Author(s): Nissi, Riikka; Lehtinen, Esa

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1. Introduction

In recent decades, PowerPoint presentations have become a prevailing part of organizational life. While previous research has largely focused on their communicative efficiency in various settings (e.g. Craig and Amernic, 2006) some studies have also investigated them as a form of social conduct. Yates and Orlikowski (2007) have, for instance, examined PowerPoints as a historically emerged configuration of a business presentation. Defining genre as an organizing structure that becomes manifested in specific aspects of communication (see Yates and Orlikowski, 2002) and using it as their starting point, they show how the PowerPoint presentation enables and constrains the communicative practices of organizational members. Importantly, their study reveals the hybridity of the PowerPoint presentation genre, for instance in terms of its function – the presentation may, for example, be employed to inform, propose or to advocate. Kaplan (2010) has further examined the use of the PowerPoint presentation in the epistemic culture of organizational strategy making, also emphasizing the hybridity of the presentation genre. She shows how the PowerPoint presentation enables collaborative knowledge production by providing an arena for assembling and sharing information. At the same time, it also arbitrates competing views, for example, by legitimizing certain ideas as worthwhile pursuing.

However, although providing insights into the features of the PowerPoint presentation in organizational contexts, these studies have not investigated the way the presentation is accomplished as a situated activity. Yet, PowerPoint presentations are distinct linguistic and interactional encounters, in which talk, gestures and body position work in combination with the manipulation of written texts and material objects to form the recognizable activity of a 'presentation'. In recent times, a number of studies on social interaction have focused on this kind of interchange between materiality and verbal and embodied action (e.g. Streeck et al., 2011; Nevile et al., 2014). Despite this, PowerPoint presentations have received little attention. They have been previously examined by Rendle-Short (2006), who shows how in academic presentations the speaker accomplishes engagement with a non-speaking audience through gaze, hand movements and body position. Moreover, Knoblauch (2008) has analyzed the way the speaker presents knowledge and locates it in space with a pointing gesture. Although illuminating the other-oriented nature of PowerPoint presentations, these studies have approached them as presenter-driven activities of 'knowledge transmission' (Knoblauch, 2008), where the recipients tend to remain silent. Interestingly, however, elsewhere Knoblauch (2014: 128–129) notes that the audience can be offered a slot to participate verbally in the presentation and provides an example of such a case.

In this article, we draw from and contribute to these research traditions by examining the PowerPoint presentation as an interactionally accomplished activity type occurring specifically in a workplace context. By activity type we mean a culturally recognized activity, which is "goal-defined, socially constituted, and a bounded event with constraints on participants and a setting" (Levinson, 1979: 358). Activity types can thus be seen as mutually constructed and intersubjective

phenomena that unfold in interaction and are institutionalized to various degrees: the formation and recognition of social actions takes place in relation to them and the communicative goals they entail. In studying the situated realization of PowerPoint presentation activity, we will particularly focus on a phenomenon peculiar to our workplace data, that is, the exchange that takes place in the midst of the presentation between the speaker who is delivering the presentation and another meeting participant. As Rendle-Short (2006) states, the PowerPoint presentation as an interactional activity requires the participants to establish a mutual orientation towards an object of reference – this is accomplished by combining talk and embodied action to invite the audience to focus on a certain part of a slide. In the exchanges we study, this deictic process is intertwined with a further issue of 'ownership' concerning the slide and the information it contains. This is because as a form of information delivery (cf. Peräkylä and Silverman, 1991) the PowerPoint presentation projects different epistemic positions for the presenter and the recipients, but in exchanges between them, these positions are subjected to explicit negotiation. This has been shown earlier by Mondada (2012), who analyzes how a previously silent participant is established as an 'expert' in meeting interaction. Although not actually investigating this particular phenomenon, she notes that the episode begins by an audience member interrupting the presentation.

In our data, the workplace meetings are attended by various professionals both within and outside the organization, all with their specific areas of expertise, yet all working for the same project. The core aim of our study is to show how these complex professional positions are negotiated and talked into being in and through the exchanges and the epistemic rebalancing (see Heritage, 2012b) they create. In this way, we also aim to shed light on the underlying intricacies of workplace interaction in modern knowledge-intensive and multi-professional organizations. More specifically,

through using ethnomethodological conversation analysis as a method (see e.g. Sidnell and Stivers, 2012), we will examine 1) how participants orient to each other's expertise when initiating an exchange in the middle of the presentation, 2) what is being accomplished with the exchange and how it positions the participants towards each other and the issue at hand, and 3) how the actual PowerPoint slide as a text and as a material object is interwoven with the process. Conversation analysis investigates how the participants achieve an intersubjective understanding of the social world in and through social interaction so that this understanding about what is happening in the interaction is publicly displayed and updated in the turns of the participants. In studying the PowerPoint presentations, the conversation analytical approach enables examination of the participants' publicly displayed understanding of the PowerPoint activity with regard to its function and the expertise involved. In particular, it also allows investigation of how the PowerPoint slides are used as a semiotic resource in the presentation context. Therefore, although the PowerPoint presentation can be seen as part of a broader category of presentation activity and some of the phenomena related to speaker exchange might perhaps also be found in presentations without any slides, these two are not the same thing. Instead, as we will show, the actual slides are an intrinsic part of the presentation and the questions to do with the speakers' expertise and the function of presentation are often closely intertwined with their material nature.

Before going to the analysis of our data, we will review relevant studies on knowledge and action in workplace interaction, and provide more information about our data and the collections that our analysis is based on.

2. Knowledge and action in workplace interaction

Knowledge lies at the heart of human interaction. Thus, any interactional event may comprise claims to knowing, requests for information, accounts of how something can be known and disputes about who knows better. Recent years, in particular, have seen an increase in the number of studies examining the way the participants negotiate and manage their knowledge discrepancies (e.g. Heritage and Raymond, 2005; Raymond and Heritage 2006; Heritage, 2012a, 2012b).

In terms of knowledge asymmetry, Stivers et al. (2011) have identified its three core dimensions: 1) epistemic access 2) epistemic primacy and 3) epistemic responsibility. The first refers to the practices that are used to display the source of knowledge and directness of access to it, whereas the second has to do with the participants' relative rights to know something and the third with their obligation to know something. As previous research (see e.g. Heritage and Clayman, 2010) has shown, all of these are in play in institutional settings. As a matter of fact, although the discrepancies in participants' knowledge are omnipresent and inescapable in all human interaction, they are particularly salient in institutional environments. This is because participants are seen to take part in institutional interaction within their institutional roles, which constitutes them as 'experts' and 'owners' of certain knowledge domains (cf. Sharrock, 1974) and allocates them divergent epistemic statuses, namely, socially grounded positions of epistemic authority (cf. Heritage, 2012a).

