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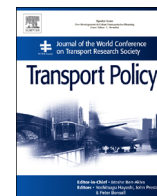
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Using cost benefit analysis as a learning process: identifying interventions for improving communication and trust



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ABSTRACT

Integrated transportation plans require assessment approaches that can adequately support their multi-dimensional, context-specific needs. The suitability of cost benefit analysis (CBA) for answering this need has been studied in recent research: an analysis of participant perceptions in the Netherlands showed several problematic process issues when assessing integrated transportation plans with CBA (Beukers et al., 2012). CBA was perceived by the participants as a final test, in contrast to the desired outcome of using CBA as a learning tool to optimize the plans. Furthermore, the two main groups of participants (plan owners and evaluators) appeared to hold different and sometimes clashing rationales. This clash was expressed through lack of communication and mutual trust.

Using a literature review of the fields of deliberative planning and organizational learning to explore how to improve communication and build trust, this paper provides a deeper understanding of the process issues at hand and contends that strong communication and trust between plan owners and evaluators are crucial conditions for employing CBA as a learning tool. Finally, based on these theoretical insights, this paper proposes an approach for supporting the practical use of CBA as a learning tool.

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1. Introduction: unsuitable assessment

Transport planning has a strong and persistent focus on technical and quantitative information (Willson, 2001), which is a problematic characteristic for at least two reasons. First, issues like quality of life and sustainability have become core subjects of public debates about transport plans. Second, and relatedly, transport planning is no longer an isolated profession. Integrated approaches that combine various aspects (e.g., local economic development, social equity, environmental preservation) are becoming increasingly relevant (Bertolini et al., 2005; Banister, 2008; Straatemeier and Bertolini, 2008). This shift has altered the demands posed on assessing transport plans (Handy, 2008; Willson, 2001), requiring multiple dimensions and context specificities to be taken into account (Curtis, 2008; Hull et al., 2011). Commonly used, conventional assessment tools appear ill-suited for the task.

The Netherlands is a case in point. In the Netherlands, cost benefit analysis (CBA) is a mandatory tool for assessing transport plans that request funding from the national government (Ministry of Transport and Water Management and Ministry of Housing Spatial Planning and the Environment, 2009). However, it has been questioned whether CBA, with its origins in welfare economics, can actually be used to assess the multi-dimensional content of integrated plans

(Annema et al., 2007; Jong and Geerlings, 2003; Beukers et al., 2012; Mackie, 2010; Naess, 2006; Mackie and Preston, 1998).

In addition to these content issues, the process of applying CBA for such plans is often hampered by several additional issues rooted in the changing planning context (Sager and Ravlum, 2005; Martinsen et al., 2010; Eliasson and Lundberg, 2010). As an analysis of practitioner perceptions revealed, the CBA was perceived mainly as a final examination of the plan's fulfillment of CBA criteria, as a formality, leading some plan owners to see it as just another obstacle to overcome (Page et al., 2009; Beukers et al., 2012). This, however, limits the opportunity to utilize CBA assessments to optimize plans. In the process of developing integrated transport plans, it is important to be able to continuously adapt the plan's goals and means based on emerging insights. This learning process is desired by planning practitioners, but not well supported by instruments such as the CBA (ECMT, 2004). Furthermore, the analysis revealed that CBA processes are often characterized by two opposing groups: plan owners on one side and evaluators on the other. A lack of communication and mutual trust between these groups leads to strongly opposing rationales (Beukers et al., 2012).

This paper seeks to understand how the aforementioned problems can be overcome, through a literature review addressing the question: Which are promising interventions and mechanisms for improving CBA process issues, specifically improving communication and trust between plan owners and evaluators? In Section 2, a conceptual framework is first formed to provide an

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understanding of the relationships between the different process issues. This is the starting point for a review of theories in Section 3. In Section 4, these theoretical lessons are then synthesized into an approach for improving the CBA process. The paper closes with some concluding remarks in Section 5.

2. Communication, trust, and the use of CBA as a learning process

This section addresses the importance of communication and mutual trust between plan owners and evaluators for the use of an assessment device as a learning tool in a changing planning context, and how these variables are interrelated. This gives a better understanding of why the lack of communication and trust is a significant impediment to the desired use of CBA in a learning process.

2.1. Communication and trust as conditions for learning from assessments

In response to failures of the technical-rational paradigms of planning, more communicative-rational approaches (like communicative or deliberative planning) are being introduced in planning theory and practice (Allmendinger, 2002). Within this development, the central issues of evaluation have also changed. According to Khakee (2003, p. 345), the aim of evaluation has been expanded from measuring all performances of a plan or program to facilitating learning. Evaluation may be seen as a cognitive process in which social realities are constructed and actors develop self-reflective learning abilities, find unexpected meanings in their actions, and build up networks of people, actions, and thoughts (Selicato and Maggio, 2011):

Research shows [...] the need to consider evaluation not as the final outcome of administrative actions, with the aim of approving or rejecting the contents of a given planning tool, but as a work methodology, a "process of gradual learning" [...] to increase the awareness of the choices taken, within the context of the decision-making process. (Selicato and Maggio, 2011, p. 173)

Expanding on this point, an increase of stakeholder engagement and openness in decision making is seen as promoting demands for the intensification of the participatory dimension in assessment processes (Kidd and Fisher, 2007). Likewise, Saarikoski (2000, p. 5) explored the integration of participation into environmental impact assessments (EIAs), not just as a supplement, but as

[...] A collective process where different actors—affected citizens, interest groups, authorities, and experts—can deliberate and exchange their views of the goals and their knowledge on the impacts of the proposed developments.

In order for EIA to support a learning process, participants should be allowed to discuss the conclusions and collectively seek out mutually agreeable solutions.

This articulation of assessment tools as supporting instruments for learning processes showed the need for organizing an inclusive discourse in which those who are involved can explain and share their values, problems, and concerns in an open decision-making process. This relates to how actors communicate, how individual knowledge (tacit and explicit) can be shared and integrated, as well as the importance of mutual trust and a trustworthy environment. The changing planning context therefore calls for reassessment of the application of CBA (as with other assessment methods) with a high level of communication and trust between participants as preconditions for supporting learning. In the

remainder of this section, we will further explore these concepts and the relationships between communication and trust.

