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Discourse Analysis: Making Complex Methodology Simple

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Abstract

Discursive-based analysis of organizations is not new in the field of interpretive social studies. Since not long ago have information systems (IS) studies also shown a keen interest in discourse (Wynn et al, 2002). The IS field has grown significantly in its multiplicity that is echoed in the discourse, which policy makers and end-users use when they talk or write about IS. Understanding their discourse might shed light on understanding their behavior with information technologies. However, so far discourse-based IS studies lag both a conceptual grounding and the 'route descriptions' of the method.

The paper illustrates the multidisciplinary genesis of what actually constitutes "discourse" and elaborates on the main principles of doing discourse analysis in IS studies. By examining the theoretical foundations of discourse analysis, we show that its goal is to interpret the hidden meaning about information technologies, covered by a text. A researcher achieves that by a constant interplay between texts (project documents, interviews with the end-users or managers, manuals of IS), discourse (sets of the texts), and context (historical an, social background). We shall analyze the practical applications of the method and demonstrate an eight-steps mode for conducting discourse analysis for interpretive IS studies. By elaborating on "doing discourse analysis" we shall give an example based on the interviews conducted with the end-users regarding implementation of a personnel management system in a larger Dutch university.

Keywords: IS implementation, Interpretive IS study, Discourse analysis, interviews.

1 INTRODUCTION

The predominance of the world of positivism among IS studies is well known (Lee 1999). This predominance received formal documentation by Orlikowski and Baroudi (1991) who noted that 96.8 per cent of all published IS articles in their sample were positivist, with the rest being interpretative. The IS studies before 1990-s have been dominated by the positivistic view ruled by 'universal' relationships between variables in the social reality (see also overviews by DeSanctis and Poole 1994, Robey and Boudreau 1999).

However, since the 1990s, 'new' streams exploded the IS field with the view of the IT implementation as a dynamic process. Since then, there have been signs of increasing acceptance of the idea that multiple perspectives on the exploration of a dynamic implementation requested multiple and dynamic research methods (Walsham 1995, Klein and Myers 1999, Mingers 2001, Orlikowski and Barley 2001, Schultze and Leidner 2002, Wynn et al 2002).

Three criteria for interpretive studies were outlined by Orlikowski and Baroudi (1991): the object had to be examined from the perspective of the participants; analysed within a specific and detailed cultural and contextual perspective; outcomes had to be regarded as nondetermenistic, and that the complex interactions and interpretations of individuals and groups were seen to result in heterogeneous resultant systems. Klein and Myers (1999) have further developed criteria for an interpretivist IS study: it should stand on the assumption that the knowledge is gained only through social constructions, focus on the complexity of human sense making as the situation emerges instead of predefining dependent and independent variables, and attempt to understand the phenomenon through the meanings that people assign to them. The following ethics were recognised as sensible and important (Klein and Myers 1999, p.72): the fundamental principle of the hermeneutic circle; conceptualisation as critical reflection on the social and historical background; interaction between the researcher and the subjects; dialogical reasoning (sensitivity to the contradictions); and multiple interpretations (understanding of the differences in interpretations among the participants).

Understanding, interpreting, conceptualising, critical reflecting, and historical grounding - these morals have gained more value in the IS research during last decade. "Research methods can be seen as instruments for provoking a response from the world, - writes Mingers (2001, p.242) - The nature of the response depends on both the world and the instrument".

And we argue, in designing a methodology for an IS study attention should be given to broadening a response from the world by including different dimensions of a real situation, technological, organisational, social, and personal; by understanding of the research context, and incorporating researcher's worldview. When talking about users' behaviour with technology, we should address their interpretations and sense making of a system. This sense-making practice is not static; employees develop their understandings of IT recurrently that might lead to continuing development of their use of technology. Therefore, in our view, it is rather difficult and not logic to study IT implementation as if it were a fixed material object when we are aware of its dynamics. We shall talk about the power of incomplete and ambiguous, contradictory and double-edged discourses, which construct implementation of technology that users experience as solid and real. That brings a call for the stories, narratives, symbols, and expressions – discourses – that grasp together dynamic and sometimes contradictory developments of technology implementation. Those stories and expressions reflect how employees and managers work with the technology. That is why it becomes important to articulate them. However, the spoken or written discourse always lags behind what one wants to say, and if you are to understand what was said, you have to derive it from the inner speech lurking behind it.

It means that the research methods should provide us with the powerful mode to cover the dynamics of IS implementation, and give us the opportunity to conceptualise assumptions of the users embedded in the discourse on IS implementation.

