Confessions of an information worker: a critical analysis of information requirements discourse

Rosío Alvarez
University of Massachusetts, Department of Management Science and Information Systems,
100 Morrissey Blvd., Boston, MA 02125, USA

Abstract

This paper seeks to demonstrate the benefit of critical discourse analysis as a research approach for examining information systems development. Research has shown that eliciting user requirements is a critical activity of information systems development. However, the requirements phase is not only a key activity, it is highly problematic. Requirements determination is considered a process fraught with conflicting, inconsistent and competing viewpoints in which users and analysts do not share a “consensual domain,” thus barring them from reaching agreements about requirements. Therefore, analytic tools that recognize and examine requirements analysis as a polyphonic interaction hold much promise for improving requirements elicitation and analysis.

Critical discourse analysis offers the tools to examine systematically the fundamental substance of requirements elicitation — interactional talk. This analysis employs sociolinguistic methods for specifying the linguistic features of different types of discourse units and the way they are tied together to create meaning, but also concerns itself with critically examining social context. In this paper requirements elicitation takes on the form of a “confessional” act where the individual verbalizes thoughts, intentions and consciousness. Findings show that during this ritual, discourse is revealed as a dialectic between two different domains of meaning, that of analyst and client. Analysts, in their official roles, propose a “frame” which conflicts with that proposed by clients during interviews. Changes in frames and deft face-saving work during interviews function to discursively produce and challenge client identities. The paper explores the tension between the frames proposed by the analyst and client during interviews which explains some of the frustrations and “gaps” which characterize this type of encounter. Issues of power inequality, identity formation, and symbolic control are presented as explanations of why competing frames are proposed and sustained while resisted by clients.

© 2002 Elsevier Science Ltd. All rights reserved.

E-mail address: rosio.alvarez@umb.edu (R. Alvarez).
1. Introduction

There is no dearth of information documenting the difficult challenges faced by organizations during information systems development. Researchers and practitioners alike searching out possible influences or causes of success and failure have discovered that an information system development project is just as much a social phenomenon as it is a technical one. Research reviews have found that information systems implementations are influenced by a wide variety of organizational and technological factors such as top management support, users’ attitudes and resistance towards change and relative advantage of the information system (c.f. Kwon & Zmud, 1987) just to name a few. However, one consistent finding in the literature concerned with information system development is the perennial “communication problem” between analyst and client (Bostrom, 1989; Cronon & Means, 1979; Guinan & Bostrom, 1986).

Establishing effectual communication throughout the entire information systems development process is important, but more so during requirements analysis. Requirements analysis is, at its core, a communicative act. In its simplest form, requirements determination entails eliciting and encoding into the new system the requirements that clients verbalize to analysts. And while the analyst uses a variety of tools and techniques to obtain information, the interview continues to be the favored elicitation technique (Agarwal & Tanniru, 1990; Holtzblatt & Beyer, 1995). These interviews are critically dependent on what analysts ask and what they hear, and on what clients report and do not report. Since the discovered data is, in this sense, partly a function of the talk between a client and an analyst, the study of this talk is central to the understanding of how information is captured and the client–analyst relationship in general. Research shows that interviews are recognized as providing a potentially rich but notoriously difficult method of data elicitation (Moody, Blanton, & Cheney, 1998). Researchers have argued that communication between analysts and users is often problematic due to issues such as cognitive limitations and vocabulary differences (Agarwal & Tanniru, 1990; Byrd, Cossick, & Zmud, 1992). Much research has examined the problematic nature of analyst–client communication. However, Urquhart’s (1997, 2000) research resonates with the approach used in this study. Urquhart uses grounded theory methods to examine how shared meaning is obtained during requirements gathering. The research here builds on this work by examining the discourse of requirements analysis.

This study positions requirements analysis interviews as a discursive event, bearing a strong resemblance to the confessional act, and uses critical discourse analysis (CDA) to examine the interviews conducted during the process. Discourse is defined as a systematically-organized set of statements which give expression to meaning. “A discourse provides a set of possible statements about a given area, and organizes and gives structure to the manner in which a particular topic, object, process is to
be talked about” (Kress, 1985, p. 7). During requirements analysis interviews, the “confessions” reveal a dialectic between two different domains of meaning, that of the analyst which propose a technical frame, and client which propose a personal frame. Changes in “frames” and “footing” are explored to uncover how identity and meaning are constantly negotiated during interviews. Through deft “facework” the paper shows how the identity of the client is discursively produced and challenged.

2. Critical discourse analysis

The framework for the study of requirements analysis is critical discourse analysis (Caldas-Coulthard & Coulthard, 1996; Fairclough 1989, 1992, 1995). Critical discourse analysis uses sociolinguistic (Schiffrin, 1994) methods to analyze interactional talk and text. Sociolinguistics assigns special significance to the structure of speech and texts, and provides methods for specifying the linguistic features of different types of discourse units and the way they are tied together into larger units of meaning. However, unlike other forms of discourse analysis, critical discourse analysis also concerns itself with examining social context along the lines of ideology, power and inequality. As Fowler (1996) suggests, critical discourse analysis goes “beyond the formal structure of Language as an abstract system, toward the practical interaction of language and context” (p. 10). In this sense, language is seen as a social practice, as a mode of action that is always socially situated “in a dialectical relationship with other facets of ‘the social’…it is socially shaped, but it is also socially shaping, or constitutive” (Fairclough, 1995, p. 131). From this viewpoint, discourse is seen as constitutive of social reality in a general sense.