2.2. Interrelatedness of communication and trust

Communication is a muddy and dynamic concept with many definitions (Littlejohn and Foss, 2008). In this paper, we will follow Lievrouw and Finn's (1990, p. 49) definition of communication as

human behavior that facilitates the sharing of meaning and takes place in a particular social context. Any interacting set of social and technical structure which facilitates the sharing of meaning among people is a communication system.

Within the CBA process, communication takes place mainly between plan owners and evaluators as a form of interpersonal communication or small group communication. Interpersonal communication relates to interpersonal behavior and relationships (Miller, 1978): at least two actors are involved, there is close physical proximity, many communication channels (modes) are available, and there are optimal conditions for immediate feedback. During this type of dialogue, i.e., face-to-face communication, concepts are built in cooperation with others, providing the opportunity for one's assumptions to be tested (Nonaka, 1994).

As with communication, the literature on trust is diverse and entails different perspectives:

Economists tend to view trust either as calculative or institutional. Psychologists commonly frame their assessments of trust in terms of attributes of trustors and trustees and focus upon a host of internal cognitions that personal attributes yield. Sociologists often find trust in socially embedded properties among relationships among people and institutions. (Rousseau et al., 1998, p. 393).

Nevertheless, the literature agrees that trust is important in several ways: it enables cooperative behavior; it promotes adaptive organizational forms, like network relations; it reduces harmful conflicts; it decreases transaction costs (e.g., a business transaction); it facilitates rapid formation of working groups; and it promotes effective responses to crises (Rousseau et al., 1998). Furthermore, trust is in its essence relational because the interests of one party cannot be achieved without reliance upon another (Rousseau et al., 1998). Gambetta clarified this relationship:

A (the trustor) trusts B (the trustee) with regard to X. Trust is A's subjective assessment of the probability that B will act as agreed when B's actions significantly affect A, independently of A's capacity to monitor B's actions. (as cited in Laurian, 2009, p. 371).

Whereas the communication literature emphasizes the importance of forming relationships, the trust literature describes how trust is a necessary component for establishing such relationships. The trust literature thereby sees communication as necessary for building trust: through communication, people can get to know each other better and relationships can take shape and become more personal, subsequently increasing the degree of interpersonal trust (Miller, 1978). Interpersonal communication and interpersonal trust are thus interrelated concepts, as recognized by several planning scholars. For Stein and Harper (2003), trust is essential for community, social, political, family, and even linguistic relations; it is a necessary precondition for any kind of communication, cooperation, understanding, knowledge, or learning. Thus, trust is also essential for the work of planners, promoting communicative performance and mutual understanding (Healey, 1999). Laurian also emphasized the interrelatedness of trust and communication:

While trust is necessary for open communication and collaboration, open communication and collaboration are also preconditions of trust. [...] When participants trust each other (even if they hold

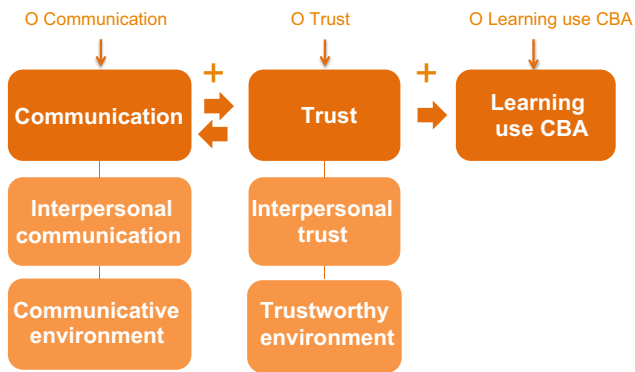


Fig. 1. Conceptual model on communication and trust conditions for increasing the use of CBA as a learning tool.

different values or goals) and trust the fairness of the process, they are more likely to communicate actively, listen empathically, and work toward consensual solutions (Laurian, 2009, p. 382).

2.3. Communication and trust as conditions for the use of CBA as a learning process

The literature on evaluation emphasize that assessments should facilitate a learning process in which planning ideas, means, and ends are progressively constructed by participants. Such an approach entails active and engaged participants who communicate with and trust each other. Moreover, the literature explained that communication and trust are intertwined. Combining these insights, we can state that the levels of interpersonal communication and trust need to be increased in order to achieve the participants' desired outcome of using CBA as a tool to support learning processes. This forms the basis for the conceptual framework illustrated in Fig. 1.

The conceptual framework focuses on communication and trust between plan owners and evaluators, the interrelatedness of these variables, and their relation to the use of CBA as a learning tool. There are, however, also other plausible influences, for instance the power balance between plan owners and evaluators in the CBA process, or the specific timing of the CBA in the planning process (if it happens when planning legislation or policy rules still permit changes of the plan due to a learning process, for example). These alternative explanations, though, are not within the scope of this paper.

3. Improving communication and building trust between experts

Section 2 asserted that communication and trust are crucial conditions for using CBA as a learning process. Additional insight is needed on how to fulfill these conditions. The aim of Section 3 is to use a literature review to identify the most promising interventions and mechanisms for improving communication and trust between plan owners and evaluators.

The literature review thereby concentrates on the research fields of deliberative planning and organizational learning, two fields with rich ideas on improving communication and trust. Although deliberative planning theorists mainly focus on improving communication processes between planners and the community (see Innes and Booher, 2010; Bickerstaff and Walker, 2005; Huxley and Yiftachel, 2000; MacCallum, 2008; McAlister, 2010), their work provides valuable insights into improving communication and trust between multiple experts. The research field of organizational learning also provides valuable insights, as it

has developed an understanding of how interactive and shared knowledge within organizations can be created (Nonaka, 1994; Argyris, 1991). Planning, evaluation, and CBA processes can be considered as temporary organizations, which makes the literature on organizational learning relevant (Te Brömmelstroet and Bertolini, 2008; Suárez-Herrera et al., 2009).

