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Interactional dynamics of team decision making

A discourse analytic study of operational planning meetings in the petroleum industry

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Abstract

Team decision making is becoming a crucial activity in the contemporary workplace as 'the new work order' (Gee, Hull, & Lankshear, 1996) increasingly calls for participatory practices and teamwork. This compilation thesis is devoted to the study of interactional dynamics in team decision making, more specifically decision making in the context of operational planning meetings in the petroleum industry. Offshore operations are characterized by high stakes, complex interdependencies, and frequent change. Decision making in operational planning must therefore be geared towards the continuous fluctuations of operations. The meaning and consequences of operational constraints are to a great extent established and negotiated discursively, frequently in meeting settings. The interactional dynamics of this kind of decision making is, in other words, highly relevant for the overall outcome of operational planning and ultimately for efficient and safe petroleum production.

The thesis is a contribution to the sub-field of Applied Linguistics often referred to as 'applied linguistics of professional practice' and 'workplace discourse': a domain that is concerned with studying language use – text, talk, and multimodal practices – as manifested in real-life workplace situations. The overall research question for the thesis is: In the context of the operational planning meetings, how do interactional dynamics play a role in team decision making? While decision making has been a key topic in social sciences and organization studies over several decades, discourse studies have to a lesser extent engaged specifically with this topic. Similarly, organization studies dedicated to the theme of decision making have drawn less on discourse analytic findings. Article 1 in this thesis provides a systematic literature review of empirical discourse studies of team decision making. While the reviewed studies provide a rich intake into a range of interactional dynamics, emphasizing situatedness and the emergent nature of team decision-making, the topic warrants further study as the number of studies found was low and the range of empirical sites was limited.

Three empirical studies, primarily based on discourse data, comprise the core of the thesis. Two specific meeting sites in which decision making across boundaries is central have been video

recorded: one weekly 'plan optimization meeting', in which six different units meet to decide on the prioritization of operational tasks, and one daily 'morning meeting', in which onshore and offshore personnel meet via multiple-location videoconference for continuous adjustments of the operational plans. The discourse data is supplemented with ethnographic field work, interviews, and observations.

The first empirical article (article 2), drawing on pragmatics literature of activity types, operationalizes an integrated analytical framework for studying role positioning in team interaction and shows how a dynamic interplay between activity roles and discourse roles opens up participation and allows for a collaborative convergence of expert labor. Based on the same data, article 3 focuses on questions as an interactional resource in decision making and discusses how questions serve a function in driving decision making in this particular activity type. Article 4 studies self-selection of turn in a multiple-location videoconference between onshore and offshore teams. Self-selection is found to be an interactional resource available and utilized by the offshore participants in this mediated setting, and the self-selected turns contribute to updating and securing commitments to future action as well as forecast intentions for future action.

The summary article presents and integrates the findings from these studies as they relate to the overall research question and to the research field as a whole. Together, the empirical studies are contributions to an activity-oriented discourse analytic approach to the investigation of team decision making. The concept of 'activity type' and the framework of Activity Analysis allows for capturing both the constraints on allowable contributions represented by the activity types in operational planning as well as the creativity and agency with which participants maneuver within these constraints.

Acknowledgements

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PART I: Summary article

1. Introduction

The contemporary workplace has undergone considerable changes during the last decades, both in public and private sectors, nationally and transnationally; often referred to under headings such as 'post-Fordism' (Amin, 1994) and 'the new work order' (Gee et al., 1996). One key feature of these changes is a move from traditional hierarchical structures to more team-based work practices. Workers no longer function simply as individuals performing designated tasks in defined hierarchical structures, but rather participate in teamwork in a flexible relation to a changing organization (Iedema & Scheeres, 2003). The changing nature of work, related to a knowledge-based economy, confronts workers with having to renegotiate what constitutes work, professionalism, and worker identity (Fairclough, 1992; Iedema, 2003). New work processes introduce increased expectations in terms of the professionals' ability to communicate across hierarchical, organizational, and professional boundaries. Professionals in different work domains are thus required to display a form of communicative competence in which they are not necessarily trained. In the context of health care, Sarangi (2004) labels this trend "communicative mentality".

The empirical site for this compilation thesis is situated in the midst of a workplace reform in the petroleum industry often referred to as 'Integrated Operations' (Rosendahl & Hepsø, 2012). The last decade has seen an intense effort in this industry to improve operations through extensive use of new technologies and a continued re-thinking of the organization of work. With increased access to real-time information from the production plants and new opportunities for collaboration across geographical distance, the reform represents significant changes in professional discourse practices, also with regard to team decision making.

The present thesis studies two meeting sites that address the continuous planning and re-planning of tasks across a field of offshore oil and gas installations on the Norwegian Continental Shelf. This is a setting that is close to the 'sharp end' of operations, as the operational planning happens in continuous response to the situation on the production plants. As the situation offshore changes in unplanned ways, the operational plans must be adjusted: tasks will have to be re-scheduled or put on hold, the prioritization of tasks will need to change, or the sequencing of tasks will need rethinking – all of which involve decision making. However, decisions in this operational setting are all potentially short-lived and fraught with uncertainties as the operational situation changes frequently and the consequences of change are not always easily assessed. This kind of contingent decision making, taking place at the level of production in a high-risk industry, has to my knowledge not been described in discourse analytic literature on team decision making.

In the workplace setting of operational planning, taking place both onshore and offshore, team decision making is highly reliant on the participants' ability and willingness to use linguistic and non-linguistic means for achieving shared goals (or even to resist these goals). The complex and changeable nature of decision making requires assessment from a broad range of expertise on a daily and weekly basis, and this is particularly evident in meeting settings in which groups of professionals meet across departments in order to re-vise and adjust the commitments to future action that are represented in the plan. The thesis is concerned with how team decision making in this workplace setting can be explored by studying closely the communicative encounters in which decision making takes place and the interactional dynamics that emerge as participants work together to accomplish the communicative goals of team decision making.

Empirically grounded discourse studies have emphasized how normative elements of human interaction, such as turn-taking procedures and norms of politeness, constrain workplace decision making. While Simon's (1957) classical concept of 'bounded rationality' emphasizes how the limitations of human cognition necessarily restrict decision making, discourse studies have shown

how decision making is bounded, not only rationally, but also socially and interactionally (P. Atkinson, 1995; Boden, 1994; Cicourel, 1986; Huisman, 2001; Silverman, 1987). The present thesis contributes to this approach to decision making by foregrounding the concept of 'activity type' (Levinson 1979), in relation to team decision making. 'Activity type' is a useful concept for describing the role of the communicative encounter in the production and negotiation of social meaning and action. As socio-culturally recognized entities with specific constraints on the style and structure of participation, activity types also represent inferential structures that guide interpretation and meaning. In this way, activity types represent an analytic entry point in which interactional dynamics can be studied as they emerge in the intersection between participants' interactional choices and the constraints of the communicative encounter. The notion of 'activity type' has been reappraised by Sarangi (2000) with special reference to institutional/professional domains of language use, and the current meeting data has been analyzed within the framework of Activity Analysis (Sarangi, 2010).

The key argument arising from the articles in this thesis is that the study of the interactional boundedness of team decision making can benefit from a meso-level approach that captures the constraints and opportunities for participation in the specific activity type. In the case of operational planning meetings, the studies show how interactional resources, such as role positioning, questions, and self-selection, play a role in decision making in *activity-specific ways.*

The empirical site

Petroleum production is a high-risk industry in which operators have to find the balance between ensuring safe operations while minimizing cost and maximizing production (Hayes, 2010). Large values are at stake and risk is an omnipresent factor as even small problems in production can cause great economic loss or jeopardize worker safety.[1] The data gathering and fieldwork have been

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[1] Operations take place in an explosive environment, on installations 300 km or more from shore, so safety is an omnipresent issue for the operators. The financial values involved are significant. Total production on the

conducted within the onshore operations unit of an international oil and gas operator, with a specific focus on meetings addressing the optimization of operational plans.

The operational planning of tasks in this complex and high-risk assets is characterized by two significant features. First, operational plans are in need of continuous reassessment and adjustment as the situation offshore changes. Due to unexpected situations in the reservoir, delays or hold-ups in operations or in maintenance work, the operational situation changes frequently in unexpected ways. Second, both operational tasks and the installations on the field as a whole are tightly coupled through shared and limited resources (space on deck, equipment, electric power, etc.). Changes in the plans of one installation might therefore have a ripple effect to other tasks and other installations as the logistics surrounding each operational task will need to change as well. Plans from several departments and units therefore need to be coordinated on a continuous basis in order to sustain productivity, safety, and optimal resource allocation. [2]

In the traditional approach, planning is defined as a method for making rational decisions (Banfield, 1959). Planning is seen as support for decision making as it identifies alternatives for future activity, selects what is deemed the best option, and organizes these in sequence related to issues such as priority, time, space, and resource allocation (Stadtler & Kilger, 2008). In this thesis, operational planning is seen as the achievement of a series of commitments to future action – decisions – that are made across departments and installations on the field. The plan itself is a representation of

Norwegian Continental Shelf averaged more than 1 million barrels of oil equivalents per day in 2013 at an average oil price per barrel of USD 110 (http://www.petoro.no/home, Annual report 2013).

[2] Importantly, the activities at this operational level are part of a much larger and complex cycle of petroleum production: from exploration and development, to production and operations, maintenance and modifications, transportation, refinement, and finally export. However, even within the limited domain of operations, there is a large range of organizations, departments, functions, and areas of expertise that contribute to the overall objective of sustaining or increasing production.

these commitments and it can be seen as an 'orienting device' (Suchman, 2007), and more than a prescription for action, it can be seen as a 'resource for action' and for situational adaptation (Gautereau & Hollnagel, 2005). This is particularly relevant in the context of operational planning, in which the continuous updating and adjustments of the commitments in the operational plan is crucial for utilizing resources such as crew and equipment optimally, for sustaining production, as well as for ensuring the safety of operations.[3]

'Integrated Operations' has been a broad industrial strategy the last decade within the petroleum industry, aiming to drive efficiency, maximize the recovery of oil and gas from the wells, and reduce risk by taking advantage of the potentials inherent in new technologies. The ethos of integration and of crossing boundaries– between professions, departments, organizations, as well as geographical distance – is at the core of this effort. 'Integrated Operations' is defined as "the integration of people, organizations, work processes and information technology to make smarter decisions" (www.iocenter.no). One significant move in this strategy has been to establish cross-functional and interprofessional arenas for decision making, and these arenas have gained increased attention and importance. Both the meeting sites in this study are examples of such 'integrated operations meetings'; one a weekly, face-to-face meeting bringing together professionals from up to six different departments, and the other a daily, video-mediated meeting bringing together seven different locations across geographical distance.

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[3] Operational planning concerns commitments on a so-called 'short-term horizon', which means the planning of activities that will take place rarely more than three months ahead. This is different from what is sometimes termed 'tactical' and 'strategic' planning, which orient to commitments in the range of 3-24 months and 2-5 years, respectively. Integrated Operations includes strategies for improving the interplay between these different planning levels in order to improve resource allocation and change management, so-called Integrated Planning (Ramstad, Halvorsen, & Holte, 2012). This thesis does not explicitly address the interplay between planning levels.

The weekly plan optimization meeting is a meeting for optimizing the plans for well service tasks, i.e. maintenance tasks on the many oil and gas wells across the field of installations. These tasks are executed by roving teams that travel from installation to installation according to the plan made onshore. Decision making in this setting concerns the issue of prioritizing limited and shared resources across the field, but also producing a feasible plan for the roving crews. Participants from up to six different departments meet, including both engineers and managers. The stated objective is 'improved quality in decision making', but also avoidance of extended or repeated rounds of decision making by including all stakeholders in the same meeting. The second meeting is a daily morning meeting in which participants from six offshore locations and one onshore location meet via multiple-location videoconference. This is a meeting where onshore and offshore personnel work to optimize the daily and weekly plans for production-related tasks across the entire field of oil and gas installations. By coordinating their activities and update each other on changes in operations across the field, the stated goal is to 'be ahead' in their planning, which means to identify at an early stage possible conflicts in the plan that might lead to delays and loss of production. Daily morning meetings between offshore and onshore locations have become routine events in the industry and they provide important sites for broad participation in operational decision making.

Darling & Dannels (2003) describe engineering practice as taking place in an "intensely oral culture", characterized by interpersonal and small group settings. The current engineering setting is no exception. In daily decision making, the practice of operational planning is highly reliant on team interaction in order to manage resource allocation across departments and continuously respond to the changes in the operational situation. Negotiations over the meaning and consequences of these operational constraints are to a large extent discursive, requiring the professionals to acquire, interpret, and assess information through interaction, often in meeting settings. The interactional dimension of decision making in this setting is thus highly relevant for the overall outcome of operational planning and production optimization.

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Purpose and research questions

The first article in the thesis, Article 1, is a systematic literature review of previous studies, asking: What do empirically based discourse analytic studies tell us about decision making in professional teams or groups? The review has served as a basis for three empirical studies, and has provided an overview of what empirical sites and analytic themes have been explored in relation to the phenomenon of decision making.

While seeing a clear relationship between decision making and problem solving, Angouri & Bargiela-Chiappini (2011) rely on a definition of problem solving as 'the invention of an alternative' and decision making as 'the selection of an alternative'. This might be a useful distinction, but in actual interaction the two might not always be easily distinguishable. In the literature these concepts are used interchangeably and with unclear boundaries between them. This thesis will therefore not make explicit use of this distinction, but will employ the term decision making defined as an interactional trajectory with the purpose of arriving at a commitment to future action or to a future state of affairs (Huisman, 2001; Mintzberg, Raisinghani, & Théorêt, 1976). Taking a discourse analytic approach allows for systematically exploring the processes through which such commitments are made, negotiated or challenged. Rather than being driven by a concern with decisional outcomes, the thesis is concerned with how the participants discursively manage decision making in this particular setting, given the constraints of their communicative situations. The focus is, in other words, on the process of achieving commitments to future action rather than 'the decision' as an outcome of interaction.

The thesis aims to be a contribution to the empirical investigation of team decision making with a particular focus on interactional dynamics. The overall research question is: *In the context of the operational planning meetings, how do interactional dynamics play a role in team decision making?* The first two empirical articles (articles 2 and 3) study the weekly plan optimization meeting. Article 2 examines the management of participant roles and asks: How do the participants occupy and shift

between specific activity roles and discourse roles in their attempt to arrive at decisions? Article 3 examines the role of questions in team decision making, asking: How do questions function as interactional resource for decision making in the plan optimization meeting? The final article, article 4, studies the daily morning meeting and looks at how offshore participants assume speakership without having been assigned speaking turn, with the research question: How does self-selection of turn function as an interactional resource for decision making in video-mediated interaction?

The four articles are presented in full in Part II of the thesis. Before giving a synopsis of each article, a review of the research on workplace discourse and team interaction will be given, with a specific focus on discourse studies of team decision making (section 2). Following the synopses (section 3), the theoretical foundations of the study is presented, focusing on language as social action, the activity-oriented approach to discourse analysis, and the conceptualization of decision making (section 4). An account of the methodological considerations is provided (section 5) before the findings are synthesized and discussed as they relate to the overall research question and the analytic approach (section 6). Implications for professional practice are also discussed before the conclusion summarizes the contribution of the thesis, including reflections on future research (section 7).

2. The field of workplace discourse

The interdisciplinary field of Applied Linguistics has a history of studying issues related to language education, language acquisition, and literacy. In the last few decades, however, a growing number of studies focusing on discourse in professional settings have appeared, in diverse settings such as healthcare, law, social work, and business. The thesis is a contribution to the sub-field of Applied Linguistics often referred to as 'applied linguistics of professional practice' (Sarangi, 2005b) and 'workplace discourse' (Koester, 2006). This field focuses greatly on practical relevance of research and collaboration with practitioners (Roberts, 2003; Sarangi & Roberts, 1999, 1999). Analysis of talk and interaction in institutional settings had its early contributions in the 1970s and 1980s with studies such as Labov & Fanshel (1977) on psychotherapeutic discourse, Sinclair & Coulthard (1975) on classroom interaction, Atkinson & Drew (1979) on interaction in judicial settings, and Mishler (1984) on doctor-patient interaction. The last two decades have seen a growing orientation towards institutional and professional practices (see e.g. Bargiela-Chiappini & Harris, 1997; Boden, 1994; Drew & Heritage, 1992; Firth, 1995; Holmes & Stubbe, 2003; Sarangi & Roberts, 1999). Only these last few years book-length volumes have appeared (Candlin & Sarangi, 2011; Gunnarsson, 2009; Koester, 2010; Schnurr, 2013), including volumes on specific empirical domains, such as business and social work (Bargiela-Chiappini, 2009; Hall, Juhila, Matarese, & Nijnatten, 2013).

While acknowledging the inherently multimodal nature of professional practice, this area of research has primarily been concerned with linguistic and interactional dimensions. Of relevance here are workplace studies in the intersections of sociolinguistics, pragmatics, and discourse analysis. There has been a growing number of empirical investigations providing insights into a wide range of themes such as identity (Angouri & Marra, 2011), leadership (Holmes & Marra, 2004), humor (Holmes, 2006; Markaki, Merlino, Mondada, & Oloff, 2010; Rogerson-Revell, 2007), and multilingual business meetings (Poncini, 2004; Wodak, Krzyżanowski, & Forchtner, 2012). Beyond specific themes, significant contributions also come from conversation analysis, particularly through studies of

interactional dimensions of meeting talk (for comprehensive reviews cf. Asmuss & Svennevig, 2009; Svennevig, 2012). Meetings are treated as speech exchange systems that are different from more incidental workplace encounters as they are planned in advance with a pre-specified purpose or goal; they are temporally and spatially bounded by a schedule/agenda; and they are located in specifically designated rooms etc. The conduct of the chair characteristically structure turn-taking, sequence organization and topic progression. The role of the chair has also been addressed from discourse analytic approaches in recent studies (Angouri & Marra, 2010; Nielsen, 2009; Rogerson-Revell, 2011).

The research tradition outlined here has mainly emerged from European and Australasian research groups, with important contributions from the Wellington Language in the Workplace Project in New Zealand. However, the North American field of Organizational Communication has also seen a discursive turn, which in many respects orients to similar phenomena although from different intellectual roots. This field approaches organizations as discursive constructions (Fairhurst & Putnam, 2004), representing a shift in thinking from seeing communication as an aspect of the organization to seeing communicating and organizing as a single, simultaneous accomplishment, in a relationship of equivalence to each other (Taylor & van Every, 2000). The latest development in this strand is the 'Communication as constitutive of organizing' (CCO) perspective (for an overview, cf. Cooren, Kuhn, Cornelissen, & Clark, 2011). There is also a growing body of research on business discourse coming from Asia, focusing among other things on the communicative challenges of business practitioners in a linguistically complex and multilingual setting (Cheng, 2009; Sun & Kádár, 2008).

Parallel to this orientation in discourse studies, the field of organization and management studies have seen an increased interest in discourse and discourse analysis (Alvesson & Kärreman, 2000; Grant, Hardy, Oswick, & Putnam, 2004; Grant & Iedema, 2005). Also drawing on the ethnomethodological and conversation analytic traditions, the area of workplace studies (Heath, Luff, & Knoblauch, 2004) is a cognate field of research growing out of organization studies, pursuing

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the detailed understanding of work, in particular the ways in which tools and technologies impact upon professional practice and collaboration at work (see e.g. Engeström & Middleton, 1996; Galegher, Kraut, & Egido, 1990; Luff, Hindmarsh, & Heath, 2000). This brief review of areas within research on workplace discourse is by no means exhaustive, but intended to give a sense of the research landscape in which the studies of this thesis can be found. The next section will concentrate on the specific area of interest for this thesis, namely the discourse analytic study of team decision making.

Discourse studies of team decision making

The topic of decision making in institutional interaction has been discussed as part of larger theoretical issues on interaction in professional settings (see e.g. P. Atkinson, 1995; Boden, 1994; Cicourel, 1968; Silverman, 1987). However, there are relatively few studies that approach decision making explicitly and empirically from a discourse analytic approach. The first article of this thesis (Halvorsen, 2010) is a systematic literature review of empirical discourse studies of team decision making, specifically team decision making among professionals. It is based on the observation that decision making has been a key concept in organization studies, theorized from a variety of perspectives, but that studies on workplace discourse have less explicitly dealt with this phenomenon. It was therefore considered useful to provide an overview of how empirically based discourse studies have conceptualized and operationalized the concept of team decision making. Such a systematic review has to my knowledge not been provided before, and it was the hope that it would provide a stepping stone for future discourse analytic studies of interprofessional interaction and team decision making.

The reviewed studies focused on a range of discursive and interactional features in team decision making. Related to the assessment of information, the analytic contributions included the discursive production and assessment of evidence (Cicourel, 1990; Måseide, 2006); client/patient categorization (Hall, Slembrouck, & Sarangi, 2006; Hughes & Griffiths, 1997; Nikander, 2003); as well

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as vagueness as a discursive resource (Menz, 1999). In terms of reaching agreement and managing

disagreement, the studies examined formulations (Barnes, 2007; Huisman, 2001); mitigation

strategies (Graham, 2009; Wasson, 2000); as well as participants' turn-taking competence (Sanders,

2007). In addition, several of the studies discussed explicitly how organizational structure and

hierarchies influence the use of these discourse strategies. In this manner, the reviewed studies

contribute to understanding decision making as an interactionally emergent phenomenon. However,

there is a need for further empirical studies both within and across institutional contexts. (cf. section

2 for a synopsis of the review article including procedure).

Since the review was conducted, a few studies have appeared with decision making as a topic of

investigation. Three are based on data from a business setting (Angouri, 2012; Angouri & Bargiela-

Chiappini, 2011; Wodak, Kwon, & Clarke, 2011), one from health care (Måseide, 2011), one from

education (Clifton, 2009, although could possibly be categorized as business setting, with data from a

private for-profit school), and one that does not fit the categories in the review article, but which

falls under religious/spiritual organizations (the church workplace, Stevanovic & Peräkylä, 2012).

Wodak, Kwon, & Clarke (2011) examine salient discursive strategies employed by one manager-chair

in two different meeting genres in a multinational defense corporation. They identify five specific

strategies that are seen to drive decision making: bonding, encouraging, directing, modulating, and

re/committing. They see the manager-chair as influencing the outcome in both positive and negative

ways through the choice of discursive strategies. They also emphasize context and meeting genre as

mediating participation in the meeting and the chair's ability to control interactions.

In their study of problem solving talk among engineers, Angouri & Bargiela-Chiappini (2011) examine

the enactment of a problem as a discursive phenomenon. With meeting data from multinational

companies they show how the identification and the ownership of a problem are locally constructed

in interaction and, by extension, how such problem solving is also linked to the status, expertise and

shared history of the interactants. With data from multinational companies as well as small and

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medium enterprises, Angouri (2012) discusses disagreement in problem solving meeting talk. She finds that disagreement and deviating opinions can be acceptable in these contexts and constitute a necessary step in reaching agreement. Disagreement is often unmarked and thus forms an integral part of the problem solving process. Face threatening acts and impoliteness are rare and marked disagreement is task-bound and does not threaten identities or relationships.

Clifton's (2009) primary focus is the notion of influence, but this is explicitly related to decision making and a definition of decision making is provided. Formulations, co-constructions, repair, and laughter are shown to serve a function in achieving influence in these meetings. Based on video recordings of a management team meeting in a private, for-profit language school, Clifton studies how influence is interactionally achieved in decision making episodes from a conversation analytic perspective. He sees decision making as primarily a sequential achievement, creating a commitment to future action through talk, and he shows how influence is better conceptualized as a fluid property of talk rather than a property of the individual team member.

Måseide (2011) also addresses problem solving in team meetings, but in a medical setting, specifically a thoracic ward at a hospital. His analysis focuses on the moral dimensions that appear to be characteristic of problem solving talk in these meetings. He also shows how turning the medical problems into moral problems can be used as a discursive tactic to manage professional and institutional problems. Stevanovic & Peräkylä (2012) study meetings involving the priest and the cantor in the church workplace, and this study has some similarities to the operational planning meetings as the church meetings also concern decision making in a planning setting, revolving around future scenarios and with the purpose of achieving commitments to future action. Stevanovic & Peräkylä show how collaborative decision making in planning meetings involves not only negotiations over epistemic authority, i.e. who has the knowledge and expertise on any given subject, but also over deontic authority, i.e. who has the right to tell others what to do.

The review of previous studies on team decision making shows diversity in terms of empirical site but we can identify only a few studies within each site. It is therefore a relatively scarce empirical base from which to draw parallels or analytic comparisons. Therefore there is still a need for more empirical studies which together can provide a richer picture of team decision making in the workplace. The data setting in the present thesis involves groups of professionals rather than dyads, with the added dimensions of risk and safety, productivity and production goals playing a significant role. This kind of setting has, to my knowledge, not been studied from discourse analytic perspectives.

3. Synopses of the articles

Four articles comprise the core of the thesis. The first article provides a systematic literature review of discourse analytic studies on team decision making in professional settings. Articles 2 and 3 are both based on data from the plan optimization meeting, and both present one extended decision making episode each for demonstrating the analytical findings. Article 4 is a broader mapping of the daily morning meeting and traces one interactional feature, self-selection, throughout the data.

Article 1: Team decision making in the workplace: A systematic review of discourse analytic studies

The field of workplace studies has grown, but there has been no systematic reviews related to team interaction and decision making. The motivation behind the literature review was to have an understanding of the range of studies that have been undertaken and to determine their foci of engagement. The procedures used for identifying eligible studies included online database searches such as JSTOR, ISI Web of Science, ERIC, MEDLINE, PsycINFO, as well as searches in reference lists in scientific papers and books on discourse and decision making. Two key concepts were chosen, 'decision making' and 'problem solving', combined with key words related to institutional setting (meeting*, organization, profession*, team, group) and relevant analytic approach (discourse, discourse analysis, interaction). This means that studies on for example negotiation, which could have relevance for decision making (see e.g. Firth, 1995), was not included.

Studies were included if they met the following criteria: 1) directed at the verbal and/or nonverbal communication between groups of professionals in a workplace setting, 2) involved audio or video recordings of interaction, 3) focused on decision making or problem solving as a core issue in data analysis, and 4) reported in the last 30 years, published in English. Since the purpose of the review was to examine empirical findings relating explicitly to decision making among groups of professionals, a number of discourse studies on team interaction were not included: for example if

the studies did not explicitly link the analysis of discursive features to the phenomenon of decision making (e.g. Bailey, Housley, & Belcher, 2006 on bridge team work); if they focused on lay or patient participation (as in studies of shared decision making, Gwyn & Elwyn, 1999); if the data derived from simulated encounters (e.g. Aritz & Walker, 2010); or if the study was a purely theoretical contribution (e.g. Poole, Seibold, & McPhee, 1985 with a structurational approach). Excluding these and other similar studies from the review does not diminish the contributions they make, but rather represents an attempt to provide a very focused review scrutinizing the empirical study of team decision making from the perspective of discourse studies.

The search resulted in 16 discourse studies of team decision making among professionals and these were located empirically in different professional domains: business, health and social care, and education. Eleven of the studies were published after 2000, which might indicate an increased interest in the subject within discourse studies. All the studies employed data gathered from meetings, and a majority of them used ethnographic insights to supplement their analyses. This leaves a void in terms of understanding decision making as it takes place in and across other workplace arenas (e.g. informal talk, backstage talk, or talk 'on the move'). In addition to the findings relating to discourse features, the systematic literature review found that almost two thirds of the studies (62.5%) did not consider conceptual definitions of decision making. The concept was treated implicitly as the purpose or outcome of interaction. This is unfortunate because without a proper definition of what constitutes decision making it is difficult to interpret the discourse strategies underpinning decision making.