In this paper we will discuss how to collect and analyse data that holds elaborated statements, speeches, news, reports, announcements, expressions, idioms, and sayings – all related to the information and understandings, assumptions, perceptions, attitudes, opinions, or awareness of the employees about IS. In short, we shall present how to conduct the empirical IS research by means of *discourse analysis.*

With this we claim to develop our view on 'doing' discourse analysis for an IS study. We will show that the practice of discursive-based research is highly dependent on the theoretical foundations chosen by a scientist. Therefore, we need to unfold the theoretical basis for doing discourse in this study. Many researchers in the field elaborate on the theoretical framework of discourse and claim discourse analysis to be both a theory and a method (Van Dijk, 1985; Potter and Wetherell, 1987; Fairclough, 1995; Gill, 1996; Titscher et al, 2000; Wodak, 2001). Yet, they do not support the *systematic* amplification of the philosophical origins of the theory of discourse analysis. Consequently, these studies have neglected to produce a framework bridging the philosophical foundations, theoretical implications and 'doing' discourse analysis. We aim to contribute to the existing body of knowledge by developing such a framework and applying it to the IS field.

Origins of discourse analysis belong to the philosophical discussion on hermeneutics that we depict in the first section of this paper. Then, we present and discuss the theoretical implications of discourse analysis. And the last part of the paper is dedicated to the practical use of the method.

2 THEORY OF DISCOURSE ANALYSIS

A discursive-based analysis came on the research agenda in the late 1970-s, as one of the reflections on the philosophical discussion on hermeneutics and the constructive role of language in the social reality (Sinclair and Coulthard 1975, Van Dijk 1985, Potter and Wetherell 1987, Fairclough 1995, Gill 1996, Titscher et al 2000). We will turn to hermeneutics in this discussion to bring out some concepts that we believe are common across different interpretive studies and provide the grounds for discourse analysis.

2.1 The hermeneutical origins of discourse analysis

The modern hermeneutics was inspired and departured from the German non-objectivist view developed in the twentieth century. It stands on the constructivist grounds and views interpretations as interminable, or open. Interpretations give a meaning to a text within a framework of the interpreter's experience, knowledge, time, epoch, culture, and history.

The main issue of hermeneutics is that the true interpretation has simply not yet been found, but rather that there is no such final interpretation. The hermeneutical circle gets the essence in its openness. Such openness is supported by the concept of "language", which lead to the 'universality of the hermeneutical problem' (Gadamer, 1975).

"The appearance of the concept "language" presupposes consciousness of language. But that is only the result of the reflective movement in which the one thinking has reflected out of the unconscious operations of speaking and stands at a distance from himself. The real enigma of language, however, is that we can never really do this completely. Rather all thinking about language is already drawn back into language. We can only think in a language, and just this residing of our thinking in a language is the profound enigma that language presents to thoughts" (Gadamer 1966, p. 62).

Put in other words – what we state, express, write and/or bring into a dialogue is already a reflection on our 'inner' language, or thoughts. Then, how to understand a 'real intention', what was supposed to be stated? In his opus, *Truth and Method*, Gadamer (1975, p. 165) develops a concept of understanding. First of all, the interpreter's place in history is a central issue: "the application of a text is to be always understood in the present situation of the interpreter". An interpreter becomes a mediator between the past and the present meaning. Past in this sense means every event that took

place before an interpreter faces an expression. Understanding, therefore is an event, a movement in history itself where an interpreter and a text are interdependent. “Interpretation is not an occasional additional act subsequent to understanding, but rather understanding is always an interpretation, and hence interpretation is the explicit form of understanding… It is thought as the entering into an event of transmission in which past and present are constantly mediated” (Gadamer 1975, p. 274).

Central to the modern hermeneutics is the idea that an interpreter would derive meaning from social events as a translator from a text written in an unfamiliar language. Therefore, a ‘translator’ (interpreter) makes a link between the ‘text’ (social events) and a whole range of previously established interpretations, history, backgrounds, and accounts of what the events mean to different individuals. A statement about social reality becomes a link between this social reality and the person making a statement, and can be only understood in terms of circumstances in which it is made.

A circle of interpretation is considered as the basis, where a variety of linked events [texts] mutually support the ideas of an interpreter. Another function of the hermeneutical circle is grasping a social network – understanding phenomena as that community does. In other words, it is broader than simply getting inside an individual’s head. To do this requires synthesising and bridging lots of events. Sources for these events can be different – textual, technological, conversational, including one or more people, etc.

Again, back to Gadamer (1975), the hermeneutic circle is continually open for re-interpretation; concepts are formed and re-formed in such a manner that their universal meaning is required to integrate within the particular situations, in which they can be completed. This interminable interpretation experience is familiar to all interpreters: the process of understanding of the statements [texts, events] *de facto* goes on and on. Important is that the circle is not ‘private’, but open to critiques and discussions, - inter-subjective examination.