The literature selection followed two criteria: most frequently cited publications and publications that provided innovative ideas on communication and trust building. In processing these publications, all lessons on how to improve communication and trust between different kinds of experts were first identified and then grouped based on the similarities in their reasoning. In order to preserve the richness of the initial selection, all the directions on communication and trust identified prior to this grouping are presented in Appendix A.

3.1. Communication and trust in deliberative planning

3.1.1. Open conversation

Much effort has been made by deliberative planning researchers to understand and effectuate Habermas' ideas on open conversation among diverse people (through which shared truths and values can be established). Using Habermas' social theories for shaping places and forming policy, Healey (1999) argued that a precondition for conversation is the acceptance of a degree of collaboration and reciprocity. This means being open to the opinions of others and accepting that there is no absolute truth, that truth and values are the outcome of social interaction within specific contexts.

According to Innes (1998), a fruitful communicative process asks participants to not only accept and address formal knowledge, but also make an effort to include other types of knowledge, like their own experiences, personal stories, and intuition. Furthermore, she stated that:

[...] we need appropriate rules, parallel to those of the scientific method, to ensure that the products of these discussions are acceptable and socially worthwhile, as well as properly informed. (Innes, 1998, p. 60)

These rules prescribe that the individuals representing all important interests must be at the table; that all must be equally empowered in the discussion; that power differences from other contexts must not influence who can speak or who is listened to; that the discussion must allow all claims and assumptions to be questioned and all constraints to be tested; and, finally, that the group should seek consensus (Innes, 1998).

3.1.2. The planners' communication experiences

Another seminal description of communication strategies can be found in the work of Forester (1987). He elaborated that planners have to deal with distrust – between stakeholders and planners and among the stakeholders themselves. Building trust therefore appeared to be an important element of the planners' tasks. They needed to listen carefully and make assurances that the thoughts and feelings of all stakeholders were acknowledged and respected. According to Forester (1987), the planner should not behave arrogantly (as a know-it-all) nor as a neutral party, but rather act as a diplomat. Furthermore, the planner had a role in preparing the stakeholders to face each other and prevent unpleasant surprises by helping the stakeholders formulate their objectives and arguments in preparation for the discussion.

In a later study, Forester (1999) stressed that deliberative planning is about acting and learning together, building relationships and finding win-win situations. This entails several behavioral challenges: to be close and keep a distance at the same time; to show empathy and critical judgment; and to recognize and

respect – rather than dismiss – human emotions like anger, fear, impatience, and suspicion.

Deliberative action thereby requires a “dialogue space,” i.e., meetings, negotiations, discussions, project reviews, hearings, and informal meetings that bring affected citizens, regulators, developers, and public officials face to face. Furthermore, communication modes and attributes can also function as a dialogue space, as illustrated by Forester (1999) by the role of using a sketch of a plan: the provision of some boundaries and a clear topic helped the participants to clarify what they meant, to share and sharpen their arguments, and to focus the discussion. Thereby, the essential precondition for using a sketch, plan, evaluation, or other mode to foster a deliberative process is not to present it as *the* ultimate sketch or plan, but as a work in progress.

3.1.3. Collaborative dialogue

Innes and Booher (2003) shared insights for many communication and (to some extent) trust building lessons that can achieve a collaborative dialogue. Basic preconditions include listening to others, treating others with respect, looking for common interests rather than differences, and challenging assumptions. Thereby, parties must begin with sharing their interests rather than their positions, learn about each other, seek win-win solutions, and accept that there is tension between cooperation and competition as well as between advocacy and inquiry in collaborative public policy processes. When stakeholders explain their own situation and needs, they may learn about their interdependence and the need to negotiate. Furthermore, participants also need to interact with one another, for example in brainstorming or scenario building. Scientists and agency staff need to be engaged with lay people who can challenge assumptions and analyses by using their local knowledge.

To achieve this collaborative dialogue, a professional facilitator plays a critical role in ensuring that the group members make a shared analysis of interests and conflicts, do joint fact-finding, address issues deeply, and feel comfortable and safe in sharing their thoughts. Moreover, participants have to be stimulated to think outside of the box as well as to be willing to put forward “half-baked” ideas (Innes and Booher, 2003, p. 46). A facilitator can stimulate this by asking for clarifications or examples when needed, or by challenging assumptions and the status quo.

3.1.4. Spatial strategy making

Healey has developed several ideas on communication and trust building between multiple experts related to ideas of “spatial strategy making.” Spatial strategy making happens in social construction sites or arenas, where what is considered significant and possible is explored, conceptualized, symbolized, and tested in various ways (Healey, 2007, p. 236). This asks for a specific approach to the production of knowledge and understandings that should be shaped by situations, trajectories, activities, and values of particular social groups (Healey, 2007, p. 243). Spatial strategic ideas need to be validated and legitimized in an interactive way through social encounters, discussion, debate, and exchanges of thoughts (Healey, 2009, p. 452). This is especially relevant when different stakeholders with multiple frames of reference, rationales, and values are involved. Besides recognizing the value of multiple sources of knowledge, it is important to maintain an open-minded stance, i.e., actively seek out multiple perspectives, challenge established assumptions, and cultivate debate among different viewpoints.

Healey (2009, p. 453) formulated guiding dimensions that characterize the process steps in transformative spatial strategy making: mobilizing attention, scoping the situation, enlarging intelligence, and creating frames and selecting actions. In

mobilizing attention, the aim is to reorient attention to issues behind immediate agendas, highlighting neglected opportunities and challenges. When scoping the situation, the aim is to identify where the energy for change exists and to build coalitions for change to expand this energy. In enlarging intelligence, the focus is to access multiple sources of knowledge to explore and recast agendas of problems, issues, and potential actions and stakes. Creating frames and selecting actions imply articulating strategic ideas, within which specific issues and actions can be prioritized and given justification and coherence.

3.1.5. Planning and trust

Despite the rising interest in trust issues, this topic remains underrepresented in the field of planning (Stein and Harper, 2003). This is somewhat paradoxical, as the importance of trust has increased with the communicative and collaborative turn in planning. As noted by Ehrman and Stinson (1999), while consensus does not require common values, it does require the existence of trust among stakeholders, agencies, and mediators.

