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Introduction

Scientific research to identify the success of group model building interventions is on the move. Clearly, since the call from Andersen, Richardson, and Vennix (1997, p. 189) for “adding more science to the craft”, steps in the right direction have been made. For the progress made, see for instance, Rouwette and Vennix (2006) and Scott, Cavana, and Cameron (2016). Noteworthy is the wider range of research designs that are employed to evaluate group model building nowadays. Whereas a case study used to be the preferred way for conducting research, controlled experiments have been added to the palette of research designs used. For sure, this is a notable step forward towards more knowledge about group model building support. Case study research allows for in-depth understanding of what group model building offers in real-life, however, experimental research allows for tests of assumptions. By (more) precision in a controlled context, bias coming from factors other than the manipulation is reduced (Dunn, 2009, p. 77; Finlay, 1998, p. 198).

Because realism and control are not very compatible but both valuable, research in group model building should not just depend on one type of research design. Quite a while ago, McGrath (1982, p. 80) made the point clear: It is from using multiple research approaches, that we may expect to benefit. It is in the interplay and the compensation for each other’s methodological flaws—inherent to each and every design and method—that a degree of progress can be achieved. In that context, given that case-study based research was available in abundance, yet, comparison of findings problematic, for my dissertation research (McCardle-Keurentjes, 2015) supervised by Jac Vennix and Etiënne Rouwette, an experimental approach was taken.

We used classroom experiments in order to contribute to knowledge on the effectiveness of group model building. The effectiveness of group model building (GMB) was tested by comparing the differences in strategic decision making processes and outcomes of supported groups and non-supported groups. The latter were called the ‘meeting as usual’ (MU) groups.

1 “One of the most powerful interventions for any facilitator which, if conducted properly, is not threatening to other people, is to ask questions” (Vennix, 1996: p. 149) This words were the inspiration for this paper.
In the GMB condition, groups were guided by the facilitator, whereas the MU groups were run by the chairperson. The role of chair was randomly assigned to one of the participants. Looking at the decision making processes in both conditions, one of the interesting differences was that the facilitator in GMB meetings demonstrated more questioning behaviour than the chairperson in MU meetings.

Although at first sight one may be inclined to take that outcome for granted, the result is an important contribution to the field of research on evaluation of group model building. First, asking questions is considered as an important facilitation skill or technique, however, the act of asking questions by the facilitator in group model building meetings has largely been neglected in empirical studies.\(^2\) Our empirical finding that the facilitator posed more questions than the chairperson in a meeting as usual provides initial support for the importance attached to facilitator’s attitudes such as the attitude of inquiry (Vennix, 1996, p. 149). Second, the evidence was obtained in an experimental research environment, with participants randomly assigned to their role and the condition, and working on the same decision making task. To the best of our knowledge, asking questions by the facilitator has not been examined in an experimental setting before. The controlled research setting provided us with good reasons to believe that the variation in the independent variable ‘decision support’ (i.e., GMB versus MU) caused the difference between the number of questions asked by the discussion leader in the experimental conditions (cf. Hayes, 2005, p. 323).

Thus, there is evidence that asking questions distinguishes the management of the discussions in supported versus nonsupported groups. Yet, considering the role of the facilitator and its importance for the group model building process, it is useful to examine the facilitator’s questioning behaviour in more detail. This will contribute to more understanding of what really matters when group model building is used and ultimately, more generally, in decision support for groups facing strategic, messy problems. In particular, it is relevant to discover in what way the facilitator in group model building uses questioning while supporting the group in covering the content of the problem at hand as well as the process (i.e., the interaction between participants). Knowing how questioning is used and in what way the facilitator’s questioning differs from questioning by the chairperson in a meeting as usual would allow us to evaluate the facilitator’s questioning behaviour more specifically in relation to group model building aims. The lessons learned can be shared in scripts describing

\(^2\) Only recently, in a master thesis study, the number of questions asked was investigated for selected parts of two real-life GMB meetings in one project (Adriaans, 2014).
facilitated modelling practices (Hovmand et al., 2012; Scriptapedia, 2015). In my contribution here, as a preparation for future research, I will elaborate on the role of asking questions by the facilitator in managing the discussion.