The critical component of CDA denotes a concern with critiquing the manner in which the “social” is produced and sustained through language. This concern places an emphasis on identifying power relations and demystifying the processes that produce and reproduce these relations and eventually leads to significant social changes. To accomplish this, CDA argues that there is a degree of “distortion” in all mediums of representation (such as language) that functions to create and maintain power imbalances. The critical linguistic seeks to expose these misrepresentations via the examination of discursive events. Discourse can be seen as an opaque power object which CDA aims to make more transparent. Through discourse examination, topics of power inequalities usually along the lines of race, class, gender, sexuality and occupation are exposed. However, it is important to note that the focus on misrepresentation does not simply assume that there is a problem of having something be represented as distorted: “there is not necessarily any true reality that can be unveiled by critical practice, there are simply relatively varying representations” (Fowler, 1996, p. 4). Critical discourse analysis therefore, demystifies what is taken to be “common sense” by defamiliarizing it and signaling its functions and consequences in sustaining the social order. This demystification sets the conditions for possible emancipation and social change.

For instance, in examining modern business organizations, institutional discourses are believed to function as regulating mechanisms that feed into the ruling apparatus.
The institutional discourse, or “rational, legitimate accounting practices which are authoritatively backed” (Sarangi & Roberts, 1999, p. 15) provides a set of possible statements about how a particular topic, object, process is to be talked about. These discourses are then mobilized to justify institutional decisions about resource and task allocation. This is well illustrated in the recent changes in modern organization’s definition of workers as “flexible” (Alster, 1989; Cooper, 1998; Segal, 1996) and “empowered” (Morris, 1995; Parker, 1994). These definitions play down the discourse of profit-making and highlights those of good work ethics which will motivate the workers to take on more responsibility for the same amount of pay. This critique draws our attention to the discourse environment of modern business organizations and institutions as a site for power negotiations.

In addition to looking at social issues such as power struggles, this research argues that the interview, as a discourse genre, is a critical site in which identity is performed. A fundamental observation of discourse analysis is that speakers’ identities emerge from discourse (Bucholtz, 1999). Drawing on Brian Street’s (1993) metaphor “culture is a verb” Roberts and Sarangi (1999, p. 229) propose that “identity is a verb” suggesting that similar to culture, identity is something that people do. For instance, feminist theorists have examined how gendered subjects are produced through discourse by proposing a performative view of identity (Mohanty, 1991; Butler, 1992). As Butler states, “gender is a copy for which there is no original” suggesting that identity is accomplished through its performance.

Now consider the requirements analysis interview, this act involves participants articulating a “truth” about actions, problems, hopes and needs in regard to work life. Unlike sermons, political speeches or educational discussions, the interview as a discourse genre is one where the subject is expected to “confess.” Confession is used here in the Foucauldian (1980, 1981, 1991) sense where the confessional is a power relationship which operates through avowal; the individual verbalizes thoughts, intentions, troubles, desires and whatever transgressions that are otherwise difficult to tell. It is through this ritual that self-reflection, self-knowledge and self-examination about the speaking subject are obtained (Foucault, 1991). Here the confessional act serves to construct the confessor’s identity as a kind of speaking subject (i.e. a “criminal,” “deviant,” or “sinner”). As we confess we tell a story that constitutes a drama in which we are a leading character, and the meaning of this role is to be found only through the recollection and imaginative configuring of that history. In other words, in narrating the past we define ourselves as the implied subject generated by the confessional narrative. The confessional act does not take place alone, it does so in the presence of an “authority who requires the confession, prescribes and appreciates it, and intervenes in order to judge, punish, forgive, console and reconcile” (Foucault, 1981, p. 61). Similarly, during a requirements analysis interview clients confess to actions and possible transgressions in relation to information (mis)use. Although the requirements analysis interview may not involve intimate personal self-reflection, this confession nonetheless allows the speaking subject to perform her/his identity through interactional talk. And finally, the information worker confesses in the presence of an authority or “expert”, usually a systems analyst or highly paid consultant. The information worker discloses information, thereby
making finer and more intimate regions of work life available for surveillance, judgment, evaluation and classification by these experts.

3. Information systems development as social practice

This research examines requirements analysis as a social practice. Several currents in the information systems literature argue for and analyze information systems development in general as a social practice (c.f. Hirschheim & Newman, 1991; Robey & Markus, 1984; Robey & Newman, 1996). These researchers attend to the “organizational” issues such as power, conflict and control that critically impinge upon information systems development. Requirements analysis is given special attention here because of its critical role in information systems development. Research suggests that many system failures can be attributed to a lack of clear and specific information requirements (Cooper & Swanson, 1979; Davis, 1982). Furthermore, errors during requirements analysis that are not found until later stages of the implementation process can cost significantly more to fix (Boehm, 1981; Marakas & Elam, 1998). Information systems researchers have begun to theorize requirements analysis as a process which is socially mediated (Galliers & Swan, 2000; Flynn & Jazi, 1998) thereby demanding attention be given to more than “technical” issues. For instance, requirements analysis is considered a process fraught with conflict, inconsistency and competing viewpoints where one “voice” is not identifiable (Nuseibeh, 1996; Darke & Shanks, 1996). Therefore, requirements analysis would best be served by developing approaches that are able to analyze the contributions made by competing voices.