However, Laurian (2009) gave several directions for building trust, for example through face-to-face interactions and sharing decision-making power. Through sharing decision-making power, an agency (like a planner) displays trustworthy behavior and can reduce the distance between experts and non-experts. Information sharing, deliberation, and democratic governance – geared towards enabling shared decision-making – thus provide support to the emergence of trust, and planners can play an integral role in this process (Laurian, 2009, p. 375; Switzer et al., 2013). Another way to facilitate trust (or to mitigate distrust) is to use mediators to support open and effective communication. Moreover, Laurian emphasized that Habermas' ideal speech conditions for undistorted communication also support trust, namely through comprehensibility, truthfulness, sincerity, legitimacy, equal standing, and respect for all forms of knowledge, inclusiveness, openness and transparency, mutual disclosure, and information sharing.

3.1.6. How to improve communication and build trust according to deliberative planning literature?

The cited deliberative planning literature shows that there are plenty of ideas on how to overcome problems related to communication and trust. These lessons on building communication and trust are grouped in Appendix A and summarized in Tables 1 and 2.

3.2. Communication and trust in organizational learning

Organizational learning focuses on finding ways to facilitate the fragile transmission of knowledge between individuals within an organization. According to Akgün et al. (2003), knowledge develops from and is manifested by a complex web of relationships and social activities among people for which culture, communication, and group activities in organizations are of utmost importance.

3.2.1. Knowledge creation

Nonaka and Takeuchi (1995, in Nonaka et al., 2006) formulated four stages for knowledge creation, i.e., the transformation of knowledge from “being” to “becoming” in an interactive process. In such knowledge conversion, personal knowledge is validated, connected to, and synthesized with the knowledge of others (Nonaka et al., 2006, 2000). This process evolves in four stages – socialization, externalization, combination, and internalization (SECI) – which link and transform tacit knowledge (i.e., personal, subjective, experiential) and explicit knowledge (i.e., universal, objective, codified). Socialization aims to share tacit knowledge among individuals; externalization aims to articulate tacit knowledge into explicit concepts; combination aims to combine

Table 1
Directions for improving communication in deliberative planning.

-
- (1) Have an open approach to all knowledge:
 - (a) Exchange different kinds of knowledge, feelings, and interpretations
 - (b) Allow all knowledge in the discussion and allow it to be questioned
 - (c) Give attention to issues behind immediate agendas
 - (2) Behave appropriately:
 - (a) Have an open perspective towards each other
 - (b) Have an open attitude to changing one's own assumptions and understandings
 - (c) Behave actively by asking questions and listening carefully
 - (3) Have interaction:
 - (a) Create shared and embedded knowledge and understanding
 - (b) Have all stakeholders involved, empowered, and engaged in interaction
 - (c) Act and learn together to develop close relationships
 - (d) Focus on shared interests and win-win solutions
 - (4) Have a supportive, communicative context:
 - (a) Create a safe environment for participants to speak their mind
 - (b) Prepare stakeholders for a constructive discussion and formulate arguments beforehand
 - (c) Create a dialogue space
 - (d) Use familiar dialogue modes
 - (e) Use a mediator
-

Table 2
Directions for building trust in deliberative planning.

-
- (1) Show trustworthy behavior:
 - (a) Do not behave arrogantly
 - (b) Fulfill promises
 - (c) Listen carefully and focus attention first on the speaker and then on the words
 - (d) Share information and decision-making power
 - (e) Communicate comprehensively, truthfully, sincerely, supportively, and legitimately
 - (2) Have interaction:
 - (a) Acknowledge and respect all knowledge, thoughts, and feelings
 - (b) Build relationships
 - (c) Use a dialogue space
 - (d) Use a mediator
 - (3) Prepare participants to take part in the discussion:
 - (a) Prevent confrontation and unpleasant surprises
 - (b) Formulate arguments beforehand
 - (c) Mention objectives from all stakeholders
-

different entities of explicit knowledge; and internalization aims to embody explicit knowledge into tacit knowledge.

This process of SECI is related to the concept of *ba*: a shared space for emerging relationships as the environment for knowledge creation, requiring the sharing of individual experiences as well as reflections on the experiences of others (Nonaka and Konno, 1998). The concept of *ba* knows different stages that follow the different steps in the SECI process. The first stage of *ba* is meeting face-to-face and sharing emotions, feelings, experiences, and mental models. This represents the socialization of individuals. This interactive *ba* supports externalization and combination, and through dialogue the mental models and skills are probed, analyzed, and converted into common terms and concepts. Then, in the next stage of *ba*, the individual's internalization

of explicit knowledge is supported, for example through training with instructors or colleagues or with repetitive exercises to engrain specific behavior (Nonaka et al., 2006, 2000).

3.2.2. Double-loop learning

Also central to organizational learning are insights on double-loop learning, which explain why it is difficult for organizations to change internal structures and truly solve problems (and cover them up instead). To detect and correct errors in an organization, double-loop learning publicly questions underlying policies and goals, assumptions, norms, and objectives (Argyris, 1977, 1991).

A critical factor is creating awareness of existing positions. To change individual assumptions, people need to become aware of their internal maps and see that some assumptions are counter-productive to learning. Moreover, it is necessary to produce new assumptions by combining articulated views with questions posed by others. All participants must acknowledge their own mistakes, recognize defensive behavior, and engage in open dialogue. Workshops and seminars are useful for stimulating this change, i.e., moving from old assumptions to new and shared assumptions. In such learning processes, people should advocate their views in a way that invites confrontation and challenges to existing positions as well as public assessment of these positions (Argyris, 1977).

3.2.3. Reflection-in-action

According to Schön (1983), it is essential for professionals to reflect on their thoughts during a learning process, because thoughts influence actions and vice versa. Past experiences – from different and similar situations – are used to guide actions, in addition to learned knowledge (see also Flyvbjerg, 2001 on how professionals reflect in action). This is phrased by Schön as “tacit knowing” or “reflecting-in-action” (Schön, 1983, p. 54). However, the actor may not be aware of this reflecting-in-action and may even ignore it.