Article 2: Team decision-making in workplace meetings: The interplay of activity roles and discourse roles

This article is co-authored with Srikant Sarangi, and provides analysis of data from the weekly plan optimization meeting. It takes as its point of departure a dynamic conceptualization of role, i.e. how participant roles are accomplished situationally and in activity-specific ways. Static descriptions of

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role ignore human agency and the skillful negotiations in which people engage as they shape and form meaningful social interaction. The article explores the interplay between activity roles and discourse roles as an analytic focus for examining team decision making. Goffman's concept of participation framework is extended to illustrate how different participant role categories can be mapped on to interactional data in a workplace meeting setting. While discourse roles (Presenter, Responder, Assessor, and Elicitor) describe participant roles at the utterance level, activity roles (Chair, Primary Participant, Secondary Participant) describe roles at the activity level.

Our analysis reveals how participants shift dynamically across activity roles and discourse roles in the meeting, as any participant can potentially adopt more or less any role at a given point in the interaction. The roles of addressee and audience map variably on to primary and secondary participant roles, depending on topical relevance, decisional power, as well as personal-professional judgments. It is argued that discourse role positioning is activated through the concept of discourse types, which are ways of characterizing forms of talk and interaction. The different discourse roles, constituted in identifiable discourse types, also afford unmarked, seamless shifts in activity roles, from chair to participant, or from secondary participant (audience) to primary participant (addressee) and vice-versa. By adopting or assigning particular roles, participants implicitly make claims about their role positioning and relationships with co-participants and at the same time redefine or reframe the activity in which they engage. Silence as a discourse type serves a specific function in decisional outcomes in this specific activity type, affording smooth transition to the next topic with minimal break and minimal repetition.

The dynamic role positioning offers the meeting participants the opportunity to cumulatively add to the joint production of decisions based on their organizational role-responsibility and expertise; a convergence of expert labor that is efficient for decision making in a setting characterized by high risk and frequent change. The activity type thus affords a flexible utilization of the participants' broad range of competencies and experiences, and the strategic use of discourse roles and activity roles on

a moment to moment basis, dependent on the participants' sense of engagement and obligation. Approaching the concept of role as dynamic and fuzzy proves to be useful in analyzing interaction at a micro-level because it allows for acknowledging complexities and overlaps in professional discourse practices.

Article 3: Questions as interactional resource in team decision making

The third article builds on Article 2 and focuses on one specific interactional resource in the plan optimization meeting and its functions in operational decision making. Among the interactional resources available to the participants, such as for example assertions or hypothetical formulations, the decisional talk in this activity type is characterized by frequent use of questions. The research question is therefore formulated as follows: How do questions function as an interactional resource for decision making in the plan optimization meeting? The analysis was conducted in two steps, with activity type mapping followed by detailed analysis of the functions of questions in decision making trajectories. Combined with ethnographic data and fieldwork, the systematic mapping of structural and interactional characteristics of the activity type, provided a comprehensive interpretive framework for the analysis of specific interactional features. The article presents one extended decision making episode from opening to closure.

The activity type was found to be loosely structured across the phases, with relatively broad participation across hierarchies and departments, and a floor that is relatively open and accessible for both engineers and managers. The questioning format as an interactional resource is available to all the participants and occurs at crucial stages in the decision making trajectory (problem formulation, assessment of options, alternative options). The questioning format is found to be brief, unelaborated, and topically implicit. There is minimal prefacing or framing of the questions and few elaborations, explanations, or justifications. The responses given are equally short and fact-oriented. The short and focused questions are communicatively efficient as they represent forceful communicative acts that require a response. The result is a style of questioning and answering that

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covers a range of issues but that still remains largely implicit in terms of professional reasoning. The continuous tweaking of the operational plan makes efficiency relevant as deliberating issues might prove a waste of time if or when the situation offshore changes. The function of questions can also be seen as collaborative as they facilitate shifts in participation. In questioning rather than asserting, the participants can be heard to defer to the knowledge and expertise of the other participants and opening up the floor to the range of expertise present. In the context of operational planning this is particularly salient as the complex interdependencies of operations require interprofessional assessment from the team as a whole.

Common to many of the questions are their metapragmatic function as formulations that allow the participants to comment and to negotiate the meaning of what has been said thus far. With their strong preference for agreement, formulations are geared towards seeking confirmation and commitment to future action. The interrogative form conveys stronger force than the declarative and the interlocutor is obliged to respond and asked to take a stand. Formulations function to make information visible and reportable, consequently lifting specific items to the attention of the group. In this sense, questions as formulations are powerful devices for the production and assessment of evidence in team decision making as they constrain and project subsequent interaction.

Questions can be seen as a strategic device in team decision making in this setting as they allow the questioner to set the agenda, make visible specific aspects of the problem or decision, and also requiring some form of response from the other participants. In this way it can be a powerful, rhetorical tool in a complex interprofessional setting in which the participant represent different interests and responsibilities. When employed at crucial stages in the decision making trajectory, the questions can play a significant role in the negotiations over commitments to future action.

Article 4: Self-selection as resource in video-mediated team decision making

The last article examines how an element of turn-taking, namely self-selection of turn, plays a role in decision making in the daily morning meeting, conducted via multiple-location videoconference. The study examines how the offshore participants' occupy the floor without having been assigned speaking turn, and how their self-selected turns contribute to decision making. The rationale for studying self-selection in this meeting was not driven by an interest in turn-taking organization as such, but rather an interest in the ways in which participants "build action together by *participating* in structured ways" (Goodwin & Goodwin, 2004, p. 225 emphasis in original). The article approaches turn-taking as an entry into participation and the research question is: How does self-selection of turn function as an interactional resource for decision making in video-mediated interaction?

The data is approached with the analytic framework of Activity Analysis, involving structural and interactional mapping of the activity type followed by detailed analysis of instances of self-selection. The mapping found a highly routinized encounter with ritual transitions between phases and pre-defined turns at talk. In the setting of the morning meeting, the mediated format is seen as a key feature of the activity type and it involves some specific constraints in terms of participation: the number of locations and participants are high; access to nonverbal information is limited; there is not direct eye-contact between participants; and the offshore participants have the sound muted in their location, which represents an additional dimension to self-selection of turn.

Self-selection was found to take place mainly in two specific phases of the meeting, the Plan phase and the Round. In these phases, the self-selected turns were found to serve several functions in decision making: qualifying decisions, presenting local decisions, launching decision proposals, as well as ratifying and confirming decisions. In addition, the offshore participants provided site-specific information and updates that drew the attention of the group to impending changes in the plan and intentions for future action, thus contributing to updating and securing the decisions represented in the operational plan. Given the interdependencies across installations, such projections are highly

relevant as they open up for other locations to plan their operations accordingly and prepare for possible change.

The occurrences of self-selection in this meeting format underscore the participants' willingness and ability to contribute to the overall communicative project of the meeting. However, it also testifies to the opportunities that are present for accessing the floor in this particular activity type. The article provides insights into the ways in which the structural qualities of an activity type might impact the participants' ability to take turn and self-select. This might be of particular relevance for complex, mediated meeting settings such as the daily morning meeting. The participants' ability and willingness to assume speakership has specific bearings on the participant framework and, as seen in the current study, the decision making trajectory.

4. Theoretical and analytical overview

Whereas traditional Linguistics approaches language as a phenomenon, Applied Linguistics investigates language as social action and social practice. This implies studying language use, text and talk, as it is manifested in actual, real-life situations, whether it is letters from the insurance company, conversations around the dinner table, or meetings at work. Underlying the research question of the current thesis are some basic assumptions about language and interaction that inform research design and analytic orientation. Intellectual roots from two major sources are particularly salient: language philosophy and micro-sociology.

Within language philosophy, Wittgenstein's Investigations (1953/2010) brought the pragmatic dimensions of language to the fore of philosophical analysis, and created the grounds for thinking about language as a collection of 'language games' and about words as tools for action. This was a step away from earlier forms of analytical philosophy that conceptualized language as a mirror of reality, now turning the attention towards meaning rather than representation – and meaning is to be found in language use, not in the structures of the language system. In his pioneering book 'How to do things with words', Austin (1975) foregrounded this approach to language, and with his concept of 'the speech act' he showed how words and utterances not only reflect meaning, but perform actions and 'get things done'. The constitutive power of language and social interaction has grown to become mainstream thinking within much human and social sciences (Fitch & Sanders, 2005).

The pragmatic approach in language philosophy also prepared for important developments within sociological analyses. The symbolic interactionists of the Chicago School were concerned with how people act toward things based on the meaning they attach to these things, and that these meanings are closely tied to the ways other people act and relate to the same object or concept (Blumer, 1986; Mead & Morris, 1934). Meaning is seen, in other words, not as existing independently of social actors, but as created in social action and interaction.

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Growing out of the work in symbolic interactionism, the ethnomethodological tradition has emphasized how actions and practices at a micro-level are essential for understanding how social life is organized, maintained and changed (Garfinkel, 1967). The systematic study of micro-elements of social life constitutes a shift from traditional sociological study with its focus on larger institutions that coordinate the behavior of social members. Talk comes to be seen as a key social activity – a topic of investigation in itself – and the accounts social members provide via talk (and text) are considered not only indexical, i.e. dependent on their context for their meaning, but also reflexive, in the sense that they serve to constitute that same context.

With the work of Sacks, Schegloff, & Jefferson (1974), this interactionist agenda was extended to the mechanisms of naturally occurring conversation and the significance of finely tuned communicative practices in the constitution of social order. Conversation analysis has provided significant concepts and tools for understanding the normative structures and mechanisms that pervade talk-in-interaction (J. M. Atkinson & Heritage, 1984; ten Have, 1999). These normative rules and practices are seen to exist independently of the specific social context, as a fundamental framework on which social conventions rest (Boden & Zimmerman, 1990). One strand of conversation analysis has specifically turned to the study of institutional interaction, with an interest in how talk in institutional settings differs from everyday conversation (Hester & Francis, 2000). The empirical studies emerging from this focus have provided important insights into a variety of workplace and organizational contexts such as doctor-patient consultations, legal hearings, job interviews, psychiatric interviews, and calls to emergency services (see e.g. Drew & Heritage, 1992; Heritage & Clayman, 2010).

While resisting categorization and blurring disciplinary distinctions (Lemert & Branaman, 1997), Goffman's work is another key contribution growing out of symbolic interactionism. With his theorizing of social life and human behavior, Goffman has contributed significantly to contemporary studies of talk and interaction, and inspires continued work on his many concepts related to 'the interaction order' (Goffman, 1983). His theorizing of the self as a social product is guided by concepts

such as 'face', which governs our attachment to a given moral order, and 'frame', organizing the individual's experience (see e.g. Goffman, 1963, 1981). The dramaturgical approach emphasizes resources and constraints for the presentation of self in social interaction. The insights into the 'orderliness of the interaction order' and the situated activity system (the encounter) bridges the agency-structure divide in social theory. However, Goffman has been criticized for his heavy reliance on metaphoric and under-formalized concepts, as well as for hypothetical and reported data (Helm, 1982). Many researchers in discourse analysis of naturally occurring talk, text, and interaction continue to extend and operationalize his concepts, offering rich empirical insights.

The current thesis leans on these insights from language philosophy and micro-sociology, in its approach to language and interaction in real-life workplace situations and with close attention to the situatedness of interaction. The analytic approach taken is that of Activity Analysis (Sarangi, 2000, 2010), which aims to approach the context of interaction in a systematic manner and with the meso-level concept of 'activity type' (Levinson, 1979) as its point of departure.

Analytical framework: Activity-oriented discourse analysis

The notion of context is imperative in pragmatic approaches to language and interaction, and has been approached in a variety of different ways via concepts such as Hymes' 'speech event' (1986), Gumperz' 'contextualization cues' (1992), and Goffman's 'frames' (1974). While the field of conversation analysis has traditionally focused on descriptive studies of inherent mechanisms of social interaction largely removed from its social contexts, discourse analytic approaches have underlined the need for contextualized analyses of social interaction (Cicourel, 1987; Sarangi & Roberts, 1999). Goffman (1961, p. 96) proposed that a basic unit of study should be the 'situated activity system': a "somewhat closed, self-compensating, self-terminating circuit of interdependent actions".

Levinson (1979) builds on Wittgenstein's notion of 'language games' with their multifaceted forms and functions of language use and coins the term 'activity type' for theorizing the notion of context and for emphasizing the level of social activity. Activity types are culturally recognized, goal-oriented events with specific constraints on participants in terms of contributions, style, and structure. These constraints are sources for activity-specific inferences and thus have implications for the meaning and functions of discourse strategies. In other words, the nature of the activity in which interaction takes place is seen to have implications for the role and function of talk-in-interaction. Activity types are described as prototype categories, i.e. they are not subject to either-or categorizations, but rather more-or-less, or can be described as relatively stable configurations of practice, with allowable deviations. Some practices will be less pre-scripted than others and leave more room for individual choices.

Language does not only reflect the situational context and the role relationship between speakers, but language establishes and changes this relationship, and ultimately the activity type in question. Context is, in other words, not a given, imposed from the outside-in (Duranti & Goodwin, 1992), rather, the agency of the participants is central as they contribute to creating, maintaining and changing context through interaction. This is a key difference from Hymes' concept of 'speech event', as Hymes sees context as constraining the individual while Levinson emphasizes how the participants shape and mold the event through their use of discursive resources (Thomas, 1995). The activity type framework thus provides a balanced approach to the constraints put on participants through the rules and norms of the encounter and the opportunities and resources inherent in that same activity.

The potential in Levinson's framework is re-appraised and operationalized by Sarangi (2000, 2005a, 2010) with special reference to institutional/professional domains of language use. Sarangi describes Activity Analysis as a specific type of discourse analysis that conceptualizes the activity as a fundamental entity in an analytic attempt to bridge the gap between the individual and the social. While paying adequate attention to the interactional organization of talk, Activity Analysis extends

the scope to consider how sequences of talk are embedded in the overall structure of the activity, also related to participant role-relationships specific for the professional encounter. Analysis of discourse data therefore begins with structural, interactional, and thematic mapping of the activity type; a mapping exercise that provides grounding and interpretive depth to the interpretation of discourse features and functions. This suggests that ethnographic insights into organizational contexts and institutional role-relationships are significant yet not sufficient for the interpretation of discourse data. The structures, objectives, and role-relationships of the language game are significant for interpreting the meaning and functions of discourse strategies.

The level of activity can in this way be a useful analytic entry into workplace discourse as it provides an analytic bridge between social structure and human agency, what Linell (2010) calls a 'bridging meta-concept' and Gu (2010) calls an 'interface between langue and parole'. The concept of activity type and the framework of activity analysis allows for capturing both the constraints on allowable contributions represented by the activity type as well as the creativity and agency with which participants maneuver within these constraints, contributing to (re)creating the activity type while also achieving communicative goals. The framework is, in other words, not entirely deterministic, in the sense that structures completely binds interactional choices, but also not entirely constructivist, in the sense that participants' options are open and free from contextual constraints.

Activity Analysis offers a specific way of contextualizing discourse data in a systematic and structured way in order provide a solid base from which to analyze discursive patterns or critical moments. Contextualizing at the level of activity opens up for rich interpretations of the dynamic negotiations that take place at the level of interaction (cf. section 5 for more details on the analytic procedures).

Conceptualizing decision making

In business studies a range of models for decision making have been developed such as SWOT (strengths-weaknesses-opportunities-threats) analysis, decision trees, cost-benefit analysis, etc. Common to all of them is a rationality-based method that systematically gathers information,

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develops alternative actions, evaluates, and chooses the optimal alternative. Rational choice theory has been the foundation for most decision making research in economics and management research, representing a cognitive approach that presupposes a fully rational actor deciding on the basis of a logical assessment of available choices. Social science approaches have contributed greatly to challenging and nuancing the rationality-based approach to decision making (for overviews, see Hodgkinson & Starbuck, 2008; Nutt & Wilson, 2010).

The concept of bounded, or limited, rationality has become central in understanding individual decision making and nuancing simple models of rational human behavior (March, 1994). People are seen as intendedly rational but they are constrained by limited cognitive capabilities and incomplete information (Simon, 1957). The logic of consequence and rational calculation is thus often substituted by a logic of appropriateness, of rule following, and fulfillment of organizational roles. From political science, theories of decision making have regarded organizations as political systems in which people have conflicting preferences and engage in political acts to increase their power to influence (Eisenhardt & Zbaracki, 1992). These ideas challenge the theories of bounded rationality as they bring in issues of power and politics. The garbage can model (Cohen, March, & Olsen, 1972) brings in the notions of ambiguity and contradiction to decision making, critiquing both rational and political models of organizational choice. According to this model, what gets decided depends very strongly on timing and luck; a random confluence of people, problems, solutions, and choice opportunities. In a similar line, Brunsson (1982) argues for the 'irrational' playing a role in achieving motivation and commitment in decision making. Generally, these studies do not include attention to the micro-analytic level of organizational interaction, but with the 'discursive turn' in organization studies (Grant et al., 2004) the level of discourse and interaction has gained increased attention.

Discourse analytic approaches to professional practice generally take a step away from traditional cognitive perspectives on decision making and their focus on professionals' mental models. Rather, discourse analysts look closely at what professionals do when they engage in decision making

practices (Boden, 1994). Through the micro-analysis of social interaction and team talk in the workplace, decision making is seen as bounded, not only rationally, but socially and interactionally (P. Atkinson, 1995; Cicourel, 1968; Huisman, 2001; Silverman, 1987). The normative constraints and the dynamics of interaction play a role in team decision making, both in terms of assessment of information, reaching agreement, and managing disagreement. This means that micro-analytic studies can contribute with insights into the local decision making practices as they take place in specific, situated workplace settings (cf. article 1).

The empirical articles of this thesis further operationalize the interactional dynamics of decision making through the analytic framework of Activity Analysis and the study of the activity-specific functions of interactional strategies. Team decision making is here seen as interactionally bounded in activity-specific ways, which means that the occurrence of questions or self-selection as interactional resources must be interpreted as they are related to the activity as whole. Importantly, defining decision making as a discursive process with the purpose of achieving a commitment to future action, does not presuppose that achieving such a commitment is straight-forward, conflict-free, or uncontested. Participants might very well have many, potentially conflicting goals that affect or prevent the achievement of decisions. This fact, however, does not undermine the relevance or usefulness of studying decision making as such (for a discussion whether 'decision gets in the way', cf. Mintzberg & Waters, 1990; Pettigrew, 1990). The workplace setting is to a great extent organized around decisions and commitments to action, whether these are team-based or not. However, the analytic approach taken when studying such processes must be able to account for the complexities and indeterminacies inherently present in professional interaction. Activity-oriented discourse analysis has the potential to account for the nuances of professional practice, particularly through the dynamic notions of activity type and participant roles.

5. Methodological considerations

The study is funded by the Center for Integrated Operations in the Petroleum Industry (Research Council of Norway project no 174963, in short 'the IO Center'). The IO Center is an example of current trends in research practices and science systems often referred to as 'new production of knowledge' (Gibbons et al., 1994) or 'post-academic science' (Ziman, 2000). Society's call for science-based problem solving and knowledge-based services increasingly require interaction between science and other social actors such as industry and government. As a 'Center for Research-Based Innovation', the IO Center is supported by the Research Council of Norway, three research institutions (NTNU, SINTEF, and IFE), and 14 industry partners through an eight year collaboration program. This thesis is one of the 25 planned PhDs in this program. It has been organizationally located in the sub-program 'Integrated Planning and Logistics', managed by The Norwegian Marine Technology Research Institute (MARINTEK). This sub-program has provided project management and practical arrangements for the study, as well as a research team working on the topic of integrated planning across several companies in the industry.

Case selection and data gathering

The case selection for the project was made through the program 'Integrated Planning and Logistics' in the IO Center. Project management approached the company based on their knowledge of the industry and involvement in other research projects in the IO center. Access to the company was given based on the research proposal as well as an email outlining the main objectives and the research topics for the PhD. The primary data has been the video recordings of planning meetings, but observations and conversations through ethnographic fieldwork has been an important source for contextualizing the discourse data and for producing relevant interpretations.

The ethnographic data was gathered through fieldwork that included observations of work both in the office landscapes and in a variety of meetings in operational planning (eleven different types of meetings, including short-, medium-, and long-term planning meetings; production meetings, vendor

meetings; and team meetings). In addition to the reading of reports, minutes of meetings, steering documentation, etc., numerous conversations were conducted with team members and management in the organization, some more planned than others (Hammersley & Atkinson, 1995). As the company was not located in Trondheim, traveling was necessary and the primary data collection, observations and video recordings took place during five one-week periods over the course of eight months in 2010. Two additional visits were made in 2011 and 2012, and several informal meetings with different participants have taken place throughout the PhD period in meetings, workshops and conferences organized by the IO Center.

In terms of contextualization and insights into the empirical site, the petroleum industry was not entirely unfamiliar to me at the start of this project. Before entering into the PhD work, I was employed on the contractor side of the industry as an internal communication manager, providing support on project management and team interaction in multi-disciplinary engineering projects. This means I had some knowledge of the industrial context before entering the fieldwork and was familiar with the overall terms and objectives, although without detailed knowledge of the domain of operational planning in this specific company.

In contemporary organizations, the high degree of specialized knowledge work and the increasingly technology-mediated communication calls for revisiting traditional anthropological ideals for fieldwork and participant observation. Czarniawska (2007) points out that the researcher's access to professional practice in the modern workplace is challenged when so much work takes place on the personal computer, and nonparticipant observation is frequently the only choice when studying expert groups. In my case, I entered the field as a guest and observed the activities as an outsider trying to understand and make sense of the processes at play without participating in them. Many aspects of practice were only available to me through retrospective accounts, for example of interaction via email. My fieldwork might resemble more the method of 'shadowing' or 'structured observation' (cf. Czarniawska 2007) than participant observation, following some professionals

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throughout the day (although not the same person consistently) and following a research interest that lead me to specific participants and activities within operational planning.

Discourse data

The plan optimization meeting and the morning meeting were chosen for video-recording for their relevance to operational planning and ambitions in terms of Integrated Operations. There was no goal to compare these two, but rather to approach the topic of decision making – and try out the methodological framework – on two quite different meeting settings: one co-located, but with a very diverse group of participants from five different departments; the other bringing together professionals with the same organizational responsibilities, but distributed across seven locations. The plan optimization meeting was primarily conducted in English, whereas the morning meeting was always conducted in Norwegian.

Other meetings were also considered recorded, but the procedures for acquiring consent was challenging as the meetings often involved a large number of people from different departments, sometimes with varied participation, and not least, different shift schedules offshore, which made the consent process demanding and time-consuming for my contact in the company. In the case of the morning meeting, in particular, changing shift schedules offshore[4] forced my contact person to be creative and, with the help of a technical assistant, they created an elaborate list of people, shift schedules, and locations in order to keep track of the changes in participation and who had consented and not to the recording. The fact that they took the topic of consent seriously, and found

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[4] The offshore operators generally work two-week shifts with four weeks off, which means there are three shifts rotating for the same position. The offshore installations and the various disciplines or work crews will have different dates and times in which the shift changes, so the morning meeting, dealing with six locations, will have a continuous change in terms of who participates in the meeting. In addition, there might be onshore personnel on offshore visits or ad hoc participation onshore from specialists or managers that take part in the meeting.

ways to keep track, was crucial for my project. In addition, a key person in the IT department was of invaluable help in identifying a recording solution for the videoconference and in fact setting up and monitoring the recording device for me.

The morning meeting was observed on a number of occasions before the practical arrangements concerning recording were cleared. 22 meetings were then recorded, 13 of which were observed. The recording was made with a recording application to the videoconferencing equipment. This meant that the recorder called into the video conference in the same way as the other locations, and it was represented on the videoconference screen as a black frame with a red blinking light. The image and sound acquired was then the equivalent of any other participating location (described in article 4). In addition, and mostly as a back-up, a video camera was mounted on top of the video conferencing screen, capturing the image of the onshore side of the meeting and only audio of the other locations. This turned out to be mostly redundant as it did not capture the videoconferencing screen with its shifting images triggered by voice activation. On one or two occasions I went back to this recording as the sound from one participant onshore was too low on the videoconference recording and I found that the onshore camera had picked this up more clearly.

The plan optimization meeting was also observed on a few occasions before the recordings started. With a co-located group of people located in a fairly small meeting room, I chose to use a single camera, mounted on top of the presentation screen in front of the room. The participants were situated closely together, all facing the front of the room and the screen on which the operational plan was showing. A more optimal solution might have been to have two cameras in the front corners of the room to capture more facial expressions, or even one in each corner, but this has obvious practical limitations, not least in processing the data afterwards. An audio recorder was in this case used as a back-up in case of technical problems, but the sound quality on the video recordings was good enough to make this extra recording unnecessary. Five meetings were video-recorded and observed, but given the richness of this data and the research interest that was spurred

by transcription and initial analysis, I requested the help from my contact to acquire another four recordings after my period of fieldwork was over. These were audio recorded and served primarily to calibrate the findings from the video-recordings by giving a broader set of meetings.

Fieldwork and field notes

The fieldwork and the extensive field notes taken throughout served an important function in several stages of the research process. The fieldwork provided the basis from which to decide what meetings should be recorded and studied in greater detail, and it was crucial for understanding the overall objectives and constraints in operational planning, not least related to the specific installations offshore, their interdependencies, and what is at stake in decision making in this setting. Field notes were taken continuously throughout the day in a note book, including questions to ask, facts to check, people to see, etc. Regularly I would take short breaks in which I would withdraw and write out more thoroughly impressions and reflections from the last hour of observation or conversation. While observing the meetings that were being recorded I made notes of any sequences or topics that struck me as interesting. These notes were valuable to me when I sat down with transcription and data analysis later on.

Since both meeting sites were characterized by peer talk among experts and insiders, with the implicitness and efficiency that entails, there was a great need for ethnographic insights that could make the recorded data understandable. After each plan optimization meeting and many of the morning meetings, I would talk with the chair or a participant immediately after and they would explain to me the topics and decisions that had been significant in the meeting, including why they were important, what assessments had been made, and why they had landed on the specific outcomes. In some case I would be able to deduct from the talk itself what the key issues and assessments were, but frequently there would be important elements that had only been implied throughout the discussion and that became clear to me as the chair explained. Often this would relate to technical issues or procedures that for example required the allocation of specific recourses

(electric power or chemicals, for example), which for the professionals were a given and therefor only implied. Also in the case of tightly coupled tasks, for example tasks taking place in the same area on deck, would not need explication in the meeting and would therefore not make sense to me as an observer.

There were also a great number of technical and organizational terms to learn and understand, and spending time with the professionals, following them around throughout the day, gave me many opportunities to ask questions and to quickly resolve simple issues that could be explained while walking from one building to another or from one meeting to another. These situations of movement, walking through corridors, frequently provided a richness of data that complemented the more formal conversations and interviews. Improvised conversations like these often gave me valuable information about the people we were about to meet or the meetings we were attending, and just as often interesting perspectives or reflections on related issues as well. The more concentrated conversations, when we sat down with allocated time to talk, gave important insights into more complex issues, historical explanations and detailed descriptions. In addition, the fieldwork gave insights into aspects of the organizational and professional culture, issues related to hierarchy and power across departments and geography, as well as the distribution of responsibility and expertise across departments, land and sea. Combined, the different elements of the fieldwork provided an invaluable resource, both for the general understanding of what is at stake for the professionals in this setting and for the interpretation of the discourse data. (See the Discussion section for some of the insights gained from the fieldwork and how they inform the discourse analytic findings).