Therefore, understanding becomes mediation between the past and present meaning, and makes events comprehensible through the ‘translating’ process. The hermeneutics circle allows connect social events into one frame in order to support the interpreter’s ideas; and grasp a community feeling by representing network understanding.

After all what we have said about hermeneutics, one comment still remains: the idea of the hermeneutic circle may be not really more than a roundabout talking about what is currently done and what would be nice to do in the name of social science. But what is the *body of the process* of the hermeneutical circle? Searching for an answer, one may try to adopt well-known countless research methods in the social science. However, recall Gadamer, who insisted that the approach had its own way of investigating the reality. But the creature is in the detail of *how* the circle may operate, or may be applied.

In our next sections we are talking about tangible application of the hermeneutic circle - conducting the discourse analysis. Based upon its roots and general theoretical characteristics, we attempt to develop practical implications, concrete procedures on how to *do* discourse analysis, in respect to the hermeneutical framework.

2.2 Discourse analysis: defining our terms

There are many explanations and definitions of discourse and discourse analysis. Van Dijk (1997), for example, in his introduction has suggested that the entire 700 pages of the two-volume set on discourse can be an “elaborative answer” to a question, *what is discourse?* Although the task is difficult, we need to have a general idea of what do we mean by the terms discourse and discourse analysis.

One of the first views on discourse considered it as a form of spoken dialogue and in contrast to written texts (Sinclair, 1975). A later image of discourse was as a combination of both spoken and written texts, which allowed us describe discourse as “all forms of spoken interaction, and written

texts of all kinds" (Potter and Wetherell 1987, p.7). Such definitions focused on discourse as the study about language, and many discursive works adopt such perspective. Later developments have brought new insights. Discourse was referred to practices of talking and writing (Woodila, 1998), which bring objects into being through the production, dissemination, and consumption of texts (Hardy, 2001). In our research we will follow the definition given by Hardy (2001, p. 26) and view *discourse* as "a system of texts that brings objects into being". The goal of the discourse analyst, therefore, is to explore the relationship between discourse and reality, interpret a hidden meaning, and mediate it between the past and present.

The concrete representation of discourses is *texts*, or discursive 'units'. They make have a variety of forms: formal written records, such as news information, company statements and reports, academic papers; spoken words, pictures, symbols, artifacts, transcripts of social interactions such as conversations, focus group discussions, and individual interviews; or involve media such as TV programs, advertisements, magazines, novels, etc. In facts, texts are depositories of discourses, they 'store' complex social meanings produced in a particular historical situation that involved individual producer of a text unit, and social surrounds that is appealed to the play.

Texts are almost irrelevant if taken individually (recall our example with the statement about 'protocol free' interviews). It is only their interconnection that makes discourse analysis valuable. Discursive activity doesn't occur in a vacuum, and discourse itself doesn't hold a meaning. Accordingly, if we are to understand discourse, we must also understand the *context*, in which they arise (Van Dijk 1997, Titscher et al 2000). Researchers usually distinguish two types of context: broad and local (Titscher et al 2000, Grant et al 2001). There is also a more detailed classification of the degree of a context, involved in a study (Alvesson and Karreman 2000): micro-discourse (specific study of language), meso-discourse (still study of a language but with a broader perspective), grand discourse (study of a system of discourses that are integrated in a particular theme such as culture), and mega discourse (referring to a certain phenomena like globalization).

Exploration of the interplay between discourse, text, and context builds the focus of the discourse analysis. Therefore, we must observe selections of the texts that embody discourses. We cannot simply concentrate on an individual text but only on a set of them, however, we must refer to the concrete bodies of the texts. Similarly, we should examine the context in which the texts were found and discourses were produced.

2.3 Discourse analysis as a theory and a method

It starts from the fundamental assumptions derived from the hermeneutics that language is a medium oriented towards action and function, that people use language intentionally to construct accounts, or versions, of the social world (Elliot, 1996); and that one-to-one correspondence exists between a word (encoding of information) and its meaning (decoding of information) (Zajacova, 2002).

As Gill (1996, p.143) has noted, "it is much easier to explicate the central tenets of discourse analysis that it is to explain how actually to go about analyzing discourse". In approaching it, one walks through a 'recipe book' of prescribed phases or attempts to follow an unstructured, seemingly mysterious path. The design of the approach, in our view, is dependent on the researcher's worldview and the special goals of the projects, which vary from a fine-grained study of linguistic features (Van Dijk, 1985) to the dominant themes in the respondents' discourse. Either of approaches, however, demands that researchers make a shift from seeing discourse as reflecting social reality to the ways in which accounts are constructed and the functions they perform.