This paper is structured as follows. In the next section, I briefly portray group model building as a decision support system while focusing on the central elements of the intervention: facilitation and modelling. Facilitation and modelling practices are revealed in how questions are asked and what is asked during group model building. Questioning is a vital tool, and I propose that questioning by the facilitator belongs to both content related modelling as relational activities in group facilitation. Subsequently, in the third section, I summarise the reasons we had for investigating the number of questions asked by the facilitator in my dissertation research and present the findings on this factor. The fourth section is of a conceptual nature. Extending my former reasoning, I illustrate that the extent to which specific types of questions are asked in a meeting and how they are asked, should be taken into account given the aims of facilitated modelling. For example, the degree to which clarifying questions are asked in a meeting, aimed at understanding what someone means. In the fifth section, I give a few suggestions on fields of literature that we can take a look at when continuing our inquiry into questioning. Finally, in the sixth section, I propose to continue the research on this topic while connecting experimental research and field studies.

**Facilitation and modelling in interaction**

A short and well-known characterisation of group model building is provided with the following description: “a bundle of techniques used to construct system dynamics models working directly with client groups on key strategic decisions” (Andersen, Vennix, Richardson, & Rouwette, 2007, p. 691). More recently, group model building has been classified into the family of the facilitated modelling approaches, a category of decision support systems specifically designed to support strategic decision making groups facing messy problems (Franco & Montibeller, 2010, p. 496). Facilitated modelling interventions aim to structure and jointly define the problem situation and to help participants gain more and a (more) shared understanding of the problem situation. By fostering the alignment between individual representations of the problem situation, they contribute to reaching an agreed upon, joint answer to this situation. Moreover, the aim is to contribute to commitment to the results (p. 494). These approaches draw on the combined use of two main means: modelling and facilitation. Together, in a facilitated information sharing process, the problem
owners build a model of their problem situation (pp. 489, 492). In building and re-examining this model, the problem owners are helped to jointly structure their problem situation and develop a course of action. The process should allow participants to openly exchange ideas, reflect on the evolving model, and to change their opinion without losing face (Franco & Montibeller, 2010, p. 493). Note that it seems inconceivable to manage such a process without ever asking questions. Group facilitation and modelling are intertwined in this process. In particular, the intertwining can be recognised in the facilitator’s questioning behaviour as we will see further on. I will first briefly discuss why group facilitation and modelling are thought to be helpful in providing group decision making support.

Modelling is thought to help the group members in gaining more understanding of distinctive content issues in their problem situation. For instance, by identifying and drawing cause-effect relations, group members can literally see how elements in a problem situation are interconnected (Vennix, 1996, pp. 34-35). Thereby, modelling is a way for group members to better understand the meaning and implications of information shared in the group. This can serve as the basis for agreement on a decision and commitment to the decision (Rouwette, Vennix, & Felling, 2009, pp. 571-574). Yet, modelling and specifically, structuring the problem in a group often is a complicated story. First, because of the related elements in the strategic problem at hand. Generally actors are not aware of feedback effects. The dynamics in the problem situation due to the interactions between the elements over time are very troublesome (Sterman, 2000, pp. 21-23). Next, the group members differ in expertise and background. The resources of a group are largely determined by who is in the room (cf. Andersen & Richardson, 1997, p. 109). Indeed, the reason for decision making in groups (vs. individually) typically is that groups have more information at their disposal which can be used to enhance decision quality. Each group member may contribute unique information to the discussion. Therefore, the inclusion of group members having different expertise is purposefully arranged in order to prevent a too narrow view on the problem.

It is in this context that group facilitation is likely to have a beneficial effect. Group member diversity in expertise and knowledge is useful in order to obtain a more complete view on the problem, yet, the varying and sometimes conflicting views of group members add to the complexity of the joint modelling process. Multiple views and interests complicate the information exchange and integration (Beers, 2005, pp. 9-10). Individual group member’s representations of the problem, depending on individual background and position, can be very
different (Cronin & Weingart, 2007, p. 764). Often, assumptions differ and concepts are differently understood which initially may pass unnoticed.