Cicourel (2007) points out that in discourse analytic research there exists an 'interpretive gap' between actor and observer-researcher perspectives; analytic reasoning cannot be equated with participant reasoning. Discourse analysts remain legitimate but peripheral participants in field work and therefore need to work on aligning researcher and participant perspectives in order to produce

meaningful interpretations of situated professional practice. Sarangi (2007) coins the term 'the analyst's paradox' when discussing the researcher's attempt to obtain members' insights as a way of minimizing the 'interpretive gap' and in approximating 'ecological validity' (Cicourel 2007). This requires sustained peripheral participation but also an invitation to dialogue with the professionals. In line with my training in Applied Linguistics, I invited the closest group of professionals to contribute, not to decisions on topics or research questions, but to a discussion of relevant issues at the end of each week of field work.

The topics for this 'debrief' meeting were generally initiated by me, based on the week's observations and ideas, but frequently the participants would take the opportunity to reflect on their own experiences on issues related to collaboration and decision making in their current work practices. I offered to contribute with reflections and some discourse analytic concepts in these meetings and this was met positively by the group. On a few occasions I was asked to join other meetings as well, including the management team meeting, in order to discuss topics related to the research project. The focus in these meetings was not findings from my study, but rather open discussions around issues of professional collaboration and the communicative goals of their various arenas for decision making. This means that, at this stage, the final analytic results of the research were pushed to the background, and the dialogue with the practitioners was foregrounded. These meetings are not seen as part of the primary data for this thesis, they were never recorded, but they are part of the fieldwork and the efforts to contextualize the discourse data. They gave me valuable insights into the concerns and experiences of the practitioners directly related to the topic of the research project. This practice can be seen as an example of what Sarangi (2005b) calls 'hot feedback', which is a method for bridging the interpretive gap and ensuring relevance when studying actual workplace practices.

Transcription and data analysis

An important step in processing discourse data such as the video recordings in this study consists of the detailed work of transcription. Transcription is a form of translation of the content and structure of the interaction into a written format. Ten Have (1999) calls it a 'noticing device', and it helps the analyst capture details that are not readily available through observation, looking, and listening. Transcription is in this way an important tool for capturing interactional dynamics and for identifying patterns and variety across a corpus of data. Transcription can also be seen as an 'estrangement device' (Clifton, 2006) as it distances the analyst from the taken for granted understanding of talk, making visible the 'seen but unnoticed machinery of talk'. Transcription is not to be considered an objective representation of the recorded interaction, but rather as theoretically informed and guided by the analyst's research interests (Ochs, 1979). In this sense, transcription can be seen as part of the analytic endeavor and it provides a written format in which the analytic findings can be demonstrated and shared with the research community.

The meeting data for this study was transcribed with conventions developed by Jefferson (2004), but with the modifications needed to suit the purpose and analytical focus of the study (cf. Appendix A for transcription key). The level of detail is reduced, for example through pauses being indicated in seconds and in micro-pauses (less than 1 second). The indication of laughter has been marked by @, with one sign per 'beat', which is a more visual marking than Jefferson's original. I have also chosen an orthographic style close to the written language for ease of reading. The discourse data here is complex and unfamiliar to many readers, both in terms of terminology and the organizational setting, so the transcription process has involved many choices and a balancing act between sufficient level of detail while ensuring intelligibility and readability. The first rounds of transcription were done in collaboration with a Master's student in Applied Linguistics who studied part of the morning meeting as part of her thesis (Halse, 2011).

The high number of speakers and various organizational roles present a challenge in transcription, but I have tried to create categories that are consistent and as self-explanatory as possible in order to

improve readability. Since participation in the meetings is based on the participants' roles and responsibilities in organization, the identification of this was significant and could not be left out. The analysis, particularly from an Activity Analysis perspective, would not make sense if the speakers were identified as male or female, or by first names. For the plan optimization meeting, speakers are identified in the transcripts with three-letter acronyms indicating their organizational role: the first two letters indicate the area of responsibility or department (e.g. WS for Well Service, PO for Production Optimization) and the third letter indicate level of authority (M for Manager, E for Engineer). In the morning meeting, these labels are also used for the onshore participants. The offshore participants, which are primarily control room operators, are simply labelled by letter, indicating their offshore installation (A, B, C etc.), and by number, indicating their role in the meeting (the one doing the primary reporting labelled 1, then 2 for the next speaker etc.). This numbering does not reflect organizational hierarchy in any systematic way. With the high number of participants offshore, I was not able to identify more details regarding their organizational roles, for example if the two participants in one location had different or shared responsibilities in their local organization.

The morning meeting was conducted in Norwegian, and this data was therefore transcribed to a standardized form of the Norwegian language. Transcriptions were only later translated for the purpose of the English research reports (journal articles and thesis). The plan optimization meeting was primarily conducted in English, with participants from different English-speaking and French-speaking countries. On a few occasions (for example in Article 3, excerpt 3), I have made a comment in the transcription when the speaker is Norwegian and his utterance is clearly a direct translation from Norwegian leading to a less clear utterance in English.[5]

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[5] For example, one Norwegian participant consistently uses the English word 'eventually' when meaning to say 'possibly'. The Norwegian word for 'possibly' is 'eventuelt', so this mistake is understandable and not entirely

The recorded data was subjected to repeated viewing and transcribed in order to capture interactional features and patterns. The primary data for the discourse analysis are always the video recordings, and I have come back to these repeatedly throughout the analytic stages. Parallel to the transcription work, the analysis has relied on the analytic practice of activity mapping of both the chosen activity types (Sarangi, 2010). Mapping of the structural and interactional features of the encounters provided a tool for close inspection of the data and was an important process in describing the activity-specific context of the interaction. The mapping went through several stages, trying out different ways of describing and illustrating the recurring features of the data, such as tracking and describing the structural phases of the meetings and mapping the participants' contributions by phase, turn frequency (number of turns), turn volume (word count), also related to organizational role-responsibility and level of authority. Looking across the meeting data, patterns emerge and the contours of the activity type might be sketched; the style and structures that are relatively stable over time and that makes the meeting recognizable as an instantiation of the specific activity type. Also the identification of critical moments and the selection of sequences for detailed analysis are supported by this thorough and empirically driven approach.

Research ethics

The project has been conducted according to the guidelines for research ethics defined by The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH). Required notification was sent to the Data Protection Official for Research (NSD, Project no. 22832). The recorded data and field notes have been stored and handled in accordance with the Personal Data Act. The anonymity of the participants is ensured by leaving out all names of people, and changing the names of departments and companies to commonly used English terms within the industry. The transcripts and field notes only refer to participants' organizational function and these have been

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uncommon, and it seems like the other participants just ignore the mistake. For readers in English, however, this must be explained.

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modified to describe organizational role but without using the exact title or position. Also terminology which is specific for the company has been given more generic labels.

The practice of informed consent is an important part of the principle of no harm and all participants in the study received written information about the project (Appendix B) in addition to presentations in person at the work place. The group that was followed most closely gave written consent to observations and video recordings in their work area. However, recordings were only made during formal meetings where written consent could be ensured from all participants. All participants were informed of their right to withdraw at any time and that all transcripts and reports would be anonymized.

6. Discussion

The systematic literature review in article 1 provided a basis from which to conduct a discourse analytic study of team decision making. The reviewed studies were shown to provide a rich intake into a range of interactional mechanisms and strategies, emphasizing the situatedness and the emergent nature of team decision-making. However, the topic warrants further study as the number of studies found was low and the range of empirical sites was limited. The overall research question for the thesis has been: In the context of the operational planning meetings, how do interactional dynamics play a role in team decision making? Two quite different activity types have been studied: the weekly plan optimization meeting and the daily morning meeting. These were not chosen for the purpose of comparison, but rather for their ethos of integration, across departments and across geographical distance. Due to the limited and shared resources in offshore production, the decisions made are frequently relevant across the field of installations, which makes the coordination across departments and units highly relevant. Under the heading 'Integrated Operations', the interprofessional and geographically distributed meetings play a significant role in this coordination, bringing together key personnel and stakeholders. The meetings have been shown to be highly reliant on verbal interaction, with relatively few and simple tools for interactional support (such as software for sharing diagrams and presentations across distance). In this sense, we can see interprofessional interaction as a primary working tool for these engineers, and one that they rely on for contingent decision making in operational planning.

Activity-oriented approach to team decision making

The social and normative constraints of local interaction have been shown to be essential to decision making; the literature review found decision-making to be bounded, not only rationally, but also socially and interactionally. While decision making has been seen as a sequential achievement by conversation analysts, this thesis draws on a broader theoretical base and sees decision making as discursively accomplished within the constraints of the specific activity type in which the interaction

takes place and as tightly linked the role-relationships and responsibilities that are reflected and negotiated in the encounter. The studies in the present thesis contribute to operationalizing the 'interactional boundedness' of team decision making by locating as a source of this boundedness the activity type in which decision making takes place.

The Activity Analysis framework provides an entry into workplace decision making that links activity type descriptions with detailed analysis of interactional episodes, contributing to linking the discursive choices of the participants to the structures of the activity in which they take place. As described in section 4, this is not to suggest that individual communicative acts are predetermined by activity type features, but rather to understand how communicative acts gain certain functions and interpretations due to their activity-specific inferences. In answering Goffman's (1974) question "what's going on here", an activity-oriented approach brings in the features and affordances of the 'language game'. The challenges of operational decision making are, in other words, seen as related not only to the complexities and contingencies of operational planning as such, but as also related to the opportunities and constraints that can be found in the activity types in which operational decision making takes place.

In terms of contextualizing discourse data, then, this approach in a way shifts the weight or the point of departure from the broad ethnographic descriptions to the more proximal context of the communicative situation – a form of meso-level entry point that necessarily must include a broader social or organizational context but that emphasizes the relevance of the specific encounter in the interpretation of the discursive and interactional choices made. This allows for seeing how the larger cultural or organizational discourses have to find their expression in specific social encounters, and that these encounters in themselves represent constraints on what can be expressed and how. Mapping of the features of the activity type is one way of providing an interpretive frame, or a frame of reference, in which some of the constraints and opportunities for participation are made visible to the analyst-observer. In the current thesis, I believe the empirical studies have shown the relevance

of approaching discourse data in this manner for providing rich interpretations of interactional dynamics that are created through discursive/interactional resources such as role positioning, questions, and self-selection.

There is an important duality in the concept of the activity type, as it is seen as both a prototype pre-existing the actual encounter, as a culturally recognizable format, and at the same time as created, maintained and changed continuously through the participants' discursive choices. The concepts of discourse role and activity role, as illustrated in article 2, can show this dynamic as it unfolds in actual interaction and opens up for identifying professional agency within structured encounters. While emphasizing the interactional boundedness of team decision making – that the participants are not free from social and communicative norms – the analysis has also attempted to capture the element of agency that is reflected in participants' strategic use of available interactional resources. The implications of this approach would be that analyzing professional discourse requires adequate attention to the constraints represented by the activity type in which interaction takes place.

The contingent nature of operational decision making

The empirical articles in the thesis provide insights into local decision making practices in an empirical domain that differ from many other team settings, particularly in terms of the great uncertainties and the changeable nature of operational planning. Decision making in this setting is contingent on the fluctuations of operations, and decisions are continuously adjusted to the frequent changes offshore. In contrast to other kinds of decision making, for example business decisions at a strategic, long-term level, decisions here are not necessarily expected to stay unchanged. Change is in fact expected; it is not a deviation, and this has very practical consequences for professional interaction and decision making. In the plan optimization meeting this is evident in the flexible shifts across discourse roles and activity roles, which are found to open up participation and afford a collaborative convergence of expert labor efficient for decision making in this setting (article 2). In article 3, questions are found to be strategic devices contributing to driving the decision making

process, achieving progress and influencing the direction of the interaction. Both the form and the function of the questions were seen to reflect the participants' orientation to and management of the constraints of the activity type.

The organizational position of the chair might also be of relevance for the dynamic participation frameworks, as she served a general function as a team leader and a facilitator, without occupying a manager role and without formal decisional power. As the mapping revealed, she participated significantly on the content of the discussions in the plan optimization meetings and spent a relatively small number of turns on chairing work. The shifts in discourse roles and activity roles found in the meeting might be related to the chair's facilitator role and her relatively 'free' position, not representing one department's agenda. Her informal chairing style allows for the varied expertise across departments to access the floor, but it also inevitably places a greater responsibility on the team as whole for arriving at decisions in a contingent fashion.

In the morning meeting, the contingent nature of decision making in operational planning is evident as well, in the constant adjustment of the commitments to action in the plan, and the offshore participants' active engagement in updating and securing decisions based on the current situation offshore (article 4). But more clearly than the analysis of the plan optimization meeting, the study of the morning meeting shows the link between participation in decision talk and the structures of the activity type. The study sheds light on the contributions of offshore participants by relating activity type mapping to the participants' ability and willingness to occupy the floor. The management of speaking rights can be seen as constrained by the routine and structured phases of the activity type, which steer self-selection to two specific phases of the meeting. As an indicator of the participation framework, the occurrences of self-selection reflect the opportunities for speakership that are found within the complexly mediated morning meeting. Interestingly, the offshore participants were found to participate significantly by self-initiated floor-taking, and they were found to contribute to decision making through the continuous securing of decisions in the plan, the updating of plan

decisions, as well as forecasting of intentions for future action, which allowed the extended team to prepare and mobilize if necessary.

The morning meeting was a relatively new meeting as it had only existed for a few years, and the fieldwork revealed that it had been somewhat challenging to establish a new meeting on top of all the other meetings in people's calendars.[6] The chair described a process in which it was crucial for them to establish the meeting as relevant and useful for the participants in order for them to prioritize it in a busy work schedule. The fact that the meeting also required that the participants learned to call into the videoconference and log into the shared application was another barrier for establishing the meeting. Over time, the meeting has found a form that has succeeded in bringing the offshore control rooms together on a daily basis; the meeting is prioritized by the control room operators and only exceptionally missed. The active participation from the offshore participants and the contributions to decision making made through self-selected turns at talk suggest that they have managed to make the meeting relevant. Onshore participants were clear in their opinion that with this meeting they were better able to "be ahead of the game" and "improve the quality of the planning". The decisional outcomes and the information generated in the morning meeting feeds into several other related planning meetings, including the plan optimization meeting, either as background information on the current status offshore or in terms of information on specific tasks.

All the three empirical studies can be seen to relate to shifts in participation and how the team members negotiate and maneuver the participation framework (Goffman, 1981) within the constraints of the activity type. The occupation of different discourse roles give different

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[6] Prior to the creation of the morning meeting, it was common practice to have offshore personnel spend a week onshore on a regular basis. This was seen as a crucial link between onshore and offshore in terms of exchanging both information and experience. However, this was found to be contrary to union regulations and the practice was ended. The morning meeting was created as an alternative way of continuing the exchange between operational personnel.

participation framework, and shifts in participation framework give new configurations of opportunities and constraints for turn taking and turn design. Both self-selection of turn and questions trigger shifts in participation and a chance to take advantage of the dynamics created by the shifting alignments. These shifts in participation can be seen as resources for the participants in managing the contingencies in decision making.

The fieldwork and interviews support these findings in several ways, particularly in the explicit orientation from the professionals to the topic of expertise. As the operational situation consists of such a broad range of actors and tasks, there is not one position or department that has a complete insight into the operational situation. Decisions regarding plan optimization are necessarily interprofessional, and if the decisions are made without the input of a certain area of expertise (drilling, well integrity, etc.), the chances for repeated rounds of discussion and decision making are high. This focus on distributed expertise might also mediate the production of open and fluid participation frameworks as it ensures the inclusion of the broad range of expertise. In addition, the meeting participants were frequently described in terms of expertise that went beyond their current organizational roles and responsibilities. As experienced professionals, many of the participants had work experience from other departments or organizations. For example, one of the managers had previously worked as a reservoir engineer, with a specialty on new wells, and would therefore contribute on topics that were outside his current area of responsibility. This 'open floor' might, in other words, also be related to the ideals of integrated operations that seek to privilege expertise over authority.[7]

While activity types are seen as guiding inference and implicature, they also provide a specific and defined communicative space in which participants might contribute and influence the course of the interactional trajectory, and ultimately the decision making process. Within the specific activity type,

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[7] This might also be related to 'the Scandinavian model' of work organization, which is characterized by high levels of trust between management and employees at the local level (Gustavsen, 2007).

some discursive and interactional resources will be more easily available than others, and some might not be found relevant at all. For example, the use of collective silence in decision adoption, with the chair withholding formulations or summaries, is available and relevant in the face-to-face plan optimization meeting. However, it is hard to imagine this strategy being used effectively in the morning meeting, with its highly routine and structured moves between agenda items and a more active chair guiding the participants through the meeting. Leaving decision adoption to a moment of collective silence would most likely not be efficient in the multiple-location video-conference. With its high number of participants and the sound muted in the offshore locations, the meeting does not have the same collective, auditory space to in which to be silent in.

In the context of medicine, Måseide (2011) talks about the team meeting as a *clinical tool*. Rather than describing the team meeting as a *site* for decision making, the meeting can be seen as a *tool* for the professionals in their continuous efforts to achieve high quality, interprofessional decision making in effective response to a changing situation offshore. With the metaphor of the tool, we can see that different activity types allow the participants to do different things, perform different actions, and achieve different goals. Thinking about meetings in this way, might invite professionals to consider whether their current activity types in fact are tools that are appropriate for the kind of decision making that needs to take place.

Implications for practice

Through the fieldwork I was shown examples of how the organization had been working systematically with their meeting practices over the last few years, especially related to clarifying issues such as objectives, participants, input, and output of different meetings. They have labels for categorizing some types of meetings, such as 'collaboration meetings', which involve participation across departments or functions. This work seemed to be based on a thorough process of continuous improvement in the organization and one that was found to be generally useful. However, there was little focus on what would take place during the course of the meetings in terms of interaction and

participation. In the feedback sessions after each week of observation, this was the topic and the participants expressed great interest in the discourse analytic concepts and reflections that were made, but also that this was an unusual way of talking and thinking about meetings (as stated by one participant as "we are not used to thinking about our work in this way"). This suggests to me that finding a vocabulary in which to talk about interactional dynamics might be very useful for professionals in this and similar work settings.

While there is a drive toward automated decision support in the industry, in the form of computer programs calculating for example the optimal sequence of operational tasks, the professionals in operational planning expressed some skepticism to the usefulness of such tools for their daily practice. Rather, the broad expertise of experienced professionals was highlighted as the primary source for the frequent re-assessment and re-scheduling of the plan. The many day-to-day decisions triggered by changes offshore are based on interprofessional reasoning, which include technical, organizational, and practical experience. When personal-professional expertise is such a significant resource in decision making, we can see that the communicative situation – the activity type – in which the professionals meet to deliberate gains crucial importance. Empirically based insights into the conditions that specific activity types create for interaction and participation is in other words useful. Knowledge about participant frameworks and mechanisms for accessing the floor, whether through self-selection or other means, might stimulate awareness and a language with which to speak about what happens interactionally in meetings. This in turn might lead to adjustments of current practices to better achieve the communicative goals of the meeting.

The challenges of team decision making in operational planning, then, is not only about the many contingencies and the frequent changes to the plan, it is also about the boundedness of the activity types and the challenges related to the specific communicative situations in which decision making takes place. At a management level, a focus on the activity-specific constraints on team decision making might invite managers and team leaders to consider whether existing arenas for decision

making provide adequate conditions for participation and team interaction. Activity-oriented

concepts and interactional approaches to workplace discourse invites metapragmatic awareness and

competence, which has a greater practical relevance than a focus on recipe-style communication

skills or decontextualized notions of 'good' or 'bad' communication at work.

7. Conclusion

Contemporary work life poses increasing expectations on professionals to practice their work in close interaction with professionals across departments, units, organizations, and geographical distance. Studies of workplace interaction have the potential to shed light on specific and local practices, which in turn inform our understanding of professional life and workplace relations as they are reproduced and transformed through everyday interaction. The empirical studies comprising this thesis have been concerned with how participation in team meetings mediates decision making in operational planning. The systematic literature review called for more empirical studies from different workplace contexts, fleshing out our understanding of the situatedness of decision making in various contexts. The three empirical studies are attempts to contribute to this, with data from a high-risk, operational business setting that is rarely explored in the field of discourse studies.

The studies examine two different activity types; the weekly plan optimization meeting (articles 2 and 3) and the daily morning meeting (article 4). Both sites were mapped in terms of structural and interactional features as part of the Activity Analysis, and the analysis of interactional resources (role positioning, questions, and self-selection) was interpreted as they served a function in decision making within the specific activity-type. The studies have shown that decision making in the operational planning meetings are characterized by continuous handling of significant uncertainty and frequent change in the operational situation. In addition to the challenges of operational planning, the participants have also been seen as maneuvering the constraints of the interprofessional activity types in which operational decision making takes place.

In this sense, the thesis is a contribution to understanding how the constraints of the activity type, and the discursive and interactional resources that are available to the participants in a given encounter, play a role in decision making trajectories. The challenges to decision making in operational planning might, in other words, also be seen as a challenges related to the highly complex communicative situations in which the professionals are expected to make 'better and

faster' decisions. The participants' ability to navigate and negotiate the constraints of the activity, their ability to use the interactional resources available in order to contribute adequately to the decision talk, is highly relevant for contingent decision making in this setting. Together the empirical studies contribute to the understanding of team decision making as interactionally bounded, and this boundedness is seen to be activity-specific, which means that the interactional dynamics of decision making will be differently expressed across communicative situations or activity types.

Future research

As pointed out by Article 1, there is a need for more and a broader range of studies on team decision making in the workplace. The topic of this thesis would benefit from further empirical study across empirical fields and across a variety of workplaces and organizations (for-profit and not-for-profit, governmental and non-governmental, for example). The theoretical concepts of activity type and discourse type, as well as the interplay of activity roles and discourse roles, could usefully be explored across other activity types and other institutional contexts. This would also contribute to further exploration and testing of the analytical framework of Activity Analysis and the potential in activity type mapping for guiding and strengthening the interpretive work.

The link between the structuring of the activity type and the participants' ability and willingness to self-select could be explored across other activity types and other institutional contexts. Comparisons between similar activity types across organizational context could possibly yield interesting results. For example would comparing different types of video-mediated morning meetings shed light on a well-known meeting genre in offshore oil and gas production, as well as contribute to developing the methodological approach. Butler (1990) points out the risk of 'political behavior' when decision making involves a large number of experts, as there are more interests that have a stake in the decision. Further studies on this data, and similar meeting sites, could explore the interprofessional tensions that surface and possibly play a role in the decision making trajectories, for example through a study of disagreement or opposition in discourse. Pursuing the study of team

decision making with discourse analytic tools can contribute to further the study of workplace

discourse, expand our understanding of team decision making as interactionally bounded, and

represent practical implications for practitioners.

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Press.

Appendix A: Transcription key

[word] : overlapping talk

(.) : micropause

(3s) : pause in seconds

Word : increased emphasis

WORD : louder voice (with the exception of abbreviations)

°word° : softer voice

XX : inaudible word

XwordX : uncertain transcription

@@ : laughter

Word- : truncated word or phrase

= : latching to previous utterance without pause

((word)) : comment to transcription

(word) : anonymized information

?   questioning intonation where not obvious on paper

,   rising intonation

.   falling intonation

Appendix B: Request for consent to video record workplace meeting

The following text was attached to an email which was sent form the company representative to the participants in the meetings.

INFORMATION ABOUT RESEARCH PROJECT: DECISION MAKING IN MULTIPROFESSIONAL TEAM INTERACTIONS

This PhD project will study decision making in multidisciplinary teams working with integrated planning. The purpose of the study is to better understand how and on what basis decisions and priorities are made in integrated planning, and what role team interaction plays in this process. With more systematic knowledge of team interaction in planning, your organization might gain increased and nuanced knowledge of existing work practices as well as discover new and more effective ways of working together.

The study will be conducted by Cand.Philol. Kristin Halvorsen in collaboration with Professor Srikant Sarangi, Department of Language and Communication Studies, NTNU, and Project 3.3 Integrated Planning in the Center for Integrated Operations in the Petroleum Industry, Trondheim. The study will be completed December 2012.

As part of the study, the (daily morning meeting) will be video recorded at regular intervals for the next 6 months. All information gathered will be treated confidentially. The video recordings will be deleted and all transcripts anonymized when the project is completed, 31. December 2012.

You are asked to give your consent by clicking 'Accept' or 'Reject' in this email. Participation is voluntary and you may at any time withdraw your consent without any consequences for your work situation. No one will be filmed without consent and only the research team will have access to the recordings.

If you have any questions regarding the project, do not hesitate to contact me.

Sincerely,

Kristin Halvorsen

Studio Apertura, NTNU Samfunnsforskning

Idrettsbygget 4.etg., 7491 Trondheim

Phone: 48 24 51 35

Email: kristin.halvorsen@samfunn.ntnu.no

The participants were here informed that the data recording would be deleted Dec. 31st 2012. As the

project was delayed, new notifications were sent to the Data Protection Official and it was decided

that new information to the participants about changed end date was not needed. This was based on

the following reasons: the information treated is not of a sensitive nature; reaching the participants

is difficult as they might no longer function in the same positions; the completion of the study

pursues the original objectives of the project, and; it is unlikely that the end date was decisive for the

participants when giving consent.

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PART II: Research articles

Permission to include the articles in the thesis has been obtained from the publishers.

Article I

Halvorsen, K. (2010). Team decision making in the workplace: A systematic review of discourse analytic studies. *Journal of Applied Linguistics and Professional Practice*, 7(3), 273–296.

Article II

Halvorsen, K., & Sarangi, S. (in press/proof stage). Team decision making in workplace meetings: The interplay of activity roles and discourse roles. *Journal of Pragmatics*

Article III

Halvorsen, K. (revision in progress). Questions as interactional resource in team decision making. *International Journal of Business Communication*

Article IV

Halvorsen, K. (in review). Self-selection as a resource in video-mediated team decision making. *Journal of Applied Linguistics and Professional Practice*

Article I

Halvorsen, K. (2010). Team decision making in the workplace: A systematic review of discourse analytic studies. Journal of Applied Linguistics and Professional Practice, 7(3), 273–296.

Article II

Halvorsen, K., & Sarangi, S. (in press/proof stage). Team decision making in workplace meetings: The interplay of activity roles and discourse roles. *Journal of Pragmatics*

Article II

Team decision-making in workplace meetings: The interplay of activity roles and discourse roles

Abstract

Decision making in team meetings has become routine organisational practice in contemporary work life. Beginning with a theoretical discussion of role positioning at the micro-interactional level, the present study adopts as its analytic focus the management of participant roles, specifically the interplay of activity roles and discourse roles, in examining interprofessional meeting talk and decision making. Weekly meetings for optimising maintenance plans on offshore oil and gas wells on the Norwegian Continental Shelf were recorded and analysed within the framework of Activity Analysis, which combines sequential nature of turn-taking with the structural components of a given activity type vis-à-vis role-relationships among participants. Our findings show that interprofessional meeting talk in this activity type is characterised by shifts between discourse roles and activity roles in complex and overlapping ways, thus affording the meeting participants the opportunity to cumulatively add to the joint production of decisions based on their organisational role-responsibility and expertise. The present study points to the need for further differentiation of role categories in the participation framework, especially with regard to professional/institutional discourse.