Given such diversity, what is the quality criterion for discourse analysis? We would say that first is that the discourse analysis "must be intelligible in its interpretations and explanations" (Titscher et al 2000, p.164) that means trustworthiness of the study (Lincoln and Guba 1985). The process of collecting, analysing, and explaining the data must be recognisable. Teun van Dijk suggests accessibility as a criterion of the quality: findings should be at least accessible and readable for the

social group under investigation. That is, in fact, a member check proposed by Lincoln and Guba (1985) for qualitative studies. Triangulation techniques are also used to enrich trustworthiness by employing a variety of background information, empirical data, and analysing techniques (Wodak, 2001).

Very specifically for discourse analysis is that the value of findings and conclusions is anchored in the inter-subjective validity that means the endless openness and interchange between different types of data, participants' and researcher's interventions, interpretations and explanations, and diverse levels of analysis (individual vs. combination of texts, linguistic vs. context).

2.4 In comparison with other methods of text analysis

It is rather easy to get mystified in the variety of those methods, which of them to compare: conversation analysis, membership categorisation device, content analysis, narrative semiotics, ethnographic methods, grounded theory techniques, distinction theory analysis, symlog methods, etc. Alike all research techniques, methods of text analysis are developed within a certain discipline and have social relationships within scientific networks. Therefore, among the broad spectrum, we have chosen those methods of text analysis, which are broadly used in the IS research: content analysis, ethnographic text analysis, and grounded theory techniques. We bring to the discussion discourse analysis and compare it with the rest.

In comparison with the aforementioned methods, discourse analysis postulates inductive-deductive development and may deal with the categories and structures (in fact, like most of the methods). In principle, it doesn't' have restrictions in the application spheres, but only demands availability and transparency of the information around the phenomenon, including social, historical and other conditions. The discourse analysis may use techniques from the content analysis like codification, but without strict quantifying the findings, and it is strongly subject-oriented that distinguishes it from the content analysis and ethnographic studies. It attempts to identify deep structures of textual data like narrative semiotics but doesn't need a full story. Beyond this, discourse analysis works with different texts, investigating their interrelationships, what is not developed in other methods. In this sense, discourse analysis is often considered as applying the broadest range of textual factors (Wodak 2001). Concerning the notion about interplay between the language use and society, a further difference appears. Discourse analysis doesn't consider it as deterministic but implies the mediation that is in hands of an interpreter.

3 PRACTICAL APPLICATION OF DISOCURSE ANALYSIS TO IS RESEARCH

In this section we will combine theoretical implications and our own development of the application of the disocurse analysis in IS research. We will show eight steps we developed and conducted in our empirical research.

3.1 Step one – identifying a theory

It was important to realise what kind of theory of discourse analyis makes the grounds for the empirical study. In our study we were investigating neither linguistic features of discourse, nor power division in IS implementation. Our primary concern was on the social context of the use of technology and discourse that supported it. This aproach was defined as interpretive structuralist discourse analysis.

We should probably brifely outline the research site in our study. We investigated the implementation of a SAP system in a large Ducth university. The system was introduced to a group of 50 users (personnel and salary administrators), who had to work with SAP on their daily basis. We were

interested in how interaction processes between end-users developed their understanding of a newly introduced IS, and therefore – its implementation. We called interaction processes group learning. Before employing the case study, we have developed the preliminary research model, or a cognitive map, that included several constructs: group learning, technological characteristics, group support factors, managerial support, and stable use of technology. The case study aimed at refining our understanding of IS implementation as group interaction processes.

3.2 Step two – operationalisation

The primary issue here is how the various methods are able to translate their theoretical claims into instruments (Wodak 2001). Following this step, a research may determine categories for coding, in other words - operationalize the constructs of a research model.

This operationalization is the key factor in conducting further empirical study: in our study we based the interview protocol on these categories, we transcribed interviews always checking whether we were in line with the theory, and we analysed the transcripts in accordance to the operationalization scheme. We built our concepts in three levels: constructs were divided into dimensions, and latter – into components. Every construct and dimension was precisely defined. Some of dimensions were 'single', i.e. have one component per dimension. Other dimensions were 'multiple', i.e. have from 2 to 5 components per dimension.

Our operationalization scheme (table 1) included also numeric codification that had to be used in the analysis; every component had its numeric code like 1.1, 3.4, etc. We have also included qualitative labels for the analysis for the dimensions of group learning, managerial support, and stable use, - like 'strong-weak', 'high-low', etc. In this paper we give only an example of the operationalisation, i.e. not all items we used in the research are included in table 1.