The points discussed so far concern the group modelling activity through a discussion focused on the content of the problem. But issues of content are not the only thing at stake in modelling. The individual goals of group members may be different (Cronin & Weingart, 2007, p. 766). Along with the discussion of diverse perspectives (content related), the participants’ interests play a role and complexities arise with respect to the relational dimension of the group communication. It must be taken into account that those who participate in the modelling, share the problem; they have a common context, and thus will meet each other again after the modelling process. Participants envision “a future” for which social relationships are important (cf. Eden, 1995, p. 309). Relational communication in the group is important since socioemotional factors have been identified as facilitating and hindering outcomes of decision making groups (Keyton & Beck, 2009, p. 15). Trust, for instance, has been shown to be an essential relational factor for information processing in groups (Mengis & Eppler, 2008, p. 1288).

To conclude, in a strategic problem situation, the various perspectives of the group members can be very useful to build a shared and more complete model (cf. Phillips, 2007, p. 380). But they bring along complexities that make facilitation imperative to supporting the modelling process. The ambition to manage content related complexities in strategic decision making groups while also taking care of the relational dimension in the group process, underscores the crucial importance of group facilitation during the modelling process (cf. Visser, 2007, p. 454).

In practice, when groups are supported with group model building, the interplay between ‘content’ and ‘process’ is evident. Modelling and facilitation are intertwined, and simultaneously done. They form one package. For the topic of this paper however, it is important to recognise the two dimensions—modelling and facilitation—in the intervention, for these dimensions strongly colour the facilitator’s questioning behaviour. It is useful to

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3 The question might come up whether one of the two is of primary importance in decision support, with the other being secondary? One could argue that facilitation is most crucial for effective group decision support. As explained above, strategic, messy problem situations are so difficult to deal with that good modelling would be not successful without good group facilitation. On the other hand, similarly, good modelling cannot be missed. Like Vennix (1996, p. 266) put it concerning the building of system dynamics models: “Without this skill one will be a poor help to a management team”. See also p.141: ”What is really required in the context of group model-building is a thorough knowledge of system dynamics and extensive model-building skills in order to be able to ask the right questions during meetings” [italics added].
realise that what (kind of) questions the facilitator asks will be mostly related to the group modelling activity; the focus is on uncovering the content of the problem at hand, while how these questions are asked specifically relates to the discussion process. This means I believe that (a) the content of the unfolding model will be directed through the type of questions asked by the facilitator, and (b) that the facilitator’s act of questioning including the way in which questions are framed and articulated, will influence the group atmosphere during the unfolding group discussion process. Questioning, in itself, and how questions are presented will influence the group atmosphere and group interaction (e.g., the degree of participation in the discussion). Thus, I see questioning as a technique that the facilitator deliberately can use to influence both the tangible outcomes of group model building (i.e., the model and agreements made) and intangible outcomes such as commitment and the maintenance of social relations between the group members. In my dissertation research, several reasons have been mentioned for examining the facilitator’s questioning behaviour. In the next section, these reasons are summarised and the findings presented on the comparison of the frequency of questions asked by the facilitator and the chairperson.

**Frequency of questions asked by the facilitator**

The overall aim of my dissertation research was to contribute to knowledge on group model building’s effectiveness. A major part of the research was devoted to testing whether group model building groups did a better job (compared to the control groups) in pooling and using their informational resources. As already stated, one of the factors examined was the number of questions asked by the facilitator. There were four reasons or points that inspired us to examine this factor (McCardle-Keurentjes, 2015, pp. 108-110).

First, asking questions is a direct way to explore perspectives, ideas or experiences of others. Exchange and discussion can be initiated through questions. Information can not only be elicited but also validated by questions (Stivers, 2010, p. 2776). Second, questioning induces a thinking process (Vennix, 1996, pp. 149-150), and helps to promote dialogic communication (Spano, 2006, p. 279). Note that Franco proposed the dialogue as the most

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4 Similarly to how we can differentiate between the content of a group discussion and the discussion process; what is the group discussing versus how is the group discussing together?