Unfortunately, most requirements determination methods focus on technical issues and give little if any attention to the more conflictual social issues. Instead, most requirements analysis techniques seek to produce a “tidy” representation of the organization that can be mobile, stable, and combinable (Latour, 1990), thereby allowing analysts to decontextualize requirements, represent the organization in a durable form and make requirements capable of manipulation at a distance far away from the interruptions and clamor of clients. The approach in this paper contributes to understanding requirements analysis as polyphonic, i.e. as containing multiple voices. This polyphonic linguistic interaction is socially situated, where words bring with them the context in which they have lived. In particular, this paper examines the fundamental substance of requirements analysis interviews — talk. From this perspective requirements analysis takes on the form of a discursively mediated and constructed social practice.

The position presented here lies specifically at a theoretical juncture of two research streams within the information systems literature. The first stream is the Speech Act based approach (Goldkuhl & Lyytinen, 1984; Lehitinen & Lyytinen, 1994) and the second stream is that of socio-political approach (Bloomfield & Coombs, 1989; Coombs, Knights, & Willmott, 1992) for examining information systems development and use. The Speech Act based approach “is an attempt to understand and model the rich meanings exchanged in ordinary conversation” (Iivari,
Hirschheim, & Klein, 1998). Information technology and systems is not about the
design of physical things, it is about the design of practices and possibilities realized
through linguistic communication systems (Flores, Graves, Hartfield, & Winograd,
1988). For the most part, this perspective focuses on the illocutionary point and
propositional content of speech acts. These speech acts form larger parts of networks

The second stream concerns socio-political issues and the development and use
of information systems. Researchers within the socio-political perspective are con-
cerned with power and subjectivity. They argue that power infuses all organizational
relationships therefore information systems development must be examined in the
context of this condition (Knights & Murray, 1994). Power in this sense, disciplines
the information worker but also enables the existence of categories of subjects
(managers, programmers, systems analysts, consultants) and provides the routines,
language, relations, practices, in a word, discourse, that is available to the individual
(Knights & Willmott, 1988; Knights & Vurdabakis, 1994). Indeed, the systems ana-
ylist, or any other subject position, is a consequence of power relations and discourses.

The position presented in this paper attempts to fuse together these two streams
of research. In using critical discourse analysis this paper examines the formal struc-
ture of talk by using methods borrowed from sociolinguistics, such as conversational
and frame analysis. This data analysis is also subjected to criticism that examines
how power, control and identity are produced and negotiated during interviews.

4. Faces, footings and frames: towards a critical discourse analysis
methodology

One of the fundamental principles of CDA is that frameworks for understanding
the world and social identities of individual actors are dialogically produced through
discourse. This paper draws on three discursive mechanisms adapted from the ideas
of Erving Goffman to analyze requirements analysis interviews. The three central
mechanisms are facework, footing and framing.

In social interactions, actors seek to organize particular presentations of self or
face. Face as studied by Goffman “is an image of self delineated in terms of approved
social attributes — albeit an image that others may share” (1967, p. 5). The showing
of face involves the person taking on verbal and non-verbal acts by which views
about the situation and evaluation of others are expressed. However, the actor is also
evaluated during this performance. Therefore, a person’s performance amounts to a
display of character which implies a claim to legitimate membership and participation
in that particular social group. In a sense, the individual seeks to preserve face. As
Brown and Levinson suggest “face is something that is emotionally invested, and
that can be lost, maintained or enhanced and must be constantly attended to in inter-
action” (1978, p. 61). If face is somehow threatened, the issue of facework becomes
key. Here a complex array of resources, actions and strategies are adopted to protect
ones self-presentation. The management of face may take the form of verbal state-
ments about roles and responsibilities or be managed through prosodical and linguistic
markers such as change in tone or hesitation.
In everyday talk, speakers have available to them a number of social roles to then move in and out of. In one moment the speaker may be a “friend” concerned about the health and well-being of an employee, in another moment the same speaker may be a “peer” competing for control of resources. As speakers communicate linguistically, they choose from a wide range of social attributes and roles that are made available to them and which they perceive as the best fit to the situation. Erving Goffman (1981) uses the term footing to refer to these interactional stances or positions vis-à-vis one another. Footing defines the relationship between speakers. Footings are relational and shifting. As we speak, we shift footing, move in and out of social roles, all of which assist us in establishing the relationship with others such that the meaning of the utterance is understood.

Another useful concept used in this paper is framing. Goffman and others (Bateson, 1972; Goffman, 1974; Tannen & Wallat, 1987) define framing as the speakers’ instructions to the listener about what has been said and how to understand the utterance. It provides a metamessage about the context (Tannen, 1986). Through subtle signals like pitch, voice, intonation, and facial expression the contextual information is jointly created. Gumperz (1982) refers to these signals as “contexualization cues” which may be prosodic, paralinguistic and non-verbal. These messages function to call up shared experiences. They are powerful means for negotiating social identity and legitimating preferred styles of communicating in the predominantly asymmetrical interactions in workplace settings. (Sarangi & Roberts, 1999). The person proposing the frame establishes how talk is to be understood in that context (Tannen, 1986). In this sense attempts at re-framing, counter-framing or any other out-of-frame activity will likely be resisted. Out-of-frame activity refers to lines of activity that are somehow outside of the main official line (Goffman, 1974, p. 201). This behavior is distracting and threatens the context, which in turn may be treated by participants with active disattention so that the main line of activity can continue.

The discursive mechanisms presented here integrate Goffman’s views of social interaction as involving particular presentations of self and dynamic shifts between footings and frames. This paper will analyze the self, or subject position as Foucault and Fairclough would call it, and the manner in which these subject positions are produced, sustained, or discredited during requirements analysis interviews.