Most studies on institutional interaction have focused on encounters between professionals and laypeople. In such contexts there is a fairly clear division of epistemic authority between the

professional's expert knowledge and the layperson's lifeworld knowledge (see Heritage, 2013). However, there are also institutional environments where the knowledge domains that might be engaged in a course of action are more complex. These include workplace interactions, in which the participants are work colleagues and operate within the same knowledge domain of professional expertise, although also possessing their own separate stocks of specialized expert knowledge. In workplace settings, these kinds of imbalances of knowledge and the way the participants manage them may also be particularly consequential. This is because the successful completion of institutional tasks is often dependent on the sufficient distribution of information among the participants with different knowledge levels. As a result, different forms of knowledge sharing are central in workplace interaction. For example, a recurrent activity in workplaces is reporting, that is, relaying information about organizational activities, decisions and so forth in order to keep the co-participants up-to-date on them (Boden, 1994). Thus, meetings can comprise a series of report sequences, where each sequence consists of the chair requesting the report, the report, and feedback by the chair (Boden, 1994; Svennevig, 2011). Moreover, as Djordjilovic (2012) has shown, in such activities participants can be oriented to as part of a team that possesses shared knowledge on the discussed matter.

The PowerPoint presentation is clearly an activity that involves knowledge sharing and transmission (cf. Knoblauch, 2008). As mentioned, in this way it also projects different epistemic positions to the presenter and the recipients, as it is the presenter who delivers information to the audience. However, as we will show, the situation is not so straightforward in the workplace context: epistemic authority may be shared or participants may display different kinds of expertise vis-à-vis the information in the PowerPoint slides. Also, information delivery may not be the only

function of the presentations, but there may be a directive twist in them. This is in line with

Boden's (1994) findings on reports which, in her view, are both about sharing information and

taking positions concerning different organizational agendas. Svennevig's (2011) observations of

managers evaluating employees' reports also point in the same direction.

Interestingly, recent research has also stressed the centrality of deontics in human interaction, that

is, the participants' orientations to their own and each other's rights and responsibilities to do

something in given circumstances (see Stevanovic and Peräkylä, 2014). It has been shown how –

similarly to epistemic positions – deontic positions are oriented to and negotiated in different

social actions and action sequences (e.g. Antaki and Kent, 2012; Stevanovic and Peräkylä, 2012).

More importantly, it has been noted that epistemics and deontics are not separate areas of human

reasoning, but instead in many ways interconnected – in fact, the ambiguity between these two

orders of social action is fairly common and observable in various examples provided by previous

research (Stevanovic and Peräkylä, 2014; Stevanovic and Svennevig, 2015).

In this study, we build on these previous studies, as we examine how the participants' expertise is

constructed and negotiated through the exchanges between the presenter and other meeting

participants. We will show how the PowerPoint presentation is, in the workplace context,

essentially an activity type in which the complexity of professional knowledge and expertise are

displayed and negotiated. Furthermore, we will illuminate how the exchanges also contribute to

accomplishing directive functions of the PowerPoint activity.

3. Data and method

The data for the study consist of a series of project meetings held in a Finnish city organization and established to develop the customer services of the municipality. This customer service project was initiated by the Ministry of Finance, who provided written instructions to help coordinate a similar kind of process nationwide. According to the instructions, the project aims at reorganizing the customer services provided by the city in order to create a more transparent and accessible system for the citizens to use and to make the public services more cost effective. However, the decisions concerning the practical arrangements of the project were left to respective municipalities. In our target organization, the customer service project took place over eighteen months, and the project meetings were attended by a project group consisting of 30 city employees from various municipal departments, a project leader and other project management, outside consultants and various guest speakers. We followed the project for the first six months, videotaping the meetings (approximately 15 hours) by using two cameras and collecting all the written materials connected to meeting encounters. The interactional data was then transcribed according to the conversation analytical notation system and analyzed from a multimodal conversation analytical perspective.

As we went through the data, we noticed that the project meetings often contain PowerPoint presentations: there are 16 presentations in the whole data set resulting in approximately 6 hours in total. Moreover, we noted that while the majority of the presentations were followed by questions and comments produced by the audience, 10 of them were also distinguished by such exchanges in the midst of the presentation, forming a side sequence within the presentation activity. Focusing on

the latter, we further excluded questions produced by the presenter and concerning the technicalities of the ongoing presentation ('do you hear me back there', 'how much time do I still have') and turns that followed the initial transitional turn and were produced by other audience members ('I would like to comment that --' ~ 'I have also noticed that --').

This initial sampling produced a collection of 62 cases, in which the exchange is initiated either by the presenter or by the recipient and materializes either as an interrogative or as a declarative. After studying these instances more closely, we divided them into two main groups. First of all, there were cases where the presenter and one or more participants sitting among the audience oriented to each other as co-presenters. Secondly, there were cases where the roles of the presenter and audience were retained even though the expertise of the audience members came into play. In the following, our analysis is organized into two sections that follow the above distinction. Furthermore, in both of these groups there are cases where the exchange is initiated by the presenter and cases where it is initiated by the co-presenter or an audience member. Both of the analysis sections are divided into sub-sections in this respect. The presenter we defined with two basic criteria as being the participant who stands in front of the meeting room and handles the computer and PowerPoint slides unilaterally. When we talk about the other participants, we call them either co-presenters or audience members.

The data excerpts in the analysis are selected on the basis of clear representation of the studied phenomena. Due to space restrictions, we will show the PowerPoint slide or a picture of the setting only when it is particularly relevant for the analysis.

4. Expertise in exchanges between the presenter and the co-presenter

It is a regular feature of our data that PowerPoint presentations are constructed beforehand by more than one person (cf. Yates and Orlikowski, 2007). This co-authorship may be mentioned for example in the meeting invitation and results from the project often involving group work or the meetings being attended by several guest speakers from the same institution. In these cases, one participant is chosen to speak on behalf of the group while other group members sit in the audience, albeit typically closer to the presentational space. These 'team memberships' (cf. Djordjilovic, 2012), are also invoked and made visible by the exchange between the actual presenter and the co-presenter, establishing for them a joint expertise in terms of the ongoing presentation. Moreover, the co-presenter is not always pre-nominated, so that the co-presentership may actually emerge in local interaction. In both cases, the exchange may be initiated by either one of the parties.

4.1. The presenter invites the co-presenter to take part in delivering the presentation

The exchange initiated by the presenter is accomplished by him/her producing a question that nominates a certain audience member as a co-presenter and invites him/her to take part in delivering the presentation. Typically, the presenter seeks some piece of information that is needed in order to continue with the presentation. This is also the case in extract (1), in which a project member (Venla) talks about the services for senior citizens and the disabled provided by the city.

Her presentation does not have another pre-nominated presenter. However, among the audience, there are employees from this particular service unit, and the presenter orients to their professional expertise in constructing her talk. The slide Venla is referring to is shown in the transcription above the turn in question.

Extract 1

            *GAZES AT THE AUDIENCE

01 Venla: *>eli nyt mun< täytyy (1.0) lähteä vähän (1.1) kertomaan

              >so now I< have to (1.0) begin to (1.1) tell

02   tästä (.) ↑toimintakyky ja arjen sujuvuus (0.4)

              <something> about this (.) everyday ↑ ability and functionality (0.4)

03   palvelukokonaisuudesta, <jotain> pääsette samalla vähä (.)

              service program, you can at the same time get acquainted a little bit (.)