Key words: participation framework, discourse role, activity role, workplace discourse, decision making, activity analysis

1. Introduction

In recent years there has been a growing body of workplace communication studies adopting discourse analytic and social pragmatic frameworks (Angouri & Marra 2011; Bargiela-Chiappini & Harris, 1997; Holmes & Stubbe, 2003; Koester, 2006; Sarangi & Roberts, 1999; Schnurr, 2013; for an overview see Sarangi & Candlin, 2011). Parallel to this, a discursive turn is noticeable in organisation studies (Alvesson & Kärreman, 2000; Grant, Hardy, Oswick, & Putnam, 2004), steered by disciplinary contributions from psychology, anthropology, sociology and discourse studies, among others. This is reflective of the contemporary workplace moving away from traditional hierarchical structures to more team-oriented work practices, with team work and team talk in decision making gaining increasing relevance. Of particular significance is the focus on meetings which have become routine organisational practice underpinning how intra- and inter-professional collaboration is accomplished in situ.

Team meetings in organisations take different shapes and serve different functions. It may be useful to distinguish between ritual meetings which are characterised by reporting/exchange of information and meetings which are targeted at problem solving and

decision making in high risk scenarios. We are concerned here with the latter type of

meetings within an international oil and gas company, namely the meeting for optimising

maintenance plans for oil and gas wells located on the Norwegian Continental Shelf. In order

to optimally coordinate the maintenance activities, professionals from several departments

meet weekly to decide how to prioritise limited and shared resources across a field of oil and

gas installations. Decisions made at this front line, operational level are crucial for the day to

day functioning of the organisation and have significant economic, environmental and safety

consequences. The site is representative of a form of meetings in the industry under the

heading *Integrated Operations*, which is an overall industrial strategy for overcoming

boundaries between professionals, fields of knowledge, departments and organisations. In

the attempt to integrate what traditionally have been functional silos, one significant move

has been to establish interprofessional and cross-functional arenas for decision making.

Our focus is on how interprofessional team decision making is accomplished in the meeting

activity type. The research question can be posed as follows: Within the activity type of an

interprofessional meeting, how do the participants occupy and shift between specific activity

roles and discourse roles in their attempt to arrive at decisions? And by extension, how can

such shifts in role-relationships offer useful insights about tacit professional practice?

The paper is structured as follows. First, we outline our conceptual framework of role-positioning in activity types, drawing a clear distinction between activity roles and discourse roles and showing how discourse roles afford shifts in activity roles, and vice versa. Second, we revisit relevant discourse analytic studies of meeting talk, paying special attention to studies on team decision making. Before undertaking data analysis, we offer details about our data setting and the framework of activity analysis. The analysis will explore the affordance of activity roles and discourse roles available to the participants within the given activity type. We suggest that the dynamics of role positioning in this meeting setting facilitates contingent decision making.

2. Conceptual framework of participant roles: Linkage between activity roles and discourse roles

Over the decades the notion of role has been theorised at the interface of disciplines such as psychology, sociology and anthropology (see Sarangi 2010a for an overview). Goffman (1961) marks a point of departure with his focus on role performance (or role enactment) and his conceptualisation of role as a basic unit of socialisation: "it is through roles that tasks in society are allocated and arrangements made to enforce their performance" (p. 77). In social encounters, according to Goffman (1961, 1981), participant roles, unlike social roles, can be understood in terms of *participation framework* and shifts in *footing*. His claim that "[…] all

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who happen to be in perceptual range of the event will have some sort of participant status

relative to it […]" (Goffman, 1981: 3) challenges the folk categories of participation, i.e.

speaker and hearer as pronounced in speech act pragmatics. His participation framework

differentiates more nuanced participant roles such as Author, Animator, Principal,

Overhearer, Bystander etc.

Among others, Goodwin (1981), Thomas (1986) and Levinson (1988) have offered different

typologies of participant roles. However, Irvine (1996) critiques more generally the

decompositional approaches that devise participant categories as universal,

decontextualised and finite in numbers. Her empirical focus, insult poems in rural Senegal,

makes evident the activity-specific constraints and opportunities in any encounter and the

need for contextual sensitivity in analysing participation. She suggests a few primary roles

with subtle sub-categories closely related to activity-specific goals and frames, and stresses

the need to separate between participant roles at an utterance level and at a speech event

level.

Participant roles at the utterance level can be called *discourse roles*, which is akin to

Goffman's (1981) production and reception roles. Sarangi and Slembrouck (1996) point out

that discourse roles, referring to the relationship between the participants and the message, are fundamentally dependent on social mandate. Participant roles at the speech event level can be termed *activity roles*. Drawing upon Levinson's (1979) notion of 'activity types', Thomas (1986) suggests activity role as central to participation structure. Activity role refers to the relationship between participants and the activity type in which the participants are embedded, for example, meeting chair, meeting members and minutes-taker (see section 4.2).

Many researchers – although not explicitly invoking the notions of 'activity role' and 'discourse role' – concur that static descriptions of role ignore human agency and the skilful negotiations in which people engage as they shape and form meaningful social interactions (Cicourel, 1972; Jackson, 1998). Hilbert (1981) gave an early description of role as a resource for social members, claiming that "roles are not behavioural matrices to be described and explained but are conceptual resources actors use to clear up confusion, sanction troublemakers, instruct others in the ways of the world, and so forth" (p.216). Likewise, Halkowski (1990) conceptualised 'role' as an interactional device, thus moving away from role as a self-evident, social-scientific resource for analysis. Within social psychology the concept of 'positioning' is an attempt to overcome the constraints of

traditional role theory by paying due attention to local context, episodes, storylines, access

and opportunities for action (Davies & Harré, 1990; Harré & Van Lagenhove, 1999). From a

discourse analytical perspective, the argument for a more dynamic conceptualisation of role

urges us to acknowledge how participant roles (i.e. activity roles and discourse roles) are

accomplished situationally and in activity-specific ways, especially in professional settings

(Housley, 1999; Linell, 2009; Sarangi, 2010a). By adopting or assigning particular discourse

roles, participants implicitly make claims about their role positioning and relationships with

co-participants, and at the same time redefine or reframe the activity in which they engage

(Bennert, 1998). In light of the research question posed earlier, our analysis will show how

participants in a meeting context shift across available activity roles and discourse roles in

arriving at decisions. In what follows, we review selectively relevant studies that have

addressed meeting talk.

3. Literature review

Meetings are a key arena in which organisations are "talked into being" (Boden, 1994) and

where roles and responsibilities are negotiated (Cooren, 2007; Taylor, 2006). For the

purposes of the present paper, discourse analytic studies of meeting talk will be clustered in

two strands: studies focusing on interactional features of meeting talk; and studies

addressing the focal theme of decision making.

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Micro-interactional studies have characterised meetings as speech exchange systems or

speech genres that differ from other forms of workplace talk and from talk in informal

encounter. Formal meetings are routinely planned in advance, with structured agendas and

goals as well as clearly delineated participation structure. However, as meeting talk unfolds

the interactional dynamics is more fluid and contingent (for comprehensive reviews, see

Asmuss & Svennevig, 2009; Schmitt, 2006; Svennevig, 2012). The specific conventions for

regulating the talk in this setting are the resources for participants in 'achieving a meeting'

(Cuff & Sharrock, 1985; Handford, 2010). Members will move in and out of the meeting

proper and this will be marked by transitions in the speech exchange system (Atkinson, Cuff,

& Lee, 1978; Boden, 1994; Deppermann, Schmitt, & Mondada, 2010). These transitions are

seen as emergent collective accomplishments wherein nonverbal resources are an integral

part.

The activity role of the chair is a distinguishing feature, with a mandate to manage access to

the floor, control contributions and formulate decisions and conclusions – a structuring device

for managing interaction (Angouri & Marra, 2010). Boden (1994) shows how in any single

meeting there will be an implicit negotiation regarding the role of the chair and whether s/he

assumes or is assigned this role. When the chair lacks seniority, s/he will defer to

participants or explicitly call on the mandate of the chair, or even distance himself/herself

from the acts of authority inscribed in the role (Pomerantz & Denvir, 2007; Potter & Hepburn,

2010).

Studies of meeting interaction show that it is often difficult to identify when a decision has

been made and even whether a decision has been made (Boden, 1994; Miller, Hickson, &

Wilson, 1999; Sarangi & Roberts, 1999). Rather than being a singular statement, decision

making in meetings is a process consisting of incremental activities with many minor

intertwined steps. Cicourel (1986) has rightly pointed out that decision making in

organisational settings cannot be reduced exclusively to technical rules or context-free

inference and knowledge. Local interaction and organisational resources and constraints are

essential to this process. Huisman (2001) issues a directive for confronting decision-making

theories with empirical data from actual talk "[…] so that our understanding of decision-

making is enhanced" (p. 84). With regard to the topic of decision making in team meetings,

Halvorsen (2010) provides a systematic review, identifying empirical studies from a variety of

professional contexts, ranging from business settings to education, health and social care.

The reviewed studies below generally contribute to illustrating how decision making is

bounded not only rationally, but also socially and interactionally, thus anticipating our analytical focus on activity roles and discourse roles.

Several studies focus on the ways in which organisational hierarchies, and implicitly organisational roles, mediate interaction in specific ways. Wasson (2000) and Graham (2009) demonstrate how organisational structure and hierarchy influence the use of mitigation strategies for handling disagreements, resulting in complex face-saving strategies for handling a consensus-oriented business culture and the multiple hierarchies of a hospital, respectively. Kwon, Clarke, & Wodak (2009), focusing on a senior management team meeting in a multinational company, draw attention to how macro- and micro-dialectics play out over an extended period of time, explicitly addressing the emergent nature of decision-making processes. Housley's (1999) study of the flood support team is primarily concerned with roles at a social-organisational level, such as social worker or lay volunteer, while drawing attention to how roles are interactionally accomplished. In the context of school meetings concerning children with special needs, Mehan (1983) addresses role relations more specifically and shows how institutional roles and authority reside in the mode of presentation at the linguistic/interactional level. He illustrates how language structures role relationships, and how such role relationships in turn provide the grounds for the authority of

the claims and recommendations made (see also Sarangi (1998), on the dynamic inter-

relationship between reportability and evidentiality in interprofessional meetings). Similarly,

Hall, Slembrouck, & Sarangi (2006), in the context of social work case conferences

concerning parental neglect of children, demonstrate how the moral characterisation of the

mother becomes a precursor to decision making. In their study of problem solving talk among

engineers, Angouri & Bargiela-Chiappini (2011) report how procedures are "anchored to past

experiences and shared perceptions of professional practices and hierarchies in their

workplace" (p. 223).

The studies reviewed here give empirical depth to the co-constituted relationship between

organisational roles vis-à-vis participant roles and the emergent nature of decision making.

Some of the studies highlight the activity specificity of participation; however, to our

knowledge the concepts of activity role and discourse role have not been employed

systematically in the analysis of workplace meeting talk targeted at decision making. We aim

to take Goffman's concept of participation framework one step further by undertaking a more

systematic approach that allows for capturing the dynamics of role positioning as it relates to

the specifics of the activity type, including role-relationships as well as the agency of

individual participants. We hope to establish the relevance of these concepts through our

detailed analysis of the plan optimisation meeting, but first a description of methodology and

the analytical framework is in order.

4. Methodology and analytical framework

4.1 Data and methods

The data for this paper is part of a larger study on decision making in an operational

business setting. The first-named author conducted ethnographic field work in an

international oil and gas company over a period of eight months during 2010, attending and

recording key meetings in operational planning. The plan optimisation meeting was one such

meeting, observed throughout the period and recorded on five occasions, later supplemented

with four more recordings, totalling five hours of meeting talk. Following usual ethics

clearance surrounding informed consent, the recorded data has been transcribed and

anonymised. (Transcription conventions can be found in Appendix A.)

The meeting in question is the weekly planning meeting in which decisions on task

prioritisation and resource allocation are made with regard to oil and gas wells on a field of

offshore installations. Well service tasks, also called well intervention or well work-over, are

tasks for performing maintenance or treatment that will restore, prolong or enhance the

productivity of the wells. The interprofessional meeting is designed to attend to the

optimisation of the well service plan with the purposes of maximising production and

minimising loss, while ensuring safe operations. Decision making in this setting concerns a

myriad of small and large decisions, some more consequential than others, and some more

visibly so than others. The outcome of decision making can be a specific task prioritisation, a

change in the current plan, or a decision to postpone or delegate the decision due to lack of

information or lack of decisional power.

The tasks and installations on the field are tightly coupled through shared and limited

resources (such as beds in the living quarters, electric power, equipment, expertise etc.).

This means that changes in one part of operations might trigger changes elsewhere, and the

consequences of change for current and future tasks, within well service or other areas, must

therefore continuously be assessed. In addition, operations offshore frequently face

challenges and changes that affect planning. These changes can be related to unforeseen

events, such as a halt in the drilling process, delay with vendors, mistakes or unexpected

hold-ups, or simply be caused by adverse weather conditions preventing work from being

done.

An explicit motivation for gathering this group of people is to ensure that all relevant and

available expertise is involved and that repeated rounds of discussions on decisions are

avoided. What would be most practical for the well service team might for example conflict

with what is cost-efficient from a production management point of view. There is not one

person or unit who has access to the full picture of all constraining factors in the current plan.

The well service plans must in other words be coordinated with a range of other operational

plans in other departments and across the field of installations offshore. We can anticipate

how shifts in activity roles and discourse roles in meeting talk are going to play a central role

in negotiating decisional processes and outcomes.

Approximately ten people attend the meeting in their organisational roles representing up to

six different departments. The discussion is conducted in English. Two to three participants

are native speakers of English; for the rest of the participants, English is a second or foreign

language. All participants are onshore, in the same room, gathered around a meeting table.

There are two large screens on the wall used for displaying the current well service plans.

The meeting participants safeguard different aspects of the operations through their areas of

expertise or their organisational role-responsibility within a specific domain. Broadly

speaking, there are two categories of meeting participants – those with a management

background and those with an engineering background. In addition, there is the meeting

chair who also holds a coordinator role for Production Optimisation. This is an organisational

role with a certain authority, although not invested with formal decisional power.

Given the contingent as well as cumulative nature of decision making, the analytic section

will centre around one decision making episode, from the identification of a problem with the

plan, through discussion of options, to a closure of the episode and transition to the next

agenda item. The analytic focus, as already announced, will be the interplay of activity roles

and discourse roles in relation to discourse types in decision-making trajectories.

4.2 Analytical framework

In light of our research question and the conceptual model of participation framework and

role-positioning, our analytical approach is Activity Analysis (Sarangi, 2000, 2010b), which is

based on Levinson's (1979) seminal notion of 'activity type' that views language as primarily

indexical, with meaning dependent on its contexts of production/reception. Following

Levinson (1979), meetings are a prototypical activity type, defined as socio-culturally

recognised entities that are goal oriented and involve specific constraints on participants in

terms of contributions, style and structure. This echoes Goffman's (1961) conceptualisation

of an *encounter* as "[…] sanctioned orderliness arising from obligations fulfilled and

expectations realised, and therein lies its structure" (p. 19). Levinson's notion of activity type

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has been reappraised by Sarangi (2000; see also Linell, 2009) with special reference to institutional/professional domains of language use. According to Sarangi (2000), "[t]he notion of activity type appeals for various reasons: it takes into account cognitive, historical and genealogical dimensions, as it links these to interactional patterns and structural configurations" (p. 6). Gu (2010) makes a similar point when arguing that activity type is an interface between langue and parole, between society and the individual.

The categorisation of an activity type is not an either-or matter, but rather one of more-or-less in the spirit of prototypes. In this sense, a given structural/sequential/stylistic form can deviate from what is taken as prototypical, with corresponding inferential schemata linked to the goal of the activity type (Levinson 1979; Sarangi 2000). As activity types are not pre-structured, likewise interactional trajectories within an activity type are not pre-structured. For instance, participants' organisational roles can determine who participates in a meeting but the exact nature of their participation in the meeting talk is bound to be dynamic and of a negotiable nature. It therefore becomes imperative to consider how participant roles are accomplished in and through activity roles and discourse roles in meeting talk.

Activity Analysis pays adequate attention to the sequential organisation of talk but extends the scope to consider how sequences of talk are embedded in the overall structure of the

activity vis-à-vis participant role-relationships (Sarangi, 2010b).[1] Activity Analysis therefore

begins with the structural, sequential (interactional) and thematic maps of an entire activity

type (see Appendix B for an example). Structural and sequential maps can also be

undertaken for parts of an activity type, e.g. decision-making trajectories. This mapping

exercise affords a necessary anchorage for data interpretation in a focused and sustained

manner, in this case an analysis of how activity roles and discourse roles are accomplished

sequentially, structurally as well as role-relationally.

The relevant participant roles are derived from the main purpose of the meeting activity (plan

optimisation) as well as the project's interest in decision making. Production roles have

therefore been categorised as *Presenter*, *Responder*, *Assessor* and *Elicitor*, all of which

relate to information, problems, options, opportunities, experiences, expert opinions or

decisions. As all the participants are ratified receivers with speaking rights, reception roles in

this meeting can usefully be distinguished in terms of *Addressee* or *Audience:* the former is a

targeted receiver with listening obligations whereas the latter is only peripherally targeted

with partial listening obligations. This is a particularly relevant distinction in this meeting

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[1] The Activity Analysis framework and the notion of 'activity type' should not be confused with Soviet

psychological Activity Theory (Leont'ev, 1978) or Cultural-Historical Activity Theory (CHAT)

(Engeström, 1987).

setting in which the participants have very different organisational role-responsibilities and

domains of expertise. The topical focus will determine which participants are positioned as

Addressee or Audience at any given interactional moment.[2]

This distinction is closely linked to the activity roles in this meeting, which can be simply

categorised as chair and participant. The role of the chair, held by the Coordinator of

Production Optimisation, is a dual one. She not only chairs the meeting, she also contributes

as a participant significantly on content, both in terms of frequency and volume as visible in

the interactional mapping (cf. Map 2b, Appendix B). The meeting participants can be further

categorised as *primary* or *secondary participants.* Some participants assume or are assigned

more central positions than others, similar to the case presenter role in Mehan's (1983)

study. Some will provide more information or have a higher stake in the decisions made,

depending on their organisational role but also their professional experience, personal

engagement, strategic interests etc.

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[2] The receiver roles of addressee and audience of an utterance are not always easy to identify as an
outsider analyst even with the benefit of video recording. A specific person or group might be
targeted through the mere topic of the utterance, e.g. a drilling-related topic targeting drilling
personnel without explicitly stating so. But the utterance can equally be seen as targeted at anyone
in the meeting who might have information relevant to the topic.

As will become clear in our data analysis section, the performance or enactment of activity

roles and discourse roles as well as continuous shifts between such roles are facilitated

through *discourse types*. Sarangi (2000) expands Levinson's notion of activity type to

suggest that activity types are composed of discourse types. Discourse types are ways of

characterising forms of talk and interaction, whether these are verbal or nonverbal. Examples

of discourse types for the purposes of the current paper can include proposal formulations,

question-answer sequences, concessions followed by proposals, minimal responses

followed by assessments etc. We see such discourse types as the building blocks of

discourse roles and activity roles within the meeting activity type. For example, it is through

the choice of discourse types (e.g. proposal formulation, assessment token) that the meeting

chair can change his/her footing as chair and participate as an ordinary member. In this

regard a given discourse type derives its meaning from the activity type in which it is

embedded vis-à-vis participant roles (see Culpeper, Crawshaw, & Harrison, 2008 on advice

as a discourse type). In sum, activity roles can be indexed through discourse roles, and

discourse roles through discourse types, to provide a more systematic account of

participation framework.

5. Data Analysis

Given the complexity of the meeting activity which is our analytical site, here we select one decision making episode divided into three sequential excerpts. The episode illustrates well the patterns we have found across the data set in terms of the shifts in different role types. The first two excerpts illustrate the affordances of the activity type in terms of role positioning as well as the dynamic shifts in activity roles and discourse roles. The last excerpt, in which the final decision is made and the meeting moves on to the next agenda item, the analysis focuses on how the routine shifts in roles facilitate decision making.

The scenario is as follows. The well service plan needs to be changed because the drilling rig is covering one of the wells that is scheduled for maintenance. The Well Service Manager (WSM) proposes that the well service crew move to other tasks instead. But an alternative option is being presented, namely that of skidding the rig, which implies moving the rig on rails away from the well. This is an unusual option as only this particular installation has the rails for moving the rig and it would involve coordinating with other units in the organisation in order to execute the move.

5.1 The affordance of activity roles and discourse roles

Twenty minutes into the meeting and three minutes into the phase in which platform B is

being discussed (cf. map 2 in Appendix B), the problem in the plan is presented by Wells

Service Manager (WSM). The alternative option is jointly constructed by Production

Optimisation Manager (POM) and the Chair/Coordinator Production Optimisation (CPO),

followed by a sequence of assessments and responses. For purposes of illustration, we

signal how categories of activity role and discourse role can be systematically mapped on to

the transcript, but not necessarily corresponding to single utterances and turns.

Excerpt 1 (A2/8/190)

Organisational role acronyms WSM= Well Service Manager CPO = Chair/Coordinator Production Optimisation POM = Production Optimisation Manager POE = Production Optimisation Engineer DRE = Drilling Engineer	Discourse role	Activity role
1. WSM we are happy but the issue- there is something that is wrong there you see ((pointing to screen)) if- we can pull in eight (.) but not in sixteen. the rig is covering that (.) so we have to go from eight and then have a-	Presenter	Participant

((a few turns omitted; WSM is corrected by several participants, it is well six, not eight))			
2. WSM	yeah six and sixteen=six we can pull right now		
3. CPO	so what would you do=so will you do: [GLT then?]	Elicitor	Chair
4. WSM	[so I need to do-] I need to do- then we have to go to some of the other, either restim in eh- in eleven or GLT in two or something.	Presenter	Participant
5. POM	why not [skid the rig]	Presenter	
6. CPO	[move the rig]		
7. WSM	hm?	Responder	
8. CPO	move the rig	Presenter	
9. WSM	should we just move the rig?	Assessor	
10. DRE	yeah we can [move it]	Responder	
11. POE	[why not?]		

12. DRE	xxx okay,		
13. WSM	°okay°		
14. POE	It's skiddable @@ [@xxx@]		
15. WSM	[skidding that is-] no. but we need to- then we are skidding over to the other [side]	Assessor	
16. POE	[yeah?]	Responder	
17. WSM	and then we are going to skid back	Assessor	
18. POE	so rig up in the rig then and skid the whole rig	Presenter	
19. WSM	=we could maybe use the rig xx no xx- is there any maintenance- something going on in this rig? [is it-] ((to DRE))	Assessor	

In the opening phase, WSM assumes the discourse role of Presenter as he provides an

account of the conflict on well sixteen (turn 1). WSM is responsible for the practical

realisation of the well service plan, executed by the crew members offshore, and he is

concerned about the feasibility of the plan and what arrangements are practical in terms of

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transportation, equipment, material, expertise etc. At this moment, he has identified that the drilling rig is covering the well where maintenance work is planned; so they will need to find an alternative sequence of actions in their plan. The chair takes on an Elicitor role when she first asks what WSM 'would' do in a hypothetical sense, but then quickly adds a proposal in the form of a question ("so what would you do=so will you do: [GLT then?]", turn 3). WSM is the primary addressee of CPO's question, while other team members are positioned as audience at this point. WSM then responds, initially in first person singular pronoun but self-repairs to use the collective pronoun 'we' signalling the perspective of the well service crew or unit (turn 4). Representatives of the Production Optimisation team are focused on prioritising the wells with the highest potential for production, and it is perhaps not surprising that it is POM who presents an alternative solution to the ones presented by WSM ("why not [skid the rig]", turn 5). As POM self-selects and presents the option of skidding the rig, he shifts from an audience position to an active Presenter role. We notice CPO presenting the same option in an overlap ("[move the rig]", turn 6): the proposal is in a way jointly constructed by the two participants. WSM initiates a repair ("hm?", turn 7); he does not appear to have heard the proposal, and CPO consequently repeats the proposal in turn 8 ("move the rig").

Now that the alternative option has been introduced, WSM again assumes the role of

addressee of the proposal and through his question in turn 9 ("should we just move the

rig?"), he issues a request for information and assumes the role of Assessor. At this point,

two of the engineer participants enter the floor, both taking on the role of Responder to

WSM's elicitation. DRE first mirrors WSM's turn and responds positively ("yeah we can move

it", turn 10), repeating it exactly, while POE overlaps this response with a negative

formulation but signalling agreement ("why not?", turn 11). This is followed by DRE's

inaudible response, which from the intonation sounds like a reassurance token ("xxx okay,"

turn 12). In responding to WSM's elicitation, both POE and DRE support POM's and CPO's

proposal to skid the rig, and after WSM has acknowledged their response weakly, in a low

volume ("°okay°"), POE continues reassuring, in a humorous manner, that it is in fact feasible

to skid the rig ("it's skiddable @@ [@xxx@]", turn 14). Both POE and DRE clearly know the

conditions offshore and the installation in question, which happens to be one of the few

installations that have a rig that can be moved on rails (skidded). Through self-selection and

assuming a Responder role, they position themselves as primary participants in this

sequence of talk, while in other parts of the meeting they hold a secondary participant status.

Following the responses from DRE and POE, WSM in turns 15 and 17 assesses the

proposal to skid the rig by formulating the implications of this proposal which is negative,

namely that it requires them to skid the rig first to one end of the installations and then back

again. POE overlaps with a short question in turn 16, again taking on the Responder role in

order to support the option of skidding the rig ("yeah?"). He proceeds in turn 18 to take on a

Presenter role and launch a solution to the problem WSM has indicated ("so rig up in the rig

then and skid the whole rig"). It is easy to imagine other, more moderated ways in which he

could have chosen to present this proposal, for example through a question to the Drilling

Engineer ("Do you think we could rig up in the rig?") or through a more mitigated expression

of opinion ("I believe we could rig up in the rig before skidding it"). Instead he presents a bold

proposal, and through it he claims a legitimate primary participant status with the opportunity

to contribute without being prompted or invited, and without thereby (re)framing the activity

as one in which these kinds of discourse role are allowable and accessible for participants

without formal authority. No one challenges this role positioning. WSM immediately moves to

assessment again, first by partially agreeing to the option and secondly to assess further by

probing for more details about the situation on the rig and potential other obstacles ("=we

could maybe use the rig xx no xx- is there any maintenance- something going on in this rig?

[is it-]", turn 19).

We see several discourse roles in play in this brief excerpt; Presenter of problems, Elicitor of

solutions, Responder of solutions, and Presenter of alternative solutions. The same

discourse role of Responder, for example, is realised differently, one with a confirmation and

reassurance, and the other with a negatively framed elicitation accompanied by humour, and

with different levels of modulation.

5.2 Shifts in activity roles and discourse roles

The discussion of skidding the rig continues in the next excerpt, but takes a turn as the chair

interrupts WSM to present a concern regarding a piece of information she has picked up in

an earlier meeting that day. There has been a problem with the fire and gas detection on the

drilling rig and this might exclude the option of skidding it.

Excerpt 2 (A2/8/207), continued from Excerpt 1

Organisational role acronyms CPO = Chair/Coordinator Production Optimisation DRE = Drilling Engineer WSM = Well Service Manager	Discourse role	Activity role
19. WSM =we could maybe use the rig xx no xx- is there any maintenance- something going on in this rig?	Assessor	Participant

		[is it-] ((to DRE))		
20.	CPO	[wha- wha] what about the node eh i- is [sue]	Presenter	
21.	WSM	[hm?]		
22.	CPO	the fire and gas node issue up on °rig sixtysix°		
23.	DRE	yeah that is maybe-	Assessor	
24.	CPO	[we have eh-]		Chair
25.	WSM	[no w- w-] bo bo bo [bo]		Participant
26.	CPO	[we have] a deviation right now on-	Presenter	Chair
27.	DRE	I don't know- that is a rough issue	Assessor	Participant
28.	WSM	they have also this electrical issues [that's kind of xxx-]	Presenter	
29.	CPO	[yeah that's what I'm talking about]		
30.	WSM	there is some tests on-going [today]		
31.	DRE	[okay]		
32.	WSM	but still they haven't found the reason		
33.	CPO	yeah I know but can we consider whether it's	Elicitor	Chair

practical to skid the rig to do well sixteen or whether it could be (.) best on- (.) later.		