Constructs / definitions	Dimensions/ Definitions	Components	
Technological prerequisites – the visible, technical properties of the system users are offered.	1. The role of the system in a company – the intended goal and managerial reasons for introducing the system.	1.1	grounds for introducing a new system
	2. Specification of the system – domain-based services that the system is supposed to deliver.	1.2	modules and their functionality
	3.Enabling collaboration – specific facilities for collaboration offered by the system for users engaged in common tasks.	1.3	extent of possible cooperation offered by the system
Group learning - all interactional processes through which group members develop the interpretive schemes about a newly introduced	1. Collective acting – task-related operations with the system undertaken by members of a group.	1.1 1.2 Active – Passive	operating with basic modules in everyday tasks performance searching for new techniques in the system
	2. Group reflecting – communicating upon extent to which the system supports performing tasks.	2.1 2.2 2.3 Strong – Weak	discussing difficulties in use of the system comparing with another software experience declaring individual problems in use of the system

system that help them to implement it.	3.Knowledge disseminating – behaviors of the group members that aim at externalization of ideas about the system in order to improve its usage.	3.1 3.2 3.3 Intens. - Fuzzy	demonstrating of operating with technological options proposing new actions in order to improve the use clarifying difficulties to the team members
	4. Sharing understanding – common meaning of the system regarding the role of the system and its functionality.	4.1 4.2 4.3 4.4 4.5 High–Low	clearness about the purpose of the system users' needs in the system understanding of operating with the modules in the system attitudes towards functionality of the system attitudes towards future state of the system
	5. Mutual adjustment – activities that aim at collective agreements on use of the system in the group.	5.1 5.2 5.3 Strong – Weak	arranging learning and other activities to improve use of the system developing regulations evaluating intermediate results

Table 1. Operationalization scheme

3.3 Step three - sampling

Sample size is not usually a main issue in discourse analysis as the interest is in the variety of ways the language is used (Potter and Wetherell 1987). Large variations in linguistic patterning can emerge from a small number of people. So a larger sample size may just make the analytic task unmanageable rather than adding to the analytic outcomes.

Selection concerned documents and employees in the companies related to the projects of technology implementation. We wanted to get the empirical data about knowledge, perceptions, and attitudes of managerial employees, members of project teams and end-users in the companies. This was planned to gain mainly through the interviews, but we were also open for participation in the discussions and meetings. The information about the context had to be supplemented by observations and analysing written materials – project documents, Internet sites, news reports, manuals of technologies, etc.

We have conducted 82 interviews each lasting from 45 minutes to 2 hours, in total of 110 hours. The interviews were held with 90 employees (there were some couple- and group-based interviews).

3.4 Step four – conducting interviews

As Potter (1996, p. 134) has noted, "interviews have been used extensively in discourse analysis, but they are constructed in a novel manner". Traditional interviews used to aim at producing colourless interaction. However, in practice, interviews are as complex as any other social events, and responses to answers are dependent on the sculpture of questions and atmosphere during the conversation.

The main switch in conducting interviews for discourse analysis is in their rationale. The goal becomes more complex – obtaining both consistency and diversity, while in traditional interviews consistency is the main evidence factor. The researcher gets a role of an active participant in the conversation instead of being a "speaking questionnaire" (Potter and Wetherell 1987). Therefore the techniques used are different, they all strive at getting diversity in opinions and stimulating

discussions. Table 2 gives an overview of the main differences between traditional and discourse-oriented interviews.

We were actively involved in the conversation and stimulated variability by asking provocative questions, confronting respondents with opposite opinions, organising the dialogue, and by facilitating disagreements (Elliot 1996, Hardy 2001). We had an interview protocol with semi-structured questions, but during conversations we used a 'snowballing' technique: additional questions were emerged during the talks or on the basis of our increasing knowledge of the context. Every new interview was related to the previous ones – we used information we heard before, to enrich every forthcoming conversation. For example, a very interesting conversation with a new member of the project team began with the question about her first impressions of the IS implementation, and the interview brought insightful expressions and 'covered' all necessary for us topics.

Traditional interviews	Interviews for discourse analysis
Goal – to obtain consistency in responses, which is one of the main evidence.	Goal – to obtain both consistency and diversity in responses. Feedback and member check are important evidence.
Techniques are oriented to support consistency.	Techniques are oriented to support diversity: o active intervention o provocative questions o informal information exchange o facilitating disagreements
All interviews are independent from each other.	Every interview is interrelated with the previous ones and the context.
An atmosphere during an interview is neutral, business-oriented.	An atmosphere is business-oriented, but important to bring informal tones.
An interviewer is a 'speaking questionnaires'.	Active role of an interviewer.