5 Kelly and Spoor (2006, as cited in Beck, Paskewitz, & Keyton, p. 309) describe emotions as “intense, short-lived feeling states” and moods are “long-lasting feeling states”. Participants’ emotions and moods influence each other and create a group emotional state and group mood. At the group level, emotions and mood can influence group interaction and subsequently, group outcomes.
promising conversation form for effective facilitated modelling (Franco, 2006, pp. 814-815). This form of group conversation specifically aims for achieving a shared understanding by, for instance, not only assuring that each participant can contribute to the discussion but also hears the contributions of others. Questioning techniques, such as, systemic questioning, can be used to compare participants’ views: to draw out “connections and relationships in the perspectives and stories that participants tell” (Spano, 2006, p. 280). Third, questioning has been proposed as a way to keep information “alive” in the discussion, for instance by relating a new contribution to content discussed in an earlier discussion episode (Larson, Christensen, Franz, & Abbott, 1998, p. 105). Finally, it has been shown that questioning positively affects the process of knowledge integration in a group, for instance through directing attention to others and change of topics (Okhuysen & Eisenhardt, 2002, pp. 382, 384).

Based on these points and the assumptions underlying facilitated modelling as described before, we hypothesised that more questions would be asked by the person leading the discussion in GMB groups (i.e., the facilitator) than by the leading person in the control condition (i.e., the chairperson in MU groups).

The hypothesis was tested in two classroom experiments with participants in a third year course of the Bachelor’s programme in Business Administration at Radboud University. Decision making groups were assembled in a meeting of one hour to clarify a given problem situation and to decide what had to be done to tackle the problem. Each group was randomly assigned to either the group model building condition or the MU condition. Videotaped discussions of in total 80 groups were transcribed, and coded by coders who were unaware of the hypotheses. Each sentence from a facilitator in a transcript was considered as a separate unit, and coded as a question or nonquestion. Regardless of the content of the contributions in the discussion, if the contribution was accompanied by a question mark in the transcript, the contribution was coded as a question.

In the first experiment, 26 five-person groups participated ($N_{contributions} = 24452$). Of the participants in these groups, 66 were women and 64 men. The mean age was 21.5 years ($SD = 6$

6 Typically, the chairperson in a meeting faces a dual task; at one hand to lead the group to a desired outcome—serving the group—and at the other, similar to other participants in the discussion process, to bring up ideas of one’s own, serving one’s individual interests (Straus & Doyle, 1978, p. 9; cf. Vennix, 1996, p. 142).

7 We decided to rely upon the natural language interpretation of the transcribers. Hence, for the transcription of the videotaped group discussions, no specific instructions were given about the use of question marks.
In the second experiment, 54 three-person groups participated ($N_{\text{contributions}} = 35713$). Here, 82 participants were women, 80 men, and the mean age was 21.6 years ($SD = 2.10$).

For each group discussion, we determined the percentage of the questions asked by the discussion leader (out of the total number of contributions—questions and nonquestions—in the group discussion). In both experiments, a Mann-Whitney $U$ test showed that the facilitator asked more questions than the chairperson; the differences were statistically significant, and the effect sizes could be considered “large” (see Table 1).

Table 1. Results from Mann-Whitney $U$ tests predicting more questions asked by the discussion leader in meetings supported by group model building than in meetings as usual

<table>
<thead>
<tr>
<th></th>
<th>GMB Median (range)</th>
<th>MU Mean Rank</th>
<th>$U$</th>
<th>$z^a$</th>
<th>$p^b$</th>
<th>$r$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Experiment 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions asked$^d$</td>
<td>14.27 (13.45)</td>
<td>3.34 (8.30)</td>
<td>16.75</td>
<td>7.46</td>
<td>6.00</td>
<td>-3.33 &lt; .001</td>
</tr>
<tr>
<td></td>
<td><strong>Experiment 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions asked$^d$</td>
<td>10.07 (14.99)</td>
<td>4.47 (8.31)</td>
<td>40.19</td>
<td>15.71</td>
<td>34.00</td>
<td>-5.71 &lt; .001</td>
</tr>
</tbody>
</table>

Note. GMB = group model building, MU = meeting as usual.