As WSM is assessing the option of skidding the rig in turn 19, CPO overlaps at a transition

point in order to present a piece of new information that could potentially affect the decision

about skidding the rig ("[wha- wha] what about the node eh i- is[sue]", turn 20). She poses a

question regarding some problems with the electricity on the rig, and the fact that she

chooses a question format is interesting in itself, as it points to the temporal and contingent

nature of information in this setting as well. The node issue might have been solved in the

hours between her learning about it and this meeting. WSM initiates repair ("hm?", turn 21)

and CPO provides a more detailed presentation of the issue ("the fire and gas node issue up

on °rig sixty six°").

No one takes a direct Responder role at this point to provide the information that CPO calls

for in turn 20. Instead there is a sequence in which DRE and WSM take on the Assessor

role, considering the implications of this issue for the decision they are making. DRE

indicates familiarity with the issue and acknowledges its relevance for the decision in a

contingent fashion ("yeah that is maybe-", turn 23). WSM assesses the information through

an emphatic utterance that resembles a halt sound ("[no w- w-] bo bo bo", turn 25), as if to stop the discussion right there. In turn 27, DRE again assesses the relevance and the problematic nature of this issue ("I don't know- that is a rough issue"). CPO, on the other hand, turns to the entire group with a non-directed presentation in a summary format that explains what this new topic is about ("we have a deviation right now", turn 26), which can be seen as a switch to her activity role of chair, ensuring that all participants in the meeting understand the nature of the issue being discussed. In turns 28, 30 and 32, WSM shifts to a Presenter role as he provides information about the node issue ("they have also an electrical issue [that's kind of xxx-]", turn 28; "there is some tests on-going today", turn 30); and "but they still haven't found the reason", turn 32). CPO signals the givenness of this information ("Yeah that's what I'm talking about", turn 29 and "yeah I know", turn 33); with this reformulation she shifts to her activity role as chair again and the discourse role of Elicitor, calling on the group to discuss whether it is still practical to skid the rig (turn 33).

Excerpt 2, like excerpt 1, clearly illustrates the dynamics of the meeting and the shifts in activity roles and discourse roles via discourse types. In terms of discourse roles, the Presenter role is taken up by both managers and engineers, by personnel from different departments, and by the chair. We have seen WSM presenting problems (turn 1), options

(turn 4) and information (turns 28, 30, 32); POM presenting alternative options (turn 5); POE

presenting alternative options (turn 18); and CPO presenting problems (turn 20) and

information in the role of chair (turn 26). The Assessor role is taken up by WSM (turns 15, 17,

19, 25) and by DRE (turn 23, 27), which involves assessing information, options or problems

that are proffered by the Presenters. The Elicitor role is part of the activity role of chair (turns

3 and 33); however, responses are also elicited by WSM in turn 19, by calling upon DRE to

contribute with his specific expertise. CPO, in her double role as chair and coordinator of

production optimization, moves between the activity roles of chair and primary participant

without any explicit markings. In excerpt 1, she can be seen to occupy the role of chair

through the discourse role of Elicitor in turn 3 ("so what would you do=") while positioning

herself in the activity role of primary participant via the discourse role of Presenter of option

in turn 6 ("move the rig"). While CPO has a specific responsibility for facilitating the meeting,

she is not the only one who can assume the role of chair through discourse types

characteristic for this role (cf. Angouri & Marra 2010 on 'chairing DTs'). Her pre-assigned role

of facilitator gives her privileged access to certain kinds of discourse types, but this is not

exclusive to her in this particular meeting setting.

To summarise thus far, activity roles and discourse roles shift dynamically as all participants can potentially adopt any discourse role – Presenter, Responder, Assessor and Elicitor – at a given point in the interaction. The roles of addressee and audience, of primary and secondary participant, are in a constant flux; the occupancy of such roles depends on topical relevance, decisional power, as well as personal-professional judgments. The question is: what function do these dynamic shifts in role positioning serve in achieving the meeting's goal of deciding on task prioritisation and optimising the plan in an uncertain and frequently changing operational setting?

5.3 The emergent nature of decision making

The routine shifts in discourse roles facilitate a range of options in terms of organisational role positioning, which in turn influences a specific interactional trajectory of reaching decisions. The next excerpt follows the previous one and brings the discussion of whether to skid the rig to a close. . Following the problems surrounding electricity, the chair calls upon the participants to discuss whether it is practical to skid the rig after all (turn 33). Rather than responding to this elicitation explicitly, WSM returns to one of his earlier options (turn 34).

Expert 3, **(A2/8/222), continued from Excerpt 2**

Organisational role acronyms		
CPO = Chair/Coordinator Production Optimisation	Discourse	Activity
WSM = Well Service Manager	role	role

		WSE = Well Service Engineer		
33.	CPO	yeah I know but can we consider whether it's practical to skid the rig to do well sixteen or whether it could be (.) best on- (.) later.	Elicitor	Chair
34.	WSM	I would have taken then the- complete well two, take well six, and then I think we have both available (name of WSE) because then we have gained two or three days- three or four days.	Presenter Assessor Elicitor	Participant
35.	WSE	four	Responder	
36.	WSM	yeah. [yeah]		
37.	CPO	[okay]		
38.	WSM	and then continue with the production.	Presenter	Chair
(5s)		((everyone looks at the screen, physically still, except for POE2 who writes in his book))		
39.	CPO	o:kay. Anything else on platform A?	Elicitor	Chair
(5s)		((everyone is physically still , looking at the screen, POE2 continues writing))	Assessor	
40.	CPO	ehm- platform B? ((moves on to the next agenda	Presenter	Chair

item))		

In turn 34, WSM is responding to CPO's request to reconsider the option of skidding the rig. He first initiates a hypothetical scenario signalling an alternative option but then self-repairs and formulates a proposal in the directive mode. He implies that he is not in favour of skidding the rig and instead proposes to change the sequence of tasks in the plan: first finish well two and then take well six. As he is presenting a hypothetical scenario and a mitigated proposal ("I would have", "I think"), he is positioning himself in the discourse role of Presenter of a new option, albeit through hypothetical and mitigated formulations. But he also offers assessment of this option in terms of the availability of the wells and the time frame of this scenario, and he is directly addressing WSE by name, eliciting his support.

WSM receives a confirming response from WSE in the form of a nuancing of his estimated time frame ("four", turn 35), supporting his rationale for doing wells two and six first and, after four days, by which time they will have finished well two and six, well sixteen will be accessible again. In the turns that follow, WSM's proposal meets with approvals from WSM ("yeah [yeah]", turn 36) and CPO ("[okay]", turn 37). WSM then continues with his reasoning

around the alternative plan, and having received support from WSE, closes his proposed

future scenario ("and then continue with the production", turn 38).

What follows this sequence is a long silence spanning five seconds, in which the participants

look at the screen without making any comments or displaying any visible nonverbal cues.

This silence is followed by CPO resuming her activity role as meeting chair to forecast a

conclusion of the discussion with a pre-closing marker ("o:kay"), accompanied by the

discourse role of Elicitor ("anything else on platform A?"). Yet another long silence follows

(5s) as no one responds to the question, with everyone's gaze directed at the screen. This

stretch of silence is followed by the chair opening up the next agenda item, platform B. The

decision has been made of tackling well two and six before well sixteen, and the option of

skidding the rig has been left behind. The meeting moves on to the next platform on the

agenda and does not return to this issue.

The sequential positioning of the silence here is characteristic of this interprofessional

meeting activity type, and it is interesting to consider the tokens of silence as a discourse

type in its own right with a specific function. The participants all look at the screen, not in a

manner that suggests they are intensely assessing the proffered option; it is rather a more

neutral posture without any nonverbal behaviour such as nods, frowns or sighs. Rather than

representing uptake of the Assessor role, we interpret this silence as the occasioning of the

role of Responder, in this case collectively. The participants might be contemplating WSM's

scenario, but they might also just be waiting for a topic closure. If the silence was a sign of

reluctance to express dissent, there would most likely be nonverbal markers of this or verbal

responses to the silence (see Schnurr & Chan 2011 on silence as a discourse marker of

disagreement). In an interprofessional meeting context like this, the silence might function

not necessarily as explicit consent, but as a signal that there is nothing more to add, no

questions unanswered, no information held back – at least as far as the participants' current

status of knowledge is concerned. In this case, silence in a collective sense may function as

a strategy for adopting the proposed decision in a manner that allows for efficient transition to

the next topic with minimal break and minimal repetition. There has been a discussion,

followed by a feasible option, and unless or until any other issues come up, the decision just

formulated will assume the status of a team decision. The participants do not see it

necessary to spend time affirming or repeating the decision in a warranted fashion, and there

are few instances of gist formulations or summaries in general in the meeting.

6. Discussion

One key finding emerging from our data analysis is the fluid interplay of discourse roles and activity roles through the use of discourse types. Discourse types – which resemble conventional speech acts – can then be regarded as a basic unit of analysis. However, beyond conventional speech acts, discourse types extend to accommodate activity-type specific communicative behaviour, including silence. For example, the discourse type of presenting an option (e.g., "why not skid the rig", "move the rig") may originate from different participants in different role-relationships, with potentially different functions and meanings. As we have seen, presenting an option is a prevalent discourse type in our meeting dataset aimed at optimising the maintenance plan.

Like discourse roles and activity roles, discourse types are realised in complex ways. The discourse type of presenting an option/solution is manifest differently, for example through the discourse role of Responder, if the option/solution were to be elicited (e.g. Elicitor: "Are there other options?"; Responder: "Why not skid the rig?"). It is therefore useful to see how discourse types are dialogic and stretch over single turns and single utterances. In excerpt 1, through his assessment in turn 19 ("=we could maybe use the rig xx no xx- is there any maintenance- something going on in this rig? [is it-]), WSM uses a discourse type which consists of two parts – "partial agreement + further assessment"— allowing him to take on

the discourse role of Assessor of the option presented and thus ratify his position as a

primary participant in the meeting. Similarly, the discourse type of "presentation of option"

can be responded to in different ways as a basis for re-defining the role-relationships

between participants, or even the very boundaries of the activity type.

Our data analysis also points to the nuanced nature of role-positioning. In excerpt 1, we saw

the Production Optimisation Engineer self-selecting on four occasions when the topic of

skidding the rig was topicalised ("[why not?]", turn 11; "It's skiddable @@   [@ xxx@]", turn

14; "[yeah?]", turn 16; and "so rig up in the rig then and skid the whole rig", turn 18). POE's

role positioning reflects some of the opportunities this particular activity type affords. He

assumes the role of Responder and Presenter through short, unmitigated utterances that

position him as knowledgeable about the conditions offshore and the specifics of the drilling

rig. He easily occupies the role of Presenter and positions himself as a primary participant.

Following Thomas (1986), these can be seen as complex participant roles (both producer

and receiver roles) which are manifest through complex illocutionary acts.

The primary or secondary participant status is not necessarily linked to amount of speech or

number of turns. A manager participant might very well be accorded the role of primary

participant from his or her mere presence and a discourse role of Assessor even if they do not express themselves verbally. Other participants might rarely assume a primary participant role, as they attend the meeting only to pick up relevant information. Similarly one could imagine someone being cast in a secondary participant role, despite their efforts to assume a primary participant role, through consistently being ignored by the other participants. Secondary participants can, however, choose to participate should they find it relevant or strategic to do so, and might acquire a primary participant role related to specific topics. In excerpt 1, we saw both POE and DRE occupying the floor and explicitly supporting the option being launched, providing additional information and using their expertise to assess the option of skidding the rig.

What is characteristic of decision making in this operational setting is the closeness to the ebb and flow of operations, continuously faced with changes and adjustments of tasks and plans. Decisions made are potentially short-lived and burdened with great uncertainty as the operational situation changes and the consequences of change are not always easily assessed: they rely on a range of interrelated factors. The decision made on such a contingent basis can be glossed as 'based on what we now know, the optimal sequence of activities is x, y, z' or 'unless something comes up, we'll do X' – and that 'something' can be

events that prevent X from being done or that present other actions as more efficient than X in terms of production and/or safety. The decision to go with well number two was made without too much deliberation and could consequently be overturned with ease after the meeting if, for example, it turned out that the electric issue on the rig was resolved in time and that there would be no other obstacles to skidding the rig. If the team spends too much time deliberating each decision, it will have been a waste of time if there is a change in the prevailing circumstances. The meeting needs to assure that decisions made are based on thorough interprofessional exchange/assessment of information and at the same time efficient decision-making procedures have taken into account the high likeliness of change. Any consequent changes do not necessarily amount to a sense of time wasting nor do they undervalue the purpose of meeting talk.

The plan optimisation meeting, with its affordance of shifts between different discourse roles and activity roles, provides for a flexible utilisation of the participants' broad range of competencies and experiences. Simultaneously, efficiency is ensured by avoiding extended rounds of confirmations or formulations of decisions that might very well be overturned by other events. This kind of activity affords the strategic use of discourse roles via discourse types on a moment to moment basis, dependent on the participants' sense of engagement

and obligation, as well as expertise. The different discourse roles, constituted in identifiable discourse types, also afford unmarked, seamless shifts in activity roles, from chair to participant, or from secondary participant (audience) to primary participant (addressee) and vice-versa. This interactional dynamic opens up a range of options in terms of social and organisational role-positioning for the meeting participants in their joint and cumulative production of decisions on a contingent basis. In an operational context, this can be seen as a convergence of expert labour that is efficient for decision making in a setting characterised by high risk and frequent change.

7. Conclusion

In a constantly changing business context, the interactional level is where organisational members handle, implement, or resist change, and the concept of discourse role, closely linked to activity type and activity role, provides an analytic entry into "the core of organising", in this case decision making trajectories in team meetings. This case study has looked at the interplay of activity role and discourse role vis-à-vis discourse type as an analytical focus for examining team decision making. Discourse types and discourse roles are here seen as the building blocks of activity-specific roles (e.g. chair and participant) and as resources for realising organisational roles (e.g. manager, engineer, and specialist). As discussed in our

conceptual framework, the concept of role is regarded as dynamic and fuzzy, which proves

to be useful in analysing interaction at a micro-level, while acknowledging inconsistencies,

complexities and overlaps in how participants achieve communicative goals. The

indeterminacy of discourse roles provides strategic means for participants in their pursuit of

specific communicative goals – both individually and collectively. In studying meeting

interaction in a workplace setting, the concepts of activity role and discourse role allow the

analyst to probe further the interactional mechanisms participants draw upon to negotiate

their participation by adopting and assigning to others various participant roles. By

operationalising these concepts and showing how they can be mapped on to interactional

data in a workplace meeting setting, the study extends Goffman's participation framework.

This is something we hope future research in other interactional settings will take forward.

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Appendix A: Transcription conventions

[word] : overlapping talk

. : micro pause

(3s) : pause in seconds

Word : increased emphasis

WORD: louder voice (with the exception of abbreviations)

°word° : softer voice

XX : inaudible word

XwordX : uncertain transcription

@@ : laughter

Word- : truncated word or phrase

=word : latching to previous utterance without pause

((word)) : comment to transcription

(word) : anonymised information

Appendix B: Examples of activity type mapping
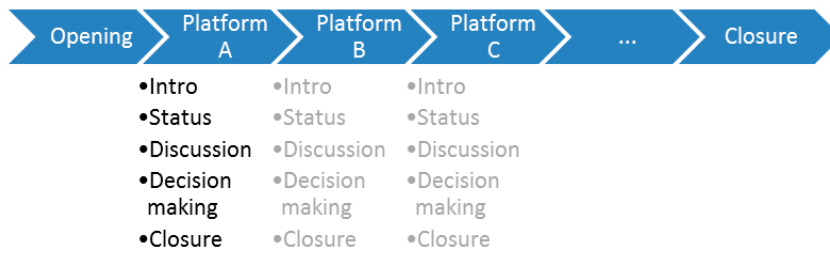
Map 2: Phase structure
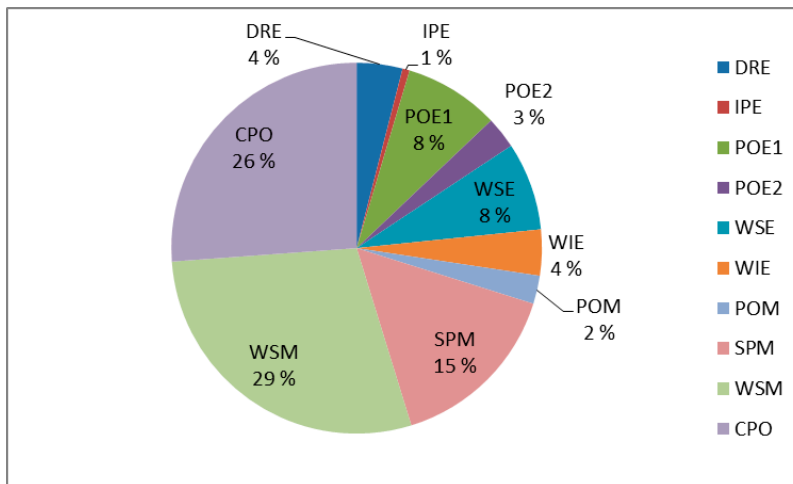
Map 2a: Distribution of turns by frequency
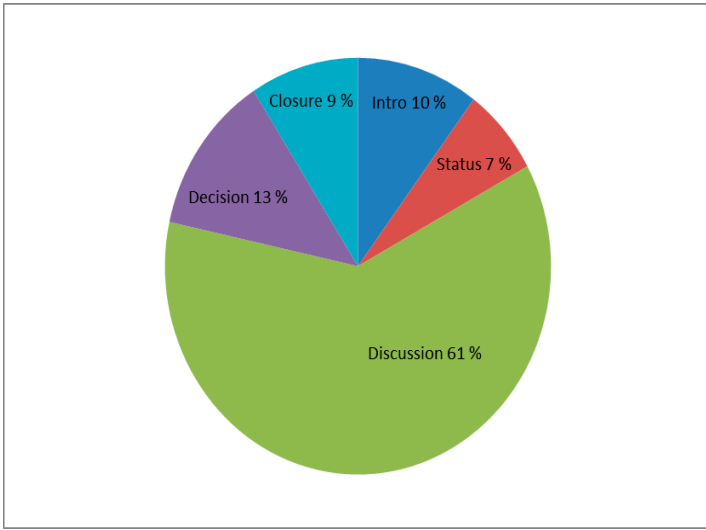
Map 2b: Distribution of chair's turns by phase

Article III

Halvorsen, K. (revision in progress). Questions as interactional resource in team decision making. *International Journal of Business Communication*

Article III

Questions as interactional resource in team decision making

Abstract

This study explores how professionals in an operational planning meeting in the petroleum industry employ questions as an interactional resource in team decision making. The empirical site is characterized by considerable uncertainty and frequent change as it is tightly bound to the sharp end of high-risk industrial production. A weekly meeting for optimizing well service plans was observed and recorded on nine occasions. The data was analyzed within the framework of Activity Analysis (Sarangi 2010a), emphasizing the relevance of the activity type (Levinson 1979) for the analysis and interpretation of interactional features, in this case questions. Structural and interactional mapping of the meeting data provides an interpretive frame in which the role of questions in decision making trajectories can be understood in light of the activity-specific context. The paper presents one extended decision making episode from opening to closure. Analysis shows that the questions are characterized by being brief and unelaborated, topically implicit and fact-oriented, which is seen to be an efficient format in a setting that requires frequent adjustments of the commitments made in response to changes in the operational situation. While questions can function collaboratively by opening up the conversational space and seeking the expertise of others, they are also seen to function strategically, driving the decision making trajectory in specific directions. Of particular interest are questions embedding upshot formulations, which carry strong communicative force, seeking confirmation and commitment to future action. The study contributes to the investigation of team decision making and professional reasoning in a setting rarely studied from a discourse analytic viewpoint.

 Keywords: discourse analysis, activity analysis, team decision making, workplace discourse, business meetings, questions

Introduction

Decision making has been at the heart of organizational analysis for half a century, and is no less so today as the contemporary organization has moved towards increasing emphasis on team work and cross-professional interaction. Discourse studies have made significant contributions to our understanding of team decision making, perhaps most importantly through the analysis of local workplace interaction (see f. ex. Atkinson, 1995; Boden, 1994; Cicourel, 1968; Sarangi & Roberts, 1999; Silverman, 1987). Studies of interaction show that it is often difficult to identify when a decision has been made, even whether a decision has been made, and that decision making processes are incremental activities consisting of many minor steps. Decisions can rarely be connected to one singular statement as "decisions are virtually never stand-alone affairs but rather are part of a sequence of 'tinkering' with some organizational problem or policy" (Boden, 1994, p. 182). The interest of the present paper is precisely such continuous organizational decision making wherein decisions are cumulative, transitory and constantly tweaked to accommodate situational changes and new information.

The research site is a planning meeting in the oil and gas industry, where decisions regarding the sequence and priority of service jobs on offshore oil and gas wells are made. Professionals from up to six different departments meet weekly to coordinate and decide based on the current operational situation. The operational planning onshore must continuously respond to the changes in production offshore, as the prioritization of tasks might change, the sequencing of tasks will need rethinking, and planned tasks might have to be re-scheduled or put on hold. This continuous adjustment work is a form of decision making that crosses department boundaries and areas of expertise, and the decisions made are all potentially short-lived and fraught with uncertainties. This kind of contingent decision making, taking place at the level of production in a high-risk industry, has rarely been described in the discourse analytic literature on team decision making.

The meeting data is approached from the framework of Activity Analysis (Sarangi 2010a), which foregrounds the activity type (Levinson 1979) and its structure as an integral part of analyzing interactional sequences. Systematic mapping of structural and interactional characteristics of the activity type, combined with ethnographic data and fieldwork, provides a comprehensive interpretive framework for the analysis of specific discourse features. Halvorsen & Sarangi (forthcoming) have considered the management of participant roles in the same meeting data and revealed characteristic features of the participant framework. The analytic focus of the current study is the functions of questions as interactional resources for decision making in this specific activity type.

The paper will first provide a review of discourse analytic studies of team decision making, including the notion of professional reasoning and a brief review of the functions of questions in institutional discourse. Following a description of data and methods, an account of the analytical framework of Activity Analysis will be provided. The analytic section will present one decision making episode from opening to closure in order to trace the role of questions in decision making. The discussion will focus on the role and function of questions at crucial moments in the decision making trajectory and how questions can be seen to function strategically in this particular activity type.

Literature review

In contrast to traditional rationalistic perspectives, mainly from the fields of economics and scientific management, social science approaches have described organizational decision making comprehensively and critically (for an overview, cf. Hodgkinson & Starbuck, 2008); from Simon's (1957) early concept of bounded rationality to issues of power and politics (Cyert & March, 1963), ambiguity and contradiction (March & Olsen, 1976), and sequential processes (Mintzberg, Raisinghani, & Théorêt, 1976). Discourse studies have contributed to this theorizing by showing empirically how decision making is not only rationally but also socially and interactionally bounded. Boden (1994) argued persuasively that the persistent focus on cognitive elements of choice processes in the study of decision making ignores the temporal, spatial, sequential, and interactional

3

aspects that dominate organizational life. Decision making in organizational settings cannot be reduced exclusively to technical rules or context-free inference. Huisman (2001) calls for confronting decision-making theories with empirical data from actual talk. Analysis of the discourse strategies participants employ provide evidence of the situated nature of decision making and the many discursive balancing acts performed by organizational members. However, there is still a need for further empirical studies of team discourse and team decision making across a variety of workplace contexts. Although a variety of sites have been studied, within education, business, health and social care, there are still relatively few studies within each empirical domain (for a systematic literature review cf. Halvorsen, 2010).

The empirical site for this study, operational planning, is tightly bound to the sharp end of high-risk industrial production, a kind of setting that is rarely studied from a discourse analytic viewpoint. Discourse studies of team decision making have analyzed, among others, management team meetings (Clifton, 2009; Huisman, 2001; Kwon, Clarke, & Wodak, 2009; Sanders, 2007), which will always be somewhat removed from the everyday details of the 'shop floor', and department meetings (Menz, 1999) working on allocating time and resources to project work. Closer to the operational setting are perhaps studies from the medical domain and cross-professional rounds in hospitals (Cicourel, 1990; Graham, 2009), where the impact of social structures and organizational hierarchies on professional interaction and decision making have been focused. In addition, several studies analyze meeting data from teams with specific and bounded functions, such as committees and conferences of different kind. In the educational setting, these are school committee meetings (Hjörne 2005, Mehan 1983) and university curriculum meetings (Barnes, 2007). In health and social care settings, admissions conferences for surgery and rehabilitation (Hughes & Griffiths 1997), nursing home placement meetings (Nikander, 2003), and child protection conferences (Hall, Slembrouck, & Sarangi, 2006) have been studied. In a business setting, an 'extra recognition and awards team' in an American corporation has been studied (Wasson, 2000). These meeting contexts

have some similarities to the plan optimization meeting as they are meetings going beyond each participant's primary work activities. However, operational planning takes place during ongoing operations and attends to the continuous planning of operational tasks, which makes it more exposed to the frequent changes in production.

Huisman (2001) presents an interactional definition of decisions, which states that an utterance can be considered to 'do a decision' if the commitment of relevant participants to a future state of affairs is achieved. The operational plan itself is a representation, in the form of a Gantt diagram, of a series of commitments to future action, organized in time and related to the allocation of resources. In their efforts to optimize the plan, the participants in the plan optimization meeting are concerned with optimizing these commitments and continuously adjusting them in accordance with the changes offshore. Operational work has been described as consisting of "a continuous flow of circumstances to which adjustments and adaptations are continually made" (Almklov & Antonsen, 2014, p. 480). Building on this, the current study looks at decision *making* as processes in which commitments to future state of affairs or future actions are made. Taking an interactional approach allows for systematically exploring the processes through which such commitments are made, challenged, negotiated, or changed. The focus is not on the decision outcome as such, but rather on the decision process, located in the interactional sequences of workplace talk. In an operational setting, decisions are relatively 'small', related to the day-to-day operations, but what counts as a decision will depend on the communicative norms of the group (Huisman 2001). It therefore makes sense to study the trajectories in workplace interaction that allow professionals to align and commit to future action, whether this is in short term, contingent ways or in long term, more fixed ways.

For the topic of the current study, the theme of professional reasoning and studies on the production and assessment of evidence in team decision making, are particularly relevant. Although these studies have mainly been conducted in the context of health and social care, they nevertheless provide a valuable backdrop for the analysis of questions in the plan optimization meeting.

Interaction has been shown to play a crucial part in establishing a piece of information as evidence and thus as a valid basis for decisions on diagnoses and subsequent action or treatment. Cicourel (1990) shows how physicians assess the adequacy of medical information on the basis of the perceived credibility of the source, which in turn is constrained and guided by the professionals' general and local knowledge of social structure. Also within medicine, Måseide (2006) displays the emerging quality of medical evidence, both generated and made applicable discursively by the participants. Questions play a crucial role in the gathering and assessment of evidence. Similarly, Sarangi (1998) examines information as evidence related to case construction in social work, arguing that the evidential status of information is related to its reportability. Information and evidence are interactional products, generated discursively and requiring discourse for its applicability. This view challenges traditional approaches to evidence and is useful for understanding the phases of decision making that precede decision announcement and adoption.