Table 2. Comparison of main principles in traditional and discourse-based interviews

3.5 Step five - transcription

There is a certain variety in transcribing discourse from work attesting to the phonetic and intonational features. Different transcription systems emphasise different features of interaction. Doing discourse analysis, for example, a sociolinguist concerned with language variety, will need an indication of accents; while a researcher interested in speech therapy – in phonetics. Potter (1996, p. 136) gives an indication that a ratio of one hour of tape to 20 hours of transcription time is not unreasonable. This should not however, be seen as a dead time before a 'real' analysis. Often the enlightening analytical insights come during transcribing.

As we have stated earlier, our research interest was concerned with the content and context regarding IS implementation. The sense and lexicon about meaning of IT implementation, used by the employees were in the center of transcription. That's why our records represented *only* words, and relatively gross features such as corrections, doubts, confusions, convincing arguments, clearness, vagueness, transparency, self-evidence and hesitations. In this way, transcribing each of 82 interviews took about 3 hours. Our transcriptions, therefore, resembled to 'normal texts'.

3.6 Step six – member check

This step is essential in the discourse analysis as one of its main principles is to achieve common understanding. Member check is getting feedback from the interviewees on the correctness of the transcripts. We have discussed transcripts of all interviews with the respondents. Most of the time it took place via e-mail correspondence, when interviewees wrote their opinions in the body of the message, and corrected the transcripts 'on-line'. Sometimes there was a need for an additional talk.

Thus, during our case study after a 1,5-hours interview we had three one-hour following-up talks with the respondent. In fact, this stage resembled a second round of mini-interviews.

It ensured correct and precise expressions for the later analysis. There is one important prerequisite for this step – transcripts must be completed as soon as possible after an interview in order to keep the conversation in minds of the researcher and the interviewee.

3.7 Step seven – analysis

After interviews are transcribed and corrected by the respondents, it is time to analyse the sets of texts. Table 3 below provides detailed information about steps in the analysis of texts we did in this research. We took the idea from Titscher et al (2000) and developed the analytical steps based on the interpretive hermeneutic levels distinguished by Oevermann (1996). There are seven levels of interpretations – from general understanding of a transcript towards understanding of the constructs contents and their relations in the research model. Clarifying questions in aim at supporting the researcher to transform an interpretive level into concrete research actions, called sub-steps.

The first glance at the 16 sub-steps reveals cyclic readings of the transcripts – in our study we have read all the transcripts at least four times. In general, the analysis can be divided into four parts. First, we needed to get the overall impression and bridge it with the context that was picked up from the documents, observations, etc. (steps 1- 3). Knowledge of the context was crucial to understand and *feel* the implementation. For example, a simple phrase of an interviewee, "the system was built in accordance to the budget", gets a special meaning if we know that there was *no* budget for that technology at all.

Second part aimed at describing every construct from the model on the basis of the text units. We began with compiling sets of text units per construct (group learning, managerial support, and stable use). To achieve that, we had to distinguish and codify the text units from every transcript on the basis of our operationalisation scheme. Some units were placed in parallel to different sets as they contained sense of different components. Working the sets out meant making additional insightful notes along the margins and giving labels to every text unit within a set. We did it in a qualitative way as proposed in the operationalisation scheme ('strong – weak', 'high – low', etc.).

After that it was possible to depict a construct as a whole (sub-steps 4 – 9). In the case reports we will present the full description of the constructs based on the analysis of the sets of the text units, while the sets themselves are put in the appendixes.

Third part was dedicated to identification of the noteworthiness of the components for the dimensions and constructs. To do that we analysed significance and linguistic presentation of every text unit and component (sub-steps 10 – 15). We aimed at revealing different semantic features such as vagueness of opinions, doubts, clearness, hidden meaning, etc., but also – the factual representation of the text units per component. The fourth part was about refining the model (sub-step 15, table 3).

3.8 Step eight - debriefing

This step is the finalising one in the analysis. We were open for other interpretations of the empirical data. Striving to get common understanding, we have discussed inter-mediate reports in companies where the research had been conducted. On-going scientific discussions about the findings and results kept us on the way to the final reports and conclusions.

