used a guiding question: How did the involvement of stakeholders impact on perceptions of credibility, legitimacy and salience?

We coded the data in an iterative way (Weiss, 1995) to find patterns across the data using MAX QDA 11 (MAXQDA, 2014). First of all, we selected excerpts that pointed to the challenges encountered with stakeholder participation. We differentiated among conceptual, methodological and managerial challenges, while not pretending to forsake their interconnectedness. Secondly, we identified how these challenges had come into existence, pointing to strategies in use by the foresight researchers to organise their participatory processes. In reconstructing how these strategies were enacted, changes in the socio-political context of the projects and the internal dynamics of the participatory efforts were highlighted and labelled as explanatory circumstances for the quality perceptions of the projects. The case reconstructions in the next sections reflect the various perceptions attributed to salience, credibility and legitimacy by the foresight researchers and their peers.

3.1. Case introductions

3.1.1. Case 1 – Sustainable City

The Sustainable City (SC) project was a two-year project initiated by the PBL in early 2008. The project built on a long-running internal debate about the methodology of sustainability assessments. Previous sustainability assessment studies had been criticised for their technocratic approach in designing worldviews (Petersen, Cath, Hage, Kunseler, & van der Sluijs, 2011). Therefore, the SC project served as an experiment to further develop PBL's sustainability assessment methodology using stakeholder participation to open up to a variety of insights and views about the meaning of sustainability in urban contexts. Simultaneously, the project had a policy-oriented objective: to generate integrated options for strategic, long-term urban development policies in the Netherlands to display the complementarities and trade-offs across various urban environmental and planning issues. The project team developed desired images of a sustainable city in 2040 and roadmaps to identify actions on a timeline from 2040 back to the present in dialogue with stakeholders. Using this method, which is known as participatory backcasting, in combination with modelling exercises and design activities, resulted in model-based

Table 2
Design choices in the Sustainable City and the Nature Outlook projects.

Expected impacts on	Salience	Legitimacy	Credibility
Project design of stakeholder participation	Users are invited to participate in the stakeholder activities Communication/dissemination strategies are developed	A diverse group of stakeholders is selected to capture various domains, interests and expertise Procedural activities (e.g. website, newsletters, readers) facilitate transparency and create commitment among stakeholders	Participation is enacted to accommodate uncertainties about the future and address short-term implications Iterative process cycles of stakeholder activities and 'back office' activities ensure reconciliation across knowledge forms, sources and methods during the foresight process

narratives for a sustainable city in 2040, which were discussed at a stakeholder symposium in spring 2010 (Dassen, Kunseler, & Michiels van Kessenich, 2013).

3.2. Case 2 – Nature Outlook

The PBL produces a Nature Outlook (NO) every four to five years under statutory obligation, in collaboration with researchers from Wageningen University and Research centre (WUR). The most recent NO project was conducted from late 2008 to early 2012, excluding the exploration and dissemination phases. In response to a governmental request, the focus was initially set on generating insight into ecosystem services – which was at that time perceived of as an appealing concept for future nature policy development. During the project, the team anticipated on policy changes and political tendencies and accordingly changed its focus to discuss the fundamental motivations and values underlying nature policy. In interaction with policy clients and other stakeholders the project team developed four nature perspectives, entitled 'Vital Nature', 'Functional Nature', 'Recreational Nature' and 'Tailored Nature', and conducted an assessment of their implications. Besides participation, various other techniques were used including literature study, impact modelling, spatial design, governance analysis and expert judgement. A report was presented to the State Secretary of economic affairs, agriculture and innovation and to a wider audience in a symposium setting early 2012 (PBL, 2012).

4. Case analysis

The foresight researchers in the Sustainable City project and the Nature Outlook project involved stakeholders during various stages of the process, particularly in the narrative development: images and roadmaps for a sustainable city in 2040 (SC) and nature perspectives (NO). To a lesser extent, stakeholders also contributed to the formulation of policy actions. Stakeholders did not actively take part in impact assessment and design activities. They were informed about the findings and could reflect upon draft reports. Section 4.1 reconstructs the project design of the projects to illustrate how stakeholder participation had been motivated by expectations of increased credibility, salience and legitimacy. Table 2 summarises the design choices. The research teams in the two projects encountered challenges while enacting their participatory efforts, using different strategies. The strategy of the SC team was to ensure openness to diversity throughout the project, while the strategy of the NO team was to anticipate ongoing policy developments. These strategies and their impacts on perceptions of salience, credibility and legitimacy are illustrated with case reconstructions in Section 4.2 and summarised in Tables 3 and 4.