5. Research site

The organization chosen for the study is State University1 a large public research university located in the northeastern United States. The annual budget of State University exceeds $0.5 billion. It has enrollments of 24,000, a faculty of 1184 and staff of approximately 3600. At the time of the fieldwork, the university had recently allocated $11 M for an information systems development project. The organization was to determine its information requirements. This involved determining the manda-

---

1 Pseudonym is used.
tory and desirable requirements of a system, documenting them and then evaluating the various vendor solutions according to these requirements.

The new information system was to handle all the major administrative functions of the university including, financial accounting, human resources, and all student services such as housing, enrollment, financial aid and admissions. The system that was in place at the start of this project, which we shall call the Administrative Information Systems project (AIS), consisted of a combination of in-house developed applications and vendor software that had been heavily customized or no longer updated. The ages of each module varied, but for the most part they ranged between ten to fifteen years in use. Prior to the approval of this project, many reports issued by various committees suggest that a growing number of individuals at mid to upper level management were extremely dissatisfied with the current information system and support that was in place.

For this research, the author was hired by the CIO of the university to document the software selection process. This role was disclosed to all organizational members involved in the ERP selection and implementation. My interest as an employee of the project was in capturing information that would allow her to create a narrative of the entire selection process. The case study was completed and a report was provided to the CIO who read and approved its contents. From a research perspective, I was interested in capturing the social interactions that made up the discourse environment of requirements determination. In particular I was interested in examining the stimuli-response model that seemed to prevail during the requirements determination phase. Under this model, I saw analysts function as “interrogators” during interviews, hoping to obtain technical data from clients who were to respond to the stimuli of an analysts queries. However, too many times I witnessed what I believed to be “good” data being provided by a client but quickly dismissed or silenced by the analyst because it did not fit the model. The frequent dismissal by the analyst caused frustration on both ends and often a break down in linguistic communication. I was interested in knowing why the dismissals occurred and why clients continued to resist them.

The research was conducted between January 1996 and December 1998. The entire information systems development project began in January 1996 and was still in implementation at the writing of this paper. The focus of this paper is on the requirements analysis phase which lasted from August 1996 to December 1996. During this shorter phase, the university contracted a consulting firm to conduct the requirements analysis study and produce all relevant documentation.

6. Findings

In keeping with an interpretive approach, the researcher must be immersed in a stream of organizational events in an inductive attempt to create categories that are revised through interaction and integration of data from observed experiences (Putnam, 1983). The data collection was conducted through participant observation of requirements analysis interviews. While my primary role was that of observing
and documenting the selection process, my recognized technical expertise by clients
and analysts often prompted questions directed at me, which required my partici-
pation in the discussion. In all interviews at least two analyst-interviewers were
present. The analyst’s strategy was to have one interviewer ask the question and the
other function as “scribe.” Conversations during interviews were taped. Data was
collected at thirty-two meetings in which eighty-two individuals from eight different
departments participated. The data set consists of sixty hours of tape recordings,
along with field notes where tape recording was not feasible. I personally transcribed
all the tapes and converted them to line-numbered transcripts.

The emphasis during data analysis was on linguistic structure and interaction,
therefore it was important to include intonation, volume, pacing and other qualities
of speech to capture the mood and feel of the interview. To achieve a balance
between capturing all the detail necessary and providing a readable transcript, tran-
scription conventions were based on the work of Reissman (1990) and Gronn (1983,
1985) (adapted from Stubbs, 1983). These conventions ensured that overlaps, exclama-
tions, questions, pauses and emphasis were maintained. Symbols used in the tran-
scribed extracts are:

// overlapping talk from the first to the last slash
(x) pause of x seconds
[] explanatory note
{} nonlexical utterances
*italics* word emphasized by speaker
! exclamation
? question

Speakers are identified by Name (of narrator) and by Int. (for interviewer). Open
coding was used to identify frames and examine their interactional accomplishment,
maintenance and resistance through the use of face-work and changes in footing.
The core features of open coding are: 1) the inductive development of provisional
categories; 2) ongoing testing of categories through conceptual analysis and compari-
son of categories with data that is already coded; and 3) the altering of existing
categories as other ones are created or eliminated (Strauss, 1987, pp. 11–13).

7. It’s just vocabulary: shifting between technologist and personal frames

In the following section two members from the student billing office, Bob and
Denise, are asked questions by two interviewers (Int1 and Int2) about changes they
make to a program that is used to calculate charges for students bills.
program (4)/or are they control cards
Denise — they are control cards/
Int2 — okay, so the parameters are provided on the
control cards in the program?
Denise — no, they are built/into the program
Int2 — you have to change the program?/
Int1 — no they are not built into the program
Denise — all the parameters are tied up/with the
program
Bob — that’s right/
Int1 — what do you put on every semester, that card
image file that you work on with all the parameters on
it?
Bob — that’s program, that’s the base of the program/
Int1 — okay I think it’s just vocabulary (3)/it’s not actual
program code
Denise — oh no it’s not/program code
Bob — yes it’s control cards/again in 1979–1980 when
this thing first started, we had literally a deck of cards
and it said per this condition, if you were in-state there
was a card that said bill the person 500 dollars and to
make the change you had to pull one card and put
another one in. Of course things have changed little bit
since then (laughs) so that’s the way it used to be.
—
(9 Burs. 86)

In this interaction the discussion centers on lexicon. The terms “program code” and “control card” seem to be at issue. Denise seems to believe that she performs program code changes while the interviewers seem to believe that her activities constitute control card changes. The interviewer marks her “discovery” that there is a difference in terms used by a hesitation and change in intonation (line 103) “it’s not actual program code”. This statement suggests that Denise has erroneously believed that her task involved programming, when in fact it was simply a change to a parameter on a control card. The difference in status and prestige between a programmer who writes code and a data entry clerk who changes parameters on cards is quite significant. Denise has been relegated to the latter position, having somewhat believed she was in the former. Her face as programmer and information worker is threatened by the comments of the interviewer.