The functions of questions remain largely unexplored in the context of decision making among groups of professionals. A few studies on the function of questions in meeting talk in general can be found, but without a specific focus on decision making. Holmes & Chiles (2010) study questions as control devices for those in positions of power, enabling managers to maintain control of the agenda and the direction of the discussion, constructing authority and a leadership role. Ford (2010) takes a different approach, seeing questions as actions that gain the questioner entry into participation and that open up participation space for others.

The communicative form of questioning is performed through many kinds of syntactic forms that "do questioning", just as there are interrogative forms that do not do questioning, such as rhetorical questions. When defining a question one should take into consideration both functional and sequential aspects. Freed & Ehrlich (2010) define questions as utterances that a) solicit (and/or are treated by the recipient as soliciting) information, confirmation or action and b) are delivered in such a way as to create a slot for the recipient to produce a responsive turn (p. 6). It is useful to consider

questioning sequences as three-part structures involving also a third slot for the questioner to acknowledge or elaborate on the response given (a sequence described by Sinclair & Coulthard [1975] in terms of Initiation, Response, and Feedback for classroom interaction). The three-part sequence provides space for the questioner to speak again and opens up for shifts in participation. The current study will focus primarily on the first pair part of the adjacency pairs, the questions, but attention will be paid to sequential aspects and positioning in two/three-part question-answer sequences.

Recurring themes in the study of questions have been the differential speaking rights afforded by questions and the interactional asymmetry created. Recent work on the role of questions in institutional settings, however, focus on the multifaceted functions of questions and the need to nuance the association to interactional control and issues of power (Freed & Ehrlich 2010). Taking the notion of activity type as a point of departure, Levinson (1979) shows that the discourse properties involved in the definition of a question are subject to the nature of the activities in which questions are used: the role and thus the nature of a question is in part dependent on the matrix of the language game (p.378). This has more recently been illustrated in genetic counseling sessions in which Sarangi (2010b) interprets backchanneling cues as pseudoquestions that encourage reflection-based decision making on the part of the client. The role and function of questions are, in other words, dependent on the activity in which they take place, and this insight is fundamental to the analytical framework employed in this study.

Data and methods

The data for the paper is part of a larger study on team decision making in the workplace. The author conducted fieldwork with an international oil and gas operator, attending and recording key meetings in operational planning. The plan optimization meeting was observed on nine occasions, of which five meetings were video recorded. A single camera was used, mounted on the top of the presentation screen in the front of the room. Four more meetings have later been audio recorded

without the researcher being present. The data from the plan optimization meeting totals five hours of recorded talk, which was subsequently transcribed and anonymized following usual guidelines for research ethics (See Appendix A for list of transcription symbols used).

Specific to the data in this study is the proximity to operations, often called the "sharp end" of oil and gas production, and thereby also the nearness to the immediate consequences of potential problems in production offshore. The stakes are high both in terms of safety and production as operations happen in an explosive environment far from shore and with production of great financial value. Within the onshore operations unit, the plan optimization meeting is a weekly meeting for prioritizing and sequencing well service tasks, with the goal of maximizing production while ensuring the technical integrity (safety) of the oil and gas wells. Operational planning is a process of continuous tweaking of the work plans as changes happen offshore. In the case of well service (also called well intervention or well workover), the plans concern several roving crews that cover a field of installations, travelling from one platform to another performing tasks according to the plan made onshore. Each platform has a number of wells that at different times require service or intervention work, so there is a constant prioritization and sequencing of tasks based on technical integrity and the well's production potential.

Ten participants from up to six different departments attend the meeting. The meeting is conducted in English, but only two to three participants are native speakers of English; for the rest, English is a second or foreign language. The participants are both managers and engineers with different areas of responsibility and different decisional authority. The meeting chair represents the Production Optimization group, and serves a facilitator role in this meeting. She does not have decisional authority or a manager role in any of the present departments. The participants are seated in two rows around a circular table, facing a wall with two screens displaying operational plans (Gantt charts showing well service tasks against time). Figure 1 depicts the room set-up for the meeting.

POM	Production Optimization Manager
POE	Production Optimization Engineer
WSM	Well Service Manager
WSE	Well Service Engineer
WIM	Well Integrity Manager
WIE	Well Integrity Engineer
DRE	Drilling Engineer
PSM	Production Subsurface Manager
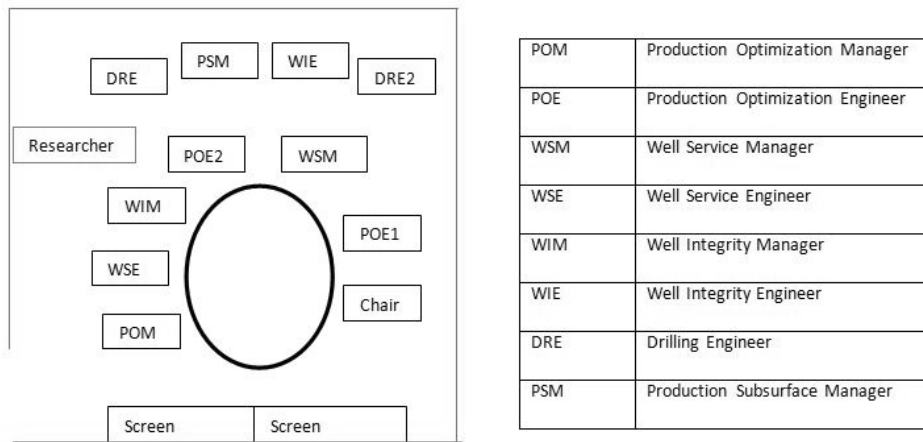
Figure 1: Room set-up for the plan optimization meeting

Of specific importance for offshore oil and gas production are the highly complex interdependencies between tasks offshore. All activities on an offshore platform share a confined, limited space, both for work, storage, and crew accommodation. In prioritizing and sequencing well service tasks, considerations concerning access to material, equipment and crew need to be made, as well as coordination with other interrelated operational tasks. Drilling might be working on the deck, which prevents well service from accessing certain wells, or there might be crane work lifting heavy equipment over the well area, which restricts work access for safety reasons. Adding to this complex picture of interdependencies are the frequent changes in operations offshore. These can be due to unforeseen events such as a halt in the drilling process, delay with vendors, mistakes or unexpected hold-ups, or simply adverse weather conditions preventing some work from being done and consequently causing re-allocation of resources. This in turn forces adjustments and re-scheduling of the well service plan. Decisions in this setting are, in other words, potentially short-lived and will always be contingent on the many interdependencies of operations. The outcome of decision making episodes in this meeting is typically a commitment to a specific task prioritization or sequence, or a

commitment to postponing or delegating the decision in the cases where the meeting lacks sufficient information or the necessary decisional authority.

Analytical framework

Seeing the function of questions as also depending on the 'activity type' (Levinson 1979) in which it takes place is an important point of departure for this study. The analytical framework chosen is Activity Analysis, as proposed by Sarangi (2000, 2010a), building on Levinson's notion. Activity types are culturally recognized, goal-oriented events with specific constraints on participants in terms of contributions, style, and structure. According to Levinson, such constraints are sources for activity-specific inferences and thus have implications for the meaning and functions of discourse strategies. In other words, the structure of the activity in which interaction takes place has implications for the sequential organization of talk-in-interaction and the role and function of discourse features. This suggests that ethnographic insights into organizational contexts and institutional roles of participants are significant for contextualizing discourse data, but that these are complemented by systematic analysis of the activity type.

While the analysis of questions (and answers) to follow builds on key insights from Conversation Analysis, with concepts such as adjacency pairs and sequentiality, the Activity Analysis will consider how sequences of talk are embedded in the overall activity of the plan optimization meeting. While a CA study is primarily concerned with the local-sequential context of interaction, this study places a greater emphasis on the larger context of professional culture and incorporates systematic mapping at the level of the activity. The structural and interactional features of the discourse data are mapped in order to provide systematic descriptions of the recurring and characteristic features of the meeting as an activity type (cf. Appendix B for examples). The mapping exercise is a useful approach for the researcher to get familiar with the data; for identifying patterns and variability in the structures of the encounter, and for identifying recurrent discourse features that might be of interest to pursue in more detailed analysis. The systematic mapping of the plan optimization meeting,

combined with the fieldwork and observations, provides an interpretive frame in which the analysis of the function of questions can find a solid foundation for rich interpretation. Structural and interactional maps can be carried out at the level of the entire activity type, over one meeting, or at the level of distinct phases. For the present article, the interactional mapping covers the one meeting in which the decision making case takes place. After presenting results from this descriptive analytic phase, the detailed analysis will follow one decision making episode from opening to closure in order to show the functions of questions in decision making in this setting.

The analysis of the use of questions builds on a previous study on the same meeting data (Halvorsen & Sarangi forthcoming) that explores how the management of participant roles in the plan optimization meeting is accomplished situationally and in activity-specific ways. This study reveals how participants shift dynamically across activity roles and discourse roles in the meeting, as any participant can potentially adopt more or less any role at a given point in the interaction. The activity type thus affords a flexible utilization of the participants' broad range of competencies and experiences, offering the meeting participants the opportunity to cumulatively add to the joint production of decisions. Further, the chair was found to do limited amounts of 'chairing work' (for a discussion of the discourse type of chairing, cf. Angouri & Marra 2010), but contributed significantly on the discussion of the technical and plan-related issues of the meeting. These findings serve as a backdrop in the following analytic section in which the functions of questions are explored.

Data Analysis

The structural and interactional mapping that was undertaken shows that the activity type follow an overarching phase structure that moves from one platform's operational plan to the next in a recurring sequence (cf. Appendix B, map 1). However, the chronology of these phases, and the length and complexity of each phase, will vary significantly according to the plan changes and re-scheduling needed in response to the offshore situation. In some cases the decisions to be made are tightly coupled to resources and tasks across platforms and several platforms will therefore be discussed in

the same assessment phase. In the decision making episode below, this is the case as the question of fitting in an additional task on platform B has implications for the planning of tasks on platform A as well. However, after closing such a cross-referring episode, the meeting generally returns to the plan and the platform by platform sequence.

Within each platform sequence, the platform to be discussed is introduced and status information on the situation offshore is given. Generally the introduction is given by the chair, but sometimes it is also initiated by other participants (as in the episode below in which the Well Service Manager initiates the move to the next platform). A status update is then given by a participant who holds the latest update on the issues related to the specific platform. This phase leads into a problem formulation or a decision proposal that initiates a decision making trajectory (cf. Appendix B, map 2). The formulation of the problem or the proposal can be initiated by several participants, including the chair. This phase is followed by an assessment phase, which includes the presentation and elicitation of information, generation of options or alternatives, and assessments of information and options by the participants. The assessment phase is sometimes very long and can involve a range of issues related to the problem or proposal (such as crew access, boat availability, implications for other tasks on the plan, etc.). The decision making phase occurs when a commitment to future action or state of affairs is formulated, sometimes explicitly, but frequently also implicitly. The decision making episode is closed by explicit or implicit decision adoption.[1] In general, the meeting follows a relatively loose phase structure that is driven by what the current situation offshore calls for in terms of decision making.

Map 3 (Appendix B) shows the distribution of turns between participants in the chosen meeting, and we can see that all the participants and departments present in the meeting contribute by taking speaking turn in a relatively evenly distributed manner. Three participants dominate quantitatively

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[1] Halvorsen & Sarangi (forthcoming) show how decision adoption in this setting can be accomplished through the practice of collective silence.

and these are the Chair, the Well Service Manager, and the Production Optimization Manager. These participants are key participants in terms of their organizational role-responsibilities for plan optimization. However, taken together, the two production optimization engineers are shown to contribute with equal number of turns as these managers. Although quantitative dominance does not reflect qualitative or content-related influence, the activity mapping nevertheless indicate that the diverse group of participants present have access to the floor across hierarchy and department roles.

Among the interactional resources available to the participants, such as for example assertions or hypothetical formulations, the decisional talk in this activity type is characterized by frequent use of questions. Turning now to the chosen decision making episode, the role of questions will be demonstrated in terms of their function in the interactional negotiations towards a commitment to future action. The episode is a long one for this meeting, lasting for a little over 13 minutes, so the analysis will focus on three selected excerpts that are significant in the episode. The topic for the episode is the decision whether to fit a new task into the plan. The option of doing a stimulation job on well B8 has come up, which involves injecting chemicals into the well to improve the flow of fluids, which in turn will increase production from the well. This task is not currently in the plan, but a proposal has been made to fit it into the plan in between other tasks. Should they prioritize it, this well has significant production potential, but since crew resources are limited, prioritizing the job will be at the expense of something else, particularly activity on platform A, which is also highly prioritized.

Excerpt 1 is the opening sequence of the episode. The meeting has just finished discussing issues related to on one specific platform and the Drilling Engineer responsible for that area is leaving the meeting. As he leaves, the Well Service Manager (WSM) is quick to launch the next issue for discussion, namely platform B, and his manner of identifying the specific problem is through a series of questions (highlighted in bold):

Excerpt 1 (B8, 4/27, 21:55)

Participants:

DRE = Drilling Engineer

POM = Production Optimization Manager

WSM = Well Service Manager

Chair= Chair/Coordinator Production Optimization

PSM = Production Manager Subsurface

POE = Production Optimization Engineer

253.	DRE2	thank you very much ((leaves the room))
254.	POM	thank you
255.	WSM	= but I think maybe go to platform B
256.	Chair	[platform B)
257.	WSM	[Platform B] is e:h [some]
258.	Chair	[yeah] ((pulls up the correct plan on the shared screen))
259.	WSM	complicated things uh ((turns backwards towards DRE and PSM on back row)) but uh-
260.	DRE	°@@ [@°]
261.	POM	[oh?]
262.	WSM	((turns back to the table)) could be (.)
263.	DRE	yes
264.	WSM	=platform B
265.	POM	=platform B
266.	WSM	=Platform B is- ((turns to back row)) uh concerning this u:h uh stimulation job ((turns back to table)) wh<u>o</u> is doing it, are <u>we</u> doing it, are- are we taking a crew to platform B?
267.	POM	what well are we talking about?

((clarification by several participants, inaudible))

268.	Chair	we're talking about [B20 B22 B8]
269.	WSM	[we have uh- yeah]and 8 yeah

270. POE2   actually 18

271. Chair   8 and18 (. .)

WSM is a key participant in the meeting as he has the overall responsibility for the well service plan and the well service crews offshore. In turn 255, he is quick to launch the new topic as the other participant is leaving. He takes on a chairing role and proposes that the meeting turns to platform B, previewing that there are some difficulties with this issue (turn 259). Low laughter from the Drilling Engineer (turn 260) suggests that the issue is known and possibly burdened with some tension (cf. Adelswärd, 1989 on unilateral laughter). WSM then formulates the problem of who should do this added stimulation job by first previewing the topic (turn 266) and then posing three questions ("who is doing it? are we doing it? are we taking a crew to platform B?"). His questions imply that there are several options as to who can do this job. The pronoun 'we' refers to his own unit, the Well Service department, and the added emphasis suggest there are others who can do the job, the 'others' being the Drilling department, as will become clear. The questions are not directed at any one participant or posed for someone to answer directly, and the series of questions gives a sense of urgency or insistence. From the implicitness of the first question ("this u:h uh stimulation job"), we can assume that this particular job has been discussed prior to the meeting, and the questions function together as a form of gist formulation (Heritage & Watson 1979) of this preceding talk, presenting the essence of the problem that they have to solve. Following this problem identification, POM poses a question calling for clarification of what job WSM is talking about, and five turns follow in which this is clarified by several participants and summarized by the chair (turns 268-271). Through his questioning, WSM has established the nature of the decision that they have to make, and he has implied that there are more than one option available.

This introductory sequence is followed by a three-minute long account by the Drilling Engineer (not included here) concerning the technical situation offshore, specifically some problems they are

having with another well, B22. He closes his account with a suggestion that Well Service handles the

B8 job as the Drilling team is very busy solving this particular problem. WSM responds to this by

explaining the consequences this would have for Well Services, primarily that they will have to

relocate the crew on platform A, which would include postponing highly prioritized work. He

concludes that Drilling should do the B8 job. So the table is set with two opposing positions when we

enter the next excerpt in which one of the Production Optimization Engineers (POE1) proposes that

the B8 job gets done *before* drilling starts their procedure on the problem well (involving rigging up a

blow-out preventer (BOP) and riser). This proposal would require everyone to turn around quickly

and get the job done within the next day or two. The proposal triggers questions from the Production

Manager (PSM) and the other Production Optimization Engineer (POE2):

Excerpt 2 (B8, 4/27, 26:22)

Participants:

Chair= Chair/Coordinator Production Optimization

PSM = Production Subsurface Manager

POE = Production Optimization Engineer

DRE = Drilling Engineer

POM = Production Optimization Manager

278.	POE1	and B8- but we should try and do B8 before you need to rig up the BOP and riser again but then
279.	DRE	yeah w- [uh]
280.	POE1	[we] can't do it for the next month
281.	DRE	that's:- that's right. If we- if we have to go pull the tubing on 22 then that's a two- two three weeks job basically. (.) So- but if you want to go do B8 we should have been done or- sh- like <u>now</u> huh, . then we need to do it in a c- within two-
282.	POE1	couple of days
283.	Chair	yes

284.	DRE	couple of days. (. .) because you- you don't get access to it after- if we have to rig up the riser on 22 you can't rig up the xxx on uh-
285.	PSM	was there any issues about putting that on uh (.) [injection?] ((looking towards POE1))
286.	POE1	[it is on] injection. It is on injection.
287.	PSM	so there is no limit on uh-
288.	POE1	[reduced injection]
289.	Chair	[reduced injection]
290.	POE1	it's only injecting twelve thousand [xx]
291.	PSM	[so] after we stimulate we can put it on full?
292.	POE1	mm (.)
293.	POE2	that's going to be about forty? ((looks at POE1))
294.	POE1	yeah thirty thousand plus at least
295.	POM	that will give us a good boost in production
296.	POE1	so we- we- we should try and get it done now before we lose the access (.) if you need to rig up the BOP and riser. (.)
297.	DRE1	then we should get a crew over
298.	Chair	mm °and a boat°

The proposal launched by POE1 to do the B8 job before Drilling starts repairing the problem well (turn 278) has not been mentioned before. She orients her utterance to the Drilling Engineer ('you') who supports and elaborates her proposal by stressing the importance of timing (turns 281 and 284). Through turns 278 to 284 they co-construct a proposal resting on the urgency to act quickly and take advantage of this opportunity. This triggers the questions from the Production Subsurface Manager (PSM), who is responsible for the decision made on this issue, but who necessarily relies on the information and assessments from the range of departments present. In turn 285, he asks a simple, information-seeking question regarding well B8 ("was there any issues about putting that on uh (.) [injection?]") Injection refers here to the process of injecting liquids into the reservoir in order to

maintain pressure. The question is implicit in its reference to B8 and he does not explicitly target a particular participant, but looks in the direction of[2] POE1 who responds before he has completed his utterance (turn 286). She confirms the relevance of the question with a short, unelaborated response, and PSM acknowledges receipt by probing further into the topic. His second question initiates an upshot formulation ("so there is no limit on uh-", turn 287), fixing the sense of the previous sequence and drawing conclusions of the 'talk-thus-far' (Heritage & Watson, 1979), previewed with the conjunction 'so'. He is interrupted by POE1 and the Chair who simultaneously provide additional detail to his first question about injection, with a brief elaboration from POE1 (turn 290). PSM goes on to present the upshot more precisely, still in the questioning format ("so after we stimulate we can put it on full?", turn 291). He formulates the implication that if they choose to do the B8 job, the well can be 'put on full', i.e. it can be produced to its full potential. The formulation makes a confirmation or disconfirmation relevant as a next action, speaking to the adequacy of the formulation, and the questioning format creates a strong demand for a response. The response here is given very briefly and without elaboration from POE1 ('mm', turn 292). Through this line of questioning PSM has established the current status of the well and has contributed to the assessment of the proposal by eliciting information that strengthens the proposal to in fact prioritize the B8 job.

As the possibility of full production of B8 now has been established, the other Production Optimization Engineer present (POE2) adds to this assessment with another question ("that's going to be around forty?", turn 293). He is here talking about the production potential of this well and the number of barrels of oil equivalents that this well can produce when it is 'on full'. He is suggesting that it is in the range of forty thousand barrels but frames it as a question with rising intonation. This

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[2] The video recording allows the researcher to see the direction of the gaze, but not precisely who the speaker looks at.

question can also be read as a formulation of implication, an upshot of what the preceding talk means for the objective of production optimization. He is calling for a confirmation of his estimate through the questioning format, but through his question he also provides a formulation that explicitly renders visible what is at stake, namely significant production numbers. POE1 confirms, but nuances his estimate (turn 294), and the Production Optimization Manager (POM) adds an assessment of this information, making further explicit to the team the implications for the overall goal of production optimization (turn 295). Together, these last turns from Production Optimization participants contribute to strengthening POE1's initial proposal to do B8 before drilling rigs up. And at this point POE1 returns to her proposal again, repeating the urgency of the decision (turn 296) and yet again DRE supports this position by formulating the implication in terms of crew allocation ("then we should get a crew over", turn 297).

The decision making episode on well B8 could have ended here as it seems there is a feasible option available that several participants support and that will yield increased production. The arguments have been made for the benefits of prioritizing B8 but, as it turns out, this proposal is not endorsed by key participants. Neither PSM, who established the production potential inherent in prioritizing B8 through his questioning, nor WSM, who is in charge of the Well Service crew offshore, seem to be willing to jump on this proposal and re-locate the crew from platform A. Instead, a range of other issues related to the decision are brought up by several of the participants, for four more minutes. For the purposes of the present argument, we will skip directly to the last section of the episode in which a decision is called for, announced and finally adopted. In the next excerpt, as the other participants seem to lean towards prioritizing the B8 job and relocate the well service crew from platform A to B, WSM expresses doubt and calls for further evaluation of the consequences of such a decision. The discussion seems to have come to a halt, when the Chair turns directly to the Production Manager (PSM) and calls for a decision. Instead of eliciting a response or a preference, this triggers more questions from PSM, as well as from three other participants.

Excerpt 3 (B8, 4/27, 30:23)

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Participants:

Chair = Chair & Coordinator Production Optimization

PSM = Production Subsurface Manager

WSM = Well Service Manager

POE = Production Optimization Engineer

POM = Production Optimization Manager
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345.   WSM   but you have to also evaluate then ((points to the screen)) do we have better jobs

on platform A than on B?=uh be- because we are de<u>lay</u>ing the whole thing on uh-

on uh- A by doing this ((turned forward, looks towards POM, WIM, Chair)) so maybe

we should go in and put up a case or whatever [I'm not sure whatever- xxx-]

((Inaudible, several participants overlap))

346.   POM   the core thing is that we don't have a drilling rig on A (.) so (.) we have better

access there

347.   Chair   =yeah

348.   POE2   =yeah that's true

350.   Chair   but it is- it is your call I mean do you want   [to-] ((to PSM))

351.   PSM   [but] could drilling take B8? (.) the

restim?   [Or the stimulation?] ((looks in the direction of the WSM, Chair and

POE1, not DRE who sits next to him))

352.   WSM   [I mean that] I mean that. ((He means "that is my opinion", direct

translation from Norwegian, 'jeg mener det'))

353.   PSM   so we   [can do- can-]

354.   WSM   [xx both]

355.   PSM   can we do B8 and keep on on platform A?

356.   WSM   =yeah (. .)

357.   POM   or do we have someone extra we can send out for a couple of days?

358.   WSM   no because we have extra out now for one that is on sick leave you see so it has

been a little bit hard to- to get more- be- I could check it.   [°I'll check it.°]

| 359. | POE2 | [when is] the |
| | | platform C operation finished? |

((Overlapping talk from several participants about the C operation end date))

360.	PSM	but that's the (name) crew
361.	WSM	no but the- but the C crew we need- we cannot just take that there is lots of other
		jobs we have to discuss °concerning that°
362.	PSM	yeah (.) so but if you have some people you can send out that would be the best.
		°If you:-° ((to WSM))
363.	WSM	I can- I can check=I am not positive o:r I'm not sure that we can man- uh make it
		but I can see °I can see°
364.	**POE1**	**so how many days are we talking about? two days? two three days?**
365.	WSM	=well it depends how many how many- if we are only doing 8 for example
366.	POM	8 is the most important one as I see it
367.	Chair	[but but xxx-]
368.	WSM	[I need to check and see otherwise-]
369.	Chair	we need crew for platform E as well [and xx-]
370.	WSM	[yes] and on platform T we need crew and we
		we have lots of- yeah.

((Turns omitted, humor about need for more crew))

| 371. | POM | okay I think we need some checking [and some thinking] |

In turn 345 WSM distances himself from the discussion so far, with the disagreement marker ('but')
and his pronominal choice, 'you '. His question functions rhetorically, not prompting an answer, and
he moves directly to an explanation for why this question needs to be asked ('we are delaying the
whole thing'). He also provides a suggestion for action, hesitantly suggesting that they 'put up a
case', which means that they analyze more systematically why one of the options are better than the
other. This could be read as a weak proposal to delay the decision, but there is no immediate support
given to this idea form the other participants. But with several participants overlapping and POM

making a general comment about better access to the wells on platform A (turn 346), the discussion seems to have come to a halt.

At this point, the chair addresses PSM directly with a prefaced question ("but it is your call I mean do you want [to-]", turn 350). She is placing the decisional responsibility with PSM and she calls him to decide by initiating a question asking for his preference. Her question is interrupted by PSM, but instead of responding, he poses a question himself ("but could drilling take the B8?", turn 351). His turn is marked as a reservation through the conjunction ('but') and through his question he re-launches the idea previously presented by WMS, that Drilling can do the B8 job. He frames it, however, as a question in the hypothetical mood, which cushions the proposal quite clearly dispreferred by drilling (with their current problem well). WSM is the one who chooses to respond, briefly, but directly and unambiguously, almost insisting by repeating twice ("[I mean that] I mean that", turn 352). DRE does not attempt to respond. PSM continues, first initiating a formulation of implication ("so we [can do- can-]" turn 353), however, he self-repairs and redesigns his utterance to a straight-forward, yes-no question ("can we do B8 and keep on on platform A?", turn 355). While seeking confirmation, the question also functions as an upshot formulation of the previous adjacency pair, which clarified that Drilling could do B8. The choice of the present tense of the verb here, rather than the hypothetical, strengthens the force of the formulation.

These two questions from PSM mirrors the design of his questions in excerpt 2, when he first asked whether the well was on injection and then formulated the implication of the response given. Now he has established that drilling hypothetically could do B8, then he has formulated the implications of this response, also in the form of a question. Through his second question he has formulated explicitly the implication that they in fact can stimulate B8 without having to interrupt the ongoing work on platform A, but through the questioning design he has also opened up the floor for a response. This sequence of questions, with information solicit and upshot formulation, represents an

interesting and powerful resource in professional reasoning, as it frames the information given in response to the first question as relevant and reportable, giving it evidential status for the specific decision. The interrogative form requires a confirmation of this evidential status from the interlocutors, and in this case the last question is unequivocally answered by WSM with a plain confirmation ("=yeah") (cf. Hak & de Boer, 1996 for taxonomy of responses to formulations).

DRE is still not making any attempts to contribute despite his department being the topic of discussion. After a short lapse, the Production Optimization Manager (POM), instead of addressing this re-launched proposal by PSM, poses a question embedding an alternative option, namely sending out extra Well Service crew ("or do we have someone extra we can send out for a couple of days?", turn 357). He is prefacing his question with the discourse marker 'or', indicating a potential disagreement or a preferable alternative option. He uses the collaborative 'we' of the meeting and downplays the strain on the Well Service department in terms of resources ('a couple of days'). He does not explicitly present a disagreement, but rather proposes an alternative option in an affiliative manner. This question triggers a more elaborate response from WSM who offers explanations for why sending out extra Well Service personnel might not be possible (turn 358).