$^a$ Corrected for ties. $^b$ One-tailed, exact significance. $^c n_{\text{GMB}} = 13, n_{\text{MU}} = 13$. $^d$ Percentage of the total number of contributions in the discussion. $^e n_{\text{GMB}} = 26, n_{\text{MU}} = 28$.

This evidence supports the notion that questioning is a typical facilitation technique (cf. Phillips, 2007, pp. 386, 395). Obviously, however, by just assessing the relative frequency of the questions asked, our measurement of questioning was very limited.$^8$ As stated in the introduction, it would be valuable to continue by addressing questions like: What type of questions does the facilitator in group model building ask? How does the facilitator ask questions? To address such questions, we need to develop a more fine-grained account of questioning in group model building. The start of such an account will be dealt with below.

**Questioning in group model building**

For a better understanding of the role of questioning in group model building facilitation, it is useful to clarify how asking questions by the facilitator relates to the aims of facilitated modelling. After all, we are seeking to evaluate questioning (behaviour) as an element of

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$^8$ Also, we did not examine the influence of questions asked on the outcome variables in the study.
facilitation with regard to the effectiveness of group model building. In this section, I identify the function of questioning in facilitated modelling and I make a start with the identification of relevant aspects of the facilitator’s questioning behaviour (i.e., question types and ‘how to question’ points).

Questioning and facilitated modelling aims

From the points that initially inspired us to examine the facilitator’s questioning behaviour, we can derive functions of questioning in facilitated modelling. In summary, questioning contributes to realising facilitated modelling aims in the following ways. Questioning is a way to:

- probe into the knowledge, ideas and assumptions of participants. It enhances the exchange and use of information in the group (cf. aim: to structure and jointly define);
- tempt participants to (re)consider and think about the perspectives of others in the group, to clarify and verify information, and to consider connections between what has been contributed (earlier) in the discussion (cf. aim: to gain (more) shared understanding and an agreed upon answer);
- encourage group members’ participation in the dialogical conversation (cf. aim: to enhance commitment to the decision);

Whereas the first two functions primarily have to do with content issues (i.e., the representation of the problem in the model and in participants’ minds), the relational contribution of questioning is more apparent in the last function (i.e., inviting group members to participate and thereby, enhancing their commitment to the decision). As an effect of having been involved in the process of decision making, decision makers will be more willing to accept the decision (Nijstad, 2009, p. 123) and feel committed to it. In Table 2, the relations between questioning and aims of facilitated modelling have been summarised.

Table 2. Questioning related to facilitated modelling aims

<table>
<thead>
<tr>
<th>Questioning</th>
<th>Jointly defining</th>
<th>Fostering understanding</th>
<th>Enhancing commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probing</td>
<td>Clarifying</td>
<td>Verifying Systemic</td>
<td>Inviting</td>
</tr>
</tbody>
</table>

Questioning and group facilitation attitudes and skills
Next, a basis for evaluation of the facilitator’s questioning behaviour in group model building has been provided by Vennix in his description of “how to be a good facilitator” (1996, pp. 145-170). Interestingly, right at the beginning he warns for easily believing that for instance, questioning is a simple facilitation skill (p. 145), as unintentionally, a question may include a preferred answer or a judgement (p. 146). Three important elements for effective group facilitation have been distinguished: attitudes, skills and tangible tasks. In Vennix’ view, however, “the attitudes are most important since the right skills will almost automatically follow from the right attitudes, and skills which are not embedded in the right attitude and accompanied by a corresponding behaviour will generate averse effects” (p. 146). In his discussion of attitudes and skills, the topic questioning pops up regularly.