4.1. Project design

The policy-oriented foresight projects aimed at broadening up the framing of existing policy discourses on urban sustainable development policy (SC project) and nature policy (NO project). While the composition of the two project teams, as well as the institutional history, policy issue domain and socio-political setting of the two projects differed, their motivation for organising stakeholder engagement was rather similar. Both teams principally involved stakeholders to

Table 3
Impacts of the participatory strategy in the Sustainable City project on salience, legitimacy and credibility.

Salience		Legitimacy		Credibility	
+	–	+	–	+	–
Facilitating more coherent policy development on urban sustainability	No relevant policy messages formulated, also due to changing policy circumstances and lack of political momentum	Developing images of a sustainable city that are respectful of diverse views and concerns in society Creating commitment from stakeholders to the project	Lack of clarity and transparency of the foresight process, partially due to parallel trajectories	Contributing to richer narratives of a sustainable city	Difficulties in processing the research material in a systematic and well-balanced manner

Table 4
Impacts of the participatory strategy in the Nature Outlook project on salience, legitimacy and credibility.

Salience		Legitimacy		Credibility	
+	–	+	–	+	–
Anticipatory efforts intertwined with sociopolitical momentum and openness of policy process ensure connectivity of the long-term perspective of the project to short-term policy needs	Concerns about the study's property to think about how the world might be different: scenarios reflect present-day policy framings	Ownership of the four nature perspectives is created among social actors	Alternative nature perspectives legitimate the political tendency to question nature policy; PBL enters the political battle field	Framing the four nature perspectives as appealing metaphors in a simple framework opens up the nature policy discourse to alternative perspectives	Concerns about arbitrariness of the four perspectives and the rigour of impact calculations

accommodate uncertainties on how the future should look like and to capture different ideas about respective solutions and actions needed in the short term. Stakeholder input was considered essential to ensure the *credibility* of foresight knowledge. The PBL researchers designed their projects in iterative process cycles of stakeholder activities – workshops, dialogues, interviews – and 'back office' activities including modelling, literature study and spatial design activities to encourage reconciliation across knowledge forms, sources and methods during the foresight process. While the research team in the SC project experimented with analytical-deliberative working (Dassen, Kunseler, & Michiels van Kessenich, 2013), the NO project team partially drew upon their experiences and systematised the policy-oriented foresight approach using a scenario cycle framework (Dammers, 2010). At the same time, the policy relevance of the projects was explicitly pursued, as mentioned in the problem statement of the project plans, through interaction with clients and other potential users by inviting them for participation in the stakeholder activities. Moreover, communication and dissemination strategies were developed as part of the project planning. The user orientation was expected to foster the *salience* of their work. The stakeholders in both projects were carefully selected to ensure diversity among the group of stakeholders to capture various domains, interests and expertise. Moreover, project team members were selected among various disciplines including e.g. sociology, public administration, environmental modelling, ecology, etc. to capture the wide range of qualitative and quantitative expertise needed. To facilitate transparency in the process and to create commitment among stakeholders the NO project created an interactive website for posting working documents and newsletters. The SC project prepared readers to inform the stakeholders about the progress. These procedural activities were undertaken to ensure the *legitimacy* of the foresight processes in both projects.

Therefore, both project teams made concrete design choices with respect to the interaction with stakeholders and users, thus using stakeholder participation in order to achieve legitimacy, salience and credibility.

4.2. Dynamics in the research setting

Whereas the well-considered designs of the two projects demonstrate the attempts of the project teams to generate salient, credible and legitimate foresight knowledge, dynamics in the research setting – including changes in the socio-political context and internal dynamics of the participatory efforts – affected the salience, credibility and legitimacy of the knowledge generated in the two projects.

4.2.1. Case 1 – Sustainable City project: openness to diversity

Building upon PBL's methodology for sustainability assessment (de Vries & Petersen, 2009; Petersen et al., 2006); reflected upon in (Petersen, Cath, Hage, Kunseler, & van der Sluijs, 2011), the project was initiated mainly out of methodological and knowledge development interest. From previous PBL projects, it had become clear that values and beliefs about the way societies sustain quality of life had to be explored more interactively, and accordingly stakeholders were engaged to explore their value orientations towards sustainability problems. Exploratory conversations with scientists and local policy practitioners demonstrated a variety of insights and views about the meaning of sustainability in urban contexts when addressing three different themes: 'Health', 'Quality of life' and 'Energy'. Using participatory backcasting (designed according to Quist & Vergragt, 2006) and building on previous experiences in a pioneering foresight project on climate policy options (van de Kerkhof & Wieczorek, 2005), the project was designed as a participatory experiment which centred on several dialogue rounds involving approximately 100 stakeholders working on many different practical issues related to urban sustainable development.