POE2 latches on to this discussion and presents a seemingly simple, information-seeking question ("when is the platform C operation finished?", turn 359). This question embeds an implicit third proposal, namely using the platform C crew for the B8 job, and he is contributing to POM's initiative to finding extra crew. This prompts overlapping responses from several participants regarding the end date for the C operation, but WSM treats the question explicitly as an option and rejects it by implying that taking the C crew would require a greater discussion of priorities (turn 361). PSM supports this assessment but he also proceeds to support the proposal to send out more personnel (turn 362). Despite his previous orientation to the possibility of Drilling doing B8, he now presents a hypothetical scenario in which Well Service provide extra resources. He explicitly states this as the preferred scenario, and he does not provide any explanation or justification for this preference. WSM

responds by repeating his uncertainty about the crew situation but also his intention of looking into it (turn 363).

It seems the managers POM, PSM, and WSM again are moving away from drilling doing B8 and this last comment from WSM could have functioned as a pre-closing marker leading to a decision to look for additional crew. However, POE1 poses yet another question concerning the length of the B8 job ("so how many days are we talking about?", turn 364), yet another quite simple information solicit, but she proceeds to offer suggested answers to her own question ("two days? two three days?"). POE1 is the one in excerpt 2 who argued for prioritizing B8 and fitting it in before Drilling started rigging up. She is not requesting new information, as POM already indicated only six turns prior that this as a matter of "a couple of days" (turn 357). Drawing attention again to the relative ease of the B8 job, her question can be seen to also serve a persuasive function leading towards her own decision proposal.

The tension over the use of crew resources resurfaces in turns 367 and 368, when other platforms (E and T) are brought in as well. Following a humorous sequence about the lack of personnel, POM offers a preclosing statement ("okay I think we need some checking and some thinking", turn 369). His turn can be seen as a 'candidate preclosing' (Barnes, 2007), as he takes on a chairing role and attempts to bring the topic to a close. Embedded in his formulation is a proposal to postpone the decision in order to explore the issues further, outside of the meeting. At this point the meeting splits into several parallel floors, in which some are in English and some in Norwegian. WSM speaks directly to the Chair in Norwegian. After an attempt to summarize without managing to bring the meeting to shared attention, the chair finally closes the topic with a decision summary:

377.   Chair   [but then-] but then we have decided it's a- we do not want to go from platform A-
         we don't want to take uh the A crew we want to find another option.
378.   WSM   that's the decision.

379.	Chair	yes mm
380.	POM	°that's a good decision°
381.	Chair	°good decision° (.) okay. ((meeting moves on))

The decision is explicitly announced from the authorized role of the Chair and as the focus again is on the joint meeting. With a short gist formulation, extracting and highlighting aspects of the previous discussion, the decision is presented in the negative form, what the decision is *not (*"we do not want to go from platform A"), then very generally what the decision is ("we want to find another option"). This other option stays open and unexplained to the group. The final turns from WSM and POM explicitly adopt the decision ("that's the decision", WSM, turn 378; "that's a good decision", POM, turn 380). A long, complex episode of talk has come to an end, many issues and interdependencies have been considered, and only one element of the decision has been landed, namely that platform A is still prioritized and the Well Service crew will not be relocated. However, whether Drilling will in fact do the stimulation job or whether Well Service will find extra resources remain unspecified.

Discussion

The initial mapping of the meeting data provided a systematic approach to the structural and interactional features of the activity type across meetings and episodes. The activity type was found to be loosely structured across the phases, with relatively broad participation across hierarchies and departments. The accessibility of questions as interactional resource for all the participants might also be seen in relation to what Halvorsen & Sarangi (forthcoming) found to be highly fluid and dynamic participation frameworks in this particular activity type. The study found that the plan optimization meeting as an activity type allows for dynamic shifts in participation roles, with the chair also frequently shifting between the activity roles of chair and participant. The floor is in other words a relatively open and accessible one, both for engineers and managers.

The analysis has shown some characteristic features of questions in this setting. The questioning format is generally brief, efficient, and often topically implicit. There is minimal prefacing or framing of the questions and few elaborations, explanations, or justifications for why the question is relevant or important. Similarly, the responses given are equally short and fact-oriented, and there is no, or minimal, third slot verbal acknowledgement from the questioner. The contingent nature of decision making in this setting makes the brief and dense format functional. The continuous tweaking of the operational plan makes efficiency relevant as unnecessary time spent on deliberating issues might prove to be a waste of time if or when the situation offshore changes. The short and focused questions are communicatively efficient as they represent forceful communicative acts that require a response. The result is a style of questioning that covers a range of issues but that remains largely implicit in terms of professional reasoning. The reasons for asking when the platform C operation is completed (excerpt 3, turn 359), as an option for the crew problem on platform B, was, as we saw, not explained, only implied. The response from the team showed that this inference was made and the question was treated as a proposal.

In institutional settings, questions have often been seen as indications of interactional dominance on the part of professionals or managers. In this setting, however, which is a group of professionals with diverse authorities and responsibilities, the questions can also be seen as *less* forceful than for example declarative statements or imperatives. In questioning rather than asserting, participants can be heard to defer to the knowledge and expertise of the other participants, opening up the floor to the range of expertise present. The information solicits from PMS in excerpts 2 and 3 are examples of this. Questions facilitate shifts in participation and therefore can also be seen to have a collaborative function. In the context of operational planning, this is particularly salient as the complex interdependencies of operations require interprofessional assessment from the team as a whole.

However, questions in this setting have also shown to function strategically as drivers in the decision making episode. Through questions the participants address specific issues, set the agenda, and

make visible the kinds of information that they find relevant. We have seen the questions occur at crucial points in the interaction: in problem formulation (excerpt 1), assessment of options (excerpts 2 and 3), and in launching alternative options (excerpt 3). Some questions functioned as more or less veiled proposals of alternative options (such as POM "or do we have someone extra we can send out for a couple of days?" and POE2 "[when is] the platform C operation finished?"). Others functioned rhetorically, as POE1 in excerpt 3 pointing out the relative ease with which the future action can be executed ("so how many days are we talking about? two days? two three days?").

Common for several of the questions was their metapragmatic function as formulations. Formulations provide a candidate reading of preceding talk; they are a type of metapragmatic utterance that allow the participants to comment and to negotiate the meaning of what has been said thus far. Similar to questions, formulations typically occur as adjacency pairs with a second part showing strong preference for agreement. Heritage & Watson (1979) found that confirmation was massively preferred in formulations, and we can see how formulations as discursive devices allow the participants to impact the decision making trajectory in desired directions by providing a candidate reading and receive confirmation of this interpretation. In this case, the formulations were designed in the interrogative form, which conveys even stronger force than the declarative form, obliging the interlocutor to respond and asking them to take a stand. In this sense, these forms of questions constrain and project subsequent interaction[3], while at the same time opening up the floor to other participants.

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[3] Based on a study of university discourse, Vásquez (2010) suggests that formulations have a stronger communicative force in public, multi-party talk than in one-on-one participation structures. Explicit formulations compel an interlocutor to go 'on record' and the preference for agreement might be even stronger in such contexts as noncomfirmatory responses are potentially more unsettling in

Clifton (2009) shows how formulations can be a resource for managers or chairpersons to 'do influence' in workplace meetings[4]. In the plan optimization meeting, this device, in the form of questions, seems to be available for both managers and engineers. While questions enable participants to gather information, the evidential status of this information is a matter of interactional negotiation (Sarangi 1998). In both excerpts 2 and 3, we saw the Production Manager (PSM) employ the same design of two consecutive questions, first soliciting information and then formulating implications of the response in a second question, thereby granting the information evidential status for the decision they are about to make. Similarly, when POE2 poses the question "that's going to be about forty?" (excerpt 2), he presents an upshot formulation of the preceding talk about putting the well on full, making this information visible and reportable, consequently lifting to attention what is at stake in the decision. Questions as formulations are in this way a powerful device for the production and assessment of evidence.

Questions can be seen as a strategic device in team decision making in this setting as they allow the questioner to set the agenda, make visible specific aspects of the problem or decision, and also requiring some form of response from the other participants. In this way it can be a powerful, rhetorical tool in a complex interprofessional setting in which the participant represent different interests and responsibilities, but in which they are expected to work together for the overall goal of

public rather than private settings. This is, however, a proposition that needs further empirical investigation across institutional contexts.

[4] Studies of formulations have frequently emphasized how institutional roles constrain the production and response to formulations (Antaki, Barnes, & Leudar, 2005; Hak & de Boer, 1996), but these have mainly been related to professional-client relationships, where formulations have been found to almost exclusively be performed by the professionals.

production optimization. When employed at crucial stages in the decision making trajectory, the questions can play a significant role in the negotiations over commitments to future action.

Conclusion

This paper has explored how questions function as an interactional resource for decision making in an operational planning meeting in the petroleum industry. The analysis was conducted in two steps, with activity type mapping followed by detailed analysis of the use of questions in decision making trajectories. Through the example of one decision making episode in which the participants decided whether to fit in a new task into the plan, questions have been shown to be a forceful interactional resource in this activity type. The questions are characterized by being brief and unelaborated, topically implicit and fact-oriented, and this specific format is interpreted as efficient for several reasons. The interprofessional nature of the meeting, with loosely structured phases and fluid participation frameworks, opens up the floor to all the participants. The questioning format as an interactional resource is available to all the participants and occurs at crucial stages in the decision making trajectory (problem formulation, assessment of options, alternative options).

The questions allow managers and engineers to set the agenda and bring in the topics they find relevant or significant to the decision, while at the same time inviting the other participants to respond. This might also be seen as functional in an operational planning setting that requires frequent adjustments to the commitments made in response to the changes on the offshore installations. While questions can function collaboratively by opening up the conversational space and seeking the expertise of others in a context of complex interdependencies, they are here seen as also functioning strategically, driving the decision making trajectory forward and in specific directions. Of particular interest has been questions embedding upshot formulations, which play a significant role in the decision making trajectory as they carry strong communicative force and a drive towards consensus and commitment to future action.

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The study contributes to the topic of team decision making in the workplace by looking at questions as a multifunctional interactional feature serving diverse functions in decision making. Through the activity analytic approach, the study shows the relevance of contextualizing at the level of the activity type in order to provide a solid foundation for interpreting discourse features as they derive their functions and meanings within the framework of the situated communicative encounter. The study further explores professional reasoning in a setting that is rarely studied, namely planning at an operational level, in which stakes are high and decisions are short term and frequently changing. Studies of such settings can provide an interesting contrast to other forms of workplace meetings and shed light on the diverse resources for decision making in workplace interaction.

Appendix A: List of transcription symbols used

Speakers are identified in the transcripts with three-letter acronyms indicating their organizational role: the first two letters indicating the area of responsibility or department (e.g. WS for Well Service, PO for Production Optimization) and the third letter indicating level of authority (M for Manager, E for Engineer). Questions are emphasized in bold font.

[word] : overlapping talk

=word : latching to previous utterance without pause

(.)   : micro pause

(3s)   : pause in seconds

Word   : increased emphasis

WORD : louder voice (with the exception of abbreviations)

°word° : softer voice

XX   : inaudible word

Word- : truncated word or phrase

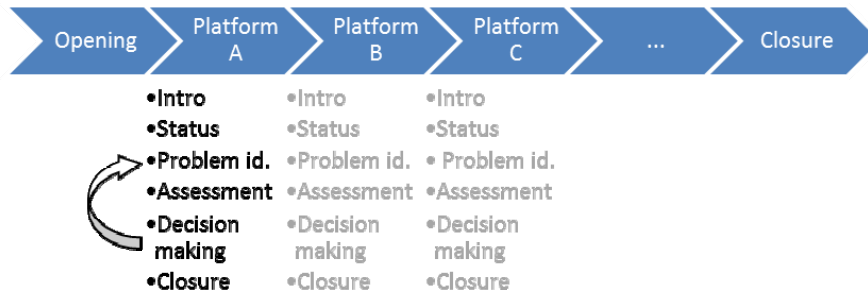 ((word)) : comment to transcription

(word) : anonymised information
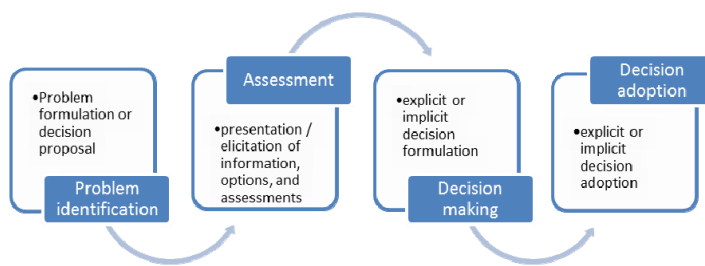
,   : rising intonation

?   : questioning intonation

.   : falling intonation

Appendix B: Examples from activity type mapping

Map 1: General phase structure across the meeting data

Map 2: Phase structure, decision making episode
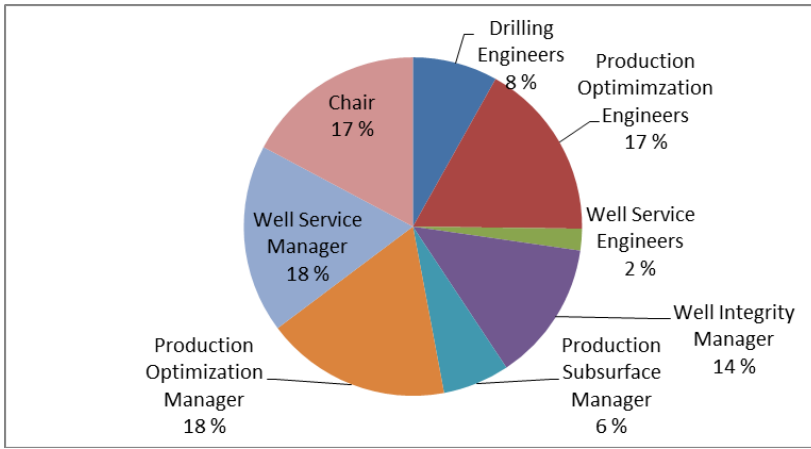
Map 3: Distribution of turns by frequency, April meeting

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Article IV

Halvorsen, K. (in review). Self-selection as a resource in video-mediated team decision making. *Journal of Applied Linguistics and Professional Practice*

Article IV

Self-selection as a resource in video-mediated team decision making

Abstract

Team decision making across geographical distance is increasingly common in the global workplace, often taking place via video-conference. Participation in such meetings might be challenging, in particular assuming speakership without having been assigned speaking turn. The present study examines how the participants in a daily morning meeting via multiple-location videoconference occupy the floor without having been assigned speaking turn, and how their self-selected turns contribute to decision making. I adopt a discourse analytic approach which emphasizes the relevance of the notion of 'activity type' (Levinson 1979). A systematic mapping of the video-mediated encounter shows a highly structured and routinized activity type in which participants are found to self-select in two specific phases of the meeting, the Plan and the Round. Through their self-selected turns, the participants contribute to updating and safeguarding their commitments to action currently manifested in the operational plan, as well as requesting decisions to be made, ratifying tentative decisions, and forecasting possible future decisions. In a changing and uncertain operational environment, these self-selected turns contribute to the continuous adjustment of interrelated decisions and reflect a sense of responsibility for the communicative project of the meeting. The study contributes to our understanding of team decision making in an empirical site rarely studied, and with relevance for professional practice.

Key words: self-selection, decision making, team, workplace, meetings, participation, videoconference

1. Introduction

As collaboration technologies, such as videoconferencing and shared software applications, have become widely accessible, both in terms of procurement cost and user friendliness, virtual teams or global teams have become increasingly common in the corporate world. In the petroleum industry the technology has created new opportunities for communication between offshore oil and gas installations and onshore management and specialized expertise. Daily morning meetings between offshore and onshore locations via videoconferencing have become routine events in the industry and provide important sites for broad participation in operational decision making.

The quality of team decision making rests on participants' ability to contribute timely and relevantly to team interaction. Although there are many ways to participate, verbally and nonverbally, self-selection of turn – i.e. the choice to assume speakership without having been assigned speaking turn by the chair or someone else – testifies to the willingness and ability to initiate verbal contributions and make oneself count in decision talk. When the participants are not physically co-present self-selection is potentially more complex, as video-mediated meetings provide limited access to nonverbal information and no direct eye-contact between participants. The current study looks at how the participants in a daily morning meeting via multiple-location videoconference occupy the floor without having been assigned speaking turn, and how their self-selected turns at talk contribute to decision making.

The decisions made in this setting concern the coordination of tasks offshore with the purpose of optimizing production and minimizing loss. As the offshore participants are geographically distanced from the decisional authorities onshore, the current study finds it particularly interesting to examine offshore participants' self-selected turns[1]. While decisions can be seen as organizational products to which organizational members orient and to which there is

linked organizational authority and responsibility, decisions as outcomes of interaction, however, are evasive and constantly re-negotiated in a complex organizational setting. For the purposes of the present paper, decision making is defined as interactional trajectories with the purpose of arriving at *commitments to future action* (Mintzberg, Raisinghani and Théorêt 1976; Huisman 2001). In the context of the current study, these commitments are manifested as decisions in the operational plan that guides the participants in the meeting.

A systematic literature review found a limited number of empirical discourse analytic studies that explicitly address team decision making (Halvorsen 2010). All of these studies examined meeting data in which the participants were co-located. The current study therefore provides insights into a site for team decision making that has received limited attention, specifically the multiple-location, video-mediated meeting. The first section of the paper will provide a review of self-selection in mediated meetings and the role of shifting participation frameworks in team decision making. Before presenting data and methods, the analytical framework of Activity Analysis will be introduced. The data analysis section first describes results from the structural and interactional mapping of the activity before engaging in detailed analysis of five excerpts in which three different types of self-selection take place. The discussion will focus on the functions that the self-selected turns are found to serve in decision making and the contributions offshore participants make to the continuous adjustment of decisions in the operational plan.

2. Literature review

The workplace meeting represents a significant site in which the organization is "talked into being" and in which teamwork takes place (Boden 1994). With features that separate it from other workplace encounters – such as the agenda, time frame, physical location, and pre-defined objectives – there are specific conventions for regulating talk in meetings. The chair serves a particular function as a structuring device for participation through his/her mandate to

manage access to the floor (Angouri and Marra 2010). In formal meetings, the chair allocates turn and sanctions departures from topical relevance, normative turn length etc. In more informal meetings, the talk will resemble conversation with more self-selection and next-turn allocation by current speaker (Svennevig 2012, for an overview of studies of meeting talk, cf. also Asmuss and Svennevig 2009).

There are few studies that explore the dynamics of turn-taking as it relates specifically to decision making. While some studies have explored specific turn patterns that play a role in decision making (e.g. Wasson [2000] on 'reversals', Barnes [2007] on 'candidate pre-closings'), Housley (2000) illustrates how the sequence of team members talk impacts the local occasioning of specific forms of knowledge and 'know-how'. The management of speaking rights is therefore seen to have epistemological importance in team interaction. More directly aimed at decision making, Sanders (2007) provides a convincing example of how participants' turn-taking can impact the decision outcome in a senior management meeting. His analysis shows how the interests of some participants in the meeting cannot be pursued at a certain point in the interaction due to the sequence of turns prior to that moment; pursuing the issue at that point would threaten the face of the speaker as it would indicate self-interest at the expense of the company. Participants' ability to express opinions and contribute towards a decision, then, is not merely a question of content, of what they believe to be true or have aspirations to achieve, but it is constrained by their abilities to manage their speaker rights within the boundaries of what has already been said.

This suggests that decision making is constrained, not only by cognitive limitations, as Simon (1957) describes through the classical concept of 'bounded rationality'. In line with other discourse scholars commenting on the phenomenon of decision making, this embeds a general critique of traditional rationalistic approaches to decision making that assume a logical, value-neutral assessment of available choices. Participation in decision making is instead seen as

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constrained by the social and normative dimensions of local interaction, in which participation

structure and the interactional resources for turn-taking constitute one important element

(Cicourel 1986; Silverman 1987; Boden 1994; Atkinson 1995).

2.1 Self-selection of turn

Self-selection of turn has been seen as the turn-taking strategy distinguishing informal

conversation from other types of discourse as it is more prevalent in encounters where

participants have equal status and share responsibility for the discourse. Institutional talk is

often characterized by a more restricted range of turn-taking strategies due to the relative

status of the participants and limits to the extent of cooperation possible in achieving an

outcome (for example in the court room or traditional class room, Coulthard 1985).

Shifts in speakership can generally happen in two ways: speaking turn is allocated by current

speaker (the chair or someone else) who selects next speaker or; speaking turn is allocated by

self-selection (Sacks, Schegloff and Jefferson 1974). The concept of 'projectability' describes

interlocutors' ability to both analyze and understand an utterance at the same time. Incipient

speakers are able to plan their own speech while processing the speech of co-participants and

monitoring the responses of other participants. In addition to the continuous assessment of

relevance of the upcoming turn, the turn is timed to fit an appropriate 'slot' in the current

speaker's turn. The transition relevant places (TRPs) are most commonly at the perceived end

of an utterance. These are also referred to as 'transition spaces', which is a more dynamic

concept emphasizing the ways in which the boundaries of the TRP can be extended,

compressed, and negotiated by the participants (Sidnell 2010). Lerner (2004) shows how self-

selection can be used to complete the prior speaker's turn and in some cases transform this

turn into a collaborative turn sequence.

Multiparty meetings, with their the large number of potential speakers and the norm of keeping a single focus, frequently lead to extended sequences of single-speaker talk. This poses specific challenges for the participants in terms of coordinating turn transition and consolidating recipiency (Ford and Stickle 2012). Self-selection of turn is not simply accomplished by verbal means but involve multimodal practices for negotiating the transition space (see for example Mondada 2007) on the gesture of pointing). Ford (2008) showed how a bid for a turn to speak is frequently done through nonverbal acts, such as hand gestures, gazing, and leaning forward. In the context of video-mediated interaction, we will see that such multimodal resources are not equally accessible for the participants despite their visual presence for each other.

2.2 Video-mediated meetings

The visual space available to participants have been central in studies of videoconferencing and with that their opportunity to assess the availability of colleagues before initiating contact (Heath and Luff 1993, 2000; Jones 2004). The visual space enables nonverbal back channeling and more informal and flexible coordination of speaker change compared to audio-mediated interaction such as the telephone. The visual field provides information about the reactions and relative involvement of other participants as well as information relevant for the projection of self-selected turns. However, there are significant limitations in terms of eye contact as the participants look at the screen, not at each other, so they cannot know who is visually attending to them. This is particularly noticeable in group and multiple-location settings (Buxton, Sellen and Sheasby 1997; Mané 1997). Lack of direct eye-contact severely limits the use of gaze and gestures as methods for turn allocation, whether for self- or other-selection. In addition, the visibility of nonverbal signals is dependent on the image captured by the camera in each location. In sum, these constraints suggest that the negotiation of

transition spaces and the practice of self-selection could represent a challenge for the participants in multiple-location videoconferencing.

2.3 Activity Analysis of workplace interaction

The present study builds on the insights from Conversation Analysis regarding turn-taking mechanisms, but anchors the analysis in a systematic scrutiny of context at the level of the 'activity type' (Levinson 1979). Activity Analysis, as proposed by Sarangi (2000), conceptualizes the activity as a fundamental unit of analysis and considers how sequences of talk are embedded in the overall structure of the activity, also related to participant role-relationships. Activity types are defined as culturally recognized, goal-oriented events with specific constraints on participation in terms of contributions, style, and structure. Linell (2010: 52) defines 'communicative activity type' as a "*situation definition*, a set of assumptions guiding parties' expectations and interpretations of what may happen in the situated encounter" (original emphasis), and he sees it as a "bridging meso-concept in discourse theory". The constraints and assumptions of the given activity are sources for activity-specific inferences and thus have implications for the meaning and functions of discourse strategies (Levinson 1979). The participants' choices in terms of assuming speakership in a meeting, then, is seen as bounded not only by previous and projected turns, but also by the constraints posed by the features of the activity type in question.

The analysis of discourse data within the framework of Activity Analysis begins with a systematic mapping of characteristic features of the activity type through structural, thematic, and interactional maps. Such maps allow the analyst to undertake a close examination of the data and identify critical moments for detailed analysis (Sarangi 2010). The current study takes such mapping as its point of departure and the results lead into the detailed analysis of interactional strategies, in this case self-selection of turn by offshore participants. The communication technology, in this case the multiple-location videoconference, is viewed as

an integral part of the activity type – a key feature that represent specific constraints on participation, but that gains it meaning and function through its pragmatic use, tightly linked to objectives, roles and responsibilities in the meeting.

3. Data and methods

The data is part of a larger study on team decision making in operational planning. The author conducted fieldwork with an international oil and gas operator, attending and recording key meetings in operational planning. This particular meeting was recorded on 22 occasions, with the researcher present in 13 of these. Each meeting lasted on average 20 minutes, which yields approximately 7.5 hours of recorded meeting talk. The recorded data was subsequently transcribed (cf. Appendix A for a list of transcription symbols used) and anonymized following usual guidelines for research ethics. The data was acquired through streaming of the videoconference, which involved a recording device that called into the videoconference in the same way as the other participating locations. The participants could see the recorder on the screen as a black square with a red light, signaling that the meeting was being recorded.

Every morning, seven participating locations call in to the videoconference and the images from six offshore control rooms and one onshore location appear on the screen (Figure 1). There are multiple participants in each location with various roles and responsibilities. The chair is located onshore. The visual space that connects the participants is voice-activated, which means that the position of the images changes with shifts in participation. The largest frame on the screen automatically changes to the location with the current speaker. In addition to the videoconference, the participants log into a shared application that allows the chair to share documents and graphics with all the participants, such as the operational plan. The offshore locations have the microphones turned off in order to block out background noise (messages over the calling system, alarms, telephones, etc.). In order to speak to the meeting the offshore participants must use their remote control to unmute the microphone[2].

Figure 1: Still photo of the videoconferencing screen with seven participating locations.

The overall objective of the meeting is that of production optimization, which in this case involves the continuous coordination of operational tasks across the different locations. As the operational situation offshore changes, the commitments to future action represented in the operational plan have to be continuously assessed and updated. The interdependencies of tasks across the locations are great as resources such as equipment, space, and electric power are limited and shared. In addition, issues such as weather conditions or unexpected events will regularly force changes to the plan. By successfully coordinating decision making across locations, the overall downtime on wells and processing facility can be minimized, which has significant consequences in terms of cost. In addition, there is a safety aspect involved as improved coordination of plans has the potential to reduce the risks of adverse events in this high-hazard environment.

4. Data analysis

Mapping of the meeting activity type as a whole was undertaken, providing structural and interactional maps of phase structure and the occurrences of self-selection. The structural

mapping revealed a recurring phase structure that mirrors the agenda (Figure 2) and a ritualistic and routine movement through the agenda items, every day following the same pattern and generally keeping the meeting brief and focused.

Figure 2: Phases in the morning meeting on production optimization

The opening is ritualistic and very brief (for example "okay good day then uh we start on uh the production side", 5/26), leading into the phase in which the chair reports daily status on production at the different locations of the field supported by graphs on production statistics. Following this report, the action log is shared on the screen and the chair reports on the progress on the items on this to-do list. The Plan phase focuses on the operational plan that visualizes the tasks requiring coordination by this group. In this phase, the chair routinely invites comments and input before moving to the next phase (for example "does anyone miss anything in the plan that should be flagged?" 4/26). The longest phase of the meeting is the Round, lasting on average half the meeting time. In this phase all the six offshore locations are allocated turn for reporting status or bringing up issues. The closure of the meeting is short and ritualistic, generally without any summary but with a pre-closing marker and an invitation for additional topics before closure (for example "okay. does anyone else have anything we need to address? (pause) okay, then all of you thank you and have a good day", 4/26). This linear movement through the phases is consistent throughout the meeting data.