Schön (1983, pp. 231–232) gave several directions for achieving this reflecting-in-action, stating that it is necessary to give and get valid information and speak in directly observable categories, thus providing information, data, reports, and speech that are open to disconfirmation. Furthermore, Schön underlined the urgency in the reflective process to create awareness of the values at stake and of the limits of one's capacities. There is also the need to make designing and managing a multilateral task and involve several parties to work towards freedom of choice and internal commitment. Also, a protected environment is needed to ensure that no one withholds negative information or prevents testing this information and assumptions publicly.

Practitioners use various modes to reflect on their action, such as media, languages, conducting experiments, and repertoires (theories, role playing, storytelling) to describe reality. Independent of the modes used in reflection-in-action, it is important that different practitioners are familiar with the modes they use when working together. Furthermore, reflection-in-action requires a social context that supports reflective actions as well as cooperation with other reflective practitioners or clients. For example, the classical professional–client relationship, where the professional has all the authority and the client submits to it, is not seen as productive. In reflecting-in-action, the client participates in a reflective conversation with the professional, thus providing valuable input. This asks the expert to not act arrogantly and to encourage the clients to share their thoughts and feelings. It asks for a different attitude by the client, not to passively expect the expert to solve the client's problem but rather to engage in a dialogue, ask questions, and question the expert's knowledge, all without hostility (Schön, 1983, p. 300).

3.2.4. Organizational learning and trust

Many studies in organizational learning focus specifically on trust: how it relates to innovations, contracts, competitiveness, institutions, teamwork, group performances, or cooperation (Peters and Karren, 2009; Jones and George, 1998; Bachmann and Inkpen, 2011; Erhardt, 2011), and how to build trust in an organizational context (Six and Sorge, 2008; Mayer et al., 1995; Abrams et al., 2003; Lander et al., 2004; Edelenbos and Klijn, 2007).

Edelenbos and Klijn (2007) explained that trust is generated in social interaction and is influenced by existing codes and institutional rules, and vice versa. Trust develops especially in embedded relationships, through stable, frequent, and tight interactions. They emphasized that trust is fragile and needs to be nurtured and maintained following three key guidelines: create reciprocity in the relationships and repeated interaction; stabilize and manage interactions, for example through mediators and facilitators; and design process rules to frame risk and opportunistic behavior, to decide on what to do when in conflict, how benefits are distributed, and what to do if one of the involved actors wants to change the relationship.

Abrams et al. (2003) espoused a more abstract view on building trust. When engaged in a network for sharing information and creating knowledge, they noticed benevolence and competence as two important dimensions of trust. Benevolence is related to the experiences of caring and being interested in the well-being of others and their goals. Competence relates to the notion that one has relevant expertise. Abrams et al. highlighted the following factors that promote trustworthiness (Abrams et al., 2003, p. 68): act with discretion so that people feel safe in sharing confidential information; be consistent in words and deeds; ensure frequent and rich communication on a personal as well as on a professional level; engage in collaborative communication in which both sides feel free to share and really listen to each other's thoughts and ideas; ensure that decisions are fair and transparent; establish and ensure a shared vision and language; and disclose your expertise and limitations by being open about strengths and weaknesses.

Another variation of trust building factors is given by Lander et al. (2004, p. 512), asserting that trust building was influenced by repeated and positive interactions, integrity (being forthright and truthful in interactions and fulfilling promises), and perceived reputation. Moreover, communication was to them the most relevant factor in building trust. It enabled the sharing of relevant information and knowledge, the provision of timely feedback, the creation of a common language, the creation of a shared vision, and explanations for decisions. Besides communication, Lander et al. (2004) noticed that sharing control and responsibility was perceived as an act of trust.

3.2.5. How to improve communication and build trust according to the organizational learning literature

The cited literature from organizational learning showed a wide range of (partly overlapping) views on and approaches to communication and trust. Tables 3 and 4 summarize these views. A more detailed overview can be found in Appendix A.

4. An applicable approach for CBA processes

The literature review addressed comprehensive ideas on how to improve communication and build up trust between different types of experts. The review found that deliberative planning and organizational learning share many insights and confirmed that communication and trust are interrelated concepts asking for similar actions and attitudes. Although these communication and trust building insights are mostly quite applicable, it remains a challenge to implement them in CBA practice and to explore how

Table 3

Directions for improving communication in organizational learning.

-
- (1) Interpersonal behavior:
 - (a) Have an open attitude towards testing assumptions
 - (b) Have an open attitude towards learning, including from "risky" ideas
 - (c) Be explicit and accurate
 - (2) Interaction:
 - (a) Share and combine tacit and explicit knowledge
 - (b) Define means and ends together and interactively
 - (c) Ensure that all actors meet, discuss, and become engaged in a knowledge creation process
 - (d) Use various conversation modes that are familiar to all practitioners, such as sketches
 - (3) Organizational context:
 - (a) Adopt a leadership style open to transformation and sharing of decision-making
 - (b) Establish a supportive structure through stability of team members, learning procedures, training
 - (c) Create a safe environment and cultivate emerging relationships
-

Table 4

Directions for building trust in organizational learning.

-
- (1) Personal awareness of others and trustworthy behavior:
 - (a) Be aware of preconceived positions and be open to discussing them
 - (b) Have trustworthy behavior: act sincerely, act discretely, really listen, be honest about expertise and limitations, give compliments, address "troublemakers" directly
 - (c) Fulfill promises
 - (2) Interaction and forming of relationships:
 - (a) Collaboratively create knowledge through communication
 - (b) Have stable, frequent, and informal interactions to form relationships
 - (c) Form a shared language or vision
 - (3) Trustworthy environment:
 - (a) Share control
 - (b) Make fair and transparent decisions
 - (c) Make rules to frame risks, opportunistic behavior, and methods of dealing with conflicts
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they can improve the levels of communication and trust in CBA processes. With this objective in mind, we have structured and translated the identified insights into an applicable approach for CBA processes with the help of the CIMO framework (context, interventions, mechanisms, and outcome), introduced by Denyer et al. (2008).