Co-framing was considered essential for legitimacy purposes, that is, for developing images of a sustainable city that are respectful of diverse views and concerns in society, as well as for creating the necessary commitment from stakeholders to the project. At the same time, this co-framing approach attributed credibility to the project as it resulted in richer narratives, which accordingly improved the social robustness of the study. For example in the 'Health' theme the discussion shifted from the intended focus on quantifiable definitions of health in view of cause–effect relationships, to descriptive narratives about

happiness and self-reliance. The SC project team tried to encapsulate all stakeholder ideas throughout the steps of the foresight process, first of all in an array of desirable future images, secondly in coherent thematic roadmaps and thirdly in building policy scenarios for the purpose of urban systems simulation modelling and impact assessment on health, quality of life and energy. The project team experienced difficulties in processing the research material in a systematic and well-balanced manner. Normative and cognitive elements of the stakeholder ideas were mixed without clear logic in iterative cycles of divergence and convergence, affecting the perceived credibility of the study. Moreover, the project suffered from a lack of focus with too many parallel trajectories going on, not only having implications for the planning but also for the perceived legitimacy of the process: "the participatory backcasting approach was continuously supplemented with other methods and techniques", as one team member explained to us. The internal peers experienced the process as 'opaque', reflecting concerns about the legitimacy of the process. They mention that the project seemed "to get increasingly more complicated" with "insufficient profound analysis". Towards the end, the project made an explicit quantitative turn due to time constraints. In collaboration with external modelling companies, several SC project members 'fitted' the stakeholder ideas to model parameters, whereas other project team members did not grasp this translation step and 'got lost' despite their high commitment to the project.

An external reviewer suggested that the legitimacy and credibility troubles can be traced back to the conflict between the "technocratic orientation and quantitative methods 'traditionally' in use in scenario studies at the PBL and the deliberative orientation and qualitative methods suiting the participatory model of the project". This conflict was fuelled by disciplinary misunderstandings across the team members, which is explained by one team member in the following way: "team members with a social science orientation – including EK – favoured a discursive approach to explore the various positions in the debate and how these positions were shaped by language and practices, whereas the members with a natural science background adhered to a reductionist approach aiming for plausible scenarios of the ultimate sustainable city". Since this conflict in rationales was not made explicit despite clear signals such as differing opinions about the need for making detailed notes and argumentation analysis of the workshops, it caused a discrepancy in ideas about the purpose of the project and the research approach: "the project seemed to have a dual purpose, characterising and assessing the potential of urban sustainability on the one hand and raising societal awareness about the plurality of sustainability views on the other hand", in the view of an internal reviewer. Hence, there was a lack of common understanding among the researchers participating in the foresight process on how to integrate the quantitative and qualitative strategies, which reflects the co-existence of fundamentally different 'foresight cultures' at the PBL. In this case, the traditional quantitative foresight approach 'won over' the ambition to discursively express a plurality of urban sustainability perspectives (compare for example to van 't Klooster, 2007; van Asselt, van 't Klooster, et al., 2010).

As the project also aimed for policy-relevant outcomes, the research team had been in contact with the Directorate of Urbanisation. The policy-makers were open and eager to draw insights from the project to develop urban sustainability into a more coherent policy field. However, due to a reorganisation in the ministry, the Directorate ceased to exist halfway the project. Towards the end of the project, the researchers invited policy-makers from various policy units to discuss about urban sustainability. Nevertheless, these policy-makers were not open to accept or understand the complex 'helicopter view' of the project, since their orientation was rather fragmented, suiting their own policy issues. Moreover, the topic did not raise socio-political debate at that time. As such, the research team had no opportunities for timely delivery of input to political or societal processes. In the end, the outcomes of the project could not be traced down to relevant policy messages, accordingly affecting its salience.

In short, the co-framing strategy in the SC case was envisioned as part of a participatory experiment to enhance the legitimacy, credibility and salience of PBL's sustainability assessments. The process was complicated by a lack of systematic and transparent processing of the outcomes of the stakeholder dialogue and difficulties experienced in integrating qualitative and quantitative trajectories, which raised credibility and legitimacy concerns. Developments beyond the control of the research team – the policy context changed during the project – troubled the project's salience.