The interviewer summarizes the miscommunication with “it’s just vocabulary” implying that they are mere words. Or are they? In the short exchange leading up to this comment Denise’s identity as programmer and in general competent information worker has been undermined. From the point of view of the analyst, an information
worker should certainly know the difference between control cards and programming changes.

Bob intervenes to perform face management by counter-framing the interview which till now has taken place in a question answer format, with a story (line 106). Bob begins with a transition “again in 1979–1980” which takes us back in time. Bob attempts to clarify the meaning of the concept control cards by telling a story about their genesis. The story serves to establish Bob’s identity (and authority) as a veteran of the organization as well as to establish that at one point, control cards changes were in fact a technical task, it’s the way things used to be done by technical staff. The latter serves to recover Denise’s face as information worker which has been undermined. For Bob, a potentially conflictual situation is smoothed over by narrativizing his experience through a story.

The above excerpt points to many of the moves that were exhibited by the clients and analysts in the interviews. The interviews followed a pattern of shifts and conflicts between what I call the technologist frame (proposed mostly by the interviewers) and the personal frame (proposed mainly by the clients).

The technologist framing is an asymmetrical relationship; the analyst controls the turn-taking as well as the topic of discussion by asking the questions. The personal frame is a more balanced, symmetrical relationship, and responses are usually in the form of a narrative. Thus, the personal frame is often a storytelling frame, where answers are in the form of a personal narrative. In this frame the role of “professional” information worker resides in the background while a subjectivity of caring worker is developed in the foreground. The clients shift in and out of these frames while the analyst, for the most part, stays in the technologist frame. Each frame brings with it certain “rules” about what talk should be about (or not be about), who can talk, in what sequence and who controls the activity.

The following passages portray a shifting between technologist and personal frames. Through discursive mechanisms of changes in footing as well as subtle and effective facework the identity of the client is produced, challenged and at times undermined. In the first passage, two members from the housing office, Shelly and Carol, are asked questions by two interviewers, Int1 (who is female) and Int2 (who is male). They are asked about the process by which students received bills pertaining to damages of the dormitory rooms.

1 Int1 — so you don’t have a 24-hour turnaround?
2 Carole — the other time when there is a little backlog is check
3 out in December. December is a real problem because they are
4 checking out and our staff wants to go out on Christmas break
5 also. So, {um}, we frequently have to badger to get those invoices
6 Int1 — so December and May are your tough times when you

1 Int1 — so you don’t have a 24-hour turnaround?
2 Carole — the other time when there is a little backlog is check
3 out in December. December is a real problem because they are
4 checking out and our staff wants to go out on Christmas break
5 also. So, {um}, we frequently have to badger to get those invoices
6 Int1 — so December and May are your tough times when you
don’t have a 24-hour turnaround. What do you think the
processing time is in most cases?

Shelley — [Shelley looks a Carole] (5) it could be as
much as two

weeks

Carole — yeah, and maybe in some cases depending upon
staff in
the area offices even three weeks
(3) because the staff and the area offices have many other
responsibilities besides the billing, that
(3) we could badger them, but they can’t do it, and we

/understand

Int1 — the example/ you gave us suggested that at check
out the
inventory form was completed with the student present, is
that

not uniformly true?
Shelley — that is not uniformly true.
You’re trying to check out 11,000 people
in a week’s period of time with 300 RA staff, who are also
taking
finals and have
there are sometimes where students will check out alone
and
waive their right to appeal, by checking out and then
someone
will come in after the fact and complete the inventory form
and

do a billing that’s related to that

Int1 — how often does this happen?
Shelley — (3) we could certainly get you statistics on how
many
students do that, I, I, don’t know I assume a lot. We could
do,
not, not, full range statistics but take a pile of /inventories
Carole — see how/ many were checked out

Int1 — is that universally true, that if the student checked out
without the inventory being completed he waives his right
to
appeal
Carole — absolutely in all cases, so if his choice is get out of

here I wanna leave or wait around till someone can go
with him
and/complete and so he
Int1 — ok ok/
Carole — ok, because I have been on the phone with parents
Int1 — [begins talking to other interviewer, looking away from Carole and Shelley]
Carole — I’ve been on the phone with parents,
[interviewers look at Carole] explaining that when they’ve gotten bills and have been very upset, and very irate and indicated to them that your son or daughter made a choice and when we went back and inventoried the room this is what we found.
I tell you, as a parent it’s not a very comfortable thing to hear
and, /and the have to
Int1 — they /don’t accept it?
Carole — not all the time
Shelley — we’re looking at a process to possibly not, we used to bill three dollars if the student didn’t leave their mattress cover
on their mattress and were trying to put a minimum I think what we’re suggesting a $25 minimum per billing…
Int1 — except that the cost of mattress covers has gone way up, I know [Interviewer 1 laughs, Carole and Shelley laugh]
Int2 — ok, so this is just one way they can get a notice, then it gets on to BRS and is simply an amount due.
Carole — [2] yes
—
(6. Hous)