Concerning the attitudes of group model building facilitators, key characteristics are: a neutral, authentic, helping, and inquiring attitude. In short, typically, the facilitator is expected to be neutral with regard to the content of contributions, and with regard to the participants (p.150). By asking questions with the intention to help the other(s), the facilitator can show that he/she wants to understand the participants. This then may lead to a “joint thinking process” (p.148). Asking questions is meant to foster an attitude of inquiry within the group; “focusing on the problem and posing questions is also helpful to avoid politicking and win-lose fights” (p. 150). That this indeed may happen, is illustrated in the following case.

In the second session of a GMB-project a new participant joined the project. At some point she got annoyed and started arguing with another participant. The facilitator intervened and explained the procedure again. Although we had explained the procedure briefly to her she had missed the experience of working together in the first session. She reacted by saying that we should talk about what we were going to do instead of keep asking questions. The facilitator reacted by explaining that as a group in this phase we were all investigators into the problem, in a later phase we would of course talk about what should be done. The session continued and at some point, the same participant started arguing again but stopped herself in the act by saying: “Oh no, I shouldn’t start a discussion but I
have to formulate it as a question.” (B.L.A. Fokkinga, personal communication, January 21, 2016)

With regard to skills, in the communication with participants, reflective listening based on genuine inquiry is needed (pp.159-160). Miscommunication is really in the details. Asking clarifying questions is important not only for the facilitator’s understanding but also for the purpose that each of the participants understands what has been contributed. Reflective listening by the facilitator (e.g., you mean that…?) may help to get a group into reflective listening mode. Also, the facilitator should ask critical questions if there is the threat of premature consensus (p. 156). Further, when participants experience that their input in the discussion is really listened to, commitment likely will increase (p.160). The facilitator needs to keep on inviting the participants, encouraging all group members to participate. Thus, the creation of an open atmosphere is a key facilitation task. Vennix has also mentioned that language matters: In addressing participants while using the word ‘we’, team building may be fostered (e.g., in a question like “do we agree on…?”; see p. 163). Table 3 shows a summary of the facilitator’s questioning behaviour related to facilitated model aims based on Stivers (2010), Spano (2006), Franco (2006), Larson et al. (1998), and on Vennix (1996).

Table 3. Questioning related to facilitated modelling aims and facilitation attitudes and skills (update of Table 2)

<table>
<thead>
<tr>
<th>Question type</th>
<th>Jointly defining</th>
<th>Fostering understanding</th>
<th>Enhancing commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probing</td>
<td></td>
<td>Clarifying&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Problem focused&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Verifying/reflective listening&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Systemic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critical&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Neutral</td>
<td>Inviting&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Helping</td>
<td>‘We-word’</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inquiring</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> Based on Stivers (2010), Spano (2006), Franco (2006), Larson et al. (1998), and Vennix (1996).<sup>b</sup> Based on Vennix (1996).<sup>c</sup> If there is a threat of premature consensus (Vennix, 1996, p. 156).

Table 3 shows that three question types emerged in both Stivers (2010), Spano (2006), Franco (2006), Larson et al. (1998), and Vennix (1996): inviting questions as encouragement to participate, questions that clarify information, and (reflective listening) questions to verify
interpretations. Of these three, the inviting questions specifically aim to increase group member participation and involvement in the discussion. The focus is not so much on content; what counts most for the inviting questions is the relational message implied by the facilitator’s communication. In contrast, clarifying and verifying questions explicitly concern the content of the problem at hand and originate in the modelling activity of the group at the time of the meeting. In this respect, it should be noted that Vennix (1996, p. 141) pointed out: “What is really required in the context of group model-building is a thorough knowledge of system dynamics and extensive model-building skills in order to be able to ask the right questions” [italics added] during meetings”. Nevertheless, as relational messages are included in all communicational acts (Keyton & Beck, 2009, p. 16), also for questions focusing on content, it remains very relevant how these questions are asked. They should be posed in a neutral way, embedded in an helping and inquiring attitude (Vennix, 1996, pp. 147-150). It is at this particular point that the intertwinement of modelling and facilitation in the facilitator’s questioning behaviour becomes apparent.