The CIMO framework states that within a specific context (C), interventions (I) can be used to trigger the necessary mechanisms (M) in order to get a desired outcome (O). The interventions thereby inform which concrete actions are needed to trigger the mechanisms, whereas the mechanisms reveal how something works and how the different elements function in relation to each other. Following the reasoning of the CIMO framework, it is expected that within the *context* of a CBA process, applying the right communication and trust *interventions* will trigger the necessary communicative and trust *mechanisms* that will lead to the desired *outcome* of improved communication and trust between plan owners and evaluators. This reasoning resulted in a synthesis of the insights from the literature review into five communication-improving and trust-building interventions with related mechanisms.

4.1. Interventions and mechanisms for improving communication and building trust

The first intervention advises the creation of a dialogue space where plan owners (those whose plan is going to be assessed in a CBA) and evaluators (conducting the CBA) meet face to face. This triggers the mechanisms by which plan owners and evaluators have the opportunity to get to know each other and build relationships, which enables them to better assess how the other will react in future interactions, thus building interpersonal trust. They may feel safer and may share more detailed information and listen more carefully. For example, plan owners may share doubts about assumptions used in the CBA and the evaluators might pay more attention to difficult-to-measure effects that are nonetheless important to plan owners. Then they may pay more attention to issues behind immediate agendas, ask and receive critical questions, and collectively change and build assumptions. This, for example, could help to crystallize the underlying problem analysis of the plan at stake: What is the actual problem (or opportunity) and how does the plan resolve (or fulfill) this?

The second intervention is to share and discuss the plan and CBA simultaneously and together. This triggers the mechanisms by which plan owners and evaluators can better understand each other's standpoints and see their shared interests, increasing opportunities for finding win-win solutions. They will know more information about each other (the plan and the CBA), which increases the predictability of how they might respond and therefore increases the interpersonal trust. This helps to create a more open and critical interaction, sharing even more knowledge and possibly changing one's own perspective based on the perspectives of others. This could help to decide if the plan is, for example, the most cost-effective, or if

other solutions (such as a different phasing in time of the benefits and expenses) are possibly better. It could also help to understand if the CBA addressed the right effects and provides the information required to make a decision.

The third intervention is to be prepared to share and discuss knowledge together. This triggers the mechanisms by which plan owners and evaluators do not feel unpleasantly surprised or attacked by new arguments, are better able to make their own standpoints and reasoning explicit, and know how to incorporate or internalize outside critiques without acting defensively. This preparation helps to make explicit what the plan is actually about and how different effects could be assessed in a CBA. Furthermore, plan owners and evaluators may feel supported by the management or political environment to act in a spirit of open communication and trust and will be more likely to act along these lines if they receive training.

The fourth intervention is to have the interaction guided by a moderator. This triggers the mechanisms by which all can feel safe to speak freely, all types of knowledge are considered and included in the discussion, and the focus of the discussion is on finding shared interests, win-win solutions, and issues behind immediate agendas. As such, the different types of knowledge possessed by plan owners (such as planning concepts and qualitative visions) and evaluators (such as the reasoning behind the CBA and used assumptions) alike get equal attention in the discussion. Furthermore, when plan owners and evaluators feel guided and protected by the moderator, they may feel encouraged to share more detailed and diverse knowledge, to be more open towards each other, and to give and receive constructive criticism without responding defensively.

The fifth intervention is to use dialogue modes (e.g., sketches, simulations, storyboards, role play) presented as “work in progress.”

Table 5

Interventions and related mechanisms for improving communication and building trust in a CBA process.

Context: In CBA processes in which plan owners and evaluators participate....	<p>Intervention 1 ...creating a dialogue space where plan owners and evaluators meet face-to-face... Triggered mechanisms: Plan owners and evaluators have the opportunity to get to know each other and build relationships, which enables them to better assess how the other will react in future interactions, thus building interpersonal trust. They may feel safer and may share more detailed information and listen more carefully. Then they may pay more attention to issues behind immediate agendas, ask and receive critical questions, and collectively change and build assumptions</p> <p>Intervention 2 ...sharing and discussing the plan and CBA together..... Triggered mechanisms: Plan owners and evaluators better understand each other's standpoints and may see shared interests, increasing opportunities for finding win-win solutions. They will know more information about each other (the plan and the CBA), which increases the predictability of how they might respond and therefore increases the interpersonal trust. The development continues towards more open and critical interaction, sharing even more knowledge, and possibly changing one's own perspective based on the perspectives of others</p> <p>Intervention 3 ...being prepared to share and discuss knowledge together... Triggered mechanisms: Plan owners and evaluators do not feel unpleasantly surprised or attacked by new arguments, are better able to make their own standpoints and reasoning explicit, and know how to incorporate or internalize outside critique without acting defensively. Furthermore, plan owners and evaluators may feel supported by the management or political environment to act in a spirit of open communication and trust and will be more likely to act along these lines especially if they receive training</p> <p>Intervention 4 ...having the interaction guided by a moderator... Triggered mechanisms: The moderator makes sure that all feel safe to speak freely, all types of knowledge are considered and included in the discussion, and the focus of the discussion is on finding shared interests, win-win solutions, and issues behind immediate agendas. When plan owners and evaluators feel guided and protected by the moderator, they may feel encouraged to share more detailed and diverse knowledge, to be more open towards each other, and to give and receive constructive criticism without responding defensively</p> <p>Intervention 5 ...using dialogue modes (sketches, simulation, story board, role play): presented as “work in progress”... Triggered mechanisms: Plan owners and evaluators may feel encouraged to give their standpoints, to illustrate their arguments, and to make them context specific and explicit. This sharing will give the others the opportunity to respond, illustrate, contextualize, and explicate their points of views</p>	Outcome: leads to CBA being used as a tool to support learning
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This triggers the mechanisms by which plan owners and evaluators may feel encouraged to share their standpoints, to illustrate their arguments, and to make them context-specific and explicit. This sharing will give the others the opportunity to respond, illustrate, contextualize, and explicate their points of views. Moreover, it may help to overcome the knowledge differences between plan owners and evaluators.