4.2.2. Case 2 – Nature Outlook: anticipating ongoing policy developments

At the start of the NO project, in 2008, the nature policy arena was dominated by an ecological development discourse focusing on the implementation of EU regulations. Triggered by the global economic crisis and subsequent financial cutbacks in Dutch nature conservation policy (among other environmental and planning issues) in autumn 2010, social actors in the nature policy arena gradually started discussing the problems of this dominant ecological discourse. The PBL actively participated in strategic policy discussions about the (implications of) financial cutbacks in nature policy. Since these discussions took place while the NO project was running, close connections and overlapping networks were established between the PBL researchers and stakeholders active in the policy debate and the researchers and stakeholders participating in the NO project. This way, elements of the initial body of thought from the NO project were already disseminated in policy and society. Simultaneously, it allowed the research team to become aware of the intricate political circumstances and sensitivities surrounding the policy debate. Especially since previous nature outlook studies had been criticised in this respect (Vader, Smits, Vreke, & Dagevos, 2004), the NO project team was particularly keen on ensuring connectivity with present-day policy and societal concerns. Accordingly, the NO team proactively responded to requests for additional reports, organised working sessions and gave presentations, even when these activities did not necessarily coincide with the scope and activities of the project.

Their anticipatory strategy required appropriate timing of interim publications and tailored presentations, accordingly asking high flexibility of the research team in the focus and planning of their work. The flexible course of the project caused

delay and misunderstandings among team members due to "a lack of clarity about the focus and the progress of the project" – as one team member explained it to us. For example "an explicit decision to develop alternative policy scenarios was made rather late in the project" – according to another team member. A further implication was that additional capacity and budget were needed to finalise the project.

Despite these managerial challenges, the salience of the NO project seems to have been effectuated by the continuous interaction with stakeholders and interim reporting and presentation activities. Overall, the stakeholders that we have interviewed indicated that the PBL played an important role in opening up the nature policy discourse to alternative perspectives. The four nature perspectives were framed as appealing metaphors and positioned in a 'simple' conceptual framework to support strategic thinking among actors involved in nature policy. The PBL researchers reported how attention to alternative perspectives of nature reframed the critical and pessimistic atmosphere in the politicised debate about the budgetary rearrangements in nature conservation policy. Discussing the potentials of alternative nature policy arrangements, raised new opportunities, which brought along a more open and positive atmosphere. The "political attention for nature triggered the functionality of the Nature Outlook study" in view of a member of the external supervisory board, and this enhanced its salience. PBL researchers indicated that the anticipatory strategy to ongoing policy developments was initiated and intensified during the project through personal efforts: "I actively pursued a seat at the policy table", as one member of the internal supervisory board pointed out. These anticipatory efforts initiated ad-hoc policy requests and NO project team members together with other PBL researchers had to produce "interim reports where the already available information was reported", as the project leaders explained to us. Hence, the project team was challenged to connect the long-term perspective of the NO project with short-term policy needs. Consequently, however "the scenarios tell more about the present-day policy framings than about the future", in view of a team member, which indicates that the salience of the study in terms of its futuristic difference may have been compromised by anticipating ongoing policy developments. Thus, among the participants, the impact of the anticipatory strategy on the study's salience was positively interpreted in terms of the study's facilitating role and its connectivity to policy needs, with some concerns in terms of its property to think about how the world might be different.

Similarly, we identified how our interviewees attributed different perceptions to the credibility of the study. Some PBL researchers argued that the anticipatory strategy had jeopardised PBL's independence, reflecting institutional-level credibility concerns. In the view of a member of the internal supervisory board, the perspective 'Tailored Nature' was added in the project to accommodate concerns about the economic value of nature, even though "it is unclear whose norms and values are reflected in this narrative and whether they are realistic and representative". Whereas another member of the internal supervisory board countered this concern by reflecting on the communication style: "the equal presentation of four nature perspectives sustains our independent position". Also at a methodological level, credibility concerns were raised as well as refuted. Several PBL researchers criticised the arbitrariness of the four perspectives: why these four and not others? Although selection criteria of 'internal consistency' and 'diversity' had been used by the project team – resulting in the removal of a fifth perspective – internal criticism remained. Concerns about the plausibility of the scenarios were raised, for example, the scientific quality of the impact assessments of the four nature perspectives was perceived as an issue of concern, since the rigour and the origin of impact calculations differed and accordingly the "nature perspectives were not assessed in an identical and comparable manner", as one team member explained to us. Concurrently he argued that credibility was not necessarily at stake, since each approach was "systematically processed and transparently explained using triangulation of knowledge sources: literature study, stakeholder activities and modelling work". Hence, the credibility perceptions differed according to the criteria one adhered to, informed by standards in qualitative or quantitative inquiry. These criteria were ambiguous and subject of debate, reflecting the co-existence of different 'foresight cultures' at the PBL (compare to case 1 and for example to van 't Klooster, 2007; van Asselt, van 't Klooster, et al., 2010).