The extract above illustrates a pattern of shifting and conflicting frames. I analyze this excerpt by examining turn-taking and moves that each speaker accomplishes through their turns. In the opening sequence Carole responds to the question posed to her by the interviewer about turnaround time. Carole responds with a narrative
about problems they encounter in December when staff has competing demands to leave for Christmas break. Rather than give a yes or no answer, Carole steps into a more personal frame, changing the footing from information provider to caring woman, concerned about employees’ desires and demands. The interviewer reframes the interview by returning to the question about processing time (line 7). By asking questions the analyst imposes the obligation of a response on Carole. This places a constraint on Carole’s next move. More importantly, it places Carole in a follower role where the appropriateness of her response will be measured by the question that preceded. Carole hesitates for several seconds, almost appearing to refuse the follower role. At this point Shelley looks at Carole and intervenes (line 10) attempting to shift the footing back to a more official one of analyst–client by answering the question more directly with a quantifiable amount.

Carole then returns to the conversation, at first participating in the technologist frame by providing direct quantifiable information about timing (line 12), but after a pause she shifts the footing again and describes a minor transgression. Carole describes overworked staff that “have many other responsibilities” (line 14) therefore, she does not badger them for information even though she may need it. In this move, the confession about a deviation from standard process that would normally require staff to comply with providing information independent of other perhaps more personal demands, serves to inscribe Carole in the narrative as an understanding woman. Carole has reframed the interaction and now the professional roles of information worker remain largely in the background. Instead a relationship of caring worker figures more prominently.

The interviewer reframes the interview by abruptly switching to interrogator searching for factual information. She resists Carole’s out-of-frame activity by demanding uniformity (line 20), quantification (line 29) and universals (line 35) in client responses. To the first request Shelley responds with a direct answer, but then switches back to narrativizing the daily difficulties of managing workers who have lives with other demands (“RA staff who are also taking finals”). When Shelley is pulled back into the technologist frame and asked to quantify her response, she stalls, the hesitation is a linguistic marker of the facework that follows. Shelley does not want to be humiliated, she does not want to show her impotence as a “professional” subject, one who has quantifiable measures to track her processes. This moment presents a threat to Shelley’s face as information worker which she manages by offering “statistics” as a symbol of her technological competence.

Carole, on the other hand, seems much more resistant to staying in the frame proposed by the analyst. In lines 41–51 Carole is interrupted by the analyst, with “ok, ok” after Carole provides an answer to whether something was “universally true” but was about to continue with what appeared to be more of a story. At this point, Carole launches into another personal narrative about her interaction with parents. The interviewers respond to this counter-frame activity with active disattention. They talk and look at each other. The non-verbal cues by the interviewers, who turn away, signal to Carole that they have transitioned their attention away from her. In response, the pace and pitch of Carole’s talk increases (line 45). She repeats the previous statement, regains control of the interview and reframes the interaction,
back to a personal one. She tells a story about parents who are surprised when billed for damages done by their children to dormitory rooms. She closes the narrative by identifying herself as a parent (line 51). This disclosure contributes to creating a more nuanced identity for Carole, now as a caring mother.

The passage ends with a change in footing initiated by the female interviewer (Int1). Throughout the interaction she has remained firmly within the technologist frame, functioning as interrogator, counter-framing whenever Carole or Shelley imposed the personal frame. However, at line 61 the woman interviewer responds with a bit of personal information about herself as a consumer. The prosodic emphasis on “I know” signals to the other women that interviewer has direct experience with or information about purchasing the item of concern, a mattress cover. The interviewer shares an understanding with the other women as a consumer, perhaps as a mother as well. In performing this move, the analyst steps out of her official role as analyst and interrogator and Carole and Shelley momentarily leave their roles as information providers to assume that of women consumers conversing about the costs of keeping a home. This move creates an affiliation among the women as they laugh together. The interview is suspended. However, the fleeting moment of intimacy among the women fades as the male interviewer regains control of the interaction. With an abrupt shift in footing the male interviewer changes the context. He reduces the complexity of concerns and dilemmas of work practices as narrativized by Carole and Shelley to “simply an amount due on the bill”.

In another interaction Elizabeth and Marie, from the Enrollment Management Office, are interviewed and asked how they track student credits for those who take courses outside the university system.

1 Int — Do you have to go in there and take away credits /because they have too much? [Marie nods]
2 Elizabeth — I didn’t know that!
3 Marie — the other day, I had a case Friday, the student was continuing education. They can take twelve credits prior to enrollment, this is a fresh start. So he got all As and one A−. And when you take a course over at continuing education it’s just pass–fail, you have nothing to compare with, so usually you get the A−, in this case he did but he also took courses prior to that. I had to go and take the credit away from him /from a previous semester…
4 Int — I don’t think we need to concentrate/ on that level of specifics
Elizabeth — we don’t know that yet/

Int — I think those are artifacts of our existing system I don’t think the new system will have. I think we need to concentrate just on the rules, we need to enumerate every field and every algorithm attached to the calculation of that field [laughter from Elizabeth and Marie]

(12. Reg, 241)

The passage above demonstrates shifting frames and face management. At the beginning the interviewer starts by asking Marie a question about removing credits. Marie responds through a gesture of nodding providing the interviewer with a direct answer to her question. However, Elizabeth follows by using intonational resources in the expression “I didn’t know that” to invite further explanation on the part of Marie. Marie then shifts into a more personal frame, or storytelling frame by narrativizing her experience with removing credits. The storytelling frame brings with it certain rules; that the story will have a beginning, end and central point. Marie begins the story with transition talk, “the other day” which signals to the listeners that a “flashback” (Polanyi, 1985, p. 10) to a story is about to begin. This disjuncture in time brings us back to a time when Marie had a student which did not fit into the regular process. Here Marie confesses to violating the usual process when she states that “I had to go and take the credit away” implying that the information system did not address the students problem and required her intervention. Although the story lacks extensive linguistic expression, its central point is that Marie’s transgressive intervention is justified. What we see is Marie as an information worker that addresses students as individuals, as a caring worker willing to bend rules or improvise when needed.