04   ↑siitäki >(kartalle)<,

              with ↑that too,

             ((lines omitted: the speaker elaborates the topic))

                 *TURNS GAZE TO EMMA   *GLANCES AT EMMA BY STRETCHING HEAD AND

BODY TOWARDS HER

05 →   ja tota: *(1.6) Emma ainaki sitte sieltä *(.) hihkuu jos (0.3) (mä)

and well: (1.6) Emma will at least then (.) shout from there if (0.3) I

06 →   puhun läpiä päähäni?

speak nonsense?

((lines omitted: the speaker produces a commented reading of the first slides))

*GAZE ALTERNATES BETWEEN THE AUDIENCE AND THE COMPUTER SCREEN

07   *no tässä on ihan mitä koko: (.) meiän (.) palvelukokonaidu- (.) suudessa

well here is just what was in our (.) whole: (.) service progras (.) ram

08   näitä (.) muutostarpeita ja perusteluita (.) sillo

(.) then ↑initially put together (.) as the (.) needs for change and

09   ↑aluksi kasattu ja, (0.3) tän keskitettyjen

            arguments for them and (0.3) from the

10   palvelujen (0.5) näkökulmasta (1.6) ja vanhus- ja vammaispalveluitten

            viewpoint of the (0.5) centralized services (1.6) and the viewpoint of

11   näkökulmasta on (.) nähty (.) tarpeelliseksi ennalta ehkäsevän

            senior and disability services it has (.) been seen (.) as necessary to strengthen

12   työn vahvistaminen?

            the preventive work?

            ((lines omitted: the speaker goes through the points on the slide))

13   tällä (.) tällä hetkellä (0.7) ↑vanhus (.) palveluissa (0.3)

            at this (.) this moment (0.7) in ↑senior (.) services (0.3)

14   palun (.) palveluohjausta tekee (0.4) tehdään <kentällä>, (0.5) kotihoidossa?

            seri (.) the service guidance does (0.4) is done <in the field>, (0.5) in home care?

            ((lines omitted: the speaker continues to describe the current situation))

15	ja ↑vammaispalveluissa on pikkusen erilainen ti- (.) tilanne (et)
	and ↑in disability services it is a slightly different si- (.) situation (that)

16	siellä on toimisto X:ssä ja (2.1) s<u>ie</u>llä voi käyvä
	there is an office in X and (2.1) one can also visit there

            *TURNS GAZE AND BODY TO EMMA

17 →	myöskin ↑paikan päällä, (0.7) *eikö ↑totta.
	in the actual ↑place, (0.7) isn't that ↑right.

18	(0.8)

19 Emma:	voi käyä mutta siis mei↑jän sosiaalityön palveluohjaus on
	one can visit but like the service guidance of ↑our social work is

20	käyä <kotikäynnil[lä>.
	to make a <home visit>.

21 Venla:	[no lähin↑nä (.) j<u>oo</u>. (.) kyllä.
	well main↑ly (.) y<u>ea</u>h (.) yes.

Prior to extract (1), Venla has just reported about group work related to another matter, and in the beginning of her turn, she shifts to her presentation, laying out its purpose: it is to share information about the work practices of this unit in order to familiarize the recipients with them (lines 1-4). In terms of epistemics, this creates expectations concerning the access of the speaker to the discussed matter and the accuracy of the disclosed information. It is in this sequential environment that Venla refers to certain members of the audience, treating them as having specific knowledge concerning the topic of the presentation and inviting them to disclose this knowledge (lines 5-6). Thus, Venla nominates Emma verbally – by using the particle *ainaki* 'at least' she implies that there may also be other 'knowing' participants, but addresses first and foremost her. This is also emphasized by Venla seeking out Emma in the audience and glancing at her through embodied means (cf. Mondada, 2012). Particularly noteworthy is Venla's request for Emma to 'shout' (line 5), in other words, to take a turn without asking permission to interrupt. By doing so, she postulates Emma rights and responsibilities that differ from the usual conduct of the audience and creates a co-presentership with herself. Importantly though, these rights between the two speakers are not entirely equal – Emma's participation in the presentation activity is shown to be constrained by specific conditions (see lines 5-6).

After nominating a co-presenter, Venla continues with the presentation and explains what kind of development work has been done in this service unit (lines 7-12). As seen, she uses the PowerPoint presentation as a resource for constructing her talk. Thus, at this point her turn consists of a commented reading of the PowerPoint slide, which in turn recycles the elements of a development plan composed earlier within the service program (see the slide in the transcription above). However, an important change occurs as the speaker deviates from the slide and begins to

describe the unit's current situation, indicated by the preface *tällä hetkellä* 'at this moment' (line 13). It is within this 'free' talk where the presenter orients again to the co-presenter and her expertise by producing a tag question *eikö totta* 'isn't that right', combined with an embodied orientation towards her (line 17). The question marks the recipient as having specific knowledge concerning the discussed matter and invites her to confirm the claim. However, by projecting an affirmation form to the recipient, it marks the speaker, too, as a knowing participant to some degree, thus establishing a joint expertise between them. Interestingly, Emma only partially confirms the claim and instead corrects the presenter's understanding concerning the matter (lines 19-20). This is followed by Venla's response (lines 21), which does not orient to the preceding turn as offering new information, but also claims for the speaker independent access to the discussed matter (cf. Heritage and Raymond, 2005).

As a whole, the extract shows how the presenter creates places for the co-participant to take part in delivering the presentation, and by doing so, invites him/her to complement the presentation in order to proceed with the presentation activity. Thus, the exchange initiated by the presenter does not occur randomly in the middle of the presenter's talk, but is connected, for example, to the structural features of the PowerPoint slide. Through the exchange, both speakers are positioned in the same identity category and postulated specific professional knowledge related to this category. This makes visible their shared work prior to the presentation and establishes their joint, yet also separable, expertise on the matter under discussion – thus marking the presentation activity essentially as information delivery addressed to a third party, the audience.

4.2. The co-presenter takes the turn to complement the presentation

The exchange initiated by the co-presenter materializes by him/her producing a comment that also elaborates the presentation. However, these cases differ from those analysed earlier in as much as through them the PowerPoint presentation is given further functions in addition to delivering information to the audience.

This can be seen in extract (2), where three public servants from the Ministry of Finance are visiting the city organization in order to familiarize the project members with the aims of the nationwide customer service project. In the extract, one of the public servants, Pauli, is giving a presentation about different customer service channels (lines 1-7) – the abbreviation ASPA in the heading of his slide refers to the national project. While Pauli is standing, his pre-nominated co-presenter, Onni, is sitting within the audience and listening to him. However, in the middle of Pauli's presentation, Onni takes a turn and begins to comment on the presentation (lines 9-16). The slide and pictures of the setting are shown in the transcription above the respective turns.