Levels	Clarifying questions	Sub-steps
LEVEL 1 Explication of the main intention per interview transcript	How can be a text "normally" understood? How can a statement be rewritten, paraphrased, transformed? What does an interviewee wish to present, emphasize, stress? What intention is being traced? What would be an acceptable interpretation for this person?	1. Reading interview transcripts, getting general impression 2. Making first notes
LEVEL 2 Explication of the context about organisational background, participants in the research, and their interactions	What are contextual facts that might be bridged to a story in the interview transcript? Are their background, historical, or other factors, known by the researcher that might evoke through the statements?	3. Wherever applicable – making second notes – concerning the context
LEVEL 3 Categorisation of the transcript in accordance to the research model and operationalized components of the dimensions	What are the text units in the transcript related to the research constructs, dimensions, components? Are their text units that can be categorised in more than one component, dimension?	4. Reading interview transcripts 5. Giving codes to every text unit on the basis of the research model 6. Compiling sets of interpretive accounts per component, dimension, construct (for example, in tables)
LEVEL 4 Explication of the main meaning of the research constructs	How can the dimension, construct be understood as a whole? How could the text accounts be estimated in accordance to the research intention, model, etc?	7. Reading interpretive accounts per set 8. Labelling every unit in line with the research intention (in a qualitative way, for example, "strong-weak") Depicting the research construct 9. Extracting the core summary
LEVEL 5 Characterisation of the linguistic features of the text units	What can be said about linguistic presentation in the units? Convincing arguments, clearness, vagueness, transparency, self-evidence?	10. Reading interpretive accounts per set 11. Identification of the linguistic presentation of every unit
LEVEL 6 Refining components - extrapolation of the interpretations on to every component	What can be said about relevancy of every component for the dimension in the research model? Are their dimensions that can be re-structured after such a revision?	12. Identification of the noteworthiness of every text unit for the particular component 13. Identification of the significance of every component for the dimension 14. Refining structures of the dimensions (unifying some components, eliminating others, etc.)
LEVEL 7 Explication of general relations in the model	What can be concluded about significance of every dimension? About their placement in the theory?	15. Refining the research model

Table 3. Interpretive levels, research questions, and concrete steps in analysis of the interview transcripts.

4 DISCUSSION AND CONCLUSIONS

Given an abstract character of the method and the surplus of well-established other research methods, why should anyone adopt discourse analysis? We expect a reader come with some arguments why *not* to adopt it. First, all new techniques request time to master, especially if the literature doesn't provide with clear guidelines. Newcomers in discourse analysis experience a squall of philosophical-sociological-linguistic discussions, but shortage of clear procedures. Second, new methods have a 'long way to go' before getting institutionalised in a research community. Discourse analysis is certainly not an exception: researchers face huge barriers as they attempt to publish studies based on discourse analysis. We would stress that the IT studies are at the beginning to recognise discourse analysis. Third, the method is highly labour intensive and time consuming. Giving aforesaid reasons and an endlessly ticking clock 'publish or perish' in academia, someone will definitely prefer well-known and quicker research methods.

However we believe that there are strong reasons, which increase the importance of discourse analysis in the IS field. In our view, those reasons have overshadowed disadvantages and pushed us to dive into this method. We view discourse analysis as a useful methodology for studying information systems because of the five concluding remarks.

First, the subject matter of discourse analysis involves the "real life of IS in organisations". That includes created meanings, weather those are held by the individual users, or shared by groups. The method provides with the powerful mode to cover the dynamic reality of IS implementation and use in companies.

Second, it challenges the research and requires creativity and improvisation. Considering a constructive character of language, the discourse is both constructive for the social world and being constructed by and within it. In its observable for a researcher form, discourse always lags behind the real intention of what one wants or has to express. The challenge for a researcher is to understand (interpret) the meaning of IS issues (design, use, implementation), covered by a text. That is to be achieved by the exploration of the interplay between text (linguistic features), discourse (set of texts), and context. Through analysing discourse, the researcher intervenes between the past and the present meaning, and gives the translation of the social events into a form, comprehensible for the 'owners' of the discourse.

Third, by using contextual knowledge, discourse analysts link different social events that mutually support the research idea, i.e. the method grasps a community understanding of a IS phenomenon.

Fourth, analysis of discourse is open for multiple interpretations but also for new contexts, which might cause the results to change. However, the ways in which researchers have arrived at the results must be recognisable. Therefore, the scientific value is mostly backed-up by the inter-subjective validity that is achieved by the interplay between open-ended interpretations and their transparency; between individual and other texts, between single- and multiple-levels interpretations within one set of discourse, between texts and contexts, and between the interpretive and the explanatory nature of their analysis. In other words, the trustworthiness of the discursive-based study can be assessed.

Fifth, as Lee (1999) argues, with a good interpretation, any absurd behaviours would no longer appear so; new observations would not surprise the researcher and an outside observer to whom the interpretations have been communicated.