At this point the interviewer, abruptly dismisses the personal narrative as too specific (line 11) effectively shifting the interview to a more technological frame of direct answers. This statement serves to reframe the interview but also threatens the face of Marie as information worker. The interviewer, who is in the role of authority vis-à-vis her technical expertise, has judged Marie’s statements as inappropriate for the technologist frame. The implicit rules for the technological frame require brief and direct answers, without details that a personal narrative involves. Elizabeth responds to this threat by interrupting the interview and challenging her statement (line 12) suggesting that perhaps Marie’s response might in fact be appropriate and that dismissal of the specifics might be premature. This move shows how the management of face can involve speakers colluding in the face maintenance of the other. Elizabeth recognizes that Marie’s face as “professional” information worker is at risk and intervenes to save it.
Elizabeth’s attempt is thwarted. The interviewer continues by stating that Marie’s response was one that is associated with a legacy system, a system on its way out and soon to be replaced by a new system. The old system has likely been somewhat discredited and association with the old, rather than the new, is a sure way to discredit Marie’s face. Instead of narratives offered by Marie in her storytelling frame, the interviewer would like enumeration, algorithms and calculations, thereby overtly establishing the rules and aims of talk for the technological frame as well as the interviewer’s authority within that frame. In the last line Marie and Elizabeth laugh together in response to the interviewer’s rules that she has established for talk. This paralinguistic expression could be interpreted as a challenge to the interviewer by clients who perceive their role as one of less authority to establish and enforce the framing of the interview. Rather than expressing verbal disagreement, they collude in laughter as a way to ridicule the rules set by the interviewer.

8. Discussion

These examples of the discourse of requirements analysis shows that although an interview takes place within a technologist frame, counter framing as well as changes in footing and facework continually occur which create an ongoing tension between the analyst and client. Throughout the interview we observe a struggle in reframing which can be attributed to an underlying conflict between the way the analysts view the encounter and how the clients view it. For the analyst the encounter is a technological encounter, for the client it is about personal work experiences and dilemmas. Thus, Bob, Carole, Shelley and Marie propose reframings in the direction of social encounter through the telling of stories. The analysts counter this with a shift back to a technological encounter that will generate data they will know how to capture and use. Although, in the second passage the female interviewer briefly accepts the personal frame by shifting the footing relationship in the direction of a social encounter, more often we see the interviewer interrupt client’s talk, shifting back to the technologist frame, the more official context of the requirements analysis interview. This continual conflict exemplifies a basic difference between clients and analysts. While both are engaged in and contribute to producing an interview, clients and analysts have very different understandings of what each one’s role is. The clients approach the encounter from a more intimate angle, attempting to be more personal, funny, friendly, or even dramatic, the analyst comes at it from a very professional stance looking for brevity and directness. This conflict in frames is perhaps the result of mismatched expectations about the topic of conversation, the manner in which that should be constructed and what linguistic expressions are appropriate.

The analysis in the study permits us to examine issues of power and control. For the most part, the analysts seek to (but don’t really) control what happens during the requirements analysis interview by keeping it well within a technologist frame. In this frame power relations are skewed in the direction of the analyst. However, it is the clients who propose reframing and control what happens when the personal frame is in place. For instance, Carole’s identity as a caring mother emerges which
allows her a certain amount of control over the possible topics of discussion: as a parent concerned about damages incurred by a child, as a woman who is concerned about permitting employees to celebrate Christmas, as co-worker who does not badger overworked staff. Marie’s identity as a caring worker also emerges as she shifts frames and narrativizes her experience with the information system. In reframing, the client’s communicative styles change to providing more information and more involvement. They confess to their transgressions with the information system, they tell of experiences in which their social identity emerges. The analysts are quick to resist the personal frame and counteract by changing topics and shifting back to the technological context. However, by accomplishing a reframing Carole is able to regain control over her social identity as “caring mother” and signal the importance of the larger social context. However, the analysts shift out of the personal frame and in so doing, confine Carole and Marie to a limiting and unidimensional role of information worker and nothing else.

How does this fine grain analysis of the discourse environment of requirements analysis link up to emancipatory goals as deemed necessary by critical analysis (Habermas 1970, 1975)? Recent organizational research has focused on unearthing and critiquing the ways in which technical rationality, consonant with managerial interests, dominates communicative practices in organizations (Alvesson & Willmott, 1992; Clegg, 1975; Mumby, 1988). The discursive analysis, along the lines suggested here can contribute to this critical project. Critical discourse analysis made apparent how workers socially construct work and how work is embedded in social relations. While managers and analysts represent and reward work that falls within narrow definitions, this critical analysis explicitly represents the perspective of workers and points to the essential skills that are necessary for accomplishing work. The workers (primarily women) in the examples engage in skillful negotiations of identity and the competing demands that are brought about by that identity. As professional information worker they are required to be detached from emotional concerns, as caring (women) workers they are concerned about the well-being of their clients. Through talk, the identities that emerge index other aspects of work that are important and necessary for accomplishing work yet are almost always overlooked. To the extent that these skills are necessary, workers skillful accomplishment of these can be recognized and rewarded rather than erased.