Extract 2
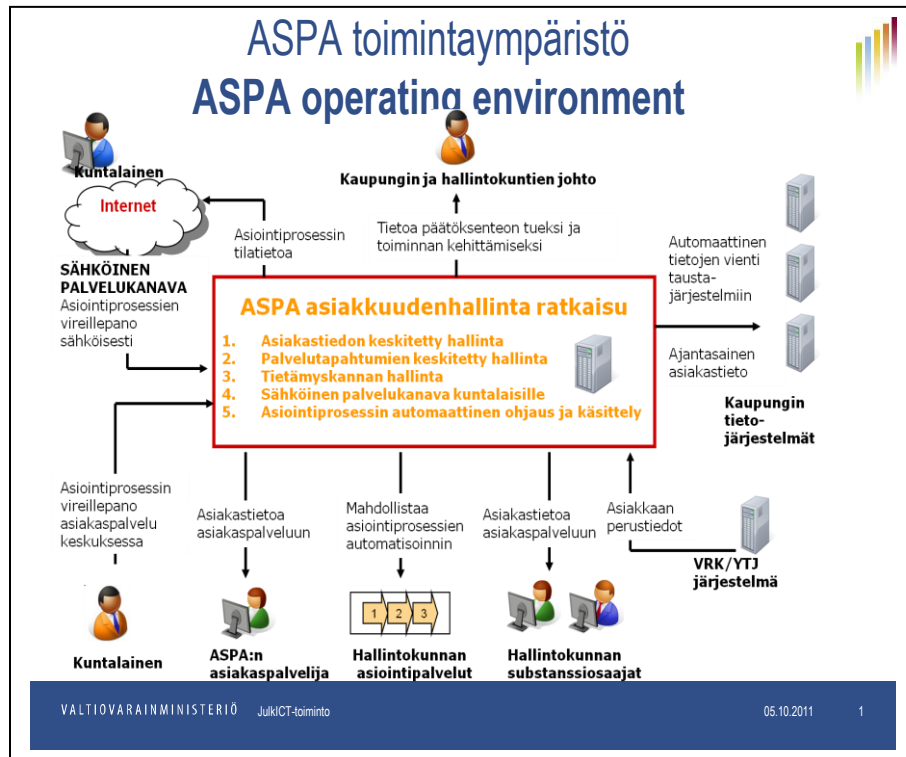
01 Pauli: *GAZES AT THE SCREEN, BACK TURNED TO THE AUDIENCE

*-- tietämyskannan hallinta eli se on se (0.6) kn<u>o</u>wledge managementti,

 -- **knowledge base control so that is the kn<u>o</u>wledge management,**

02   s<u>ä</u>hköinen pala- (.) palvelukanava kuntalaisille eli se (.) (niinku)

the <u>o</u>nline se- (.) service channel for citizens in other words (.) (like)

*GAZES AT O<small>NNI BRIEFLY</small>

03   *miten se ilmenee sinne <u>a</u>siakkaaseen suuntaan, (0.4) hän pystyy v<u>a</u>litseen

how it appears to the customer, (0.4) he can then ch<u>oo</u>se

04   sen (.) itselleen sopivimman ↑k<u>a</u>navan, (0.3) ja sitte tietyst

the (.) ↑ch<u>a</u>nnel that is most suitable for him, (0.3) and then of course

05   tämmöne (0.6) ää (.) mikä tässä niinku p<u>o</u>hjana (.) <u>a</u>lustana (0.4)

this kind of (0.6) uhm (.) what is like the f<u>ou</u>ndation (.) the b<u>a</u>se here (0.4)

                              *TURNS GAZE TO ONNI/PROJECT GROUP BRIEFLY

06   asiointiprosessi (.) *automaattinen ohjaus et puhutaan myös

the transaction process (.) an automatic steering one can also talk about

07   tämmösest (.) <pr<u>o</u>sessim<u>oo</u>ttorista> ja ty<u>ö</u>jonoista.

these kinds of (.) <pr<u>o</u>cess m<u>o</u>tors> and t<u>a</u>sk queues.

          *PAULI GAZES AT THE SCREEN AND CHANGES THE SLIDE

08   * (3.8)

*POINTS AND GAZES AT THE SCREEN

09 Onni: →   * >vielä jos otat ton kuvan nyt takasi (aikasemmin ja)<,

>if you now still go back to that picture (earlier and)<

*TURNS GAZE TO THE PROJECT MEMBERS, REPOSITIONS THE CHAIR SO THAT

HIS BODY IS ALSO ORIENTED TOWARDS THEM

10 →   *öö tos äsken ↑Jussin esitykses (0.7) käytiin

uhm pr<u>e</u>viously there in the presentation of ↑Jussi (0.7) we went through

11 →   tää kohta läpi todettiinki jo (se) että tavallaan niinku r<u>ii</u>ppumatta

this item and it was already noted that like in a way no m<u>a</u>tter

12 →   ny siitä kanavasta et (.) mitä pitki se kuntalainen tulee niin (0.5)

what channel (.) the citizen uses to come through (0.5)

13 →   ee (0.3) tuontyyppiseen ↑<u>y</u>mpäristöön sen olis hyvä nyt niinku

uhm (0.3) it would be like good to acc<u>o</u>mpany him into that kind of

14 →   s<u>aa</u>tella, (.) elikkä (.) <u>o</u>tetaan ne palvelu (.) pyynnöt <kiinni> heti

↑env<u>i</u>ronment, (.) so (.) one g<u>e</u>ts <hold of> the service (.) requests at once

15 →   heti siinä (0.4) kun se palvelupyyntö j<u>ä</u>tetään. (0.3) oli se

as soon (0.4) as the service request is subm<u>i</u>tted. (0.3) be it

16 →   sitte puhelin sähköposti (0.6) sähköinen l<u>o</u>make tai <käynti>, --

telephone e-mail (0.6) online f<u>o</u>rm or a <visit>, --

Despite being a nominated co-presenter and Pauli orienting to him during the course of the

presentation (lines 3, 6), Onni waits until Pauli has clearly closed down his current topic, as

indicated by the information structure and falling intonation of the turn combined with the change

of slide (line 8). By asking Pauli to go back to the previous slide and thus by marking his own turn

as 'additional', Onni displays orientation to Pauli's primary right to produce a commented reading

of the slide. Moreover, Onni refers specifically to the 'picture' both verbally and by pointing at the

slide (line 9) (cf. Knoblauch, 2008). This topicalizes the slide and makes known that the

elaboration has to do with it, not with Pauli's talk. In this way, the speaker establishes a joint

expertise explicitly in terms of the slide and the information it presents, invoking the institutional

ownership of the PowerPoint presentation – the presenters can be seen to talk on behalf of the

Ministry, whose name 'valtiovarainministeriö' also appears on the bottom of the slide. This co-

presentership is further accomplished by referring to the third public servant (lines 10-11), and by

categorizing his talk as belonging to the same group of institutionally-owned presentations.

Looking back at Pauli's turn, it can be seen as being characterized by classificatory language:

Pauli explains the new customer service system by opening up the terminology involved in it. This

is done by paraphrasing the core terms appearing in the square in the middle of the slide

(*tietämyskannan hallinta* 'knowledge base control', *sähköinen palvelukanava kuntalaisille* 'the

online service channel for citizens') with the use of a particle *eli* 'so, in other words' – the terms

are replaced either by other terms that are marked as already familiar to the audience (line 1) or by

the speaker's own explanation (lines 2-3). Secondly, he also provides information about how the

terms and the conceptual background they represent act as a base for the rationale behind

developing the described system (lines 5-7). Therefore, the view endorsed in Pauli's talk is

explicitly 'theoretical' and presents the topic from the standpoint of a system developer.