How would we respond to a critic who insists that he doesn't agree with our interpretations? When we are reading, the responsibility is on us, to understand the text. Likewise, if a critic is reviewing our interpretation, it is his responsibility to reach an understanding of our interpretations. For the critic who does not understand or does not want to, Lee (1999) recommends to follow the advice of the political scientist Charles Taylor (1979): "Change yourself". Then, if a critic becomes able to appropriate the given interpretations, this would enable him to suggest improvements. And that will bring us back to the inter-subjectivity we have mentioned earlier: validity of discourse analysis is

developed through a dialectical process of using a circle of evidence to create the social reality, and through the openness for other interpretations and critiques.

References

DeSanctis, G., & Poole, M. (1994). Capturing the complexity in advanced technology use: adaptive structuration theory, *Organisation science*, 5, (2), 121 – 147.

Elliot, R. (1996). Discourse analysis: exploring action, function and conflict in social texts. *Marketing Intelligence & Planning*, 14 (6), 65 – 68.

Fairclough, N. (1995). *Critical discourse analysis*, London: Longman

Gadamer, H.-G. (1966). Philosophical hermeneutics. Berkeley, University of California Press

Gadamer, H.-G. (1975). *Truth and method*, Sheed and Ward, London.

Gill, R. (1996). Discourse analysis: practical implementation. In J.T.E.Richardson (Eds.), *Handbook of Qualitative research methods for psychology and social sciences*, Leicester: British Psychological Society, pp. 141 – 156.

Grant, D., Keenoy, T., & Oswick, C. (2001). Organisational discourse. *International Studies of Management & Organisation*, 31 (3), Fall 2001, 5 – 24.

Hardy, C. (2001). Researching organizational discourse. *International studies of management & organization*, 31 (3), 25 – 47.

Klein, H.K., & Myers, M.D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems, *MIS Quarterly*, 23, (1), 67 – 94.

Lee, A.S. (1999). Researching MIS. In: W.Currie and R.Galliers (Eds.), *Rethinking management information systems*. Oxford University Press.

Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Mingers, J. (2001). Combining IS research methods: towards a pluralist methodology, *Information Systems Research*, 12, (3), 240 – 259.

Oevermann, U. (1996). Becketts "Endspiel" als Prüfstein hermeneutischer methodologie. Eine interpretation mit den verfahren der objektiven hermeneutik. In: H.-D. König (Eds.), *Neue versuche, becketts endspiel zu verstehen*. Frankfurt: Suhrkamp, pp. 93 – 249.

Orlikowski, W., & Baroudi, J.J. (1991). Studying information technology in organisations: research approaches and assumptions. *Information Systems Research*, 2, (1), 1 – 28.

Potter, J. (1996). Discourse analysis and constructionist approaches: theoretical background. In: J.T.E.Richardson (Eds.), *Qualitative research methods for psychology and social sciences*, Leicester: British Psychological Society, pp. 125 – 140.

Potter, J., & Wetherell, M. (1987). Discourse and social psychology. London: Sage

Robey, D., & Boudreau, M. (1999). Accounting for contradictory organizational consequences of IT, *Information systems research*, 10, 167 – 185.

Sinclair, J.M., & Coulthard, R.M. (1975). *Towards an analysis of discourse: the English used by teachers and pupils*. London: Oxford University Press.

Taylor, C. (1979). Interpretation and the sciences of man. In: P.Rabinow and W.M. Sullivan (Eds.), *Interpretive social science*. Berkeley and Los Angeles: University of California Press.

Titscher, S., Meyer, M., Wodak, R., & Vetter, E. (2000). *Methods of text and discourse analysis*. Sage Publications, London.

Van Dijk, T.A. (Eds.), (1985). *Discourse and communication: new approaches to the analysis of mass media discourse and communication*. Berlin: Walter de Gruyter.

Van Dijk, T.A. (1997). *Discourse as structure and process*: Volume 1 and 2. London: Sage

Walsham, G. (1995). The emergence of interpretevism in IS research, *Information systems research*, 6, 376 – 394.

Wynn, E.H., Whitely, E.A., Myers, M.D., & DeGross, J.I. (2002) (Eds.), *Global and organisational discourse about information technology*. Kluwer Academic Publishers: Boston.

Wodak, R. (2001). What CDA is about – a summary of its history, important concepts and its developments. In: R.Wodak and M.Meyer (Eds.), *Methods of critical discourse analysis*, London: Sage Publications.

Woodilla, J. (1998). Workplace conversations: the text of organizing. In D.Grant, T.Keenoy, and C.Oswick (Eds.) *Discourse and Organisation*, 31 – 50. London: Sage

Zajacova, A. (2002). The background of discourse analysis: a new paradigm in social psychology. *Journal of Social Distress and the Homeless*, 11(1), 25 – 40.