To sum up and fill in the CIMO structure as illustrated in Table 5, the following interventions trigger the mechanisms by which a CBA can possibly be used as a tool to support learning in the context of a CBA process in which plan owners and evaluators participate: (1) creating a dialogue space where plan owners and evaluators meet face-to-face, (2) sharing and discussing the plan and CBA together, (3) being prepared to share and discuss knowledge together, (4) having the interaction guided by a moderator, and (5) using dialogue modes (sketches, simulations, storyboards, role play) presented as “work in progress.” So, the CBA process should be organized as a dialogue between plan owners and evaluators, the plan and CBA should be discussed when both are still open for input, plan owners and evaluators should prepare themselves for the discussion, and the discussion should be guided by a moderator and tools such as sketches or maps.

5. Conclusion

This paper presented an investigation into deliberative planning and organizational learning theory in order to address some of the process issues of CBA (i.e., low levels of interpersonal trust and communication and the use of CBA as a final assessment) and to increase its suitability for assessing integrated transport plans. First, a conceptual model was formed to provide an understanding of the relationships between the process issues. The model showed that communication and trust between the plan owner and evaluator are crucial conditions for the use of CBA as a learning tool. Second, the literature review provided more insight into how to improve these conditions. The research fields of deliberative planning and organizational learning were explored for ideas on this. These insights were synthesized in five concrete interventions that are expected to trigger the right mechanisms for improving communication and building up trust between participating plan owners and evaluators in CBA processes in order to use the CBA to support learning.

Table A1

Grouping of directions from deliberative planning and organizational learning for improving communication and trust.

Directions for improving communication between experts in deliberative planning
<p>1. Have an open approach to all knowledge</p> <p>(a) Exchange of different kinds of knowledge, feelings, interpretations Exchange conceptions and interpretations Give room to feelings and thoughts</p> <p>(b) Allow all knowledge in the discussion and allow it to be questioned All kinds of knowledge allowed, like experiences, personal stories, and intuition All claims, assumptions, and constraints are allowed to be questioned and tested Recognize and respect human emotions of anger, fear, impatience, and suspicion Stretch yourself out to access multiple perspectives Challenge established assumptions, and cultivate debate and argument among different viewpoints Challenge assumptions and analyses by using local knowledge Ask for clarifications or examples when needed and challenge assumptions and the status quo Encourage questions</p> <p>(c) Give attention to issues behind immediate agendas Direct attention to issues behind immediate agendas Address issues deeply</p>
<p>2. Behave appropriately</p> <p>(a) Have an open perspective towards each other Have an open perspective to comments by other practitioners Have an open-minded stance on what is going on and what is at stake</p>

Through this paper, we answered our research question: Which are promising interventions and mechanisms for improving CBA process issues, specifically improving communication and trust between plan owners and evaluators? It turned out that scholars from deliberative planning and organizational learning agree largely on desired actions and behavior for both improving communication and building trust. As framed in the five interventions, it is, in short, necessary for plan owners and evaluators to meet, to discuss the plan and CBA together and simultaneously when these are still open for external input, to be prepared for such a meeting, and have it guided by a moderator and a discussion tool like a sketch. It is our expectation that applying these interventions in a CBA process will stimulate the participating plan owners and evaluators to improve their interpersonal communication and trust so that they can use CBA more as a learning tool. Moreover, we expect that this will increase the suitability of CBA when assessing integrated transport plans.

However, although these interventions might seem self-evident, they are not common practice in CBA processes (ECMT, 2004; Beukers et al., 2012). Furthermore, and related to this, while they are theoretically grounded, they have not yet been tested in the context of their intended use, which is an essential component of research aiming at improving an existing practice (Straatemeier et al. 2010). It is thus still unclear if they give the desired outcome of improving communication and building trust when applied in a CBA process, if some interventions and mechanisms are more relevant than others, or if there are other influencing conditions. A next research step would therefore be to test and analyze these expectations and uncertainties in applied CBA processes, in order to develop a richer understanding of which interventions and mechanisms are successful under which conditions. Such testing and analysis should be done in both context poor, control rich environments (i.e., controlled experiments) and in context rich, control poor environments (i.e., in-depth case studies). This dual approach would help both isolate the impact of the identified interventions and mechanisms (i.e., ensure internal validity of the findings) and verify their relevance in actual practice (i.e., ensuring ecological validity) (Te Brömmelstroet, 2010).

Appendix A

See Table A1.

Table A1 (continued)

Prevent discussions from becoming too emotional
Treat each other with respect

(b) Have an open attitude to changing one's own assumptions and understandings
Stimulate change in understandings
Explore and recast agendas of problems, issues, and potential actions and stakes, through accessing multiple sources of knowledge
Learn from both acceptance and refusal

(c) Behave actively by asking questions and listening carefully
Be close and keep a distance at the same time
Show empathy and critical judgment
Ask and listen
Seek to correctly interpret the language used by other practitioners
Put yourself in the position of others
Make suggestions that the others may not have considered
Think “outside of the box” and put forward “half-baked” ideas

3. Have interaction

(a) Create shared and embedded knowledge and understanding
Stimulate that information becomes embedded in the understanding of participants
Shared knowledge
Share and sharpen arguments and meanings
Ensure that the group makes a shared analysis of interests and conflicts
Stimulate the creation of meaning shaped by the situations, trajectories, activities, and values of particular social groupings

(b) Have all stakeholders involved, empowered, and engaged in interaction
All relevant individuals are present at the table and equally empowered
Scientists and agency staff need to be engaged with lay people

(c) Act and learn together to develop close relationships
Accept a degree of collaboration and reciprocity
Act and learn together
Learn about each other
Build relationships
Have a process of collectively creating meaning and shaping information
Have conversations or “plenty of talk” about the meaning of information, its accuracy, and its implications
Have a dialogue
Organize brainstorming, scenario building, role play, storytelling, and joint fact-finding
Seek validation and legitimacy in an interactive way through talks, social encounters, discussions, debates, and exchanges of opinions

(d) Focus on shared interests and win-win solutions
Look for common interests rather than differences and challenging assumptions
Focus on the shared interests rather than the positions held
Seek mutual gain solutions as much as possible
Develop alternative stories that are plausible and appealing to all
Find win-win situations
Negotiate between the stakeholders and their different interests
Identify where the energy for change may exist and build coalitions for change that expand this energy