The ritualistic character of the meeting, in addition to the high number of offshore locations, might suggest that self-selection would rarely take place. However, the interactional mapping of the data corpus shows that the participants in fact do self-select in all the phases of the

meeting, except during the very brief opening phase. As shown in Figure 3, the majority of instances of self-selection in this meeting took place in the Plan and Round phases of the meeting (87% of all instances) and mostly by offshore participants (70% of all instances in the Plan and Round phase).
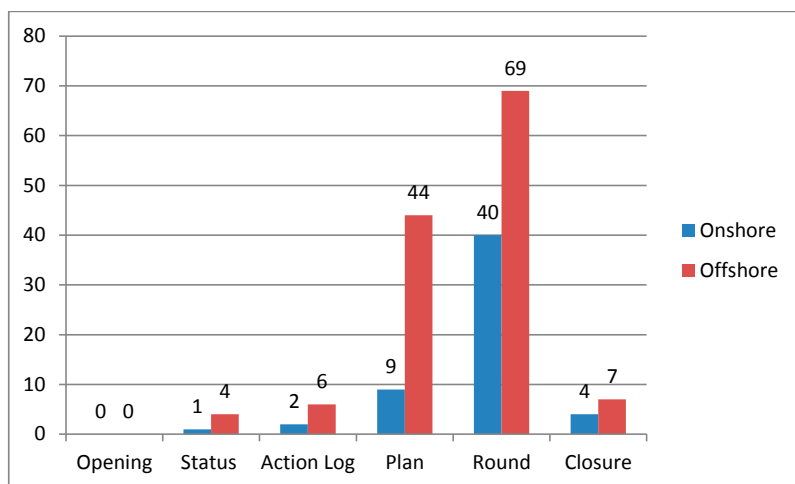
Figure 3: Self-selection by meeting phase, onshore and offshore participants

The Plan phase is central as this is where the participants assess the commitments manifested in the operational plan and bring in information that might have consequences for these decisions. In the Round the six offshore locations are allocated turn in a pre-defined chronology, starting with the smallest platform and ending with the largest, the hub of the field. Thematically, the instances of self-selection do not differ significantly in these two phases; they are therefore treated together in the analysis. The detailed analysis of the data will look more closely at instances of self-selection in the Plan and Round phases, specifically ones that serve a function in decision making in the sense that the turns orient to and have consequences for the commitments to future action (decisions) manifested in the operational plan. Three kinds of self-selection are analyzed: 1) speaker takes advantage of a gap in previous speaker's turn (either chair or others), 2) speaker responds to a general, unaddressed

question from the chair, and 3) interruption of another speaker's turn. The chosen excerpts take place during the chair's reporting in the plan phase, during a colleague's talk on same-location's turn on the round, and, more rarely, during another location's turn on the round.

The excerpt below is taken from the Plan phase and the chair is reporting from the plan that an oil pig is scheduled today (a device that is sent with the flow through the pipeline to clean or inspect the pipeline). An operator from the Hub self-selects to qualify this decision (for transcripts in the original language, cf. Appendix B):

Excerpt 1 (29/1/09:18)

1. Chair   on platform F there is also- yes oil pig on the plan today (..)

2. Hub1   yeah ((large frame shifts to Hub)) we have to get out that pig that's in
               the sluice first so- (..)

3. Chair   yes okay. (..) u:h ((large frame shifts to onshore)) u:h then we have that
               gas lift job on platform A ((poses a question regarding this task))

The offshore operator uses the gap in the chair's talk to assume speakership. His voice triggers the visual image on the videoconference to shift and his image shows in the large frame. There are no visual cues that signal his intention to speak; there are no gestures or physical movement. The Hub is on the receiving end of the pipeline through which the pig from platform F is sent, and Hub1 points out that before sending the pig, there is a pig in the sluice that needs to be taken out. He does not elaborate or explain what this implies, but the utterance-final marker 'so-' implies there is a necessary sequence of tasks on which the execution of this oil pig relies. His self-selected turn functions to qualify the decision presented by the chair. The qualification does not trigger any questions or comments, just an acknowledgement of relevance from the chair before she moves on to the next task on the

plan. The Hub has achieved to get the meeting's attention to the fact that there is still a pig in the sluice and that the decision to send an oil pig from platform F today is contingent on this being successfully removed. The brief, unelaborated style in which this qualification is given is characteristic and it speaks to the function of the meeting as a daily update on the many, interrelated operational decisions that together provide efficient operations.

The next excerpt shows self-selection of turn during the speaker's own location's turn on the Round. Operator F1 has just completed his turn of reporting from their location, when F2 self-selects at a TRP, after a short gap in her colleague's reporting. She calls for a decision to be made regarding specific preparations for shutdown[3], and she calls on the chair to obtain this clarification from the person accountable for the decision:

Excerpt 2 (27/5/13:35)

1. F1   So: we will see (.) ((closing his reporting for platform F))

2. F2   I have a question, uh we sent to (name) which we haven't heard back from, u:h before we close down the entire shop here, will we be filling the water lines with biocide towards platform B? Can you try and force someone to answer that?

3. Chair   I will call him at home afterwards, he is home today as well ((F2 nods)) uh but   ((large frame shifts to onshore)) I would expect that the answer is yes (..)

4. F2   yes we ((large frame shifts to platform F)) expect that too but it would be good to- (.)

((chair brings in another related task))

As F1 reaches a completion point in his turn of reporting, F2 uses the gap to self-select. She assumes speakership with a preannouncement projecting her turn and she provides an account for some action already taken (most likely an email, sent to a person from whom they haven't heard back). This formulation of state of affairs in terms of failure or non-occurrence can be seen as constructing a recognizable complaint (Schegloff 2001: 239), which frames her request. Before formulating her request, she refers to the forthcoming shutdown of the plant (closing down 'the entire shop') and clearly alludes to the urgency of the matter as the shutdown is only one week away. Rather than waiting for a (dis)confirmation regarding the decision to fill biocide, she moves directly to requesting a course of action from the chair ('try and force someone to answer that'). This suggests that the onshore meeting participants are not in a position to decide on this issue, that the authority lies with a particular person or unit onshore, but she appeals to the chair through a constellation of hedging and boosting that he take action to provide her with this clarification (she uses the singular pronoun 'you' in the original language). The chair responds immediately with a promise to personally call this person at his home, following with an assessment of what the answer most likely will be (turn 3). F1 aligns by mirroring his utterance (turn 4) but she also restates the relevance of her request through an incomplete utterance that suggests that a clarification is preferred (it would be good to-'). Through her self-selected turn she has achieved a commitment to action as the chair has promised to call and clarify the decision regarding filling the lines with biocide. This action will allow them to plan and prepare for the coming shutdown, a period in which the pressures are high and the consequence of poor planning significant.

The next excerpt also orients to the coming shutdown, and the offshore participant self-selects in order to present a tentative decision for the preparations for shutdown. As part of the Plan phase, the chair is reporting preferred dates for oil and gas pig from platform F. At a possible

completion of the chair's turn, F1 self-selects to presents a tentative decision to send these

pigs on the same day:

Excerpt 3 (26/5/12:50)

1. Chair   concerning uh uh platform F gas pig- it could be taken anytime as far as

uh (name) is concerned, a:nd concerning the oil pig he preferred that

this would go on Monday approximately (2s) ((chair looks at the screen,

F1 turns to F2 and says something, then turns on the microphone))

2. F1   yes ((large frame shifts)) what we are uh uh thinking about is uh if we

should send both gas and oil on Monday, uh gas first (.) and then oil. uh

about the gas- that too was supposed to be sent we have been told (.)

relatively close to the shutdown so there won't be lots of condensate in

the line to flush off (.)

((two lines omitted concerning work procedures for pre-shutdown work))

5. Chair   yes okay but then we just comply with that there is no-°the:-° (.)

6. F1   but is it okay for the Hub to:- that ((Hub1 picks up his remote control

and turns on the microphone)) we send both oil and gas on Monday? (..)

7. Hub1   sure that's fine oil ((large frame shifts)) does not create any problems at

all (..)   ((F1 nods))

8. F1   gr:eat (.)

9. Chair   okay then we have that. then we have that. ((moves on, large frame

shifts to onshore))

In turn 1, the chair is presenting the preferred dates for the pigs from platform F, as relayed to

her by a named person. At a TRP and a gap in the chair's turn, F1 self-selects to present a

tentative decision to send both gas pig and oil pig on Monday. In the pre-announcement, the decision is framed as tentative and still under consideration ('what we are thinking'), but she proceeds to provide details about the sequence in which the tasks are thought to be effectuated (gas first, then oil). She also provides the rationale for why also the gas pig should be sent as close to the shutdown as possible (by leaning on the reported speech). After a short exchange about details of the work procedure (two omitted turns), the chair concedes to the authority of the procedure (turn 5). F1 self-selects again in turn 6, during what can be perceived as a micro-pause or a gap, as the chair's turn is trailing off. This time F1 addresses another offshore location, the Hub, to elicit support or ratification of their tentative decision. Her question is directed at the Hub, with a third person address that is not unusual in this multiple-location setting. By naming the location, without calling on a particular participant, she achieves an efficient next-speaker selection based on location rather than person[4]. Hub1 picks up the remote control as soon as his platform is being mentioned and responds without delay with a triple positive assessment. F1 has through self-selection, firstly, managed to present to the meeting a tentative decision with a persuasive rationale and, secondly, she has acquired confirmation of the feasibility of this decision from the Hub. The tentative decision can now be adopted and entered into the plan as a ratified commitment to future action.

While the examples so far has shown instances of self-selection in which the participants take advantage of a gap in the previous speaker's turn, the next excerpt shows a type of self-selection that is specific for multi-party meetings, and particularly multiple-location meetings such as this one, namely self-selection as a response to a general and unaddressed question from the chair. In the excerpt, the chair is about to close the Plan phase and she does so in the ritual manner, inviting any additional comments to the plan before moving on to the Round. This might be seen as a kind of other-selection inviting everybody to take speaking turn. However, it is one that requires the individual participant to self-select in order to assume the

role of responder. The floor is opened up, but it is up to each participant whether they choose to assume speakership at this time or not. In the case below, the offshore participant self-selects to present what she frames as a 'small comment' but which in fact might have significant consequences for operational decisions across the field:

Excerpt 4 (26/1/02:10)

1.	Chair	yes. that's what we had. does anyone else have any comments to what is in the plan? or l- lack something? (..)
2.	F1	uh yes ((large frame shifts to F)) just a small comment=we are down with the main generator here and we don't really see us getting back up before we are taking it down again in mid-February (.) that is to say we are trying to pull this u:h service in February forward in time as much as we can (3s)
3.	Chair	[okay]
4.	Engineer	[how will] ((large frame shifts to onshore)) that affect water supply in the coming weeks then?=do you have electricity for it? (.) on the normal?

((F1 responds and a discussion follows))

The question posed by the chair at the transition between agenda items, opens up the floor to all participants. This is different from other unaddressed questions that might be directed at specific platforms or specific organizational roles. In such cases, specific participants are expected to answer based on their roles and responsibilities, while others are not. In the case of the open invitation for comments to the shared plan, each participant is a potential speaker and in the case where a participant takes turn, this is treated as an instance of self-selection.

After the chair has opened up the floor in turn 1, inviting comments from the participants, a short pause follows and F1 takes the floor. She uses the pause and a verbal preannouncement to enter the floor. There are no visual cues that she intends to talk. She holds the remote control in her lap and most likely turns it on just as she starts to talk. She opens her turn with a preannouncement ("uh yes just a small comment") framing the nature of her initiative. She then describes the current situation on board concerning the main generator, and she proceeds to present an assessment on behalf of her team offshore ("don't really see us getting back up before […]"). This assessment is followed by a specification that both informs about a decision made (they are trying to pull the service forward) but that also signals the uncertainties related to this decision ("as much as we can"). She presents this decision without calling for support or assessment from the meeting. The decision seems to need no further explication, and the lapse of three seconds suggests that she does not have anything more to add. As the chair acknowledges receipt, an onshore production optimization engineer simultaneously self-selects to pose a question regarding the implications of this decision for water supply and electric power.

The decision F1 has presented does not affect the plan as it currently stands, but the intention of moving the service on the generator forward in time will have ramifications for future planning of other tasks. Electric power is a limited and shared resource between platforms, so any work that impacts the access to power will have relevance for other platforms. In their planning of tasks for February they will need to plan according to this situation. Her 'small comment' is in this way a presentation of a local decision made and a forecast of a potential change in the plan that is relevant for the other locations.

The final excerpt shows a less frequent the type of self-selection, namely that of an interruption of the current speaker's turn. Platform G is the second platform on the Round and

the excerpt starts when operator G1 is in the process of reporting on the main issues on his platform, one of them being counter pressure in the pipeline. The chair makes an assessment of this issue when she is interrupted by the operator on the Hub who self-selects to provide an assessment of the situation which in turn leads to a decision proposal:

Excerpt 5 (26/1/05:55)

1. G1   that counter pressure started as you know last night and the oxygen is (.) as mentioned earlier.

2. Chair   yes. but that counter pressure did improve after- ((while the chair is speaking, background talk is heard from the Hub and the large frame shifts to the Hub)) or that was when we   [were]

3. Hub1   [no]

4. Chair   finished with-

5. Hub1   it wasn't really so high during the water wash either=we were at ten point three to ten point five on (.) LP: so: there has to be something u:h- should preferably have sent a pig from G

6. Engineer1   =let them pig ((to the chair))

7. Chair   °yeah° (..)

8. Hub1   because   [there hasn't been extra high]

9. Engineer2   [let th- them pig Thursday]

10. Hub1   on the LP separator

11. Engineer1   let them pig   [Thursday]

12. Engineer2   [Thursday] is fine (...)

13. Chair   okay (..) yes that was a bit u:h ((frame shifts to onshore)) (..) but we could possibly see if there has been any- I don't know- has there been any changes in gas production on G? the- or- (.)

14. G1	no there hasn't but ((frame shifts to platform G)) it is I guess maybe a pig that is needed
15. Chair	=yeah. [yes]
16. G1	[that it's] time for that
17. Chair	but why don't we just say- if it's good timing- to put in a pig ((frame shifts to onshore)) today? if it- (..)
18. G1	we can (.) ((frame shifts to G)) try that
19. Chair	=yes
20. G1	if they are °ready to receive it°
21. Chair	[yes we-]
22. Hub1	[YES just] ((frame shifts to Hub)) contact the control room a:nd- uh- a:nd we'll line up for it (.)
23. G1	that's fine
24. Chair	okay that's great (..) u:h ((frame shifts to onshore)) then we move on to (.) ((next platform on the round))

In turn 2, while the chair is making an assessment regarding the topic of counter pressure, there is talk heard from the Hub. Clearly, they have not muted their microphones and they talk loud enough for the image in the large frame on the screen to switch to their location. The chair continues talking but is interrupted by Hub1 who expresses a disagreement token in turn 3, and the chair self-interrupts her turn (turn 4). Hub1 proceeds to provide technical details about the issue at hand and an assessment that something is not quite right. This assessment leads up to what can be heard as a proposal ("should preferably have sent a pig from G"). In the original language, the hypothetical subjunctive mood is used, which means he is not referring to the past, but signaling preference for future action and politeness.

Immediately as this proposal has been made, an onshore engineer (Engineer 1) addresses the chair with a directive to 'let them pig' (turn 6), which the chair acknowledges briefly in low volume. Hub1 continues his reasoning; adding further assessment supporting his proposal (turns 8 and 10). Surrounding his reasoning, through turns 9, 11, and 12, the onshore engineer, joined by another one (Engineer 2) propose to let offshore send a pig on Thursday. These turns are all directed at the chair and not the meeting as a whole, functioning in a way as a side comment, outside the meeting proper. The chair's response in turn 13 suggests she is not immediately taking on these recommendations but rather seems to contemplate before pursuing further information from G (turn 13). As G1 responds by repeating the solution of sending a pig, the chair formulates a concrete proposal to send the pig the same day, i.e. Tuesday not Thursday (turn 17). As G1 supports the decision proposal with the condition that the Hub is ready to receive the pig, Hub 1 self-selects (turn 22) to confirm this readiness and to propose further course of action for executing the decision (contact the control room). Hub1's choice of interrupting in order to provide his assessment of the counter pressure, lead to a proposal for action, which in turn resulted in a commitment to send a pig the very same day in order to address the problem of counter pressure.

5. Discussion

The daily morning meeting brings together offshore control rooms with onshore personnel, and opens up for co-presence across distance and between multiple locations, rendering colleagues "uniquely accessible, available, and subject to one another" (Goffman 1963: 22). The practice of self-selection gives one indication of the participation framework (others could be terms of address, gaze direction, body orientation, etc.) and can give us some suggestion as to the collaborative environment and accessibility of the floor in this particular meeting. The initial activity type mapping showed that within a highly structured activity, and despite obvious limitations on audio and video, the participants nevertheless find the

opportunity to self-select outside of pre-defined turns and to orient to each other across offshore locations. This takes place in two specific meeting phases, the Plan and the Round, and self-selection can in this way be seen as a reflection of the opportunities provided by the different phases of the activity type.

The visual field gives information about who is present in the meeting, as well as information on attention such as body posture and facial gestures. But in the absence of direct gaze and because of the limited access to nonverbal transition cues, such as gaze or hand gestures, the participants rely heavily on verbal cues to negotiate transition spaces, such as partial agreements (excerpts 1 and 3) and preannouncements (excerpt 2) that project the coming turn. With these resources, the offshore participants manage the timing of self-selection in conventional ways by taking advantage of TRPs and gaps in previous speakers' turns, as in the first three excerpts. Excerpt 4 showed how responding to an unaddressed and general invitation from the chair required self-selection on the part of the offshore participant and that this was done following a short gap and with a preannouncement framing the turn. In excerpt 5 we saw the transition space to a greater extent negotiated, as the offshore participant interrupted the chair and the chair conceded the turn.

In terms of decision making and the commitments to future action manifested in the operational plan, the analysis showed that the offshore participants assume speakership in order to address both existing and forthcoming decisions. The self-selected turns confirmed and qualified current decisions (such as "we have to get out that pig that's in the sluice first so- ", excerpt 1), thereby contributing to updating and securing the decisions already represented in the operational plan. In the case where decisions were found to be lacking, requests for explicit commitments were made ("can you try and force someone to answer that?", excerpt 2). Also tentative decisions were presented ("what we are uh uh thinking about is […]", excerpt 3) and ratification from other offshore locations was called on ("is it okay for

the Hub to:- […]", excerpt 3). In addition, possible future decisions were forecasted by presenting intentions for future action (for example "we are trying to pull this u:h service in February forward in time", excerpt 4). Such forecasts draw the attention of the group to potential changes in the plan, and the consequences such a change might have for planning of tasks requiring, for example, electric power. Given the interdependencies across installations, such projections are highly relevant as they open up for other locations to plan their operations accordingly and prepare for this possible change. Such early coordination and preparedness may prevent plan conflicts at a later stage, which in turn reduces the changes of adverse events. Finally, self-selected turns were shown to provide assessments embedding proposals for future action and excerpt 5 showed an example of this translating into an explicit commitment to action planned to be executed the very same day.

The analysis has shown that the self-selected turns contribute to the continuous adjustment of the operational plan and coordination of the many decisions that link the participants in this meeting. The morning meeting is meant to be a collaborative space in which this daily adjustment can take place, involving the offshore expertise across several locations. The meeting also has a stated goal of achieving shared understanding and a stronger sense of community across shore and sea, and in turn producing greater loyalty to decisions made. Through self-initiated floor-taking, the offshore participants contribute to safeguarding the plan as it currently stands as well as forecasting and ratifying tentative decisions. The self-selected turns can here be seen as markers of the willingness – and ability in a multimodal context – to initiate talk and occupy the floor. In light of the offshore participants' distance to decision authorities onshore, the frequency of self-selection in crucial phases of the meeting might also be seen to reflect a sense of professional responsibility for the objectives of the meeting and the continued efforts to optimize the operational plan.

6. Conclusion

While there are many ways of participating in team meetings, assuming speakership through self-selection is a powerful way of making oneself heard and potentially influencing the decision making process. This study has explored decision making across multiple locations at the operational level of an international oil and gas operator. Morning meetings via multiple-location videoconference are increasingly routine events in the petroleum industry and represent a significant site for ensuring broad participation in daily operational decision making. Given their geographical distance to decision making authorities onshore, the focus has been on the offshore participants' contributions to decision making through self-selected turns at talk. Decision making in this setting is characterized by the continuous, daily adjustment of decisions in response to a changing and uncertain operational environment.

The structural and interactional mapping of the video-mediated activity type suggests that it is a routinized encounter with ritualistic transitions between phases and pre-defined turns at talk, and self-selection taking place in two specific phases of the meeting. In these phases, self-selected turns were found to serve several functions in decision making: qualifying and confirming decisions; requesting decisions to be made; presenting local decisions, presenting proposals for future action, as well as ratifying tentative decisions. The offshore participants can in this way be seen to take responsibility for the communicative project of the meeting and the overall objective of optimizing the operational plan.

The study contributes to our understanding of team decision making from an empirical site that is rarely studied. The link between the structuring of the activity type and the participants' ability and willingness to occupy the floor has attempted to shed light on one particular resource for offshore participants' for contributing to the meeting. This approach also has relevance for practitioners, as insights into mechanisms for accessing the floor, whether through self-selection or other means, invites professionals to assess their own

meetings in terms of participation and decision making. Exploring participants' ability to impact the participant framework by assuming speakership through self-selection might stimulate awareness and adjustments to workplace practices. This might be of particular relevance for complex, mediated meeting settings, which are becoming increasingly common in the global workplace.

Appendix A: List of transcription symbols used

[word] : overlapping talk

=word : latching to previous utterance without pause

(.) : micro pause

(3s) : pause in seconds

Word : increased emphasis

WORD : louder voice (with the exception of abbreviations)

°word° : softer voice

XX : inaudible word

Word- : truncated word or phrase

 ((word)) : comment to transcription

(word) : anonymised information

Appendix B: Original transcripts

Excerpt 1 (29/1/09:18)

1. Chair   på plattform F så er det og- ja oljepig på planen i dag (..)

2. Hub1   ja vi må få ut den piggen som ligger i slusa først så- (..)

3. Chair   ja okay. (..) e:h e:h så har vi den gassløftjobben på plattform A

Excerpt 2 (27/5/13:35)

1. F1   så: får vi se (.)

2. F2   jeg har et spørsmål, eh vi sendte til (navn) som vi ikke har fått svar på,

      e:h før vi stenger ned hele sjappa her, skal vi fylle vannlinjene med

      biocid mot plattform B? Kan du prøve å tvinge noen til å svare på det?

3. Chair   jeg skal ringe han hjemme etterpå jeg, han er hjemme i dag og eh men

      jeg regner med at svaret er ja da (..)

4. F2   ja vi regner også med det men det hadde vært greit at- (.)

Excerpt 3 (26/5/12:50)

1. Chair   når det gjaldt eh eh plattform F gasspig- den kunne tas når som helst for

      eh (navn) sin del, o:g når det gjaldt oljepiggen så så han helst at den

      gikk på mandag cirka (2s)

2. F1   ja det som vi sitter å- å tenker på eh er om vi skal sende både gass og

      olje på mandag, eh gass først (.) og så olje. eh det med gassen den- den

      skulle også sendes har vi fått beskjed (.) om relativt tett opp i shutdown

      så det ikke blir liggende masse kondensat i linja å flushe av (.)

((turns omitted))

3. Chair   ja okay men da bare forholder vi oss til det det er ikke noe-˚det˚- (.)

4. F1   men er det greit for Hub'en å:- at vi sender både olje og gass på

             mandag? (..)

5. Hub1   jada det går fint olje skaper ikke problemer i det hele tatt (..)

6. F1   su:pert (.)

7. Chair   okay da har vi det. da har vi det.

Excerpt 4 (26/1/02:10)

1. Chair   ja. det var det vi hadde. er det noen andre som har noen kommentarer til

             det som ligger i planen? eller m- mangler noe? (..)

2. F1   eh ja bare en liten kommentar=vi er nede med main generator hos oss så

             vi ser vel ikke for oss at vi kommer opp før vi skal ha den ned igjen i

             midten av februar (.) det vil si at vi prøver jo å trekke den eh servicen i

             februar framover i tid det vi klarer.

3. Chair   [okay]

4. Engineer   [hvordan] blir <u>det</u> med vannleveranser i tiden framover da?=har dere

             strøm til det? (.) på normalen?

Excerpt 5 (26/1/05:55)

1. G1   det mottrykket begynte jo i går kveld og oksygenet er jo (.) som sagt

             tidligere.

2. Chair   ja. men det mottrykket var blitt bedre etter- eller det var når vi   [var]

3. Hub1   [nei]

4. Chair   ferdige med-

5.	Hub1	egentlig så var det ikke noe høyt under vannvasken heller=vi lå på ti komma tre til tre komma frem på (.) LP: så: det må være noe e:h- burde gjerne sendt en pig i fra G
6.	Eng 1	=la dem pigge
7.	Chair	°ja° (..)
8.	Hub1	for [det har ikke vært noe ekstra høyt]
9.	Eng 2	[la dem pigge torsdag]
10.	Hub1	på LP separatoren
11.	Eng 1	la dem pigge [torsdag]
12.	Eng 2	[torsdag] er fint (...)
13.	Chair	okay (..) ja det var jo litt e:h (..) men vi kan eventuelt se om det har det vært noe- jeg vet ikke- har det vært noe endring i gassproduksjonen på G? det- eller-?
14.	G1	nei det har ikke det men det er jo gjerne kanskje en pig som trengs
15.	Chair	=ja. [ja]
16.	G1	[at det] er tida for det
17.	Chair	men kan vi ikke bare si- hvis det passer- å legge i en pigg i dag? om det- (..)
18.	G1	vi kan (.) prøve det
19.	Chair	=ja
20.	G1	hvis de er°klare til å ta i mot°
21.	Chair	[ja vi-]
22.	Hub1	[JA bare] ta kontakt med kontrollrommet så:- eh så: liner vi opp til det (.)
23.	G1	greit det

24. Chair   okay det er flott (..) e:h da går vi videre til (.) ((next platform on the

round)

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Endnotes

[1] There is a traditional gap between onshore and offshore professionals following the blue collar-white collar divide. However, the relative power dynamics between onshore and offshore professionals are complex and running through other axes of difference as well, such as age, experience, and gender. The focus on offshore participants here is in other words not motivated by an a priori idea of organizational status, but rather their geographical distance to the decisional authorities onshore.

[2] The visual set-up of the camera in each location varies in terms of what details it captures. At times there is significant physical movement in various locations that are unrelated to the meeting (people turning to talk to someone else in their location, walking away from the screen to get coffee, picking up the phone, etc.) so physical movement and nonverbal signals are not used in any explicit or systematic way to signal intention to speak.

[3] A plant shutdown is a scheduled outage of the production process for the purpose of major maintenance work. Because of the loss of production revenue during a shutdown and the expenses related to the work itself, the stakes are significant and planning highly prioritized.

[4] The personnel participating in the morning meeting changes frequently based on the offshore shift schedules, which change every two weeks but at different times for the different locations. Some participants will know each other from earlier work or from long-time participation in meetings such as these, but many will not.