During the project, nature had become a politically sensitive topic. Social concerns about the 'demolition of nature' appeared in media to raise attention to the negative implications of the budgetary rearrangements in nature policy. Unwittingly, "PBL entered the battle field" as one member of the internal supervisory board explained to us. Nature conservation-minded actors were of opinion that "the framing of values and concerns into four perspectives legitimised this political tendency". In their view, the PBL implicitly supported the policy rearrangements, compromising the study's trustworthiness. At the same time, the participatory efforts in the NO project also created 'ownership' of the four nature perspectives among social actors with tailored dissemination activities, accordingly increasing the study's legitimate role in facilitating strategic debate. Hence, the politicised setting affected the legitimacy attributed to the project by actors outside and within the PBL, both in a positive and negative way.

Therefore, by anticipating socio-political changes in the nature policy arena, the NO team increased the salience, credibility and legitimacy attributed to its output. At the same time, legitimacy and credibility concerns were raised, although the problematic nature of these implications seemed to have been outweighed by the high salience of the project in facilitating strategic debate.

5. Discussion and conclusion

Foresight researchers initially – consciously or unconsciously – designed their participatory activities in a comprehensive attempt to benefit the quality of the foresight knowledge. Engaging and interacting with various social actors was key in the teams' perception to ensure the legitimacy, credibility and salience of their work. However, in the implementation of the

foresight projects, the project teams encountered problems in balancing legitimacy, salience and credibility. In both projects, it has proven difficult to make deliberate choices about the focus and scope of research activities in response to changing socio-political contexts and internal dynamics of the participatory efforts in a way that simultaneously ensures the salience, credibility and legitimacy of foresight knowledge.

There was a tendency in the teams to focus on a particular quality attribute that was motivated by their experiences in previous projects, which demonstrates a path dependency in their quality perceptions. The participatory strategies enacted by the team enforced this tendency with positive and negative implications for the balancing process. The co-framing strategy in the Sustainable City project was motivated by a methodological ambition to explore value orientations on urban sustainability in a collaborative effort with stakeholders. The team put extensive efforts in ensuring the legitimacy of the stakeholder dialogues by engaging a diversity of social actors with different perspectives, knowledge and values on future urban sustainability needs. Co-framing implied that images and roadmaps of a sustainable city were formulated in interaction with the stakeholders. The team encountered problems in the reconciliation of the abundance of stakeholder ideas into narratives and assessment parameters. The explorative approach of the project team in using multiple analytic approaches additionally hampered the credibility of the study since the logic and consistency was missing. Because of the limited transparency and focus of the project, internal peers questioned the legitimacy of the knowledge that was produced. The salience of the project was perceived as low by the participating actors due to developments beyond the control of the research team – the policy context changed during the project.

The anticipatory strategy of the Nature Outlook team was motivated by the need identified from lessons learned of previous Nature Outlook studies to better ensure the salience of their work. The team actively pursued policy connectedness by strategically positioning itself *vis-à-vis* policy developments, that is, by anticipating them, to an extent. The team put extensive efforts in interacting with policy clients and other stakeholders to create appealing future visions, but also in disseminating and improving them 'in conversation with' actual policy debates about future nature policy. Although the anticipatory strategy had some negative implications for the process in the sense that high flexibility, more capacity and budget were needed, the strategy had generally positive implications for the outcome. This resulted in high salience attributed to the foresight knowledge. At the same time the team had to deal with contested credibility and legitimacy perceptions. The politicised setting caused legitimacy concerns with respect to the trustworthiness of the process, while the lack of comparable assessments of the four nature perspectives caused concerns regarding credibility. Since the relevance of the foresight study was perceived by all involved as extraordinarily high, remarkably, this impact seemed to overrule the credibility and legitimacy concerns that were posed.