However, this orientation is changed through the elaboration of Onni, whose turn lays out the practicalities in operating the system and thus shifts the viewpoint to the customer service provider. At first, Onni evaluates the customer service on a general level in the light of the new system (lines 11-14). After this, he produces a paraphrase of his earlier evaluative talk by providing more detailed examples of the kinds of opportunities the centralized system would bring into the daily work of the service provider (lines 14-16). Here, the speaker uses a passive verb form *otetaan kiinni* 'one gets hold of' (line 14), and by doing so, does not nominate the actor explicitly. However, the positive evaluation of the system and naming of a concrete work task ('getting hold of the service requests at once') that can be seen to belong to the work field of the audience marks the turn as a piece of advice addressed to the project group. This change in perspective is also supported by embodied action: while Pauli has his back turned to the audience, Onni gazes at the project members and moves his chair so that his body is oriented towards them, thus projecting them explicitly as the recipients of his turn (line 10) (cf. Rendle-Short, 2006).

Extract (2) shows how the co-presenter establishes a joint expertise between the actual presenter and himself through commenting on the presentation. However, in his case, the turn projects a slightly different type of expertise, constituting him rather as an expert in the matter of applicable professional knowledge. This is connected to the social action that is being accomplished with the turn – instead of just providing information about the new system the speaker formulates the information to be hearable as advice on how the system could be implemented in the target organization (cf. Silverman, 1997). In this way, the extract demonstrates a wider phenomenon in our data where the presentations taking place in meetings often introduce the practices of different institutions and organizational units, and as such, can be seen as exemplary by nature. In other

words, they disclose work practices that could potentially be extended to other units too. This exemplary character becomes visible through the exchange initiated by the co-presenter, as he/she displays a renewed orientation to the audience and seeks to make the described practices appear more appealing and sharable. By doing so, the exchange also accomplishes the directive functions of the presentation activity.

In sum, there is often a noticeable orientation to co-presentership of PowerPoint presentations in our data. This distinct team membership is invoked through the speaker exchange between the actual presenter, namely, the participant who stands in front of the audience and handles the slides, and the co-participant, who sits among the audience members. These exchanges are typically prompted by a renewed orientation to the audience and may be initiated either by the presenter posing a question or by the co-presenter making a comment. However, in both cases, the exchanges establish a joint expertise for these two participants in terms of the matter discussed in the presentation and invoke the institutional ownership of the slides, whose structural features the exchanges are connected to. In this way, they also position the participants in the same professional identity category and set them apart from the audience, to whom information and advice is delivered.

5. Expertise in exchanges between the presenter and the audience

In this section, we will look at exchanges where the presentership is clearer: the participants display an orientation to the categories of the presenter and the audience even when there is an

exchange in the midst of the presentation. In these cases as well, both the presenter and audience have expertise in relation to the issues at hand. In the following, we will analyze how that expertise is displayed by the participants. First, we will look at cases where the exchange is initiated by the presenter. After that we will turn to exchanges initiated by an audience member.

5.1. The presenter initiates an exchange with the audience

In the cases analyzed in this section, the presenter produces a question that is addressed to the audience and thus orients to the expertise of the audience members. In these cases, the presenter also seeks some piece of information in order to continue with his/her presentation. In these cases, however, no particular participant is nominated, but the audience is treated as one collective. Moreover, instead of constructing a joint expertise between speakers, these exchanges emphasize divergent knowledge domains of the presenter and the recipients, positioning them in different professional identity categories. Importantly, these cases only occur in presentations where an outside speaker is performing to the project group. Typically, he/she initiates an exchange that is related to the topic of the presentation, and therefore, to the expertise area of the presenter, but simultaneously mobilizes the knowledge of the audience concerning the same area (cf. Knoblauch, 2014: 128). In this way, the exchange is used as a pre-sequence for the actual presentation or some smaller part of it. Its function is to invoke the understanding of the audience concerning the topic at hand in order for the presenter to judge the relevance of the information he/she is about to deliver.

This is observable in extract (3), where the consultant Marko is presenting about 'total architecture', a key concept of the project. Briefly put, it means a method for approaching the structure and processes of an organization in a unified way. On line 1 Marko is just beginning his presentation and presumably going to explain the general meaning of the concept, but stops the presentation activity to inquire about the audience's knowledge about the concept. However, by asking about their knowledge of the 'basics', he not only shows that the audience might possess some knowledge but also that this knowledge differs from that which he himself has. Particularly noteworthy is also the inquiry about the number of knowing participants – the answer can be used to make a decision whether or not to proceed with the intended 'general' level.

Extract 3

01 Marko: -- <ja tota> (.) lähdetään ↑sitten liikkeelle (1.2) että miten niinku yleisesti, (.) ja (1.0)

                -- <and well> if we get going ↑then (.) that like generally how, (.) and (1.0)

02 →   ↑kuinkas moni teistä nyt sitten (0.3) tuntee   kokonaisarkkitehtuurin

                just ↑how many of know now (0.3) knows the basics of total architecture

03 →   perusteet.= ↑käsi ylös.

                ↑raise your hand

                *A FEW AUDIENCE MEMBERS RAISE THEIR HANDS

04   *(3.7)

Interestingly, these cases may also have deontic overtones. This is demonstrated in extract (4)

where the public officials of the Ministry are similarly talking about the concept of 'total

architecture'. In the middle of the presentation the co-presenter, Onni, addresses a question to the

audience, and by doing so, shows that the audience members possess some knowledge that he does

not have. This knowledge has to do with the local implementation of the customer service project

– through asking a question Onni is looking for a connection between the concept of the

presentation and the present stage of the project in the target organization. Importantly, prior to

Onni's question, Jussi, the actual presenter, has gone through the benefits of total architecture, but

has not inquired about the audience's understanding of the concept. Therefore, his talk might not

be relevant to the audience members. Onni can be seen to address the potential problem by

reverting to the action that is usually accomplished before the actual presentation – this is also

displayed by the way he marks his turn as unexpected and additional (line 1).

Extract 4

01 Onni   joo mä (.) tähän väliin keskeytän ja kysyn sen verran että (0.8)
            yeah I'm (.) interrupting here and asking as much as (0.8)

02 →   et (.) te oot- (.) aspa-projektia nyt tehneet täällä ni, (0.3) onko
            that (.) since you ha- (.) conducted the aspa project here, (0.3) have

03 →   teillä tullu vielä niinku pöydälle tai eteen (.) ikään kuin tää
            you like had it on the table or have you come across (.) as it were this

04 →   kokonaisarkkitehtuuri- (.) kohta? (.) ootteko puhuneet tietohallinnon

         total architecture (.) point? (.) have you talked with data administration

05 →   kans (.) tai (.) (-) (.) kehittämispäälliköiden kans (.) ynnä muiden kans että

         (.) or (.) (-) (.) with development managers (.) and with others about

06 →   millä tavalla tämä (-) (.) aspassa tehtävä työ nivoutuu sitte

         how this (-) (.) work done in aspa is then interwoven

07 →   X:ssä (.) täs kokonaisarkkitehtuurin (.) kehittämisen ja (.)

         in city X (.) with developing (.) total architecture and (.)

08 →   muun (.) muun (.) työnkulun kans yhteen.

         other (.) other (.) work flow.