4. Have a supportive communicative context

(a) Create a safe environment for participants to speak their mind
Feel comfortable and safe saying what you think

(b) Prepare stakeholders for a constructive discussion and formulate arguments beforehand
Prepare stakeholders to face each other by stating the objectives from both sides beforehand
Help stakeholders prepare for a constructive discussion
Let stakeholders formulate their arguments before the discussion starts
Help participants to articulate their identity

(c) Create a dialogue space, use familiar dialogue modes and a mediator
Create a dialogue space
Use a sketch that is still open for discussion
Use a mediator or facilitator

Directions for building trust in deliberative planning

1. Show trustworthy behavior
Do not behave arrogantly
Fulfill promises
Listen carefully and focus attention first on the person and then on the words
Share information and decision-making power
Communicate comprehensively, truthfully, sincerely, supportively, and legitimately

2. Have interaction

(a) Acknowledge and respect all knowledge, thoughts, and feelings
Assure that the thoughts and feelings of all stakeholders are acknowledged and respected
Promote equal standing and respect for all forms of knowledge
Promote openness and transparency in mutual disclosures
Assure inclusiveness

(b) Build relationships
Develop familiar relationships by learning more about each other
Build relationships to build trust
Get to know your counterparts

(c) Use a dialogue space
Create a space for dialogue: formal and informal meetings, negotiations, discussions, project reviews, and hearings
Promote face-to-face interactions among affected citizens, regulators, developers, and public officials

(d) Use a mediator

Table A1 (continued)

Use a mediator
Negotiate between the stakeholders and their multiple interests

3. Prepare participants to participate in the discussion
Prevent discussions from becoming too emotional when stakeholders feel confronted with unpleasant surprises
Formulate arguments beforehand
Prepare stakeholders to face each other by helping them state their objectives beforehand
Give attention to anger

Directions for improving communication in organizational learning

1. Interpersonal behavior

(a) Open attitude toward testing assumptions
Transcend one's own limited perspective or boundaries
Be open to testing assumptions publicly
Make sure that no one withholds negative information from the others or avoids evaluating this information

(b) Open attitude towards learning, including "risky" ideas
Be open to setting a learning cycle in motion
Be open to the reciprocal exploration of "risky" ideas
See the other participants as minimally defensive, open to learning, and committed
Be oriented toward learning

(c) Be explicit and accurate
Seek and provide valid information
Speak in direct, observable categories (opening them to questioning)
Create awareness of the values at stake and the limits of one's capacities

2. Organizational context

(a) Leadership open to transformation and sharing of decision-making
Promote transformational leadership
Make designing and managing a bilateral task
Promote a participatory decision-making culture

(b) Supportive structure: stability of team members, learning procedures, training
Assure stability of team membership
Provide positive supervisory behavior
Establish formal procedures for learning
Work on trainings with instructors or colleagues, including repetitive exercises to reinforce desired behavior

(c) Safe environment and emerging relationships
Work towards freedom of choice and internal commitment
Provide a shared space for emerging relationships
Create a protected environment

3. Have interactions

(a) Share and combine tacit and explicit knowledge
Promote the sharing of tacit knowledge among individuals
Help participants articulate tacit knowledge into explicit concepts
Combine different entities of explicit knowledge
Translate explicit knowledge into tacit knowledge
Help individuals externalize their experiences
Assure that personal subjective knowledge is validated, connected to, and synthesized with the knowledge of other participants
Produce new assumptions by combining articulated views with the participants' challenges to these views

(b) Define means and ends together and interactively
Keep the means and ends unseparated
Define the means and ends interactively to frame a problematic situation

(c) All actors meet, discuss, and become engaged in a knowledge creation process
Assure that clients participate with the professional and give valuable input of their own
Become engaged in knowledge creation and dialogue to adapt and shape practices
Have cross-functional communication
Meet face-to-face, sharing emotions, feelings, experiences, and mental models
Make sure that mental models and skills are probed, analyzed, and converted into common terms and concepts

(d) Use various modes which are familiar to all practitioners involved

Directions for building trust in organizational learning

1. Personal awareness of others and trustworthy behavior

(a) Awareness of explicit and implicit positions and presumptions as well as openness to discussing them
Be aware of existing positions
Be aware of internal maps and assess when the assumptions are counterproductive to learning
Advocate the interpretation of these positions in a way that invites confrontation
Challenge positions
Stimulate testing positions publicly
Question publicly underlying policies and goals, assumptions, norms, and objectives

(b) Trustworthy behavior: act discreetly and with integrity, listen attentively, be honest about expertise and limitations, give compliments, address "troublemakers" directly
Acknowledge mistakes
Recognize defensive behavior
Act discreetly (people need to feel safe in order to share confidential information)
Listen attentively to each other's thoughts and ideas
Disclose one's expertise and limitations (being open about one's strengths and weaknesses)
Be forthright and truthful in interactions
Compliment participants publicly
Address "troublemakers" directly by saying "yes" to the person but "no" to the behavior

(c) Fulfill promises

Table A1 (continued)

Be consistent with your words and deeds

2. Interaction and forming of relationships

(a) Create knowledge together through communication

Move from old to new and shared assumptions

Hold workshops and seminars

Assure that participants feel free to share their thoughts

Reflect on how one thinks

Have an open dialogue

Promote open communication to build trust

Use mediators and facilitators

(b) Form relationships by having stable, frequent, and informal interactions

Form embedded relationships through stable, frequent, and close interactions

Create reciprocity in relationships and repeated interaction

Stabilize and manage interactions

Ensure frequent and rich communication on a personal as well as a professional level

Engage in collaborative communication

Focus on continuous and positive interactions

Enable informal meetings

(c) Form a shared language or vision

Establish and ensure a shared vision and language

Make newcomers understand the values and principles of the organization and how things are done

3. Trustworthy environment

(a) Share control, make fair and transparent decisions

Ensure mutual trust by promoting shared control and responsibility

Ensure that decisions are fair and transparent

(b) Make rules to frame risks, opportunistic behavior, and ways of dealing with conflicts

Discuss beforehand how to deal with conflicts

Design process rules to frame risk and opportunistic behavior

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