Using two in-depth case studies, we illustrated that stakeholder participation by itself did not necessarily challenge salience, credibility and legitimacy, but complicated the process to some extent. The anticipatory strategy in the Nature Outlook triggered the team to prioritise interfacing, timely outputs and clear messages over other activities. Whereas in the Sustainable City case, openness to a diversity of stakeholder perspectives contributed to a more complex and in-depth assessment and reinforced the project's explorative orientation. The participatory efforts revealed different co-existing foresight cultures. Traditional quantitative foresight approaches were mixed with qualitative discursive approaches, while the inherently different quality perceptions adhered to these foresight cultures remained largely unreflected. Due to the experimental status of the Sustainable City project the process of the Sustainable City case was characterised by methodological debates, reflecting (implicit) discrepancy among the foresight researchers and their peers on how they should judge the validity of stakeholder knowledge (compare for example to (van 't Klooster, 2007; van Asselt, van 't Klooster, et al., 2010) who revealed positivist–constructivist tensions in policy-oriented foresight). These epistemic discrepancies were identified as lessons learned for interdisciplinary working and proved useful for the Nature Outlook team. The team managed to balance credibility and legitimacy to the extent that quality concerns were taken serious and internally debated. One important conclusion is therefore that innovative foresight projects only prove effective when issues over validity and quality are transparently addressed and debated.

This leads to the question how one can ensure that participatory processes add value to a (foresight) project. In this respect we can conclude that designing stakeholder participation in foresight activities alone cannot ensure legitimacy, credibility or salience. In contrast, it can jeopardise them, if there is no reflective positioning of the team with conscious strategies to counter-act emergent and unexpected problems.

One of the main challenges for futures practitioners is, therefore, to ensure that the diverse interpretations of salience, legitimacy and credibility are made explicit and are reflected upon by making tacit frames explicit (Schön, 1983), for example by addressing disciplinary preferences for foresight methodology. This is the first reflection step. Once practitioners notice that they actively construct the reality of their practice they become aware of the variety of perspectives available to them. Cultural and psychological self-reflexivity enables foresight researchers to critically examine the collective, intersubjective elements of the foresight practice they are embedded in (Hedlund-de Witt, 2013). Foresight researchers should acknowledge the multiplicity of understandings, as well as their conditional nature. In this way, it is possible to reflect upon the plurality of legitimate interpretations of foresight practices (Stirling, 2006). Stakeholder participation can help attune reflective futures practitioners in the first reflection step, by providing such a plurality of perspectives. This way, stakeholder participation does not become a problem for balancing legitimacy, credibility or salience, but can benefit the effectiveness of foresight knowledge as it is intended for. We suggest follow-up research to attend to the quality perceptions that stakeholders – and in particular users – attribute to salience, credibility and legitimacy. Their expectations influence the room for cultural change in policy-oriented foresight settings (van Asselt, van 't Klooster, et al., 2010).

Another challenge for futures practitioners is to strategically position themselves towards changing circumstances, which involves that futures practitioners remain open to changing socio-political circumstances and engage in a 'conversation with the situation' (Schön, 1983). This is the second reflection step. What allows this to happen is that practitioners acknowledge the external influences on the foresight process. The Nature Outlook team pursued salience by positioning itself *vis-à-vis* policy developments triggered by political circumstances in need of visionary input about alternative nature perspectives, to consciously ensure this salience, through interaction with relevant stakeholders. Further research to explore the influence of (changing) socio-political circumstances on foresight practices is needed as it has been relatively unaddressed in foresight literature. Whereas it is argued that the impact of foresight can be facilitated *by* foresight researchers when they design the process and formulate foresight knowledge in a responsive way to fit political and organisational cues (van der Steen & van Twist, 2012), vice versa the influence of dynamics in the policy setting *on* foresight processes remains largely unexplored. Stakeholder participation can help in raising contextual awareness. While integrating politics in the design of policy-oriented foresight may help to embed the process within broader political and organisational contexts and safeguard against domination and capture by powerful actors (Voß & Bornemann, 2011).

To conclude, how can reflection be made practical to convince foresight scholars and futures practitioners with various epistemic backgrounds to act accordingly? We suggest the use of a more comprehensive repertoire of mixed methods and tools in (policy-oriented) foresight in combination with a pragmatist orientation to 'what works' using a meta-paradigmatic perspective (Creswell, 2003; Hedlund-de Witt, 2013; Morin, 2008). This way, foresight researchers become 'reflective futures practitioners', capable of balancing salience, credibility and legitimacy in generating foresight knowledge in interaction with stakeholders.

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