         ((lines omitted: the speaker elaborates the question))

09   (1.8)

                         *TURNS GAZE TO KAISA

10 Erja: jos mää vastaan ensin ja *sitte katson tietysti £Kaisaan£ he he (.)

         if I answer first and then of course look at £Kaisa£ he he (.)

11   tuolta tietohallinnosta että (.) se on koko ajan kulkenu tässä mukana?

         from the data administration that (.) it has travelled along here all the time?

12   (.)

13 Onni: j[oo.

     y[eah.

14 Erja: [ja: (.) tietohallinnon (.) oma (.) kokonaisarkkitehtuuri odottaa (1.2) ilmeisesti

     [a:nd (.) the own (.) total architecture (.) of data administration waits (1.2) apparently

15   resursseja ja muita että .hh se (0.5) on kyllä meillä mielessä ja (.)

     for resources and others so .hh it (0.5) is indeed on our minds and (.)

16   sitä kohti me menemme --

     we are going toward it --

As seen, Onni's question includes two sub questions, both with some implied meaning. The first question (lines 2-4) is on a fairly general level: Onni inquires whether or not the project members have already come across the concept of total architecture. By asking this question, he nevertheless suggests that this concept is an elementary part of the project and will have to be encountered sooner or later. The second question (lines 4-8) goes into more detail and includes candidate answers that outline specifically how 'total architecture' could have been taken into consideration. Firstly, Onni names two organizational units that could have been talked with (lines 4-5). Secondly, he specifies the issues that could have been discussed with these actors (lines 6-8). In this way, the questions also underline and display the expertise of the questioner: he has knowledge of the normal procedure followed by the kind of project that is under way in the target organization. Thus,

while the questions clearly project a delivery of information by the answerer, they, at the same time, imply normative expectations and express what should have been done or should be done in the future.

In his question, Onni uses the plural pronoun and plural verb forms (see lines 2-3) and does not single out any potential answerer. Not surprisingly, however, Erja, the project leader, selects herself as the first answerer (lines 10-16), thus treating herself as having a primary epistemic access to the local progress of the project and also as being morally responsible for delivering information about its local state. She has a defensive tone in her answer. This can be seen, for example, in that she gives an account naming lack of resources as a reason for not undertaking the expected action in data administration (lines 14-15). Also, in stating that the issue has been 'on our minds' and that they 'are going towards it' (lines 15-16), she confirms the validity of the preceding normative expectations but simultaneously implies that there may not have been noteworthy progress vis-à-vis the issue.

All in all, the presenters' questions to the project members display a complex negotiation and distribution of expertise. Seemingly, they seek some information that deals with the practical understanding and implementation of the project and thus orient to the expertise of the audience. By doing so, they make visible the presenter's role in the meeting: as an outsider he/she needs to obtain audience and organization-specific information in order to judge the knowledge level of the recipients and to design his/her talk accordingly (cf. Goodwin, 1981). However, while the project members are expected to know about the progress and details of the project on the local level, the presenters' expertise has to do with general knowledge of how such projects usually evolve. In this

way, the presenter's questions can also be seen to outline a model for how the project should evolve, and in their answers, the project members orient to this deontic aspect of the questions by explaining how the model has been taken into consideration.

5.2. An audience member initiates an exchange with the presenter

In this section, we will look at cases where members of the audience ask for and take the turn in the middle of the presentation either by asking a question or by making a declarative comment. However, the questions are also often coupled with commentary. In their turns the audience members display an orientation to the expertise of the presenter(s), but it may also be juxtaposed with the audience member's own expertise. In the following, we will look at a case where this happens.

Extract (5) is from the same presentation as extract (2): Pauli, a public official from the Ministry, is giving a presentation about the principles of the national customer service project. In the extract he is talking about the online service channel and going through a slide in which there is a figure that describes the process of a service request in the online system. The upper row of boxes in the slide describes what the citizen must do while the lower row describes the activities from the viewpoint of the service provider (see the slide in the transcription below). In his talk Pauli reads through the different phases – we will focus on lines 4-7, where he refers to the lower left hand box in the slide and describes how the office holder 'gets ... the form now in this case by email'.

After that Pauli goes to the next slide, then switches to a third slide and gives the turn to Onni, who – once again – serves as a co-author of the presentation. When Onni turns his head towards the audience and reaches a transition relevance place, Jenni, a member of the project group, raises her hand and asks permission to ask a question (line 10). Thus, unlike the co-presenter in extract (2), Jenni does not treat herself as entitled to participate in the presentation activity verbally, but is waiting for a relevant place to insert a request for permission (cf. Knoblauch, 2014: 129). Permission is granted by Onni (line 11).

Extract 5
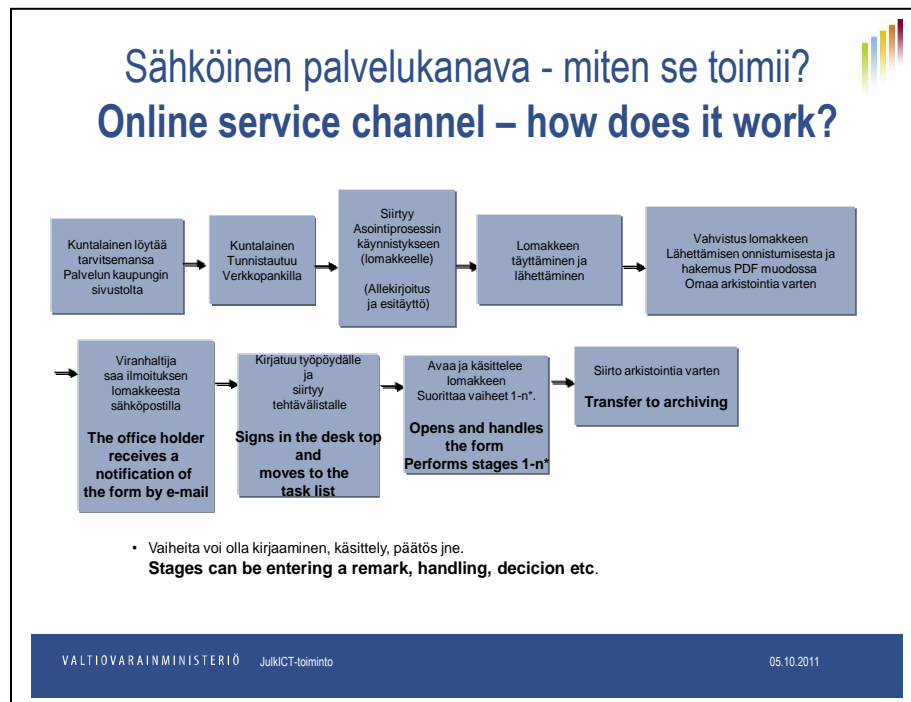
     *PAULI STANDS SIDEWAYS ON THE LEFT SIDE OF THE SCREEN, HIS HEAD TOWARD THE

       SCREEN

01 Pauli: -- *täs oikeastaan niinku sanallisesti sitte kuvattu sitä prosessia

        -- here the process is actually then described like in words

02   eli (.) eli (.) ton <u>ä</u>skeisen <u>i</u>kkunan

in other words (.) in other words (.) through that pr<u>e</u>vious

                *PAULI TURNS HEAD TOWARD AUDIENCE

                  *PAULI TURNS HEAD BACK TOWARD SCREEN

03   kautta kuntalainen (.) *sit v<u>a</u>lit*see sen p<u>a</u>lvelun ja --

w<u>i</u>ndow the citizen (.) then ch<u>oo</u>ses the s<u>e</u>rvice and --

((lines omitted, Pauli explains the different stages the citizen needs to go through in the system))

04   -- ja siis v<u>i</u>rkailijan näkökulmasta: nin (.) hän saa

-- and from the off<u>i</u>ce holder's standpoi:nt then (.) he gets

05   tästä (0.3) t<u>e</u>hdystä k<u>u</u>ntalaisen (0.7) #ää# p<u>a</u>lvelup<u>y</u>ynnöstä (.)

regarding this (0.3) s<u>e</u>rvice req<u>ue</u>st m<u>a</u>de by (0.7) #uhm# the c<u>i</u>tizen (.)