Given that such tension over framing occurs during the requirements analysis interview, why do analysts insist on staying in the technologist frame and clients succumb to this, albeit with some resistance? Several reasons may explain this. First, clients may feel compelled to participate in the technologist frame proposed by the analyst because they fear being seen as incompetent information workers, for fear of having their face as information worker undermined. When Shelley reluctantly responds to a request for quantification, she responds with an offer of “statistics” because she believes it will make her appear more official, perhaps position her as a more scientific subject. She acquiesces to the request perhaps as a form of face saving. Secondly, reframing is a difficult task to achieve. It is easier to stay in a frame than to resist or react, which takes additional effort, skill and power to do. In the technologist frame, power relations are skewed in the direction of the analyst who possesses
institutional legitimacy. Unlike the client, the analyst is poised to control the interview, ask the questions and determine what gets talked about. Third, sustaining the technologist frame gives authority to the analyst, they identify what constitutes information, what gets documented and included as a requirement. They assume the gatekeeper role to some degree which provides them with authority to make decisions about the shape and form of the new information system, itself a critical work tool of the client.

9. Conclusion

This paper critically analyzed requirements analysis discourse by combining linguistic analysis with wider contextual knowledge to illuminate issues of identity, conflict and power in the interview interaction. This approach expands our understanding of how professional identities are constituted and relations of power are fashioned out of talk during interviews. The paper has shown that a technologist frame is dominant during the requirements analysis interviews. The technologist frame is one that provides the analyst with legitimated control and authority and assumes asymmetrical relations. This framing provides the analyst with a form of symbolic control. Clients occasionally resist the technologist frame by proposing a personal frame. While in the personal frame, the client regains control of the interview. The personal frame allows the clients to engage in narratives that positions the client within their cultural and social environment. The narrative response interrupts the technologist discourse, provides a space where clients may embed themselves within the story and thereby provide a more nuanced image of their identity, concerns and dilemmas. The confessions allow for a discursive representation of information worker as woman, as caring mother, caring worker or as consumer. It allows the client to construct a multilayered identity.

As part of a critical project, this paper also focuses on the interpretation of power relations and other expressions of dominance that entail the privileging of certain interests over others. Critical interpretation requires scrutinizing representations (or mis-representations as CDA would argue) which appear self-evident, natural and unproblematic. To that end, information systems development and requirements analysis interviews are power-laden processes. Power shapes the verbal and non-verbal responses of the interviewees, and judgement consultants, researchers and in general “experts”. The discursive context of the requirements analysis interview is profoundly shaped by the presence of these types of experts. How we speak and how others address us constitutes our subjectivity, our identity, as we see in the interview. But these utterances are contingent upon the discursive field in which we find ourselves; one that does not develop freely or arbitrarily. Legitimated discourses dominate; those of experts who have privileged access to scientific information, have accredited roles, and thus interventions on their part carry an aura of “truth”. Therefore, the presence of these experts, among which I include myself, with our truths, gave expression to particular skewed power relations during the interviews. As a reflexive researcher aware of these power relations, an awareness of this did not
change the reaction that participants may have had and the influence my presence had on what they said or did not say as well as the representations that were constructed and my interpretation these.

Examining requirements analysis interviews has also allowed us to gain insight into the discursive production of a “communication” gap between analyst and client. We see a tug of war between roles assumed and modes of talk during the interview. The analyst favors the technologist frame which relegates the client to a professional identity and succinct mode of talk, while the client proposes the personal frame which frames the interview as a social encounter. Here the talk is friendly, inviting and very rich. The analysts prevailing strategy of maintaining the interview within a technologist frame seems rather at odds with one of the goals of requirements analysis interviews, effectual communication. Allowing the clients to take on more personal footings would inevitably bring about a more involved and animated person willing to provide information that better describes the complexity of work practices. Perhaps more interestingly, beyond the gender-neutral communication gap, further research might examine how women and men differ in their communicative practices during requirements analysis interviews. How do speakers “do gender” and is gender performed differently in single sex groups? Researchers on language and gender have begun to wrestle with some of these questions, finding that women’s talk at work is cooperative in the strong sense that speakers collaborate in the construction of talk, and that the voice of the group has priority over the voice of the individual (Coates, 1998; Wilson Nelson, 1998). The research here points in a similar direction but further research might explore the effect this may have on the discursive production of requirements.

This study is not intended to serve as a template that other investigators can replicate. Instead, the approach taken here is a critical and interpretive one which focuses on the critique of knowledge gained through social constructions, namely language (Klein & Myers, 1999). In particular, this research seeks to open the dialogue about discourse and identity in the realm of information systems development. If requirements analysis interviews are discursive events, as appears to be the case, where polyphonic “voices” are present, where clients negotiate identities that are often challenged and reconstructed, and where competing frames are constantly shifting, then analysts must learn to manage these tensions. This study has provided a window into, or perhaps made more transparent how clients use language to manage the demands of two competing frames; the technologist frame and the personal frame. In this study, language through linguistic markers and other aspects of speech is the product of client’s both managing and constructing a complex social interaction. The talk examined in the context of these interviews is thickly textured and densely packed. Thinking of language in this manner will perhaps begin to steer many information systems analysts and researchers away from the traditional belief that talk at work “is just vocabulary.”
Acknowledgements

I thank Jacqueline Urla for her anthropological reading of this article and assistance in distilling my thoughts.

References