**With a little help from other fields**

Questioning is a technique that is also used by practitioners in other domains than facilitated modelling. In order to further develop an account on questioning, we can turn to literature on group facilitation. For instance, Wilkinson (2004) presented questioning as the most important tool for professional facilitators (p. 9). Questioning techniques are at the basis of facilitation excellence in a methodology that can be used “to produce consistent and repeatable results” (p. 6). The starting question is one of the “secrets” discussed (pp. 33-36). Typically that is the question used to begin a new episode in a meeting. Surely, I think that facilitators in group model building meetings will recognise the relevance of a good starting question. Next, in the group communication literature, the use of questions has been studied. Already in the 1950s, Bales started to study the analysis of interaction in groups (Bales, 2002, p. 225). More recently, Keyton and Beck (2011) studied how questions were used by teams to create shared meaning. Further, insights are offered in the field of researchers in empirical methods, counselling, or education. Traditional empirical research methods provide detailed suggestions, for instance, for design of questions, and how to ask questions (e.g., Dunn, 2009; Emans, 1990). Specifically on questioning in groups, expertise can be found among focus group researchers (e.g., Greenbaum, 2000). Similarly, we may benefit from the literature in education on questioning by teachers. Although the teacher role differs in an important aspect
from the facilitator role (i.e., the teacher having expert knowledge versus the ‘not-knowing’ facilitator), teachers and facilitators share the ambition to help increase others’ understanding.

Let me give one example—recently discovered—as an illustration of insights from other fields that may prove helpful to evaluate questioning in group model building. Hyman has presented the act of asking questions by a teacher as strategic questioning. He distinguished cognitive question types, such as definitional questions (e.g., asking to give descriptive characteristics, or meaning), empirical questions (e.g., asking for facts, comparisons, explanations, or inferences), and evaluative questions (e.g., asking for opinions and justifications) (1979, pp. 10-17). Further, he addressed three considerations (pp. 21-29). First, production type. A question may evoke ‘reproductive’ (i.e. eliciting knowledge from memory) or ‘productive’ thinking (to make a fresh inference). A question as “what caused ...?” may elicit either of the two types of thinking. Other considerations are the information processing activity that is wanted from the respondent, and the response clue. With regard to the information processing activity, we can think of yes-no answers, selection answers (to select from alternatives given) or construction answers. Response clues are given in the question, aiding the respondent to give an answer. More than one clue may be present in a question. Examples of response clues are the Wh-words (e.g., when, why, who, how many), parallel terms (e.g., and?, something else?, indicating that questioner expects more of what is already available), and cited or excluded terms (which indicate the respondent the framework within to respond). With these considerations applied to questions, Hyman formed a grid of question types (pp. 28-29). For inquiring the facilitator’s questioning behaviour, I think we can expect to benefit from Hyman’s grid. Recall, for instance, that a question unintentionally may include a preferred answer or a judgement (Vennix, 1996, p. 146).

**Future research**

Analysing how the facilitator’s questioning behaviour relates to the development of the model and the socioemotional atmosphere in the group not only will increase our understanding of the functions of questioning in group model building. It also will provide a building block for evaluating whether and how the ‘facilitation’ element in facilitated modelling influences the group interaction and outcomes of the intervention. The examination of micro-processes in group model building such as the facilitator’s questioning behaviour should be conducted in multiple and various research settings; case study based as well as experimental; in real-life organisational as well as in simulated settings. As said in the introduction of this paper, there
are compelling reasons to use multiple designs and methods in research on processes and outcomes of group model building. In doing so, findings can be compared and influencing factors may be detected. With regard to questioning, just to name a few, the personality of the facilitator or cultural values influencing information sharing in an organisation (Brett, 2000, p. 101) may play a role. Most importantly, cumulative studies may answer a question that a single study cannot (Hunter & Schmidt, 1996, p. 329).

Vennix (1996, p. 149) claimed that “one of the most powerful interventions for any facilitator which, if conducted properly, is not threatening to other people, is to ask questions”. In this claim, not only is questioning valued as a most influential technique, it is also seen as a technique that bears a relational function. Yet only if conducted properly. I hope that this paper and future research will contribute to that point.
References