                     *PAULI TURNS HEAD TOWARD AUDIENCE

06   l<u>o</u>makkeen nyt täs tapaukses s<u>ä</u>hköpostilla ja *k<u>i</u>rjautuu

the f<u>o</u>rm now in this case by <u>e</u>mail and l<u>o</u>gs into

            *PAULI TURNS HEAD TOWARD SCREEN

07   tällaselle *(1.2) #öö# sähköseen t<u>y</u>öpöydälle ja, --

this kind of (1.2) #uhm# online d<u>e</u>sktop and, --

((lines omitted, Pauli explains the different stages the official must go through in the system, goes to the next slide and describes the log-in system, brings up a third slide and gives the turn to his co-presenter Onni, who elaborates on the online service system))

   *ONNI'S HEAD IS TOWARD THE SCREEN

   *JENNI'S LEFT HAND IS IN HER HAIR

           *ONNI TURNS HEAD TOWARD AUDIENCE

08 Onni: --* täs on niinkun (.) yh*denlainen kuva tästä (.) kokonaisuudesta.

-- there is like (.) one kind of a picture of this (.) whole system here.

09   (.)

   *JENNI RAISES LEFT HAND, THEN LOWERS IT

10 Jenni: →   *saako kysyä.

may I ask.

11 Onni: joo,

yeah,

*JENNI POINTS AT THE SCREEN WITH HER LEFT HAND

12 Jenni:→   .hh ku *tossa äskeisessä oli tää että se kirjautuu viranhaltijan

        .hh when in that previous one there was this that it is registered in the email

13 →   sähköpostiin, ni onks siinä joku (.) onko muita vaihtoeh>toja,

        of the office holder, are there some (.) are there other op<tions,

14 →   jos< mä ajattelen että (0.4) meille tulee (.) tuhansia (0.9) hakemuksia

        if< I think that (0.4) we get (.) thousands of (0.9) applications

15 →   esimeks esiopetukseen ja päivähoitoon tiettynä vuodenaikana.

        for example for preschool education and daycare at a certain time of the year.

16 →   ni (.) nehän tukkii se (.) jos ne tulis niinkun vain joihinki

        then (.) they will jam it (.) if they would go like only to some

17 →   tiettyihin sähköposte[ihin.

spec_ific e_mails.

18 Onni: [joo ei (.) ei (.) ei ollenkaan yhren

yeah no (.) not (.) not at all

19 viranhaltijan sähköpostiin.

to the email of one office holder.

During her question (lines 12-17) Jenni refers to the first slide Pauli showed and also explicitly points at the slide show (see line 12). Her expression *kirjautuu viranhaltijan sähköpostiin* 'is registered in the email of the office holder' is a citation – though not word for word – from a particular part of the slide, as well as Pauli's talk (lines 4-7, see also the slide above). Thus, Jenni shows that she is focusing on Pauli's suggestion concerning the automatic transfer of the customers' service requests to the email account of the respective office holder.

The citation from the slide is followed by the question proper (lines 13) and an account (lines 14-17). In the question Jenni asks for additional information. Through this question, she treats the presenters as experts on the topic of the presentation, the centralized online system that is needed for the customer service project. In the account, however, Jenni displays her own expertise. This expertise has to do with the day-to-day practical work in the organization. It is different from the general expertise of the presenters, as it has to do with concrete facts such as the number of applications they receive for different services – in this case, preschool and daycare – in this particular city. This kind of information is interesting in the sense that it cannot be disputed by the presenters since they do not possess knowledge of this particular organization.

Also, it seems clear that Jenni's contribution is critical towards the presentation. Even the question

proper implies that there should be 'other options'. The account makes the critical tenor of Jenni's

turn even clearer. The account is constructed as an 'if – then' construction that lays out a

problematic hypothetical scenario that the suggestion of the presenter would lead to in her

organization (cf. Nissi, forthcoming): the 'thousands of applications' would 'jam' the emails of the

office holders. Thus, Jenni's question treats the presentation not only as a source of information

but also as a set of requirements for the project members. It is not just a presentation of what the

new customer service model can look like, but what it should look like. Thus, in addition to the

epistemic aspect of what the different participants are entitled to know, there is a deontic aspect in

play here as well, including negotiation about what the different participants can require of each

other. It seems that the epistemic expertise is used in the argumentation vis-à-vis this deontic

aspect.

On the whole, in cases in which the project members take a turn in the middle of the presentation,

they display an orientation to different domains of expertise of the presenters and themselves. The

presenters are treated as experts in the topic of the presentation, but at the same time the project

members may display their own expertise in the day-to-day operation of the organization.

Interestingly, this latter type of expertise is used to unveil problematic aspects in the presentation,

and, at the same time, to draw attention to the deontic side of the presentation.

In sum, in our data, there are also exchanges taking place between the presenter and the audience

in the midst of the PowerPoint presentation. In these cases, the exchange may be initiated by the

presenter posing a question to the audience, which is treated as one collective, or by an audience member similarly posing a question or making a comment to the presenter. Importantly, although these exchanges display an orientation to the expertise of the other party, they simultaneously juxtapose it with the expertise of the speaker, for instance, by mobilizing the text on the PowerPoint slide. In this way, they position the participants in different professional identity categories and are typically used to accomplish and resist the directive functions of the presentation.

6. Discussion

In this article, we have examined the activity of PowerPoint presentation in a workplace context. More specifically, we have focused on cases where there is an exchange between the presenter and another meeting participant in the middle of the presentation activity. Our analysis has sought to illuminate these exchanges through three research questions. Firstly, we have looked at how the meeting participants orient to each other's expertise. Secondly, our aim has been to shed light on what kinds of actions are being accomplished through the exchanges. Thirdly, we have analyzed the role of the PowerPoint slide as a text and as a material object. In the following, we will discuss our findings from these three perspectives: expertise, action and the role of the slide.

We will begin with expertise. Our study shows how PowerPoint presentations in the workplace context involve a complex negotiation of expertise. This negotiation can take place in several ways. First of all, there may be an orientation to co-presentership. The presenter may nominate one of the

audience members as a co-presenter, inviting him/her to take part in delivering the presentation through a question and thus postulating him/her rights and responsibilities that differ from the usual role of the audience. The exchange can also be initiated by the co-presenter; he/she may take the turn to produce a comment that complements the presentation and thus treat him/herself as entitled to participate in presenting. In these exchanges the presenter and the co-presenter are positioned as possessing knowledge in the same knowledge domain, and they are construed as a team with joint, yet possibly separable, expertise on the topic of the presentation. However, the presenter may also orient to the expertise of the audience through asking a question and inviting them to provide some piece of information. In these cases no specific participant is nominated; rather, the audience is treated as one collective. Moreover, instead of constructing a joint expertise, these exchanges emphasize divergent knowledge domains of the presenter and the recipients. In particular, the roles - the presenter as an outsider to the organization and the audience members as insiders - are made visible. Finally, we looked at cases where an audience member takes the turn and either asks a question or makes a declarative comment. In these cases the presenter is treated as an expert in the topic of the presentation, but at the same time the project members display their expertise in the day-to-day operation of the organization.

As a whole, our study calls into question the concepts of the 'presenter' and the 'audience' and challenges an understanding of the PowerPoint presentation constituting dichotomous participant roles of the 'knowing' speaker and 'non-knowing' recipients. Instead, our study shows how the epistemic positions are reconstructed during the presentation activity, both in how the presentership is re-distributed and how the audience is dissected into varied participant categories with different category-bound features. This means, in a broader sense, that through the seemingly

small exchanges during the PowerPoint presentations the participants talk into being their

epistemic positions in the workplace. The complexity of knowledge used and needed in the

workplace is thus made visible.

Secondly, our analysis illuminates the actions that are accomplished through exchanges in the

middle of the PowerPoint presentation. These results also have implications for an understanding

of the overall function of PowerPoint presentations, as well as of the workplace as a context for

them. The exchanges that we have analyzed function, first of all, as vehicles for information

exchange. The presenter may seek information from the co-presenter or from an audience member

– information that is needed in order to proceed with the presentation. Similarly, an audience

member may pose a question to the presenter in order to clarify some part of the presentation. In

this way, the exchanges are driven by the epistemic orientation of the participants and establish the

presentation as information delivery. However, the exchanges may also be guided by participants'

orientation to deontic aspects of the presentation, marking it as directive. This is seen in cases

where the co-presenter elaborates the presentation of the original presenter by making the

described work practice seem more appealing and sharable. The presenter's question to the

audience may also have deontic overtones, as it may be tailored to imply normative expectations

concerning the development of the project, and the audience members may also display their

orientation to this normativity. Similarly, audience member's questions often convey resistance

and thus display the questioner's interpretation of the presentation as directive.

Interestingly, in our data, the deontic orientations do not arise randomly, but instead seem to be at

least partially intertwined with the expected professional identity and the epistemic and/or deontic

status (see Stevanovic and Peräkylä, 2014) of the presenter. Thus, deontic orientations tend to arise when the presenter is an outside consultant or a public official from the Ministry of Finance. In this way, our findings resonate with the prior understanding that action formation and action recognition are connected to the status of the speaker (see Heritage, 2012a). Also, these findings underline the varied functions of PowerPoint presentations in workplaces, namely, that they are used for delivering information, but also for advancing and steering organizational projects.

Thirdly, our study furthers the previous understanding of the slide as a textual and material resource for both the presenter(s) and the audience (cf. Knoblauch, 2008; Rendle-Short, 2006). In our analysis, we showed how the presenter produces a commented reading of the slides and thus employs them to construct his/her talk. Because of this, the presenter's turn is visibly connected to the structural features of the slides. The co-presenter, for his/her part, may refer to the slide both verbally and multimodally, by pointing. This topicalizes the slide and makes known that the co-presenter's elaboration has to do with the slide, not with the presenter's talk. In this way, a joint expertise is established specifically in terms of the slides and the information they entail, invoking the institutional ownership of the PowerPoint presentation. However, the slides as a text and as a material object are not only available to the presenters – the audience may also utilize them in the same manner in order to clarify or to resist some aspect of the presentation. Thus, unlike hand-written notes, for example, which are handled only by the presenter, the slides are directly accessible to all meeting participants, who are able to evoke and exploit them for their own purposes. By doing so, the PowerPoint slides act as the participants' shared semiotic resource in negotiating the meaning of the presentation, both in terms of its function and the expertise of the participants, with all three facets of the analysis thus being closely interrelated. In this respect, it is

very much the material presence of the slides that distinguishes PowerPoint presentations from other workplace presentations that are not similarly technologically mediated, although both types of presentation might also share some overlapping features.

The PowerPoint slide is, thus, not merely a neutral carrier of information. Rather, as part of the presentation activity, it becomes a powerful tool for organizational actors. Slides can be used strategically, for example, by managers and administrators for furthering their goals and for involving employees in furthering those goals, as well as by employees with different kinds of expertise for elaborating on, questioning and resisting the projects they are involved in. Accordingly, the PowerPoint presentation turns out to be a crucially important activity type in the workplace, both in terms of daily work and in terms of long-range organizational goals.

Our study has contributed to prior understandings of PowerPoint presentations as an activity type by analyzing their realization in workplace meetings. While previous research has addressed the multifunctionality of PowerPoint presentations (see Yates and Orlikowski, 2007; Kaplan, 2010), we have demonstrated how the different functions are accomplished through the situated action of the participants, how different domains of expertise are displayed by them, and how the slides are used as a participants' resource. Recent decades have witnessed the emergence of a globalized knowledge economy where language plays a central role in organizing work in new kinds of ways (see Williams, 2010). However, research on these new environments is still partly in its infancy: we need more empirical studies of how the orientation to shared knowledge work and multi-professional teams is actualized in workplace interaction, and particularly in the interplay of language, embodied action and information technology.

Funding

Appendix. Transcription and glossing symbols

.	Falling intonation
,	Level intonation
?	Rising intonation
↓	Fall in pitch
↑	Rise in pitch
w<u>o</u>rd	Emphasis
>word<	Faster pace than the surrounding talk
<word>	Slower pace than the surrounding talk
wo:rd	Lengthening of sound
wo-	Word cut off
#word#	Creaky voice
£word£	Smile voice
hehe	Laughter
.hh	Inbreath

(0.5)	Pause in seconds
(.)	Micro pause (less than 0.2 seconds)
=	No pause between two adjacent utterances
[	Beginning of overlapping talk
*	Beginning of overlapping nonverbal action
TURNS HIS HEAD	Nonverbal action
(word)	Item in doubt
((word))	Transcriber's remarks

PowerPoint slides shown in the transcription follow the layout of the original slide. However, we have removed all the city logos and added English translations.

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Riikka Nissi is a postdoctoral researcher at the University of Jyväskylä, Finland. Her main research interests are within the area of institutional and professional interaction and organizational discourse. During this study she worked as a postdoctoral researcher at the University of Vaasa, Finland, where she examined the networks of written texts and spoken interaction in organizations, focusing particularly on the construction of professional knowledge and identities and the materialization of employee participation in meeting interaction and organizational planning.

Esa Lehtinen is Professor of Modern Finnish at the University of Vaasa, Finland. He has conducted research on discourse in religious, medical and organizational contexts. In his current project he investigates networks of face-to-face encounters and written texts in organizations.